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**ABSTRACT BOOK
E-POSTERS**

Abstract no.: 30715

ACCURACY OF INTRAOPERATIVE CT-BASED NAVIGATION FOR PLACEMENT OF PERCUTANEOUS PEDICLE SCREWS

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Introduction: Previous studies on fluoroscopically guided percutaneous pedicle screws have demonstrated a cortical breach rate of approximately 25%. The purpose of this study was to evaluate the accuracy of intraoperative CT-based navigation for placement of percutaneous pedicle screws in a cadaveric model. Methods: Two specimens were utilized. CTs were obtained using an O-Arm and coupled to the Stealth navigation system. Navigation was used for placement of percutaneous pedicle screws bilaterally from T5-S1 and from T6-S1 respectively. Post insertion CTs were obtained. Pedicle breach was assessed and classified accordingly (I: none, II: <2 mm, III: 2-4 mm, or IV: >4 mm). Results: Thirty thoracic screws were placed with 3 (10%) medial and 17 (56.7%) lateral breaches (all grade III). Of twenty lumbar there were 0 medial and 2 (10%) lateral breaches (one grade III, one grade IV). Four sacral screws were placed without breaches. The real-time computer-aided navigation tool was limited in identifying a breach. Manipulation of the surgeon's hand or driver could change the orientation of the navigation tool without changing the screw trajectory. Discussion: CT-based navigation for placement of percutaneous pedicle screws appears safe for the lumbar spine. Thoracic breaches laterally appeared commonly but were not clinically significant. The 10% rate of medial thoracic breach was concerning. We cannot recommend use of CT-guided navigation for placement of thoracic percutaneous pedicle screws. Further study is warranted to define the roles and limits of this technology as factors including body habitus and pedicle morphology may limit use in percutaneous spinal surgery.

Abstract no.: 30735

HOW EFFECTIVE IS CT BASED NAVIGATION IN PEDICLE SCREW FIXATION:OUR EXPERIENCE IN A TERTIARY CARE CENTRE IN INDIA.

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introduction:Conventional technique of pedicle screw fixation has limited accuracy potentially endangering vital structures.CT based navigation is a technique to improve the accuracy of pedicle screw fixation which needs to be tested for its feasibility and effectiveness in a third world country.methods and materials:30 consecutive patients of fractures of dorsolumbar spine were subjected to an optoelectronic navigation system consisting of a computer work station,infrared camera system and instruments equipped with trackers.the preoperative CT scan was fed into the computer work station and the process of paired point matching was done on patients exposed spine.time taken for matching process as well as insertion of each pedicle screw was recorded and placement assessed with a postoperative CT scan which was graded using Laine's grading system.results:only one screw out of a total of 118 screws was misplaced with a Laine's grade 5 placement,showing a misplacement rate of 0.847% only.average time for matching was 7.8 minutes.time taken insertion of a single screw was 4.19 minutes and total time taken for all screws was 34.23 minutes.no neurovascular complications were seen in any of the patients.conclusion:CT based navigation significantly improved the accuracy of pedicle screw placement.the rate of screw misplacement in our study was lesser than those reported with conventional technique(14.3-42%) and is comparable to reported rates with other computer assisted techniques,however, this technique involves a steep learning curve and additional costs of procuring a pre-operative CT scan.

Abstract no.: 30739

LOW-GRADE CENTRAL OSTEOSARCOMA OF THE METATARSAL BONE: A CLINICOPATHOLOGIC, IMMUNOHISTOCHEMICAL, CYTOGENETIC, AND MOLECULAR CYTOGENETIC ANALYSIS

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Low-grade central osteosarcoma (LGCOS) is a very rare low-grade malignant neoplasm that is often confused with a variety of benign fibro-osseous lesions. It rarely involves the small bones of the foot. We present an unusual case of LGCOS arising in the third metatarsal bone of a 16-year-old man. The radiographic appearance was suggestive of a benign lesion. An open biopsy was performed and the initial pathologic diagnosis was fibrous dysplasia. The patient underwent curettage of the lesion and packing of the bony defect with a synthetic bone substitute. Histologically, the tumor consisted of spindle cells admixed with irregular bony trabeculae and osteoid. The spindle cells were fairly uniform with mild atypia, and cellularity varied from low to high. Immunohistochemically, the tumor cells were focally positive for CDK4 and p53, but negative for MDM2. The MIB-1 labeling index was 36.7% in the highest spot. Cytogenetic analysis exhibited the following clonal karyotypic aberrations: 48,XY,del(6)(p11),add(8)(q24),add(12)(p11.2),+mar1,+mar2. Spectral karyotyping demonstrated that marker chromosomes were mainly composed of chromosome 6. Metaphase-based comparative genomic hybridization analysis showed a high-level amplification of 6p12-p21 and gains of 8q21-q24, 10p15, 12q13-q15, and 16q23-q24. The histological diagnosis of the curetted specimen was revised to LGCOS, and the patient was finally treated with an additional wide excision, followed by reconstruction with a free vascularized osteocutaneous scapular flap. Our case highlights the diagnostic difficulty of this tumor on limited tissue samples and the importance of immunohistochemical analysis in ambiguous cases.

Abstract no.: 30748

TECHNIQUE TIP: USE OF ACL JIG FOR HIND FOOT FUSION BY TIBIO-TALO CALCANIAL NAIL

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Introduction: The use of intramedullary nail fixation for tibio-talo-calcaneal fusion is gaining popularity. There is chance of failure of procedure following faulty operative technique specially alignment. Objective: We describe a useful application of tibial tunnel jig used for ACL reconstruction in inserting the calcanio-talotibial guide wire which is extremely important for correct alignment of the ankle. Method: We describe a useful application of tibial tunnel jig in inserting the calcanio-talo-tibial guide wire with a precision of few millimetres through the calcanium into talus and finally into tibia. The guide arm of the tibial jig is oriented desirably by adjusting the guide arm with respect to the drill sleeve. There are markings on the guide arm to indicate the optimum orientation of the guide arm with respect to the drill sleeve. Now the guide arm is placed on the desirable exit point of the guide wire on talus and the drill sleeve is put on the entry point of calcanium . The guide wire is drilled through the drill sleeve. The guide wire comes out at the desirable place on the talus and then the tibial tunnel jig is removed and the wire is further drilled into the tibial medullary canal. Result and conclusion: There is precision of few millimetres in the exit point of guide wire on talus.This we think helps in better positioning of nail and hence better alignment and better operative outcome.

Abstract no.: 30751

SWELLING AROUND BIO ABSORBABLE INTERFERENCE SCREW FOLLOWING ACL RECONSTRUCTION- A CASE SERIES

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Introduction: Bio absorbable interference screws have been effective for graft fixation in anterior cruciate ligament (ACL) reconstruction. Complications associated with these bio absorbable screws are few. Objective: We report a case series of 6 patients who underwent arthroscopic ACL reconstruction with symptoms associated with knee instability. In these six patients, Bio absorbable interference screw (PLLA) fixation at the tibial end was done. Methods: 18 months to 2 yrs following ACL reconstruction these patients were referred back to us with a painless lump at the proximal end of tibia overlying the tunnel opening of the tibia. There was no history of infection or recent injury. They did not complain/report any pain in the knee and there was no instability of the knee. On examination, below the tibial incision there was a non-tender firm lump about 2cmx2 cm in dimension fixed to the proximal tibia. Skin over the lump was mobile and not warm to touch. Results: Patients were taken to theatre for exploration / excision and biopsy of lump. Exploration revealed chalky white remnants of the bio absorbable screw with no evidence of infection. (Histological studies confirmed a foreign body reaction against screw remnants with the presence of multinucleated giant cells.) All these patients had full recovery with no compromise to graft stability. Conclusion: Our case series highlights this very significant complication of bio absorbable screw which can lead to significant clinical consequences including further operations.

Abstract no.: 30772

RADIAL HEAD INSTABILITY FOLLOWING MALALIGNMENT OF THE PROXIMAL ULNA: A BIOMECHANICAL STUDY

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Purpose: Understanding the proximal ulna is important when treating complex injuries, since nonanatomic reconstruction may lead to malunion and instability. The purpose of this study was to evaluate the magnitude of angular malalignment of the proximal ulna that would lead to radial head subluxation. Methods: This biomechanical study was conducted on six cadaveric upper extremities with an elbow movement simulator. An osteotomy was performed at the sagittal plane bow of the ulna, termed the Proximal Ulna Dorsal Angulation (PUDA), and stabilized with plates at 5 angles. Lateral fluoroscopic images were taken in four elbow and three forearm positions, with the annular ligament intact and released. The displacement of the radial head was quantified with the Radio-Capitellar-Ratio, a validated technique to quantify joint translation. Results: When evaluating radial head instability, significant interactions existed between elbow positions, angles of malalignment and annular ligament integrity ($p < 0,001$). The greatest magnitudes of radial head subluxation were with annular ligament release ($p < 0,001$), ranging between -4% to 88%. Significant differences were found between angles of internal fixation ($p = 0,002$) and elbow positions ($p < 0,001$). Indeed, anterior subluxation increased as malalignment was fixed into extension and with progressive elbow flexion. Conclusion: Proximal ulna malalignment and annular ligament tear lead to radial head instability. Proximal ulna fracture fixation with straight plates do not consider the normal anatomic dorsal bow, which may cause abnormal tracking of the radial head, pain, restricted motion and osteoarthritis. This study demonstrates the importance of anatomic reconstruction, specifically re-creation of each individual's unique proximal ulna dorsal angulation.

Abstract no.: 30788

VALIDITY OF A PHYSICAL EXAMINATION TECHNIQUE (EGE'S TEST) IN THE DETECTION OF MENISCAL TEARS IN COMPARISON WITH ARTHROSCOPIC FINDINGS

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The purpose of this study is to assess the validity of a weight bearing test (Ege's) as a means of detecting meniscal tears of the knee by comparing arthroscopic findings to a clinical examination finding. The design was a cross-sectional study wherein subjects were taken entirely from one medical center and consisted of 109 patients who had a suspected intra-articular knee pathology. Ege's test was performed pre-operatively and the findings were compared with the arthroscopic procedure findings that the patient subsequently underwent. Eighty-four patients had a positive Ege's test, 81 had a confirmed meniscal tear on arthroscopy. Ege's test had a sensitivity of 92% and a specificity of 85.7% with a positive predictive value of 96.4%. There was a causal degree of association using the relative risk assessment which noted a statistical significance at 3.4. This meant that having a positive Ege's test increased the probability of the presence of a meniscal tear.

Abstract no.: 30789

FUNCTIONAL OUTCOME AFTER A SINGLE LEVEL PERCUTANEOUS INDIRECT DECOMPRESSION USING THE DTRAX FACET SCREW SYSTEM FOR THE TREATMENT OF PATIENTS WITH CERVICAL DEGENERATIVE DISC DISEASE

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The DTRAX facet screw system is a minimally invasive option for cervical disc disease. The study's general objective is to establish the improvement in the functional outcome after one year of undergoing a single level percutaneous indirect decompression with facet fusion using the DTRAX facet screw system. The study design is a descriptive, prospective, single-center, non-randomized study. Subjects were screened and enrolled in the study with the general inclusion criteria as single level cervical degenerative disc disease or cervical radiculopathy, facet arthroses, or spinal stenosis. There were a total of 24 subjects included with ages ranged from 40 to 75 years old. Mean of the VAS score for the neck at baseline is 7.59 with mean at 1 year follow-up at 1.73. Mean of VAS score for the arm at baseline is 7.41 and mean at 1 year follow-up is 1.50. Mean score of the NDI at baseline is 69.11 and mean after 1 year follow-up is 11.45. All the subjects claimed that their general health and well being markedly improved since before the surgery up to 1 year follow-up using the SF12v2™ health survey questionnaire. Mean muscle power was at 4/5 at baseline and was noted to be normal 5/5 after 1 year. Mean sensory deficit or loss was 20% at baseline and noted to be 0% loss after 1 year. The DTRAX facet screw system is effective in improving the functional outcome for patients with a single level cervical radiculopathy or cervical degenerative disc disease.

Abstract no.: 30839

RESTLESS LEGS SYNDROME (RLS)

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RLS is not an orthopedic related disease, but since the symptoms appear in the legs; patients turn to orthopedic surgeons. Many orthopedic surgeons are not familiar with RLS thus, the patients remain untreated. RLS is a central nervous system disorder that causes a strange sensation in legs leading to sleep deprivation and consequently, daytime confusion at work. The cause of this syndrome is imbalance of dopamine (a brain chemical that affects movement) that falls down at night. Various factors including low iron trigger this syndrome. Major symptoms that happen at night are leg creeping; tingling, burning, pulling and a general urge to move the legs or walking around in order to relieve the discomfort. A child with this syndrome is misdiagnosed with Attention deficit hyperactivity disorder and growing pains. Two kinds of RLS are diagnosed, Primary and secondary. Primary RLS runs in families and affects young people, symptoms increase with age, Secondary RLS caused by or linked to other conditions like Iron poor blood , chronic diseases like kidney failure, diabetes, peripheral neuropathy, pregnancy, thyroid problems and alcoholism. in some instances after surgical procedure the patient suffers from RLS,.Some causes may aggravate symptoms like long car trips, long-distance flights and casting .Self-help tips and some medications are available to relieve the patient from this troublesome syndrome like reduction caffeine, alcohol, and tobacco use particularly in the evenings. The first line of medicine is dopaminergic agents. In this lecture, RLS and its treatment are addressed for the benefit of orthopedic surgeons.

Abstract no.: 30869

RHABDOMYOSARCOMA OF THE EXTREMITIES; ANALYSIS OF 20 PATIENTS.

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Introduction: In children, rhabdomyosarcoma occurs with a frequency that is equal to or greater than that of all the other forms of soft-tissue sarcoma combined. The overall results of chemotherapy have been more impressive in rhabdomyosarcoma than in any other form of soft-tissue sarcoma in childhood. Objectives: Rhabdomyosarcoma of adulthood needs further assessment. Methods: Twenty patients with intramuscular rhabdomyosarcoma were treated from 1987 to 2008. They were 13 males and 7 females, their age ranged from one year to 72 years (average 26 years). Six patients were aged less than ten years. The follow up ranged from 3 months to 20 years (average 53 months). Results: All nine patients presented with metastasis died of disease (DOD), while six of the eleven patients presented with a localized disease (DOD), and the remaining five patients are alive. Among the long survivors (Five patients), four were aged below 10 years and four of them also had had an embryonal rhabdomyosarcoma, and all of them had a wide margin surgical procedure. At the end of follow up, the survival rate of patients was as follows: 64 % for M0N0, 0% for M1N0, M0N1 and M1N1, 66% for patients aged younger than 10 years, and 25 % for all the twenty patients. Conclusion: The age of the patient, the status at presentation are the most influencing factors regarding the prognosis followed by the surgical margin. The histological subtype. The use of chemotherapy or radiotherapy did not influence the prognosis of our adult patients.

Abstract no.: 30871

CLINICOPATHOLOGICAL STUDY OF SOFT TISSUE TUMOURS AND TUMOUR LIKE CONDITIONS AROUND THE WRIST AND THE HAND

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Objectives: Over the last few years, there has been much interest in the study of tumours and tumour like conditions around the hand and the wrist. Most of the tumourous like conditions result from repetitive strain injuries. It is important to study true tumours and to find a correlation between them and tumourous like conditions. Also finding a correlation between benign and malignant tumours around this area is lacking in the literature. METHODS: This study includes 178 patients with hand and wrist swellings out of 107005 patients who received medical care at our university hospital during one year (from November 2006 to October 2007). Thus patients of this study represent (0.30%) of the patients admitted from the outpatient clinic. RESULTS AND CONCLUSIONS: The pathologic diagnosis was as follow, tenosynovitis (48%), simple ganglion (41%), dupuytren's contracture (4%), Giant cell tumour of tendon sheath (4%), chronic synovitis (0.6%), fibroma (0.6%), neuroma (0.6%), dermoid cyst (0.6%), synovial sarcoma (0.6%). The common age was between 30 and 49 years, 108 patients (60.6%) were females while 70 (39.4%) were males. Housewives were affected in 62 patients (34.8%). Interference with function and unsightly swelling was a notable feature in 75 patients (42%). Diabetes was evident in 56 patients (31.5%). Recurrence was high in trigger finger and ganglia that managed conservatively. The palmar aspect of the right hand were affected more. The smallest swelling measured 0.5 cm³ while the largest measured four by seven cm (chronic synovitis). Malignancy constitutes (0.6%) of the study.

Abstract no.: 30902

LONG TERM RESULTS WITH THE MODIFIED PERCUTANEOUS ACHILLES TENDON REPAIR UNDER LOCAL ANESTHESIA

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OBJECTIVE: Controversy regarding the optimal treatment of the acute total Achilles tendon rupture remains. Percutaneous repair seems to bridge the gap combining the advantages of conservative and operative treatment. **PURPOSE:** To analyze long term results with the use of modified (own) and biomechanically significantly stronger percutaneous Achilles tendon repair under local anesthesia (in an outpatient way). **MATERIALS AND METHODS:** All the consecutive patients, who were operated on in the years 1991 to 2006 with the modified percutaneous repair were prospectively followed up for 2 to 10 years after the procedure. Postoperatively rigid or functional immobilization was used for the period of 6 weeks. **RESULTS:** There were 270 patients operated on (mean age 38,7 years, 20 of them were women), with the final analysis of 267 (98,8%) patients. 70% of them were injured during sports activities, 3 of them sustained both side injuries. There were 8 (2,96%) re-ruptures, 14 (5,2%) patients had transient sural nerve disturbances (spontaneously resolved in 3 to 8 months), there was one vein thrombosis, one superficial infection and one suture extrusion problem, with no other major or minor complications (9,2% of altogether complications). 216 patients (80,8%) return to all previous activities, 45 (16,7%) claimed some difficulties and six patients (2,2%) were not able to return to all previous activities. The average AOFAS score was 96,1. **CONCLUSION:** The results of study support the choice of modified percutaneous Achilles tendon repair under local anesthesia as the method that brings good functional result with low number of complications.

Abstract no.: 30958

STANDARDISED TRANSTIBIAL ACL RECONSTRUCTION TECHNIQUE CAN RESULT IN HIGH REPRODUCIBILITY RATE OF THE OPTIMAL FEMORAL TUNNEL POSITION: RADIOGRAPHIC REVIEW.

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Introduction: The transtibial approach is widely used for femoral tunnel positioning. Controversy exists over the superiority of this approach over others. Few studies reflected on the reproducibility rates of the femoral tunnel position in relation to the approach used. In this study we examine the reproducibility rate of the femoral tunnel position. **Methods:** We reviewed AP and Lat radiographs post isolated ACL reconstruction for 180 patients for femoral tunnel position, tibial tunnel position and graft inclination angle. All patients had their operations performed by one surgeon between March 2006 and Sep 2010. All operations were performed using one standard technique using transtibial approach. **Results:** Previous literature proved that optimal femoral tunnel position to be at 43% from the lateral end of the width of the femoral condyles on the AP view and at 86% from the anterior end of the Blumensaat's line on the lateral view. In our study 85% of the femoral tunnels were within +/- 5% of the optimal tunnel position on the AP views, and more than 70% of the femoral tunnels were within +/-5% on the Lateral view. Bland-Altman agreement plots show substantial agreements for interobserver and intraobserver measurements. Pearson intra-observer correlation shows substantial to perfect agreement while Pearson's inter-observer correlation shows moderate to substantial agreement. These results were found to be statistically significant ($p = 0.01$). **Conclusion:** Based on our results we conclude that using one standardised transtibial technique for ACL reconstruction can result in high reproducibility rates of optimal femoral tunnel position.

Abstract no.: 30959

DELAYS IN THE TIMING OF UNSTABLE ANKLE FRACTURE FIXATION

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Introduction: Ankle fractures are common and unstable fractures require fixation. Haematoma formation and blistering following injury have traditionally necessitated fixation in the first 24 hours or after 6 days of elevation to enable adequate skin closure. Patients who have appropriate home support are often offered home elevation therapy with a swelling check 5-7 days after injury. Methods: A twelve-month retrospective study was undertaken. The inclusion criteria were any acute, closed, unstable ankle fractures requiring open reduction internal fixation. Data was collected on length of stay, time to surgery from injury, home therapy and complications together with patient demographics and injury types. Results: 88 patients met the inclusion criteria with average age 48 and 59% women. There were 40 unimalleolar, 32 bimalleolar and 16 trimalleolar fractures. 55/88 (63%) presented in the first 24 hours after injury and 31/88 (35%) were operated on (mean length of stay 5.3 days). 27/88 (31%) were suitable for home therapy (mean length of stay 5.6 days) and 30/88 (34%) were kept as inpatients prior to surgery (mean length of stay 10.7 days). Complications were equal in the immediate surgery and home therapy groups with respiratory and urinary infections increased in the inpatient group. Conclusion: Early operative intervention offers the shortest inpatient stay and is thus most cost effective with no increase in complications when compared with home therapy and inpatient stay. It is important that surgeons and emergency departments are aware of these results to help reduce costs, minimize complications and promote early fixation.

Abstract no.: 30969

OUTCOME OF MINIMAL-INVASIVE SPINE SURGERY AT PATIENTS ACCORDING TO SOMATOFORM DISORDER

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Introduction: Patients with chronic low back pain often exhibit somatoform disorder. The aim of this study was to evaluate the influence of somatoform disorder on the outcome of minimal-invasive spinal interventions as well as to investigate the feasibility of brief PHQ-9 test in detecting the evidence of somatoform disorder in patients with CLBP. Methods: 26 patients with CLBP were screened for possible somatoform disorder with the established brief PHQ-9 score before minimal-invasive spinal intervention. This test takes 2 minutes for fill in by the patient and can be evaluated within seconds by investigator. Due to prior studies cut off with the possible evidence of somatoform disorder was set on 10 points. However, the indication for the procedure was decided unaware of the PHQ-9 results. After follow up of 3 months, postoperative outcome was measured by VAS and Oswestry-Disability-Questionnaire. Results: There was an overall improvement in VAS (median of 4) as well as median 6.1 of Oswestry Disability Score. In the group with PHQ-9 < 11 improvement was achieved by 3.5 in VAS in comparison to 1.25 in the group without evidence for somatoform disorder. Oswestry-Score was improved in patients PHQ-9 < 11 (median of 6.1 in comparison to 3.7 in the group with PHQ-9 >11). Our results suggest inferior outcome of minimal-invasive interventions in patients with CLBP and evidence for somatoform disorder. Furthermore, PHQ-9 seems to be a feasible brief test for the evidence of somatoform disorder and subsequent questionable indication for invasive treatment of CLBP.

Abstract no.: 30990

TRICEPS OLECRANON SPARING (TOSA)POSTERIOR APPROACH TO LOWER HUMERUS

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Introduction:This is posterior approach to lower humerus which spares triceps muscle, tendon as well as olecranon. & prevents the extra surgical dissection, saves surgical time& obviates post surgical rehabilitation problems.The normal triceps provide good soft tissue stability leading to good functional outcome. **Methods:** Thirty Six cases of fractures lower end of humerus treated by open reduction by this approach. This involves exposure and dissection of lower end of humerus including intra articular portion by dissecting & lifting on either side of triceps tendon and muscle rather than splitting the muscle belly and the aponeurosis or by olecranon osteotomy,.Out of these, 16 were children having supracondylar fracture in 12 cases and epiphysial injury lower end of humerus.2 cases and non union fracture lateral condyle in 2 cases. The series included those fractures which were grossly displaced where attempts at closed reduction failed so as to fix by per cutaneous k-wiring. Rest of 20 cases were supprcondylar or transcondylar fractures in adults with or without intra articular extension but the intra aticular fracture was undisplaced and stable. Fixation of fracture by k- wires in children or by putting plates or required fixation on either supracondylar ridge or posterior surface of humerus in adults is equally easy as compared to olecranon osteotomy or triceps splitting approach **Results:** Mayo elbow score at the end was 80-86 with an average of 81. **Conclusion:** Recovery , rehabilitation and regaining range of movements was better, faster and easier for patients operated by this approach.

Abstract no.: 30997

ADJUVANT TREATMENT WITH A SINGLE INTRA-ARTICULAR STEROID INJECTION IN FEMALE PATIENTS WITH ADHESIVE CAPSULITIS OF THE SHOULDER TREATED WITH PHYSIOTHERAPY. IS THERE A BENEFIT?

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Purpose: The aim of this study was to investigate the possible short-term benefit of a single intra-articular corticosteroid injection in those patients treated with physiotherapy when compared to a group of patients undergoing physiotherapy only. **Methods:** A chart review was conducted to identify eligible patients. All female patients between 40-60 years with a confirmed clinical diagnosis of idiopathic adhesive capsulitis who completed a prescribed physiotherapy program between 2006 and 2009 were considered eligible. Sixty-three patients fulfilled the inclusion criteria, but 22 were excluded because of missing data in the medical record. The remaining 41 patients comprise the study cohort; and were assessed both at initial presentation and at 12 weeks. Twenty patients with a mean age of 55.1 years underwent physiotherapy only (PT only) and 21 patients with a mean age of 52.4 years received a single intra-articular dose of 40 mg methylprednisolone followed by physiotherapy. Outcome measures included the Visual Analogue Scale (VAS) and measurement of range of motion. **Results:** At final assessment (12 weeks), significant between group differences were identified for the "PT only" group for flexion ($p=0.01$) and abduction ($p=0.008$). When comparing the mean change from the initial assessment, a significant between group difference was observed for abduction ($p=0.03$). **Conclusions:** The results of this study suggest that the intra-articular injection of a single dose of cortisone has no significant short-term benefit in female patients with idiopathic adhesive capsulitis managed with physiotherapy.

Abstract no.: 31005

STUDY ON BONE INTEGRATION FOR THE ABG II FEMORAL COMPONENT IN TOTAL HIP REPLACEMENTS – IN 3 DIFFERENTS MINI-INVASIVE APPROACHES – USING CLINICAL, RADIOLOGICAL AND DIGITAL CRITERIA

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Introduction: the study tried to evaluate the advantages of 3 mini-invasive approaches in total hip replacement: direct anterior, antero-lateral and Hardinge lateral; using clinical, radiological criteria and a digital radiological analyze of the images to appreciate femoral bone integration. Material and method: 180 patients have been operated between 2006-2010 with total replacement of the hip using the AGB II prosthesis; for each 60 patients we have used a different approach: lateral Hardinge, antero-lateral and direct anterior approach. All interventions have been done by the same 3 surgeons. For all patients we appreciated the intervention, blood loss, clinical results using EQ - 5 d and SF-36, the radiological results (in subsequent anterior and lateral views). Results: The clinical results in the first 3 months postoperative are better for the antero-lateral approach, but in lateral Hardinge approach more complications occurred. The operative time was similar to the 3 approaches, but blood losses have been higher for Hardinge approach. Radiological results were similar and digital analyze has no significant differences of bone integration between the 3 types of approaches. Conclusions: Total replacement of the hip using antero-lateral and direct anterior approach is a predictable intervention, reproducible witch permit a quickly rehabilitation of patients with fewer complications face with Hardinge approach. The digital analyze can be useful as a postoperative evaluation method, by creating a history of the evolution of the prosthesis and may give a prognostic on degradation of the prosthesis.

Abstract no.: 31063

ANTERIOR KNEE PAIN AND SENSIBILITY DEFICITS AFTER ACL RECONSTRUCTION

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Anterior knee pain (AKP) and sensibility deficits (SD) are frequent deficits taking in account the medium and long term results after an arthroscopic ACL reconstruction. OBJECTIVE: Identify and compare its rate of occurrence, localization and temporal evolution choosing two different types of autografts: bone-patellar tendon-bone (BTB) vs semitendinosus-gracilis (SG). METHODS: 50 male patients have been selected with a minimum post-op. follow-up of two years. In 50% the autograft chosen have been a BTB. AKP and SD have been clinically evaluated and subjective tests applied. RESULTS: 27,1% of patients reported AKP two weeks after surgery (32% BTB group vs 21,7%, $p > 0,05$) and on SG group the athletes had less duration of pain complains ($p < 0,05$). In terms of hypoesthesia, 84% of the patients on the BTB group reported it after surgery vs 56% ($p < 0,05$) and the SG group had lesser duration of the deficits (6,6 vs 12 months, $p < 0,05$). On both groups the hypoesthesia have been mostly reported to the infrapatellar branch of the safeno's nerve (100% OTO vs 57,1% SG). High maintenance of activity level and lesser time until sportive authorization was present on BTB group ($p > 0,05$). Knee walking test has been mainly positive with a BTB autograft (72% vs 28%, $p < 0,05$), and the Lysholm and IKDC-SKF scores have been similar for both groups. CONCLUSIONS: AKP as well as SD are a reality after an anatomic arthroscopic ACL reconstruction, being important to understand that its presence is correlated with the kind of graft chosen.

Abstract no.: 31092

CIRCUMFERENTIAL DECOMPRESSION AND GLOBAL INSTRUMENTED FUSION USING LOCAL BONE GRAFTS THROUGH POSTEROLATERAL APPROACH FOR ACTIVE SPINAL TUBERCULOSIS

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Introduction: Posterior surgery for spinal tuberculosis has gone to disrepute by virtue of removal of normal posterior elements leaving behind the diseased anterior column. Material and Methods: Thirty Six patients with spinal tuberculosis undergoing surgery with an average age of 36 years formed the patient group. Twenty two patients had neurological deficits. Nineteen were thoracolumbar, twelve lumbar and five thoracic lesions. Mean number of Vertebral bodies affected were 3.1. Average Vertebral Body loss was 1.2 and average kyphosis in patients operated for correction was 44degrees. Six patients had skip lesions. We analyzed clinico- radiological outcome of single stage posterior surgery in active tuberculosis spine performed at our medical centre. The indications for surgery were neurological deficits, instability and kyphosis. Results: Surgery time was 183mins. Mean intra-operative blood loss was 980ml. Average duration of follow-up was 13 months. Postoperative mean kyphosis correction was 37degrees and there was an average loss of correction by 6degrees at last follow-up. There was neurological recovery in all patients with deficits by at least one grade. One patient developed postoperative worsening of neurology which recovered over the next three weeks. At the last follow-up, all patients had healed well and were asymptomatic. Conclusion: Single stage posterior alone surgery yields a good opportunity to correct the spinal deformity in addition to global fusion using instrumentation. Posterior elements not being diseased can be used with cages to produce a definitive anterior fusion mass without risk of graft failure. Posterior approach also facilitates good canal clearance from all sides.

Abstract no.: 31096

**THINGS YOU SHOULD KNOW ABOUT ASIAN KNEE BEFORE DOING
TKR**

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medical literature has documented some unique features of the asian knee. these features need to be addressed when performing total knee replacement in asians. the senior writer of this paper has performed over 3000 total knee replacement in americans and over 5000 in asians. this enabled us to document specific anatomical, systemic, functional and revision surgery features. the objective of this presentation is to introduce surgeons to these features and recommend specific modifications for each feature to improve clinical outcome.

Abstract no.: 31144

MODIFIED BUCHMAN FENTON CLASSIFICATION FOR ACUTE HEMATOGENOUS OSTEOMYELITIS

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Introduction: Acute hematogenous osteomyelitis affecting children has not been classified as clearly as the chronic variety. Buchman and Fenton classified acute presentations of osteomyelitis according to the response to treatment and predicted the outcome response to primary treatment, which is simple and practical in clinical situations. Methods: 30 children with normal immune status diagnosed as acute osteomyelitis in the age group till 14 years (17 boys and 13 girls) presenting between March 2010 to October 2011 were included in the study. The follow up period for confirming the type of osteomyelitis was 3 months but treatment continued until complete healing. Patients were classified into 5 groups after 72 hours of starting intravenous antibiotics. Patients classified into Type I and II were treated non-operatively and showed full recovery without bony changes, while those classified into type III and IV were surgically intervened and showed definite changes of chronic osteomyelitis. A modification to this classification is suggested by adding a type V which includes patient whose response did not fit into the described types. Type V was further subclassified into a,b and c. Results: Out of 30 cases, type I- 2 cases, type II-4 cases, type III-8 cases and type IV had 14 cases. Two patients out of the 30 were classified as type V. Conclusions: Buchman- Fenton classification is useful in predicting the outcome of acute osteomyelitis with certain modifications. Acute presentation of tubercular osteomyelitis has been included as type V since the response to conventional treatment is not similar.

Abstract no.: 31155

ROLE OF GENERALISED JOINT LAXITY IN ACL TEARS

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We hypothesized that generalized ligament laxity is more common in patients who sustain ACL injury than in general population. We also aimed to evaluate any gender differences in ligament laxity. In this retrospective case control study, we examined 210 patients of Indian subcontinent origin (135 males and 75 females) with anterior cruciate ligament (ACL) injury for hyperlaxity using Beighton score. The mechanism of injury in all the patients was documented. We then correlated these findings with a selected age and gender matched control group of 90 subjects who did not have an anterior cruciate ligament injury and discussed the implications of our findings. Standard tests of significance (Chi square test, $p < 0.05$ -significant) were applied. RESULTS: 60.5 % (127 out of 210) patients in the case group had generalized joint laxity (Beighton score $> 4/9$) compared with 26% (23 out of 90) subjects in our control group (p value < 0.01). Patients with ACL injury were 4.45 times more likely to demonstrate generalized ligamentous laxity. Frequency of hyperlaxity in men was 58% in cases and 24 % in controls (p value < 0.01). In women it was 65% in cases and 29% in control group (p value < 0.01). CONCLUSION: Generalized joint laxity as measured using Beighton score is more common in patients with anterior cruciate ligament injury. Keywords: generalized joint laxity; hypermobility; anterior cruciate ligament, Beighton score, Prevalence, Asian Indian

Abstract no.: 31159

MODIFIED INSALL'S ANTERIOR APPROACH FOR PRIMARY TOTAL KNEE ARTHROPLASTY

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We describe our experience of a novel approach for primary TKA, its results & merits and comparison with standard median parapatellar approach in 498 patients. The knee was opened by anterior mid line incision by stripping the quadriceps tendon from medial 1/4th of the patella. The operative time in our modified approach was less (56.2 minutes) as compared to the standard MPP approach (68.4 minutes). The modified approach group had an earlier return to function in straight leg raising (3.5-2.6) as compared to the median parapatellar approach(8.2-3.6 days). Using the two tailed t-test the confidence interval was 95%. We found a difference in the two approaches by knee society scoring system with modified approach having better scores in first six weeks postoperatively but the results were similar after 12 weeks follow up.(table1) the knee scores averaged 86 and 84 for modified and standard approach at last follow up. The time required to achieve knee flexion was earlier in modified approach (5.6 days) as compared to the standard approach(12.2 days). Average time to discharge was 6.2 days in modified approach and it was 13.2 days in standard approach. One case in standard approach had superficial infection which healed by prolonged antibiotics for one week. No other complications were noticed during hospital stay in both groups. In follow up none of the patients in this series has had patella fracture and patellar malalignment problem with quadriceps mechanism problems. Till last follow up no loosening of implants has been seen radiographically.

Abstract no.: 31164

CAN BI-SEGMENTAL NON-FUSION STABILIZATION MAKE UP FOR THE DISADVANTAGES OF RIGID SPINAL FUSION FOR UNSTABLE LUMBAR CANAL STENOSIS?

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Introduction: The aim of this study is to compare the clinical outcomes between bi-segmental TLIF and bi-segmental non-fusion stabilization in use of SSCS® (Spinal Segmental Correction System, Ulrich, Germany). **Materials:** Thirteen cases underwent bi-segmental TLIF (Group T) and 12 cases underwent non-fusion stabilization (Group S). The mean age at the time of surgery was 66 years and 71 years, and the mean follow-up period was 42.0 months and 23.4 months, respectively. **Methods:** We reviewed operation time, perioperative bleeding, pre- and post-operative JOA (Japan Orthopaedic Association) score, improvement rate, presence of implant failure, adjacent segment disease (ASD) and reoperation. **Results:** Operation time in Group T and Group S were 216±35 min. and 159±35 min. Perioperative bleeding were 1114±377 ml and 559±71 ml. JOA score improvement rate were 30.8±0% and 70.6±21.4%. In all cases, there were significant differences. Loosening of pedicle screw was detected in 4 cases in each group but no screw breakage was found. One case in Group T had pseudoarthrosis. ASD was observed in 10 patients in Group T and 5 of them had clinical symptoms. Unfortunately, two of the five cases required reoperation. On the other hand, in Group S, ASD was not observed. **Discussion:** We had already reported benefits of mono-segmental non-fusion stabilization in use of SSCS®. We think it is an over-indication to apply rigid spinal fusion to the segments without malalignment or foraminal stenosis. **Conclusion:** Bi-segmental non-fusion stabilization made up for the disadvantages of rigid spinal fusion.

Abstract no.: 31166

CAN CONVENTIONAL INTRAOPERATIVE FLUOROSCOPY AVOID IATROGENIC INTRA-ARTICULAR PENETRATION DURING FIXATION OF FEMORAL NECK FRACTURES? A CADAVERIC STUDY

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Purpose: The purpose of this study was to observe whether conventional fluoroscopy could detect iatrogenic intra-articular penetration during fixation of femoral neck fractures. The determination of radiographic projection guidelines was also involved in the study. **Methods:** One normal proximal femur specimen was investigated in the cadaveric study. Respective apex-surface distance (TSD) was measured on anteroposterior (AP) and lateral views with the femur at varying degrees of rotation, flexion, and adduction/abduction positions, after a penetration model was simulated in separated four zones of the femoral head. The relationship between TSD and femur position was observed after correction for magnification. **Results:** Intra-articular pin penetration through certain zones of the femoral head was not able to be visualized under both conventional AP and lateral views. Statistical analysis showed that in contrast to TSD measured in the neutral position, significant difference ($P < 0.001$) was revealed on all AP and lateral views, except on the lateral view with the femur positioned at 20° of adduction when the pin penetrated through the anterosuperior aspect of the femoral head ($P = 0.821$). In addition, the graphs demonstrated a linear relationship between TSD and femur rotation on AP views, adduction/abduction on lateral views, respectively. **Conclusions:** The conventional intraoperative fluoroscopy can not entirely detect unrecognized intra-articular penetration during fixation of femoral neck fractures. A definite relationship between radiographic projection angle and pin penetration can be revealed on both AP and lateral views. Special projection methods described and discussed in this study are recommended to minimize the incidence of iatrogenic screw penetration.

Abstract no.: 31178

OUTCOME OF DISTAL FEMORAL OSTEOTOMY - A SURGEON'S EXPERIENCE!

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Aims:The aim of our prospective study was to evaluate the outcome of the Distal femoral Osteotomy (DFO) performed for valgus deformity of the knee with or without lateral compartment osteoarthritis and complex instability in patients with less than 60 years of age. **Methods:** Twenty one patients underwent DFO from 2006 to 2010. Radiological outcome was assessed by the tibio-femoral and congruence angles. Functional outcome was assessed pre and post operatively by Oxford, Lysholm and Kujala score. **Results:** Of twenty one knees, nine underwent lateral open wedge DFO and twelve medial closing wedge Biplanar osteotomy using Tomofix plate. Bone grafting was used in 10 cases. The average age of the patients was 39.5(18-57) with average follow up of 36 months. Eight patients (20-40 years of age) underwent DFO and associated procedures like MPFL reconstruction, meniscal repair for isolated valgus deformity (without any gonarthrosis). Five patients (40-50 years of age) underwent DFO with or without ACL reconstruction for valgus deformity and complex instability. Eight patients (>50 years age) underwent DFO for gonoarthrosis with valgus deformity. Complications included one case of non-union and 2 cases of cellulitis. Statistically significant improvement in the correction of both tibio femoral angle and overall long leg alignment ($p < 0.01$) was noted. All the outcome scores showed statistically significant improvement ($p < 0.01$) **Conclusions:** DFO is a safe and effective procedure for patients with valgus deformity. Medial closing wedge biplanar osteotomy with a Tomofix plate provided excellent immediate stability, satisfactory healing of the osteotomy and has better outcome.

Abstract no.: 31182

ANKLE INJURIES REQUIRING EMERGENCY MANIPULATION. IS IT TIME TO CHANGE THE MINDSET?

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Introduction: Many deformed looking ankles are manipulated 'blindly' in emergency departments (ED) before x-ray even in the absence of neurovascular compromise (NV) or critical skin. However, is it really possible to understand an ankle injury without an x-ray? The other possible injuries presenting with swelling and deformity of the ankle region, may include a ligamentous, talar, subtalar, or calcaneal injury. Does the risk of waiting for the imaging outweigh the benefit of manipulation of an undiagnosed injury? Methods: This prospective study involved the analysis of patients with ankle injuries referred to orthopaedics over a two year period. Results: Over the audited period 121 referrals were identified. Manipulation in the ED was performed for 47% of patients. Of these, 40% (23 cases) were manipulated without x-ray; 3 due to vascular deficit, 3 due to critical skin and 17 with no documented reason! Re-manipulation in the ED as well as definitive open reduction and internal fixation (ORIF) were significantly lower in those patients who had a pre-manipulation x-ray ($P < 0.05$). Furthermore, there was no significant delay in surgery due to swelling in those patients who had a pre-manipulation x-ray ($P = 0.25$). Conclusion: We conclude that taking ankle injury radiographs prior to any attempt at manipulation, in the absence of NV deficit or critical skin, will constitute best practice. This provides a better assessment of the fracture site and configuration, assists with the initial reduction, significantly lowers the risk of re-manipulation and ORIF, and does not significantly delay surgery due to swelling.

Abstract no.: 31186

ACUTE RECONSTRUCTION FOR OSTEOCHONDRAL DEFECT OF THE PHALANX WITH MOSAIC PLASTY. – A REPORT OF TWO CASES–

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Treatment for traumatic defects of articular surfaces is very challenging. Use of the osteoarticular transfer from the femoral condyle had been described for the gonarthrosis. On the other hand, the distraction arthroplasty with a dynamic external fixator is reported as a useful method for traumatic cartilage defect. We experienced two cases of traumatic osteochondral defect of the finger treated by osteoarticular transfer with an external fixator and have good result. Case 1: Patient was a 41 year old male and injured his left hand with an electric saw by himself. His second metacarpal head was cut and the proximal phalanx lost its articular surface. The patient underwent osteoarticular transfer of the proximal phalanx from ipsilateral knee joint using the mosaic plasty technique and applied dynamic external fixator. The size of the osteoarticular transfer was 6.0mm. The joint motion pain and joint motion range was improved in the case. Consequently, the patient has no pain on motion and good range of motion. Case 2: Patient was a 52 year old male and he injured his left hand with an electric saw by himself. His PIP joint of right index was opened and the middle phalanx lost its articular surface. The patient underwent osteoarticular transfer of the middle phalanx from ipsilateral knee joint by same procedure. Conclusion: Osteoarticular transfer from ipsilateral knee joint using the mosaic plasty technique is beneficial. The advantage of the technique is that the free size bone peg can be chosen according the size of the defect.

Abstract no.: 31216

THE USE OF VERTICAL EXPANDABLE PROSTHETIC TITANIUM RIB (VEPTR) IN COMPLEX SPINE DEFORMITIES IN CHILDREN

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Introduction: This retrospective study evaluates the radiographic results and complications of 30 patients treated with VEPTR for correction of complex spine deformities in children. **Methods:** 30 cases of spine deformities followed up for a minimum of 1 year and maximum of 6 years, were retrospectively reviewed. 8 congenital malformation of spine, 3 infantile scoliosis and the others were spinal deformities associated with; spinal cord tumors, osteogenesis imperfecta, Jarcho Levin syndrome, spinal muscular atrophy, arthrogriphosis, myelomeningocele and congenital myopathy. The age at surgery varied between 2 and 12 years (6.65). We studied the postoperative change in Cobb's angles (in antero-posterior and lateral views), space available for lung (SAL) and complication patterns in relation to number of lengthening operations. **Results:** The average Cobb's angles preoperatively in the antero-posterior view were 86.8°, while the postoperative average was 55° (average correction 31.8°). The average (SAL %) was 82.3% preoperatively, and has been improved to become 93.5% postoperatively. **Complications:** the complications rate was (36.6%). Complications varied from mortality "one case (3.3%)" to skin sloughing, surgical site infection, junctional kyphosis, metal failure, and pelvic hook migration. **Conclusion:** VEPTR represents a good alternative to "spine to spine growing rod techniques" and vertebral column resections "VCR" in spite of its complications rate with regard to the nature of deformity and number of "lengthening reoperations".

Abstract no.: 31226

OVEREXPRESSION OF HEXOKINASE-2 IN GIANT CELL TUMOR OF BONE IS ASSOCIATED WITH FALSE POSITIVE IN BONE TUMOR ON FDG-PET/CT

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Introduction: The aim of the current study was to evaluate the usefulness of maximum standardized uptake value (SUVmax) in 2-deoxy-2-F18-fluoro-d-glucose positron emission tomography combined with computed tomography (18F-FDG-PET/CT) for preoperative differential diagnosis between benign and malignant bone tumors. Methods: Seventy-nine patients with bone tumors were examined by 18F-FDG-PET prior to histopathological diagnosis. The SUVmax was calculated and compared between benign and malignant lesions, and among different histopathological subgroups, to identify false-positive histological subtypes. Results: There was a statistically significant difference in the SUVmax of benign (3.7 ± 3.3 ; n=18) and malignant (5.3 ± 3.3 ; n=61) bone tumors. However, receiver operating characteristic curve (ROC) analysis revealed the poor accuracy of this distinction. The cut off value was determined to be 2.6, while the value of sensitivity and specificity were calculated to be 74.2% and 64.7%, respectively. Giant cell tumor of bone (9.0 ± 2.0 ; n=5) displayed a higher SUVmax than osteosarcoma (4.2 ± 2.3 ; n=18). Immunohistochemical analysis demonstrated that markers of these cancers, hexokinase 2 (HK-2) and glucose transporter type 1 (GLUT-1), supported our findings. Conclusions: The poor accuracy of SUVmax in 18F-FDG-PET/CT in distinguishing malignant from benign bone tumors was confirmed; some benign bone tumors showed high FDG-uptake. Giant cell tumor of bone was a major false-positive histopathological subtype of bone tumors, showing high FDG accumulation. HK-2 contributed significantly to FDG uptake, whereas GLUT-1 appeared to play no role in FDG uptake in giant cell tumor of bone.

Abstract no.: 31246

PRIMARY ILIZAROV IN ASRL MODE WORKS BETTER THAN UNILATERAL EXTERNAL FIXATOR IN NEGLECTED TYPE III OPEN FRACTURES OF LEG

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INTRODUCTION: External fixator is the choice for skeletal stabilization in neglected Type 3 Open fractures of leg. We aim to compare results of Unilateral External fixator & Primary Ilizarov in ASRL mode (Acute Shortening Re Lengthening) in such cases. **MATERIALS AND METHOD:** 38 male & 12 female of 28 to 58 years, having Type 3 open fractures of leg, following RTA and beyond 11 hours to get the definitive treatment, during 2003 to 2009, were evaluated. A thorough debridement was done in all cases. Group A (n=25) received Unilateral External Fixator during till 2005 and Group B (n=25), Ilizarov in ASRL mode in later period. In Group A, local Rotational flaps were done in 18 cases with remainder healing by secondary intention. Bone grafting was done in 4 cases. No case in group B, required flaps or Bone grafting. Average shortening after bone excision was 4 cm. Mode of docking was either peg in hole or end to end. **RESULTS:** Overall complications were 75% & 15% in Group A and Group B respectively. Major Complications were Severe Pin Tract Infections, Infected Nonunion, LLD. Infected Nonunion was seen in majority of Group A as compared to none in Group B. **DISCUSSION & CONCLUSION:** ASRL is advancement of a large vascularised osteo-myo-cutaneous flap to close defect, replacing all devitalised and infected tissues by local healthy tissue without need for grafting. It is recommended in severe neglected open fractures of leg where major complications are seen if treated by conventional External Fixator.

Abstract no.: 31253

OSTEOTENDINOUS FIXATION WITH ARTHROSCOPIC ANCHOR SUTURES IN FLEXOR, EXTENSOR TENDON AND LIGAMENTOUS INSTABILITY INJURIES OF THE HAND: SURGICAL TECHNIQUE AND FUNCTIONAL RESULTS

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Introduction: Tendinous injuries of the hand are a common traumatic event. The surgical procedures of these injuries have a high incidence of post surgical fail and complications. We have seen that with a prompt intervention with anchor sutures, these common pathologies can have a better functional outcome. Material and Methods: Between January 2011 and June 2011 we treated 18 Osteotendinous and ligamentous hand injuries. 12 extensor, 4 flexor and 2 instabilities. Surgical procedure consisted in osteotendinous 2.5 anchors Fiber wire suture fixation. With 3 day postsurgical immobilization and prompt physical therapy. A 6-month functional evaluation with a QUICK DASH and Michigan Hand Outcome Questionnaire was made. Results: Male and female patients where included (M:10, F:8) ages from 24 to 48 years (m:29). The function of the injured limb was evaluated with QUICK DASH results of 13 to 25 (m:15.73), with results of, very good -15, good 15-20, regular 20-25, bad +25. We also made a medial evaluation with MHOQ with results from 76 to 86% (m:77%), with value reference of very good +80, good 70-80, regular 60-70, bad 50-60, and very bad -50. Conclusions and Discussion: The standard treatment of Osteotendinous injuries of the hand involves complicated procedures with multiple fixations even to the skin. We observed that arthroscopic anchor sutures could be an easier and more effective procedure. This treatment gave a well fixation to bone and to soft tissues with a fast recovery and a good functional result.

Abstract no.: 31255

EFFECTS OF ESW AND HYPERBARIC OXYGEN THERAPY ON OSTEOTENDINOUS JUNCTION INJURY

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The purpose of this experimental animal model study is to evaluate the efficacy of hyperbaric oxygen and Extracorporeal Shock Wave (ESW) treatment on rabbits osteotendinous junction injury healing process with comparing the biomechanical and histopathological aspects . In this study 36 male New Zealand rabbits were used. Rabbits were randomly divided in to 3 groups. Under general anesthesia the osteotendinous junction of patellar tendon was cut and anatomically repaired again, a cast immobilization was performed. Group 1 evaluated as a control group, for Group 2 ESW applied to osteotendinous junction to a single session. Group 3 received hyperbaric oxygen for 7 days. At the end of 6 weeks stretching test and histopathologic examination were performed to specimens. The force that was needed for the first decomposition, the decomposition of 2 mm and a complete break was lower in group 1 than group 2-3, while Group 3 showed the highest forces (Kruskal-Wallis: $P<0,001$, Mann –Whitney U test $P<0,002$). Histopathologically, the formation of fibrocartilage tissue, new bone and osteotendinous fusion were evaluated. There was almost a statistically significant difference between group 1 and 2($P< 0,093$), significant difference between Group 1 and Group 3 ($P<0,002$) while no significant difference was shown between Group 2 and Group 3 ($P<0,310$). As a conclusion we found that Hyperbaric Oxygen Therapy and application of ESW accelerates healing by increasing the formation of new bone and fusion of osteotendinous tissue in osteotendinous injuries. ESW treatment was not superior to hyperbaric oxygen.

Abstract no.: 31270

**USEFULNESS OF CONTRAST COLOR DOPPLER ULTRASONOGRAPHY
IN PREOPERATIVE DIFFERENTIAL DIAGNOSIS BETWEEN MALIGNANT
AND BENIGN SOFT TISSUE TUMORS**

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Purpose: The aim of the present study was to elucidate the usefulness of contrast enhanced color doppler (CD) ultrasonography for preoperative differential diagnosis between benign and malignant soft tissue tumors. **Material and Methods:** The CD ultrasonography was applied to 76 patients with soft tissue masses for preoperative diagnosis prior to histopathological diagnosis. Blood-flow in the masses were evaluated and compared between benign and malignant lesions. Conventional criterion, according to classical Giovanglion classification was used for evaluation, with or without contrast medium, Sonazoid. The elasticity of the tumor was also measured, and compared with normal fat tissue, using elastography. Student's t-test was used to compare differences between benign and malignant soft tissue tumors. **Result:** A total of 44 benign and 32 malignant soft tissue tumors were included in the present study. Contrast medium was used to evaluate blood-flow in 27 masses (14 benign and 13 malignant). Elastography was performed in 37 masses (24 benign and 13 malignant). In differentiating malignant tumors from benign, the sensitivity, specificity and accuracy of CD with Sonazoid were respectively 92.3%, 69.2% and 68.0%; while those without Sonazoid were respectively 53.1%, 78.6% and 81.5%. Elastic ratio average was 0.56 in benign and 0.21 in malignant tumors ($P=0.004$). **Conclusion:** High accuracy of contrast enhanced CD, in distinguishing malignant from benign soft tumors, was confirmed. The result of this analysis indicates the usefulness of contrast enhanced CD for preoperative diagnosis in soft tissue tumors.

Abstract no.: 31282

COMPARISON OF FUNCTIONAL RESULTS AFTER OPENING WEDGE OSTEOTOMIES OF VARUS KNEES WITH RUPTURED AND INTACT ACL – A PROSPECTIVE STUDY WITH 5 YEARS FOLLOW-UP

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Introduction: Osteotomies may relieve symptoms in patients with unilateral knee osteoarthritis. Methods: 52 proximal tibial osteotomies have been performed with opening wedge technique due to medial knee osteoarthritis with varus malalignment due to previous meniscal extirpation. 17 patients had an additional rupture of the ACL. The mean age of these was 45 (31-58) years, compared to 49 (34-64) years for the 35 patients with intact ACL. The patients with ruptured and intact ACL had similar varus malalignment. The patients were evaluated by the Knee Injury and Osteoarthritis Outcome Score (KOOS) preoperatively and at 6 months and 1, 2, 5 and 10 years postoperatively. An increase in score of 8 points is considered to have clinical significance. The mean follow-up time was 67 (24-120) months for patients with ruptured and 62 (24-125) months for those with intact ACL. Results: The mean angular correction measured on pre- and postoperative radiographs was about 8 degrees and the osteotomy cleft healed after mean 12 weeks in both groups. KOOS increased far beyond 8 points in both groups ($P < 0.001$) during the first 2 years, and this improvement was kept during the following 8 years. Patients with ACL injury had similar postoperative KOOS as patients with intact ACL, and so far only 2 of the 17 ACL injured patients have required additional ACL reconstruction. Conclusion: The results after tibial opening wedge osteotomy disclosed significant clinical improvement for medial knee osteoarthritis during the follow-up period. Postoperative KOOS were similar for patients with ruptured and intact ACL.

Abstract no.: 31283

COMPARISON OF FUNCTIONAL RESULTS AFTER OPENING WEDGE OSTEOTOMIES ABOVE AND BELOW THE KNEE – A PROSPECTIVE STUDY WITH 5 YEARS FOLLOW-UP

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Introduction: Osteotomies may relieve symptoms in patients with unilateral knee osteoarthritis. Methods: 24 distal femoral and 52 proximal tibial osteotomies have been performed with opening wedge technique due to lateral, respectively medial knee osteoarthritis with malalignment due to a previous meniscal extirpation. The mean age of the patients was 48 (31-62) years, and 47 (31-64) years respectively. The patients with femoral osteotomies had a mean preoperative tibiofemoral valgus angle of 12° whereas those with tibial osteotomies had a mean tibiofemoral varus angle of 1°. The patients were evaluated by the knee injury and osteoarthritis outcome score (KOOS) preoperatively and at 6 months and 1, 2, 5 and 10 years postoperatively. The mean follow-up time was 66 (24-133) months for femoral and 62 (24-125) months for tibial osteotomies. Results: The mean angular correction measured on pre- and postoperative radiographs was 8.8° for the femoral and 8.0° for the tibial osteotomies. The osteotomy cleft healed after a mean of 12 weeks in both groups. KOOS increased significantly during the postoperative period in both groups (P<0.001), but patients with tibial osteotomies scored higher than those with femoral osteotomies. This was significant for symptoms at all follow-up times and for pain, sport and quality of life at 2 and 5 years postoperatively, (P<0.02). Conclusion: Patients with unilateral knee osteoarthritis improve after opening wedge osteotomy, but those with tibial osteotomies due to medial osteoarthritis seem to have a better outcome than those with femoral osteotomies due to lateral osteoarthritis.

Abstract no.: 31301

COMBINED ROTATIONAL HIGH TIBIAL OSTEOTOMY AND TKA FOR CONGENITAL DISLOCATION OF THE PATELLA AND OSTEOARTHRITIS

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Excessive external tibial torsion is known to contribute to the progression of knee instability and osteoarthritis. Patients presenting with knee osteoarthritis, external tibial torsion and congenital patellar dislocation, pose a surgical challenge. Isolated total knee arthroplasty is often inadequate. This study evaluates the long term outcome of patients undergoing simultaneous derotation osteotomy and total knee arthroplasty. Method; Between 1998 and 2011 a combination of rotational osteotomy and TKA were performed in twelve knees in ten patients. Clinical and functional evaluation was carried out using pre and postoperative knee society score, WOMAC questionnaire and SF 12 as well as a visual analog pain scale. Results; The mean follow up was 81 months and the mean age 56 years. Patients presented with a mean preoperative external tibial torsion of 62 degrees with an average correction of 30 degrees. Significant improvement was found in the KSS part 1 and 2. Quality of life as measured by SF12 improved significantly as did the WOMAC scores. The VAS for pain improved from 8.5 to 1.3. At latest follow up there was no incidence of failure of the 12 TKA and no sign of delayed or non union at the osteotomy site.

Abstract no.: 31320

THE EFFICACY OF ULTRASOUND AND MRI SCAN IN DETECTING METALLOSIS IN POST OPERATIVE PAIN FOLLOWING METAL ON METAL HIP REPLACEMENT SURGERY

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Aim: This study retrospectively compares MRI and ultrasound findings with surgical findings during revision surgery for metal on metal prosthesis. **Methods:** 23 patients who underwent revision hip surgery for painful metal on metal total hip replacement (THR) were included in this study. All patients had ultrasound examination for fluid collection of the hip and blood test for cobalt and chromium levels prior to surgery. 21 of these patients also had MRI scan of the hip prior to surgery. Samples from capsule and femoral neck were sent to histopathology to prove the presence of metallosis. All the ultrasound and MRI were done and reported by a single musculo-skeletal radiologist and all revision surgeries were performed by a single surgeon. The results of histopathology were compared with MRI and ultrasound findings. **Results:** All patients had positive histopathology results suggestive of metallosis. Ultrasound examination was positive for fluid collection in 19 out of 23 patients and MRI was positive in 17 out of 21 patients. The accuracy of ultrasound in detecting fluid was 82.6% and MRI was 80.9%. One patient had ultrasound positive fluid collection with normal MRI and one patient was MRI positive but normal ultrasound findings. Three patients had negative ultrasound & MRI findings but were revised due to pain and found to have histopathology positive metallosis. **Conclusions:** MRI and ultrasound have high accuracy rates for metallosis of the hip. However patient symptoms should be taken into consideration for revision surgery even if MRI and ultrasound results are normal.

Abstract no.: 31327

SURGICAL VERSUS NON-OPERATIVE TREATMENT OF HADLEY TYPE IIA ODONTOID FRACTURES

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Introduction: Type II odontoid fractures with additional anterior or posterior chip fragments (Hadley type IIA) are rare in clinical practice. The purpose of this study was to analyze the outcome of patients following surgical or non-operative treatment of these fractures, with particular regards to bony fusion, cervical spine motion and treatment-related complications. Methods: We analysed the clinical and radiographic records of 46 patients (27 women, 19 men) with an average age of 64 years at the time of injury between 1988 and 2008. 25 patients underwent surgical stabilization by anterior screw fixation, whereas 21 patients were treated non-operatively by halo fixation. Results: 37 patients (84%) had returned to their pre-injury activity level and were satisfied with their treatment. Comparing between anterior screw fixation and halo-vest treatment, we did not find a significant difference referring to the overall clinical outcome. Bony fusion was achieved in 35 of 44 patients (80%). We had a non-union rate of 13% in patients following anterior screw fixation and a significantly higher rate of 30% in patients treated by halo immobilisation. Failures of reduction or fixation occurred in 12 patients (27%), with a significantly higher failure rate after halo immobilisation. Conclusion: Type II odontoid fractures with an additional chip fragment at the fracture site (Hadley type IIA) are inherently unstable and impede proper reduction and realignment. These fractures have a significantly increased risk for secondary loss of reduction and bony non-union, particularly following non-operative management. Early surgery should be considered to avoid further complications.

Abstract no.: 31333

COMPARATIVE EVALUATION BETWEEN CONSERVATIVE MANAGEMENT BY TRANSFORAMINAL EPIDURAL STEROIDS AND SURGICAL MANAGEMENT BY DISCECTOMY FOR TREATMENT OF LUMBAR PROLAPSED INTERVERTEBRAL DISC

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Objectives of the study: To compare the results of Transforaminal Epidural Steroid Injection with those of Discectomy in patients with a lumbar disc herniation encompassing >25% of the cross-sectional area of the spinal canal and who had continuous, disabling symptoms persistent after six or more weeks of noninvasive treatment. Sample size & sample technique: The study included a minimum of at least forty patients who were randomized to one of two treatment groups: Group A (Transforaminal Epidural Steroid Group) and Group B (Discectomy Group). Data collection technique and tools: Data were recorded as per a Proforma in which History, general examination and Neurological examination was done. A Self assessment questionnaire at the time of presentation and during subsequent follow up at 1-3 months, 4-6 months and at 7-12 months was used which included: 1) Visual analog scale of 0 to 10 for assessment of back and lower-extremity pain, and 2) Oswestry Disability scale (Ver 2.0) to quantitate the level of Disability of the patient. Conclusions – The study revealed that patients who underwent Surgical Discectomy had earlier recovery in their Neurological deficits (Both motor and Sensory), Visual Analog Scores for back and lower extremity pain and Oswestry Disability Score as compared with patients in the Transforaminal Epidural Steroids group. Still our study supports the use of Transforaminal Epidural Steroids Injections in patients with continued severe symptoms after six weeks of noninvasive treatment because 16 out of 20 patients i.e. 80% in Transforaminal Epidural Steroids group had a fairly rapid decrease in the symptoms which mirrored that of the Discectomy group.

Abstract no.: 31344

THREE YEAR FOLLOW-UP OF CONSERVATIVE TREATMENTS OF SHOULDER OSTEOARTHRITIS IN THE ELDERLY

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Little is known about the mid-term results of nonsurgical treatments for shoulder osteoarthritis (SOA), especially in a Chinese population. We therefore determined the efficacy of non-surgical management in the elderly with SOA. In 129 conservatively treated unilateral SOA patients who were older than 65 years were evaluated prospectively at the initial office visit and then subsequently at 3, 6, 12, 18, 24, and 36 months later. Parameters measured included VAS, SST and SF-36 scores. At 3-year follow-up, most patients had significant increase over the pre-treatment values for the pain, the self-assessed shoulder function, in the mental health, and in 5 of 8 SF-36 domains. Our study showed a decline trend of SST and VAS at 6 and 12 months after an initial ascent of first 3 months, and then it was rescued and continued at 36 months follow-up. This study suggests that a conservative approach may therefore be more appropriate and can produce satisfactory mid-term outcomes in selected cases. The authors recommend that the time of conservative treatments should be extended to more than 12 months before the decision of shoulder arthroplasty was made.

Abstract no.: 31349

DOES DELAY IN RECONSTRUCTION OF LIGAMENT AFTER ACL INJURY CORRELATE WITH HIGHER INCIDENCE OF ASSOCIATED KNEE INJURIES?

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Introduction: The aim of this study was to investigate the relationship between the length of time between initial ACL injury and ACL reconstruction surgery, and the prevalence of associated injuries such as meniscal tears and osteochondral defects in the knee. **Methods:** All the records from ACL reconstructed knees done by orthopedic surgeon at the Madurai Institute of Orthopedics and Traumatology (MIOT), Madurai, from 2007 to 2009 were studied. The time period between initial ACL injury and ACL reconstruction and the prevalence of associated injuries was studied. **Results:** A total of 113 patients with ACL deficiency were reconstructed during the time period of 3years. Seventy two patients (63.7%) were recorded to have associated knee injury/injuries, confirmed at the time of ACL reconstruction. The lowest incidence of meniscal tears was in early group(less than 3mths) and the highest in delayed group (more than 3mths). A significant correlation was found between the prevalence of osteochondral defects and the length of time from injury to ACL reconstruction in that the longer the time period from injury to reconstruction the greater the prevalence of osteochondral defects. **Conclusions:** Associated injuries to ACL deficiency are common and a relationship does exist between the lengths of time from injury to ACL reconstruction. This study implies that a delay in reconstructive surgery in ACL deficient knee can have a deleterious effect on the articular surface of the knee. Early reconstruction helps in preserving the structures of the knee that are in danger of further damage if left untreated.

Abstract no.: 31365

RELATIONSHIP BETWEEN GRAFT APPEARANCE ON FOLLOW-UP MRI AND KNEE STABILITY AFTER DOUBLE BUNDLE ACL RECONSTRUCTION

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This study examined the relationship between graft appearance on follow-up MRI and knee stability after double bundle ACL reconstruction using hamstring tendons fixed by a Ligament Plate. Thirty cases patients enrolled and 3 tesla MRI's were obtained at a minimum follow-up of 1 year. The average follow-up period was 20.2 months. The signal intensity of grafts was divided into 3 grades by Sononda's classification: grade 1, low-intensity signal; grade 2, high-intensity signal within 50%; and grade 3, high-intensity signal greater than 50%. The course of grafts was divided into two patterns: straight and curved. The correlation between graft appearance on MRI and the results of knee stability tests was evaluated. The AM graft was evaluated as being grade 1 in 66.7%, grade 2 in 26.7%, and grade 3 in 6.7% of the cases and the PL graft was assessed as being grade 1 in 63.3%, grade 2 in 33.3%, and grade 3 in 3.3% of the cases according to the signal intensity. The AM graft was evaluated as being straight in 83.3% and curved in 16.7% of the cases, and the PL graft was assessed as being straight in 86.7% and curved in 13.3% of the cases according to the course. The course was correlated with the result of stability test. However, the signal intensity was not correlated with the results of stability tests. The course of AM is correlated with anterior stability and the course of PL is correlated with rotatory stability on follow-up MRI.

Abstract no.: 31378

USEFULNESS OF 18F-FDG-PET/CT IN DIFFERENTIATING BETWEEN BENIGN AND MALIGNANT SOFT TISSUE TUMORS

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Introduction: Integrated 2-deoxy-2-F18-fluoro-D-glucose positron emission tomography combined with computed tomography (18F-FDG-PET/CT) evaluates both tumor function through glucose metabolism, and morphological features through CT imaging. The aim of the current study was to evaluate the usefulness of 18F-FDG-PET/CT for preoperative differential diagnosis between benign and malignant soft tissue tumors. Methods: The criteria for diagnosis of malignancy on 18F-FDG-PET/CT, was defined as the soft tissue tumor having a maximum standardized uptake value (SUV max) over 2.0 on PET, and the greatest diameter being more than 5cm measured on CT. A total of 122 patients with soft tissue tumors were examined by 18F-FDG-PET/CT, prior to histopathological diagnosis. 18F-FDG-PET/CT, 18F-FDG-PET, and CT were separately evaluated, to determine the usefulness of each imaging modality. Results: The patients consisted of 64 males and 58 females, ranging in age from 17 to 91 years (57.9 ± 16.1 years). Pathological diagnosis revealed 101 malignant and 21 benign lesions. The sensitivity, specificity, and accuracy for the cut off value of SUV max over 2.0 on PET, were calculated to be 85.9%, 29.0%, and 68.3%. Those for tumor size being over 5cm on CT, were 82.3%, 30.0%, and 69.7%. Those of integrated 18F-FDG-PET/CT were 82.2%, 33.3 %, 79.8%, respectively. Conclusions: Integrated 18F-FDG-PET/CT was more accurate for the differential diagnosis between benign and malignant soft tissue tumors, compared with 18F-FDG-PET and CT alone.

Abstract no.: 31384

SWANSON-PROTHESIS IN BOUCHARD ARTHROSE: IS STILL INDICATED ?

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Background: Bouchard -arthrose is often familial and affect predominantly females. It starts as acute inflammation of the soft tissue and with time may progress to severe deformity and limitation of movement. In the early phases one of the most common operation in the management is the synovialectomy. In late stages with severe destruction and deformity of the joint arthrodesis can be carried out . However, arthrodesis may lead to severe loss of function. One of the most commonly and world wide used prothesis to maintain movement is the Swanson –spacer. Material and Methods: 20 Swanson-implants in 14 patients (12 female,2 male) were evaluated subjectively and objectively using IPJA-score (Interphalangeal-joint –score) and Dash –score.. The follow period was 4.6 years (range 1-11 years). Results: The IPJA-score ranged 8-14 points (median 11.8) and the median Dash- score was 28 points.. Improvement of pain was observed in 90% of the cases. Flexion more than 30° in 85% and full extention in 75%. Ulnar deviation was noted in 7 patients (35%), mostly of the index finger. Fracture of the prothesis occurred only in 1 case. No loosening was observed radiologically(Fig-1). Fig-1: 10 years after implantation of a Swanson-Prothesis of prximalen interphalangeal joint of the ring finger left in a patient with Bouchard Arthrosis Discussion: Swansin prothesis is good alternative to arthrodesis and should be restricted only in cases where the musculotendinous structures are intact. In cases where the index finger is affected ,arthrodesis is preferred.

Abstract no.: 31386

AN ALTERNATIVE SOLUTION FOR ELDERLY AND POLYMORBID PATIENTS WITH LUMBAR SPINE INFECTIONS

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Purpose: Early results of a minimally invasive posterior percutaneous instrumentation combined with anterior debridement and fusion in treatment of lumbar spine infections, as an alternative solution for elderly and polymorbid patients who might not be operated otherwise. Study design: Retrospective study of minimum follow up of one year postoperatively of 30 cases of lumbar spine infection. Methods: Assessment of radiological evidence of fusion. 30 patients (17 males and 13 females) were included in this study with a mean age of 62.7 years (range 41-86, SD 12). 29 patients had spondylodiscitis and one had spondylitis. We operated 39 levels (mean 1.43 levels, SD 0.679). Results: The follow up period ranged from 12 to 42 months (mean 19 months). In 19 cases we used interbody cage with bone graft for fusion, one case of corpectomy cage and nine cases with graft only. One case was only operated by posterior instrumentation. 20 patients had single level, seven had two levels and three had three levels operated. 28 cases had solid fusion by the last follow up available, while two had delayed union (one with a corpectomy cage). Four cases had partial loss of lordosis. Conclusion: Minimally invasive posterior instrumentation in combination with the anterior debridement and fusion gives promising results in treatment of lumbar spine infections as regards fusion rate, less wound problems and early mobilisation. In comparison to open instrumentation it is less invasive with minimal blood loss and tissue destruction, highly advantageous in elderly and polymorbid patients.

Abstract no.: 31398

RESULTS OF POSTERIOR CRUCIATE LIGAMENT RECONSTRUCTION USING QUADRICEPS TENDON PATELLAR BONE AUTOGRAFT COMPARED TO HAMSTRING TENDON GRAFT

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INTRODUCTION: Quadriceps tendon- patellar bone graft and hamstring tendon graft are the most commonly used graft materials used for PCL reconstruction. There is paucity of evidence on definite advantage of one graft material over the other and ideal graft choice still remains a matter of debate. **METHODS:** We followed up 44 patients operated for PCL reconstruction using the quadriceps tendon graft (group 1) and 30 patients operated using hamstring tendon graft (group 2) for two years. Functional outcome evaluation was done using International Knee Documentation Committee (IKDC) scores and Lysholm scores. Subjective assessment by the patient was made for anterior knee pain and hamstring-area pain. **RESULTS:** Good or excellent Lysholm score was seen in 88.6 % of the patients in group 1 (39 out of 44) and 83.3% of the patients in group 2 (25 out of 30), with no significant difference between the two groups ($p > 0.05$). There was a significant improvement in these results compared to preoperative values (p value < 0.05). There was no difference in the incidence of anterior knee pain and quadriceps strength between the two groups. **CONCLUSION:** Quadriceps tendon graft for PCL reconstruction is large, strong, and easy to harvest and produces predictable results comparable to the more commonly used hamstring tendon graft. It is not associated with increased incidence of anterior knee pain or quadriceps weakness. Though this is a less familiar graft choice with most surgeons, it gives as good outcomes as the standard hamstring tendon graft and expands the options available for PCL reconstruction.

Abstract no.: 31400

HEMIARTHROPLASTY FOR FEMORAL NECK FRACTURES: IS PREOPERATIVE PLANNING NECESSARY?

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Preoperative planning for hemiarthroplasty (HA) for femoral neck fractures is thought to prevent intra - postoperative problems such as limb-length discrepancy. In our study we compared patients with dislocated femoral neck fractures treated with a HA with and without preop planning. All patients receiving a HA for a femoral neck fracture at the Kantonsspital Winterthur (KSW) during 2006 and those operated at the Ospedale Regionale di Lugano (ORL) during 2005 and 2006 were analysed retrospectively. At KSW all patients had a preop planning of the prosthesis whereas at ORL none. For all patients limb-length was measured in a standardised manner on scaled digital postoperative pelvic X-rays as the distance between the roof of the acetabulum and the proximal point of the lesser trochanter. Limb-length discrepancy was then compared for the two groups. 86 patients from the KSW and 88 patients from ORL were included in the study. Of these patients leg length difference could be determined radiologically in 73 cases at KSW and in 58 cases at ORL. The median difference in leg length was 3.3mm (SD +/- 2.8mm) at KSW and 3.9mm (SD +/- 4.55mm) at ORL. Leg length difference was greater than 10mm in 2 cases at KSW (2.7%) and in 9 cases at ORL (17.3%). In this study mean limb length discrepancy was not significantly influenced by preoperative planning in patients who underwent HA for femoral neck fracture when compared to patients operated without preoperative planning (3.3 vs 3.9mm). Nevertheless the amount of patients with a limb-length discrepancy greater than 10mm was smaller in the planned group (2% vs 17%). Further studies with higher number of patients and detailed clinical follow-up have to confirm the clinical relevance of these findings.

Abstract no.: 31407

IS ROUTINE NAIL REMOVAL FOLLOWING UNION OF TIBIAL FRACTURES JUSTIFIED?

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Introduction: Intramedullary nail fixation for tibia has become the procedure of choice for the majority of unstable or displaced diaphysial fractures. Whether or not metal implants should be removed and decrease in pain after the nail removal remains a matter of controversy. This study was designed to find out the indications for tibial nail removal, also the correlation on the pain and a protruding nail and the decrease in pain after the nail removal. **Methods and materials:** 33 tibial intramedullary nails were removed over a 3 year period. The indications for removal and outcome of nail removal were assessed by review of charts, radiographs and a telephone questionnaire. Male (20) to Female (13) ratio was 1.5:1. Median age at removal was 37 years. **Results:** The commonest indication for nail removal was pain at the insertion site 16(48.5%). Patient request was the second common indication, in 12 patients (36.4%). Most reported that there was relief in the insertion point pain after nail removal 14(87.5%).Two (6%) patients had persistence of pain post operatively. **Conclusion:** In conclusion we caution against routine nail removal. Insertion point pain is the common cause and hence avoidance of nail prominence is recommended. Where ever the insertion point pain is a problem, nail removal is likely to be successful in relieving pain. Following fracture-healing, removal of hardware is safe with minimal risk. But it should not be considered a routine procedure.

Abstract no.: 31451**31452**

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Aim: To compare the effectiveness of low dose sensory nerve blockade (SNB) combined with posterior capsule infiltration with patient controlled analgesia (PCA) for total knee arthroplasty (TKA). **Method:** The groups were well matched with respect to their demographic and anthropometric characteristics. All were treated for non-inflammatory arthritis of the knee. 28 patients were treated with a regime of femoral sensory nerve blockade and intra-operative local anaesthetic infiltration of the posterior capsule. This was achieved by infiltrating 20ml of 0.25% bupivacaine around the femoral nerve pre-operatively in the anaesthetic room and a further 20ml of 0.5% bupivacaine was infiltrated into the posterior capsule prior to cementing the components. This group was compared with 31 patients managed with PCA alone. **Results:** The SNB group required less morphine in the first 24 hours 42.5 vs 3.1 mg and in total 79 vs 4.5 mg. Episodes of postoperative nausea and vomiting (PONV) were more frequent in the PCA group (9 vs 1). The pain scores were also greater in the PCA group 0.8 vs 0.41. The SNB were able to mobilise earlier and achieved 0-90 flexion earlier than the PCA group. The mean length of stay in the SNB group was also shorter, 5.8 vs 8.7 days. **Conclusion:** The use of SNB with posterior capsule infiltration appears to confer advantages over PCA in patients undergoing TKA in terms of lower morphine consumption, reduced PONV, earlier mobilisation and earlier discharge.

Abstract no.: 31461

OUR EXPERIENCE AT USING COMPUTER-ASSISTED ORTHO-SUV FRAME

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Aims: Ortho-SUV Frame (SUV) is advanced software-assisted external fixation device (<http://ortho-suv.org>). The aim was to analyze the opportunities of its clinical use. Methods: Construction features, comfort of hardware, software use and clinical efficiency were estimated on the base of 167 cases of SUV applications. Results: At application of OSF it's possible to use 1/2 and 2/3 ring supports, supports of any shape and geometry. The supports can be assembled at any angle. The bone can be located eccentrically. The places for struts fixation can be chosen by the surgeon. It allows inserting the wires and pins in reference positions (<http://rniito.org/solomin/download/atlas-engl.zip>) without danger of strut-pin conflict. It's possible to fix the struts not only to basic but also to stabilizing supports using straight or Z-shaped plates. Minimal step of distraction is 0.25 mm. Software has convenient interface, advanced control system which absolutely protects from the user's mistake. The x-ray films are loaded into the software. It is possible to plane deformity correction directly in the software. SUV was used in treatment of 123 cases of long bone deformities, 16 fractures, 15 foot deformities, 14 knee joint stiffness and subluxations. In all cases accurate deformity correction (fracture reduction) was achieved. The complications didn't exceed the number ones for ExFix by Ilizarov. Conclusion: Clinical use of SUV in deformity correction is very convenient for the orthopedic surgeons due to the opportunities provided by the features of the hardware and software. The training courses are available (<http://rniito.org/solomin>).

Abstract no.: 31464

PATIENT SPECIFIC GUIDING FOR REVISION OF MEDIAL UNICONDYLAR KNEE ARTHROPLASTY TO TOTAL KNEE ARTHROPLASTY. FIRST RESULTS OF A NEW OPERATING TECHNIQUE PERFORMED ON 10 PATIENTS.

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Introduction: Unicompartmental to total knee arthroplasty revision surgery can be a technically demanding procedure. Joint line restoration, rotation and augmentations can cause difficulties. This study describes a new technique in which single way fitting guides serve to position knee system cutting blocks. Methods: Preoperatively an image of the distal femur and proximal tibia are formed using CT-scanning. This image is used to create a patient specific guide that fits in one single position on the contours of the bone and prosthesis in situ. These guides are fixed with pins and thereafter removed. The pins determine the position of the cutting blocks. Ten consecutive revisions were performed using this technique. Results: All guides fitted well. All femoral prostheses were properly inserted using this technique. One proximal tibia did not however have not enough bonestock so that conversion to intramedular referencing was performed. This was to be expected after the preoperative planning. Postoperative position of the prosthesis was good in all cases. Discussion: This new technique can make preoperative planning and peroperative execution of this plan less demanding. Problems such as the need for augmentations can be predicted in the preoperative planning. Radiation issues due to CT scanning are limited. The instrumentation needs to be redesigned in order to make this technique work in cases with minimal bonestock present.

Abstract no.: 31465

COMPARATIVE STUDY OF COMPLEX FEMORAL BONE DEFORMITY CORRECTION USING ILIZAROV METHOD AND SOFTWARE-BASED ORTHO-SUV FRAME

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Aims: The aim of the study was to compare Ilizarov apparatus (IA) and computer-assisted Ortho-SUV Frame (SUV) (<http://ortho-suv.org>) at correcting femur deformity. **Methods:** Out of 123 cases IA was used in 80 cases and the rest - SUV. Accuracy of correction was defined at comparing reference lines and angles – RLA (anatomic, mechanical axes and angles). **Results:** Elimination of simple deformations in IA group took 15 ± 2.8 days, external fixation index - 45 ± 10 days/cm, average limb lengthening – 6.5 ± 1.6 cm. Middle deformations: 25 ± 4.3 , 52.5 ± 15 and 4 ± 2.4 respectively. In complex deformations we had 65.8 ± 3.9 , 59 ± 12 and 4 ± 1.2 respectively. The normal mLPFA were achieved in 88.75%, mL DFA - in 91.25%. The mMP TA was restored in 93.6% and mLDTA - in 86.4%. Elimination of simple deformations in SUV group took 12 ± 3.5 days, external fixation index – 34.5 ± 16 days/cm, average limb lengthening – 3 ± 1.5 cm. Middle deformations: 17.8 ± 3.3 , 50.5 ± 9.5 and 4.9 ± 1.6 respectively. In complex deformations we had 27 ± 3.1 , 57.3 ± 11.3 and 3.8 ± 2.5 respectively. The normal mLPFA were achieved in 90.7% and the mL DFA - in 95.3% of cases. The mMP TA was restored in 93.6% and mLDTA - in 86.4%. All complications were typical for external fixation. There were 32.5% in the IA-group and 27.9% in the SUV-group. Use of SF-36 and LEFS scores showed nearly the same capabilities of both frames. **Conclusion:** The Ilizarov apparatus and SUV provide approximately equal accuracy of deformity correction. But using the SUV simplifies deformity correction, reduces its period by 1.4 times in middle deformities

Abstract no.: 31473

ROLE OF PREOPERATIVE HIP-KNEE-ANKLE LONG LEG XRAYS IN DETERMINING THE ANGLE OF DISTAL FEMORAL CUT IN TOTAL KNEE REPLACEMENT TO ACHIEVE A CENTRAL AND ACCURATE POSTOPERATIVE LIMB ALIGNMENT

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Accurate limb alignment is one important factor for long term survival in total knee arthroplasty. In many centers around the world, using computer aided navigational systems to ensure accurate implant placement is still a big logistical and economic difficulty. A conventional method to aid accurate implant placement is needed, especially in developing countries. We determined the reliability of predicting correct intraoperative femoral cuts on the basis of preoperative Hip-to-Ankle Xrays, to achieve a proper postoperative alignment. In 39 limbs, the distal femoral cut was predicted preoperatively, whereas in 30 limbs, eyeballing was used to take this cut. Postoperative long-leg views were taken to analyse accuracy of implant placement. 82.05 % (32/39) of the predicted group limbs' mechanical axii were corrected to within mid-fifth of the knee joint as compared to 26.77 % (8/30) of the eyeballing group, with a p-value of < 0.001, clearly establishing a role of Hip-Knee-Ankle Xrays in determining an accurate postoperative alignment. Thus this could be used instead of Computer aided systems for TKR surgeries.

Abstract no.: 31489

A PREOPERATIVE CARBOHYDRATE DRINK DOES NOT REDUCE INSULIN RESISTANCE OR COMPLICATIONS AFTER ELECTIVE HIP SURGERY

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Objectives: A preoperative carbohydrate drink is often claimed to alleviate the insulin resistance developing in response to surgery, and even to reduce the incidence of nausea. We tested this hypothesis in elective hip replacement (THR). Materials and Methods: 60 patients underwent THR under spinal anesthesia. They were randomized to: be fasting since midnight, ingest 800 ml of tap water 2 hours before surgery, or the same amount but with a carbohydrate drink instead. Insulin sensitivity was assessed on the day before, 2-3 hours after, and in the morning after the surgery. The method was Quicki, and by a 7-sample intravenous glucose tolerance test (IVGTT) which had previously been validated in 20 volunteers against the hyperinsulinemic glucose clamp. Muscle catabolism was assessed by measuring the urinary excretion of 3-methylhistidine. Complications were registered 2 days after the surgery. Results and Discussion: The Quicki showed no reduction of the insulin sensitivity 2-3 hours postoperatively, but a decrease by 8% in the morning of the next day. The IVGTT showed no change in insulin sensitivity 2-3 hours after surgery, but a reduction by 40% in the next morning. These data, as well as the 3-methylhistidine excretion, did not differ between the groups. The number of complications averaged 1.4, 1.6 and 1.6 per operation in the 3 groups. Nausea and vomiting occurred in 30% of the patients in all the groups. Conclusions: A carbohydrate drink did not affect insulin resistance, muscle catabolism, the incidence of complications, or the well-being after elective hip surgery.

Abstract no.: 31514

NEW METHOD FOR SCHATZKER TYPE 3 LATERAL TIBIAL CONDYLE FRACTURE

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Lateral tibial condylar fractures are relatively common fractures in trauma practice. Schatzker type 3 variety is pure depression type of fracture. In addition to articular malalignment, lateral meniscal avulsion is very common in this pattern. Achieving anatomic and stable articular reduction, managing meniscal pathology and initiating early range of motion are key to success. Various methods are described in literature; all has some advantages and disadvantages. Aim of this paper is to present a new and easy technique of lateral tibial condyle osteotomy in which Schatzker type 3 is converted into type 2 by split opening lateral outer cortex, this gives full articular view and lateral meniscus under direct vision. The depressed fragment is gently elevated under direct vision, defect bone grafted if required, plate fixation done in most cases, lateral meniscus repaired if needed and knee motion started on next day. This technique does not require fluroscopic or arthroscopic guidance for the reduction of depressed fragment still achieving excellent reduction and it does not add into comminution of small fracture fragment which may occur in other methods. I present 22 cases performed in last 7 years, I was able to achieve excellent articular reduction in most of the patient and good to excellent result in most of the cases. This new technique is easily reproducible, deals with all components required in treating this injury and accurate articular reduction is possible in most of the cases.

Abstract no.: 31517

31517

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Background: Thoracic pedicle screw application is common for posterior spinal fusion (PSF) in adolescent idiopathic scoliosis (AIS) cases. Little has been published addressing the direction of pedicle screw insertion, particularly in the sagittal plane. This study addressed a simple and novel free-hand technique of directing the sagittal inclination of thoracic pedicle screws, without the use of intraoperative monitoring, in AIS patients. Methods: A prospective radiographic and clinical study was conducted. Thoracic pedicle screw insertion between T1-T12 was performed in 66 consecutive AIS patients (N=510 pedicle screws) who underwent PSF. Intraoperatively, a right-angle, "Langenbach" retractor was utilized to define the sagittal direction of insertion. After surgery, the positions of the screws were evaluated using lateral radiographs. Screw location was described as the position of the screw tip with reference to three vertebral body zones (A, B, & C). Additionally, the screws were categorized as unacceptable if they perforated the pedicle or violated the superior or inferior disc spaces. Results: There were 15 males (22.7%) and 51 females (77.3%), with a mean age of 15.0 years. Pedicle screws were inserted between T1-T12, with a mean of 7.7 screws inserted per patient. 501 screws (98.2%) were located in Zones A or B, and only 9 screws in Zone C (1.8%). None of the patients had intra- or postoperative neurological sequelae. Conclusion: We report a simple, free-hand technique of directing the sagittal inclination of pedicle screws, without the use of intraoperative radiographic monitoring in AIS patients.

Abstract no.: 31522

**CLINICAL AND RADIOLOGICAL OUTCOME OF SCARF AND AKINS
OSTEOTOMY FOR HALLUX VALGUS**

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Scarf and akins osteotomy has been gaining popularity for the treatment of moderate to severe hallux valgus. We have looked at 60 patients who underwent scarf and akins osteotomies (73 operations) and carried out clinical and radiological assessment. There were 57 female and 3 male pts with average age of 60 years (range 14 – 80 yrs). 13 patients had simultaneous bilateral procedures. There was no infection. Two patients required early Re-do surgery due to loss of position of the metatarsal osteotomy. Clinical outcome was assessed with AFOS score and patient satisfaction questionnaire. Mean pre-op Hallux Valgus angle, intermetatarsal angle and DMAA were 31.4, 15, and 21.4 respectively. Post operatively these angles were 12, 8.2 and 6.4 respectively. We conclude that Scarf and Akins osteotomy provides satisfactory clinical and radiological results in the treatment of moderate to severe hallux valgus

Abstract no.: 31539

A STUDY OF CARPAL TUNNEL SYNDROME BY USING 3 TESLA MAGNETIC RESONANCE IMAGING SYSTEM AND NERVE CONDUCTION STUDY.

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Introduction: Imaging diagnosis progresses with 3 tesla of Magnetic Resonance Imaging system (MRI). This high resolution MRI can detect detail structures of carpal tunnel. To date, there are few reports concerning carpal tunnel syndrome (CTS) using 3 tesla MRI. We report the relationship between severity of CTS and structures of carpal tunnel by using 3 tesla MRI and nerve conduction study. Methods: 36 patients (70 hands, 37-85 y old) diagnosed CTS with nerve conduction study. There were 54 affected and 16 unaffected hands. Cross sections of median nerves were calculated at DRUJ, body of scaphoid, tubercle of scaphoid, hook of hamate. Thickness of transverse carpal ligament was measured. Results: Cross sections of median nerve significantly increased at body of scaphoid in CTS, compared to that of unaffected hand. Conversely, cross sections of median nerve decreased at tubercle of scaphoid. The thickness of transverse carpal ligament has no significant difference between affected and unaffected hands at the tubercle of scaphoid in CTS. Terminal latency has a positive correlation with cross sections of median nerve at body of scaphoid, and a negative correlation at tubercle of scaphoid. Conclusion: Our results indicate that median nerve in CTS decrease its cross sections of median nerve at distal portion of carpal tunnel, and increase it at the proximal portion in proportion to the severity of CTS. predict the severity of CTS. Severity of CTS does not increase the thickness of transverse carpal ligament.

Abstract no.: 31566

PRE-OPERATIVE ASSESSMENT FOR ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION WITH PRESERVING REMNANT USING HAMSTRING GRAFT

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Introduction: The purpose of study is to find the appropriate timing and the type of rupture of anterior cruciate ligament (ACL) for ACL reconstruction with preserving remnant using hamstring graft. Methods: Total 200 ACL reconstruction were performed. One hundred cases were reconstructed with preserving remnant, the other 100 cases were reconstructed without remnant. ACL remnants were classified into 4 morphologic patterns; group 1: ACL scarring to the PCL, group 2: ACL healing to roof of the notch, group 3: Attenuated ACL remnant healed to the lateral wall more anterior and distal than its anatomic origin and group 4: resorption of the torn ACL. The period after injury of ACL was calculated for each operation (with or without remnant). In addition, the rate of ACL scarring group was investigated for each operation. Results: The period of after ACL rupture was significantly shorter for ACL reconstruction with preserving remnant than that without remnant (3.94 vs 15.95, $p=0.005$). In groups 2, most patients can be reconstructed with preserving remnant. (33% in group 1, 52% in group 2, 15% in group 3, 0% in group 4; $p<0.01$). Conclusions: The period of after ACL rupture is important to operate ACL reconstruction with preserving remnant. The type of rupture of ACL also leads to be able to reconstruct ACL with preserving remnant.

Abstract no.: 31575

SURVIVAL ANALYSIS OF THE BREAST CANCER SUBTYPES IN SPINAL METASTASES

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Introduction: Preoperative prognosis of the spinal metastases patients is a challenge for the spine surgeon to choose optimal treatments. Now the popular scoring systems (such as Tokuhashi score) are only focusing on the primary site. Breast cancer is one of the most common tumors that involve the spine. The subtypes could significantly influence the survival period of the breast cancer patients. Estrogen receptor (ER) and Progesterone receptor (PR) status are the key factors of the subtypes. The aim of this study was to investigate the influence of breast cancer subtypes for the survival of the breast cancer spinal metastases patients. Methods: Eighty-four patients with breast cancer spinal metastases underwent surgical treatments since 1997 to 2011 were analyzed. The ER and PR status data were retrieved from the Danish Breast Cancer Group. We used survival analysis, created the Kaplan-Meier curves and run Log-rank test to compare the survival outcomes. Results: In the ER subtypes, 72 patients were positive, 12 patients were negative. Fifty-two patients were dead, and 32 patients were alive. The difference of survival rates between the ER+ and ER- was not significant ($p=0.44$). Forty-seven patients had PR results. In the PR subtypes, 28 patients were positive, 19 patients were negative. Twenty-three patients were dead, and 24 patients were alive. The mortality rates had no significant difference ($p=0.22$) between PR+ and PR- subtypes. Conclusion: The mortality rate between each subtype did not show any significant differences. Spine surgeons do not need to distinguish the breast cancer subtypes to predict the spinal metastases.

Abstract no.: 31576

INCIDENCE AND PREDICTIVE FACTORS OF MRI DETERMINED DISC DEGENERATION IN ADOLESCENT IDIOPATHIC SCOLIOSIS AFTER INSTRUMENTED FUSION

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Study design: Retrospective clinical follow-up (average 12 yrs). Objective: To determine the incidence of adjacent disc degeneration after instrumented spinal fusion in Adolescent Idiopathic Scoliosis (AIS) as determined by MRI. Secondly, determine correlations in function, health, pain scores (SRS-30, EQ-5d, and VAS questionnaires) and MRI disc changes. Lastly to identify independent risk factors (age at surgery, fusion levels, saggital balance, Cobb angle) and develop a predictive model for disc changes in MRI. Background: Since AIS patients are recommended to have a normal, active life; many long term follow up studies investigate the radiological, function and pain status to analyses the long term success of surgery. These follow up studies report fair-poor quality of life, back pain (35% to 45%) and function in AIS patients. We suggest; accelerated progression of normal degenerative changes may be responsible for the low back pain observed at long term follow in these patients. Methods: We have identified 157 surgically treated AIS patients in our hospital. Analysis of preoperative, 6 month, 1 year and 2 year follow-up radiographs is completed. Next step is to categorize them as per predictive surgical factors namely [age at surgery, fusion levels (lowest instrumented vertebra), saggital balance (cervical-7 plumb line deviation) and Cobb deformity angle] with respect to adjacent discs T1 and T2 weighted saggital MRI imaging (Pfirschmann and Modic changes). MRI imaging starts on February 4th. Health, function and pain questionnaires (SRS-30, EQ-5d, and VAS) data is received for 63 patients. Results: Ready for publication by July 2012.

Abstract no.: 31592

**LARGE GAP NON-UNIONS OF TIBIA WITH EXTENSIVE SCARRING:
RESULTS OF THE HUNTINGTON'S PROCEDURE**

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Introduction: Gap non-unions are common in tibia, due to its subcutaneous location and open fracture with bone loss in the leg. Various methods of bone transport and bone grafting have been described in literature. We present our results of tibialisation of fibula (Huntington's procedure) after trauma and tumor excisions. Method: Eighteen patients, with age 13 to 44 years, with gap non-union of tibia (gap = 2 to 8 inches) were treated with this method. These were either due to tumors or post-traumatic. One stage tibialisation, using two screws in proximal and two in distal fragments of tibia, was performed. Additional support with POP cast was given and continued till 6 months. Subsequently, the limbs were protected in PVC braces. Partial weight bearing was started after 3 months and full weight bearing at 6 months. Results: Good results i.e. union at both ends and hypertrophy of fibula was achieved in 16 patients. One patient had backing out of screws and non-union at both ends while the other had infection and non-union at one end. Shortening of 1 to 1½ inches was noted in all cases. Follow-up ranged from 2-8 years. Discussion: Fibula being covered all around with muscles makes a very good live graft to be fused to tibia. It achieves fast union and starts hypertrophying in one year of time and in young after 3-4 years of transfer it becomes full weight bearing bone. The method is biological, cost effective and technically simple at a difficult anatomical site.

Abstract no.: 31616

SUCCESSFUL RETURN TO PLAY IN ATHLETES FOLLOWING NON-OPERATIVE MANAGEMENT OF ACUTE ISOLATED POSTERIOR CRUCIATE LIGAMENT INJURIES; MEDIUM TERM FOLLOW-UP

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Our institutional protocol for twelve years has been to manage acute, isolated posterior cruciate ligament (PCL) ruptures non-operatively. This prospective study reviews the outcome of a consecutive series of active athletes with acute PCL rupture. Care and review was supervised at a tertiary referral centre. 46 athletes presented with MRI confirmed acute PCL injuries within four weeks of first consultation. Posteromedial, posterolateral and anterior cruciate ligament injuries or meniscal or chondral injuries mandating early intervention were excluded. Patients were managed by bracing and subsequently with a symptom/sign driven rehabilitation protocol. Individualisation took into account quadriceps inhibition, effusion, range of motion and patient comfort. Follow up was until athletes returned to sport and review at a minimum of three years (range 3-9 years, mean 5.2 years). 30 were reviewed with imaging in clinic, 12 by phone/activity/score review and 4 via club physiotherapist/playing record. Mean return to play at previous level was 10.9 weeks. Athletes' biggest hurdle was sprinting, with inability to reach maximum speed, despite excellent rehabilitation until a further six weeks of rehabilitation was completed. Over the follow-up period three athletes required arthroscopies for chondral and meniscal problems. On review, this might have been related to consequences of the initial injury/instability rather than new injuries. One athlete had posterolateral instability that was either initially missed and subsequently became clearer, requiring a PCL posterolateral corner reconstruction three years later. Medium term review suggests that non-operative management of acute isolated PCL injuries provides very good clinical outcomes and return to sport.

Abstract no.: 31709

CLINICAL AND FUNCTIONAL OUTCOMES OF REVISION ACL RECONSTRUCTION

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Objective: This is a single surgeon prospective study assessing the functional and objective outcomes after revision ACL reconstruction and comparing the re-rupture rates between primary and revision ACL reconstruction. Methods: Lysholm, KOOS, IKDC scores, AP laxity at 30° knee flexion using the Rolimeter (Aircast, USA®), re-rupture rates and any post-operative complications were collected prospectively in all the patients over a 10 year period. The re-rupture rate was assessed in a consecutive series of 422 primary ACL reconstructions performed by the senior author. Results: 24 patients (21 males, 3 females) with a mean age of 31.2 years (range 17-50) were followed-up for an average of 21.2 months (range 12-60 months). 14 cases were secondary referrals and 10 were re-ruptures from the 422 primary ACL reconstructions. There was significant improvement in Lysholm, KOOS scores (symptoms, ADL and QOL components) and IKDC scores (p value <0.02 in all). There was significant improvement in the AP laxity scores at 30° knee flexion post-operatively (p value ≤0.05). The re-rupture rates were 12.5 % in revision ACL reconstruction and 2.4% in primary ACL reconstruction (p<0.01). Conclusion: Revision ACL reconstruction surgery remains a challenging problem to deal with. The study shows that improved function can be expected after revision ACL surgery but there are significantly higher risks of re-rupture, which should be mentioned during informed consent.

Abstract no.: 31713

IMPROVEMENT IN THE DETECTION RATE OF PERIPROSTHETIC JOINT INFECTION IN TOTAL HIP ARTHROPLASTY THROUGH MULTIPLE SONICATE FLUID CULTURES

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Sonicate fluid cultures (SFC) are more sensitive than conventional microbiological methods in identifying periprosthetic joint infections (PJI), because sonication enables a sampling of the causative bacteria directly from the surface of the endoprosthetic components. Because of their high sensitivity SFC can be positive while all other microbiological methods remain negative. It is therefore difficult to interpret a single SFC as being truly or false positive. The aim of this prospective study was to improve the interpretation of SFC in the diagnosis of PJI in patients after total hip arthroplasty through the use of multiple SFC. We included 102 patients of which 37 had a defined PJI according to the following criteria: intraarticular pus or a sinus tract, a periprosthetic membrane (PM) indicative of infection, or a positive microbiological culture in a minimum of two separate microbiological samples. A single positive microbiological sample was classified as false positive. In 35 patients multiple SFC were acquired from the separate endoprosthetic components. Out of all diagnostic parameters SFC achieved the highest sensitivity with 89% and a specificity of 72%. PM was able to achieve a sensitivity of 78% for detection of PJI. When multiple SFC were employed it was possible to increase the sensitivity to 100% and specificity to 85%. Our results show that it is possible to increase the sensitivity and specificity of SFC when multiple samples are used. Multiple SFC facilitate the diagnosis of PJI, since they are able to give the two positive microbiological samples that are needed for PJI.

Abstract no.: 31744

OPTIMISING THE USE OF PRE-OPERATIVE PLAIN RADIOGRAPHS IN HALLUX VALGUS SURGERY

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Introduction: Hallux valgus is the commonest foot deformity. Prompt clinical with radiological assessment is essential. Patients that need surgical correction have to be referred to orthopaedic surgeons. Plain films of the feet must be weight bearing to facilitate accurate biomechanical analysis. Inadequacies in the appropriate radiological assessments increase costs and may potentially cause delays in the patient pathway. Often x-rays are requested for patient before they are seen by the surgeons. The aim of this study was to evaluate the appropriateness of x-rays requested prior to orthopaedic referral. Methodology: Retrospective study of the preoperative x-rays of 50 patients that had surgical correction of hallux valgus. Results: 48 of the 50 patients had preoperative x-rays. 22% (10) had x-rays requested before orthopaedic consultation. Requesters of these films were Multi-professional triage members (3), General practitioners (5), and rheumatologists (2). 40% (4) of the x-rays were non-weight bearing. All of the non-weight bearing (4) and 50% (3) of weight bearing x-rays were repeated. 15% of patients in total (7/48) had more than one set of pre-operative x-ray. Conclusions: Resources were not being optimised. Pathway needed to be streamlined. These results were presented in a multidisciplinary team agenda meeting. A new protocol to minimise duplication or unnecessary x-rays was introduced. A re-audit has shown significant improvement.

Abstract no.: 31747

CLINICAL OUTCOMES AND ORTHOPEDIC SURGERY FOR BONE METASTASES FROM HEPATOCELLULAR CARCINOMA

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Introduction: There have been few clinical reports concerning bone metastases from hepatocellular carcinoma (HCC). The aim of the present study was to elucidate the clinical outcomes of HCC metastases to bone. Methods: The clinical records of 15 patients diagnosed with HCC metastases to bone were retrospectively reviewed. The patients' mean age was 70.8 years. Clinical features, treatments and outcomes were analyzed. Results: Extrahepatic metastases, except to bone, were detectable in the lymph nodes of three patients (20.0%), the lungs of two patients (13.3%) and the adrenal glands of two patients (13.3%). Radiation therapy was carried out at 31 sites in 13 patients and its efficacy was calculated to be 80.6%. Orthopedic surgery was undertaken at 15 sites in 10 patients. Unexpected mortality due to sudden bleeding occurred in two patients soon after surgery. Conclusions: Radiation therapy may be the first-choice palliative treatment for bone metastases from HCC. If the condition allows for residual liver function and a coagulative pattern, surgery should be considered for the treatment of some severe pain and symptoms. Surgical planning, such as preoperative transarterial embolization or intraoperative cementing, may play an important role in reducing intraoperative bleeding, which can lead to liver failure and death.

Abstract no.: 31753

SURGICAL MANAGEMENT OF HETEROTOPIC OSSIFICATION OF THE FINGER

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Myositis ossificans is a solitary benign ossifying lesion in the soft tissue. Occurring predominantly in muscles, a similar lesion may occasionally be found in subcutaneous tissues, tendons, fascia and periosteum. It is often misdiagnosed as an extraskeletal osteosarcoma because of its rapid growth. Therefore, it is sometimes called pseudomalignant myositis ossificans. Myositis ossificans rarely occurs in the distal portion of the finger. We present 12 cases of myositis ossificans of finger and review the the clinical, radiographical, and histological presentation, as well as the appropriate therapeutic management.

Abstract no.: 31773

RADIOLOGIC RESULTS OF VERTEBRAL INTERBODY FUSION USING CAGES PACKED WITH SILICON-CONTAINING POROUS HYDROXYAPATITE

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Introduction: This study was performed to evaluate the radiological outcomes of vertebral interbody fusion using cages packed silicon containing porous hydroxyapatite. Methods: Twenty-one patients (twenty-two cases) were followed up for more than 2 years after operative treatment using silicon containing porous hydroxyapatite (BoneMedik-STM, Meta-Biomed, Korea) for spinal fusion. Mean age was 56.5 years old (23–80 years old) and mean follow up period was 28 months (24–44 months). Radiologic evaluation was performed through anteroposterior and lateral X-ray and that was classified from grade A to E by classification method of Bratigan & Steffee. In eleven cases, three dimensional computed tomography was performed and that was classified from grade I to IV as fusion status. Statistical comparison was performed with autobone graft only group. Also statistical comparison was performed between the hydroxyapatite only group and the mixture of hydroxyapatite and autobone group. Results: Among twenty-two cases, nineteen showed grade E and the other three showed grade D by classification method of Bratigan & Steffee on conventional X-ray images. Among eleven cases, nine showed grade I and the other two showed grade II on 3D-CT images. Mixture of hydroxyapatite and autobone group showed better fusion status than hydroxyapatite only group, but the difference was not significant statistically ($P > 0.05$). Autobone only group (control group) showed better fusion, but the difference was not significant statistically ($P > 0.05$). There was no grave clinical problem including infection, other adverse reactions. Conclusion: Porous hydroxyapatite seems to be one of the effective bone graft substitutes for spinal fusion surgery.

Abstract no.: 31774

STUDY ON THE SIGNIFICANCE OF THE VOLUME OF CAUDAL EPIDURAL STEROID INJECTION IN LUMBAR DEGENERATIVE DISC DISEASE

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Introduction: Epidural steroid injection is an established treatment modality for intervertebral disc prolapse. It is a low-risk alternative to surgical intervention in some patients for whom noninvasive treatment has failed. Caudal epidural steroid injection is one of the most widely used methods for pain relief. Background: To determine the significance of the volume of caudal epidural steroid with isotonic saline solution in the treatment of lumbar degenerative disc disease. Material/Methods: Prospective study was conducted during 2007 to 2009. Patients were randomized in to two groups, of which 50 % (group A) received 4 ml of steroid with isotonic saline and remaining 50 % (group B) received 12 ml. Injection was given in prone position through a 22-G IV cannula in to the epidural space through the sacral hiatus. Outcomes scores included the SF-36, Oswestry disability index and pain VAS and were recorded in the pre and post injection periods. Results: In group A, 18 had significant pain relief from steroid injection and 32 had no relief during the early period. Where as in group B, 22 had significant pain relief from steroid injection and 28 had no relief. The quality of pain relief of 50% or greater was considered as significant. Follow up after 1 year does not show much difference. Group B had significant decrease in symptoms in the initial post injection period ($P < 0.05$). Conclusions: The volume of steroid solution in the treatment of lumbar degenerative disc disease is significant in the early post injection period only.

Abstract no.: 31786

IMPACT OF DELAY IN ACL RECONSTRUCTION ON RISK OF DEVELOPING SECONDARY KNEE PATHOLOGY

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We investigated the relationship between delayed anterior cruciate ligament (ACL) reconstruction and developing new knee pathology. 600 consecutive patients undergoing ACL reconstruction by a single experienced surgeon were divided into two groups based on the time lag between injury and reconstruction. The delayed reconstruction group included patients who underwent surgery more than 26 weeks after injury within an average of 48 weeks whilst the early reconstruction group had their treatment less than 26 weeks after injury (average 8.5 weeks). We excluded patients listed for a revision ACL reconstruction, patients with multiple ligamentous injuries or history of previous knee surgery. Intraoperative findings analysed included the number of meniscal and/or chondral injuries. Statistical significance was set at $p < 0.05$. There were 356 patients in the delayed group (M:F = 198:158 , average age 28) and 244 patients in the early group (M:F = 130:114 , average age 26). The delayed reconstruction group developed significantly higher rates of additional meniscal and/or chondral pathology (0.58 versus 0.41, $p < 0.05$). We conclude that performing early ACL reconstruction with restoration of joint stability minimises the rate of subsequent chondral and/or meniscal injuries which reduces the need for further surgical intervention and its implications on patient health and cost on healthcare systems.

Abstract no.: 31788

USE OF VIBRO-RESONANCE THERAPY IN PATIENTS WITH CLOSED DIAPHYSEAL TIBIA FRACTURES

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Fractures of the tibia are frequent injuries of the human skeleton. Purpose of study is to improve treatment outcomes of patients with closed fractures of the tibia using the local vibration. Materials and methods: We studied the results of examination and treatment of 97 patients with closed diaphyseal fractures of tibia (age 15 - 77 years) treated at Traumatology and Orthopedy Department of Research Institute in Astana from 2005 to 2008. 50 patients of main group with closed fractures of tibia were managed by vibro-rezonance therapy, 47 patients of control group were treated by traditional methods without vibro-rezonance therapy. In all cases the low-frequency vibration of floating rate was applied with skeletal traction (9 patients) and after transosseous osteosynthesis by Ilizarov method (41 patients). The course of vibro-therapy comprised 5-10-fold daily seances with a frequency of 50-120 Hz, amplitude 1-1,15, 10-20 minutes during 30-90 days. Results and discussion: Analysis of long-term results of treatment of 97 patients with closed diaphyseal fractures of the tibia was as following: excellent results of main group reached the 48.0%, good - 44.0%, satisfactory - 6.0% and unsatisfactory - 2.0 %. The excellent results of control group reached 36.1%, good - 42.6%, satisfactory - 14.9%, unsatisfactory - 6.4%. Conclusions: Developed method of treating the patients with closed fractures of tibia enabled to hold timely and adequate complex therapy, improved treatment outcomes and reduced the rate of complications and the length of hospitalization.

Abstract no.: 31808

VENTRAL AND DORSAL OPERATIVE INTERFERENCE UNDER OPERATIVE TREATMENT OF THE DAMAGES AND DISEASES OF THE SPINAL COLUMN

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Since moment of the organizations in Kyrgyzstan BRSCOT for period 2003 - 2011, is handled more than 4000 sick, is conducted active operative treatment of the traumas and degeneration -dystrophic of the diseases of the spine. They are introduced new methods and are improved known methods operative interference. Under operative treatment of the traumas being accompanied stenosis of the vertebral channel in the centre is used anterior decompression element spinal brain by transcortical of the access, not damaging back supporting structures vertebra, this method whole operative - 161 sick, with additional fixation sponges autotransplantat with screw - 66 sick. In 2004 is introduced new method, broadly used in world practical person, transpedicular fixation (TPF) - an efficient method particularly under slopply fracture vertebra with offset and antelistsis. Transpedicular device of the company "Tipsan" and "Conmet" aplying at fracture beside - 26 sick, at antelistsis beside - 13 sick. Under sequester hernia of the disk in 1996 year is introduced microsurgical method of the removing the hernia on Kasper, in our centre for passed period 2003-2011 years are organized - 505 operations. In slopply forms lumbar-sacrum osteochondrosis are used for stabilization vertebral-motor segment also different types titanium keiyg: porous nikelid-titanium - 66 beside sick, keiyg company " Conmet " - 12 beside sick, designed in BRSCOT keiyg -hybrid - 26 beside sick.

Abstract no.: 31824

RADIOGRAPHS IN NECK OF FEMUR FRACTURE- ARE THEY ADEQUATE?

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Introduction: Fractured neck of femur fractures amount to about 86000 cases per annum in UK. It is well-known that it is quite challenging in radiology of fractured neck of femur to obtain an adequate lateral view due to pain, poor penetration and overshadowing soft tissues. We looked at the adequacy of these radiographs.**Materials and Methods:**We looked at consecutive 100 patient's radiographs to assess their adequacy. We looked at AP and lateral views and recorded the details on the spreadsheet. They were compared with the standards of adequacy as agreed before the study with the Radiologist. **Results:** we found that the AP and Lateral view was inadequate in 29% and 46% respectively. **Conclusion:** We looked at the literature and found recent papers suggesting that lateral view of the radiographs don't make difference in management in most of the cases and hence shouldn't be performed routinely. They should only be performed on the request of the clinician when they think a lateral view is necessary for decision making.

Abstract no.: 31829

**FUNCTIONAL OUTCOME AND COMPLICATION RATE FOLLOWING
PRIMARY HAMSTRING ANTERIOR CRUCIATE LIGAMENT (ACL)
RECONSTRUCTION IN PATIENTS WITH DIFFERING BODY MASS INDEX
(BMI) CLASSES**

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Introduction: Many studies have looked at the effect of obesity on hip and knee arthroplasty and fracture fixation with very little reported on ligament reconstruction procedures. We compared the functional outcomes following primary hamstring ACL reconstruction carried out by a single surgeon in two groups of patients with different preoperative BMI classes (normal BMI group, BMI 18.5-24.9 and high BMI group, BMI ≥ 25). Methods: This was a review of prospectively collected data of all patients referred to the senior authors' knee clinic and subsequently listed for primary hamstring ACL reconstruction between 2001 and 2009 with a minimum of 2 years follow up. Functional outcomes were measured using the IKDC 2000, KOOS and Lysholm scores. Rollimeter readings were used to assess ligament integrity. Results: 98 patients met the inclusion criteria; however 6 were excluded due to missing data. There were 49 patients in the normal BMI group and 43 in the high BMI group. Males dominated the population in both groups. Sport was the major injury mechanism. We found no statistically significant differences between both groups in all post-operative assessment scores. Both groups also demonstrated comparable significant improvements from their preoperative scores. However, high BMI patients were found to have a significantly increased risk of post-operative complications including graft failure and wound infection. Conclusion: Primary hamstring ACL reconstruction is an effective treatment option in patients irrespective of preoperative BMI. High BMI itself does not adversely affect functional outcomes, however, this patient group appears to have a statistically significant increased risk of postoperative complications.

Abstract no.: 31831

OUT OF HOURS MRI SCAN AND CONSULTANT TO CONSULTANT REFERRAL SYSTEM.

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Introduction: MRI scans are the first choice investigation for the Spinal Injuries, Cord compression and Cauda Equina. At our centre the facility of MRI is available out of hours with Consultant to Consultant referral policy. Materials and Methods: We looked retrospectively at the MRI scans that were requested out of hours at level 1 Trauma to assess the contribution of the SpinalUnit in the workload for MRI scanner. We included all the Lumbar Spine MRI scan done between August 2010 and July 2011. Results: There were a total of 70 MRI scans of the spine that were requested out of hours with only 29 requested by Trauma and Orthopaedics Spinal Team. These included 25 for suspected Lumbar Pathology. Cauda equina was suspected in 14 cases due to combination of bowel, bladder symptoms and PR findings. It was proved in 4 cases who subsequently had an emergency discectomy The scan was performed in 4 cases of trauma and 5 cases of suspected cord compression due to malignancy. 4 patients were referred by the GP and 9 brought in by the ambulance. Conclusion: The MRI scan in all patients had identified the cause of symptoms and was normal in only one instance. Looking at the cauda equina pick up rate which was only 30.7% but that shows the alertness of the Orthopaedic team to the red flags. The Consultant to Consultant referral had helped to filter a lot of emergency requests which are later on done during the daytime hours.

Abstract no.: 31862

THE OUTCOME OF LUMBAR REOPERATION

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Introduction: Reoperation in short to middle term worries us and we sometimes don't find out detailed causes and outcomes. This study aims to investigate the cause of reoperation following surgeries. Materials and Methods: 873 patients underwent posterior lumbar surgery. In the 1-4 years follow-up duration, there were 41 reoperations, except for reoperations caused by hematoma or local infection. We investigated the outcome after reoperation as 1)excellent, 2)good, 3)fair, 4)poor. To confirm the primary diagnosis, we defined the remission 1)improved but deteriorated(IM), 2)not improved following primary operation(NIM). We analyzed contribution of these factors to reoperation. Results: The reoperation rate was 1.5% for 1 year, 2.3% for 1-2 year, 2.4% for 2-3 year and 1.4% for 3-4 year. The tendency for reoperation is caused by number of levels, not by surgical procedure. The outcomes were no excellent, 19 good, 11 fair and 11 poor. 30 patients were IM while 11 were NIM without relations with surgical procedures. The younger the patients were, the better the results were but there was no difference between IM and NIM. In IM, 21 patients once improved, but five became worse. Nine weren't improved. The improvement rate of IM was 53%. In NIM, only three with FOR resulted well, though three with FOR didn't result well. Three misdiagnosis due to cervical spine resulted well. Except for misdiagnoses or surgical troubles, no improvement was seen in NIM. Conclusion: The tendency of reoperation is 1.9% per year, and the results of reoperation is poor even the cases of IM.

Abstract no.: 31885

TISSUE FACTOR MRNA EXPRESSION IN 68 SOFT TISSUE SARCOMA PATIENTS

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Introduction: Many tumor cells elicit procoagulant activity by tissue factor (TF) leading to the generation of thrombin and fibrin. It is reported that TF expression is an independent prognostic indicator for overall survival (OS) in carcinoma. However, there is no report about correlation between TF and soft tissue sarcoma (STS). The purpose of this study is to elucidate the correlation between TF mRNA expression level and clinicopathological parameters and to predict the prognosis of STS patients. Methods: This study was performed on tumor tissue samples of 68 patients with histologically verified STS. TF mRNA expression levels was quantified using endogenous gene (GAPDH). The relation of TF expression levels with clinicopathological parameters and the association between TF expression levels and prognosis was evaluated. Results: In the comparison of histological grade, TF expression level was enhanced in high grade group than low grade group. In histological high grade group, TF expression level of metastatic patients was higher than no-metastatic patients. In Kaplan–Meier analysis, OS was worse for patients with high TF expression group compared with low TF expression group in histological high grade group. These data couldn't show statistical significant differences. Conclusion: This is the first study of the comparison between TF mRNA level and clinicopathological parameters in STS patients. In this study, we reported that high TF expression is thought to be associated with tumor malignancy. The measurement of TF expression may contribute to not only prediction of prognosis but the risk of thrombosis related to tumor.

Abstract no.: 31889

SURGICAL CORRECTION OF SEVERE THORACIC SCOLIOSIS IN COMBINATION WITH CONCAVE RIB THORACOPLASTY

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Introduction: This is a retrospective clinical study reporting on the efficacy of a concave thoracoplasty in conjunction with posterior instrumentation in the treatment of severe curves in patients with thoracic scoliosis. Methods: 40 consecutive patients with severe thoracic scoliosis (Cobb angle av. 101° (70-150°); age – 19,3 (12-31y.o.)) operated by posterior instrumentation combined with elevating thoracoplasty on concave side of deformity. In 15 patients anterior release and halo-pelvic traction were performed before instrumental correction, in 8 cases only halo-pelvic traction were performed preoperatively. 17 patients undergone one-stage instrumental correction with intraoperative halo-pelvic traction. Results: The average follow-up was 2 years. There were 12 males and 28 females. The average Cobb angle of the major thoracic curve before surgery was 101° (70-150°), after surgical correction – 47°. The average improvement was 54° (53%) in the major thoracic curve. The average Cobb angle of the compensatory lumbar curve before surgery was 50,5°, after surgical correction – 20,6°. The average thoracic kyphosis before surgery was 51°, after surgical correction – 28,7°. The average vital capacity (VC) before surgery was 56,3% of normal rate, 12 months after surgery VC increased to 66,5%. The average follow-up was 24 months. Loss of correction averaged 6° for major thoracic curve. The average vital capacity (VC) before surgery was 56,3% of normal rate, 12 months after surgery VC increased to 66,5%. Conclusion. The use of concave thoracoplasty together with posterior release and posterior instrumentation provide a good correction of severe scoliotic deformity.

Abstract no.: 31892

POSTERIOR MICROENDOSCOPIC LAMINOTOMY FOR CERVICAL MYELOPATHY

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The purpose of this study was to evaluate clinical outcomes and radiographic assessment of the patients with cervical myelopathy underwent posterior microendoscopic laminotomy. Materials and methods From April 2002 to 2011, 30 patients with myelopathy underwent microendoscopic laminotomy (ME group). Nineteen patients were CSM, 3 were OYL and 8 were cervical disc herniation. Average age was 53.9 and postoperative JOA score was 12.5. 22 patients were underwent single level decompression, 5 patients were double and 2 patients were triple level. We examined clinical outcomes of those patients and compared with 30 patients underwent traditional cervical laminoplasty from C3 to C6 (LP group). Results In ME group the average operative time was 110 min and EBL was little (114min and 151ml in LP group). Cervical ROM (C2 to C7) was significantly reduced in LP group (68%). Preoperative JOA score was 12 in MEL group and 12.1 in LP group. Postoperative JOA was 15.3 in ME group and 14.7 in LP group. Their recovery rate of JOA was 80 % in ME group and 53.6% in LP group. Postoperative complication rate in ME group was significantly lower than that of LP group (6.9% in MEL, 40% in LP). Discussion Traditional laminoplasty has been very popular but some patients are suffered from severe postoperative neck pain or neck stiffness. CMEL can be indicated for various cervical diseases as a definitive surgery or a time-saving surgery. CMEL is very safe and effective surgery as a minimally invasive procedure for patients with cervical myelopathy.

Abstract no.: 31894

WEAR OF UNICONDYLAR MOBILE AND FIXED BEARING KNEE IMPLANTS.

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Unicondylar knee arthroplasty is an attractive alternative to total knee arthroplasty for selected patients. Mobile bearing knee designs have been developed to improve knee kinematics and lower contact stresses. The aim of this study was to compare the wear progression of unicondylar mobile and fixed knee implants. A knee implant design, which is available in a fixed and mobile version, was tested using a knee wear simulator. For the analysis, the medial and lateral compartments were implemented in the simulator. Loading and motion of level walking were applied for 5 million cycles. Wear was measured gravimetrically separately for the medial and lateral compartments and the amount and morphology of the wear particles was determined using scanning electron microscopy. The wear rates averaged 10.7 ± 0.59 mg per million cycles for the medial and 5.38 ± 0.63 mg per million cycles for the lateral components of the mobile bearings, compared with 7.51 ± 0.29 mg per million cycles and 3.04 ± 0.35 mg per million cycles for the fixed bearings ($P < 0.01$). Thus, higher wear rates and pronounced backside wear at the inferior surface was found for the mobile design. The wear particles were mainly elongated and small in size for both designs ($P = 0.462$). In bicondylar bearing knee designs, reduced wear has been reported for mobile polyethylene inlays. However, this study showed that the wear behaviour of unicompartmental knee implants differs from bicondylar implants and that the introduction of the mobile concept may lead to increased wear.

Abstract no.: 31915

DISTAL RADIAL FRACTURE TREATMENT WITH PERCUTANEOUS HERBERT SCREW

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INTRODUCTION: The purpose of our study: to develop and evaluate a method which simplifies operative treatment of distal radial fracture, performed percutaneously, provides stable fixation, needs no or short period of external support, permits early physiotherapy, and does not require implant removal. **PATIENTS** From 2001 to 2011, 152 patients were treated with percutaneous Herbert screw fixation. There were 98 females and 54 males. The fractures were classified according to the AO classification. There were 78 fractures of the A group, 12 of the B group, and 62 of the C group. **METHOD:** Preliminary reduction of the fracture was achieved solely by traction and ligamentotaxis, followed by manipulation under fluoroscopic control to obtain a final and satisfactory reduction. No open reduction was necessary for displaced fractures. Subsequent, use for the fixation percutaneously, different types of cannulated Herbert screws. **RESULTS:** All of the fractures healed. The only complications related directly to the method included one case of persistent irritation of the sensory branch of the radial nerve. There were no infections, nor tendinous lesions. All of the patients were available for follow-up examination. Outcomes were evaluated using the Gartland and Werley functional criteria. Using the Herbert screw fixation we were able to achieve excellent and good results in 87% of the patients. **CONCLUSION:** Percutaneous Herbert screw fixation for distal radial fracture is a safe and reliable method in terms of fracture fixation, with good functional results and a low complication rate.

Abstract no.: 31917

REIMPLANTATION OF EXTRUDED META-DIAPHYSEAL SEGMENT OF BONE IN A DISTAL FEMUR OPEN FRACTURE: A DEVELOPING COUNTRY EXPERIENCE

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Introduction: The extruded bone fragments in open fractures are heavily contaminated with bacteria and should not be reinserted. However, when the bone loss is massive, reconstruction of the limb poses a challenge. The recovery of large segment of the bone from the accident site adds to the dilemma. We report a case of reimplantation of a 15 cm extruded meta-diaphyseal segment of distal Femur. We also review the literature regarding bone piece sterilization & guidelines for management under such circumstances. Material & Methods: 16 year old boy presented with Grade III A open fracture of Femur, 24 hours after road traffic accident (RTA). 15 cm bone was retrieved from the accident site. This bone piece was autoclaved after scrubbing with povidone iodine & reimplanted 36 hours after the RTA. Distal Femur locking plate was used to fix the fracture and bone grafting was done. The patient was started on higher antibiotics. Results: The patient started walking weight bearing on the limb 8 weeks after the surgery. The fracture healed 4 months after the surgery. Follow up duration 18 months, he has good range of motion of the knee joint and no signs of infection. He goes to school, is extremely active & is very happy with the outcome. Reimplantation of extruded bone should be kept in mind when dealing with massive bone loss even in developing countries. It may save the patient a lot of time & money and assure an early rehabilitation.

Abstract no.: 31975

**PARTIAL PATELLECTOMY IN FRACTURES OF THE PATELLA:
REVISITED**

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The conventional treatment of displaced fractures of the patella is usually internal fixation based on the tension band principle. However, this method of treatment in a predominantly subcutaneous bone is fraught with hardware related complications like infection, bursitis etc. Also, this necessitates a second procedure for implant removal. In comminuted fractures proper fixation is not always possible or leads to the use of “too much” hardware and its attendant complications. Numerous studies have proven that the patella has an important role in improving the mechanical efficiency of the quadriceps/extensor mechanism. With this background, and also the economic/financial considerations (implant costs, costs related to implant complications, costs of a second implant removal procedure), we have started routinely practising partial patellectomy retaining the largest fragment and reattaching the quadriceps/patellar tendon to this fragment as may be the case. All cases underwent good repair of the retinacular tears as well. 15 patients (11 male, 4 female) with a mean age of 50.5 years underwent this procedure over a period of 30 months. Results were assessed on basis of patient satisfaction, pain, knee ROM, and quadriceps wasting. There were 10 patients with excellent and 4 with good and 1 with fair outcomes respectively. All of the patients could return to their normal/essential activities by an average period of 4 months. Partial patellectomy has obvious merits in a developing country like India where the economic/financial considerations predominantly dictate the modality of treatment. This procedure has given consistent, reproducible results with high degree of patient satisfaction.

Abstract no.: 31981

SINGLE STAGE BIPLANAR GLOBAL FIXATION FOR UNSTABLE SPINE

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Introduction- Combined anterior instrumentation restoring axial load bearing column and posterior instrumentation fixing all three columns, sequential or staged is reported to provide excellent stability to unstable spine. Methods and results- The present study comprised of 27 patients of dorsal and lumbar spine instability treated at L.N. Hospital, New Delhi for tubercular spine in 14 and traumatic paraplegia in 13 patients. The mean age of the patients was 31 ranging from 19 to 65 years. Left thoracic, thoracoabdominal and retroperitoneal approaches were used depending on the level of the lesion. Surgical decompression was limited to removal of the offending pathology and partial corpectomy with bone grafting from iliac crest. Anterior instrumentation was done using 5.5 mm titanium pedicle screws connected with a rod. Posterior instrumentation involved percutaneous insertion of two appropriate size pedicle screws and a rod from dorsal side through left sided pedicles cranial and caudal to the lesion. Image intensifier was used while access to pedicle and body under direct vision made insertion of the screws much simpler. All patients were allowed to sit on the 2-3 day and were allowed to walk with the help of the walker when recovered with enough motor power. Removal of the posterior instrumentation was advised after nine months of surgery. The mean follow up was 3.7 years with minimum of 8 months and maximum of 6.2 years. There was loss of correction of $7.4^{\circ} \pm 3.9^{\circ}$. All patients demonstrated clinical and radiological healing with sound bony union with no pseudoarthrosis.

Abstract no.: 31987

CLINICAL AND RADIOGRAPHIC EVALUATION OF COXA VARA

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Introduction: Coxa vara is a hip lesion which may lead to severe coxarthrosis. Materials and methods: clinical and functional-radiographic examination revealed severe anatomic alterations of the hip joint in 58 patients of ages from 16 to 77 with coxa vara, such as: AP joint size deficiency; multiplanar acetabular deformity; femoral neck thickening and shortening; approximation of lesser trochanter to pelvis; greater trochanter displacement and hypertrophy in vertical and frontal planes; femoral hypoplasia on the affected side; pelvic shift in case of the unilateral affection and persistent pelvic inclination in case of the bilateral; hip movements restriction; persistent adduction, flexion and rotatory contractures on the lesion side(s); significant leg shortening on the affected side; compensatory valgus knee deformity or tibial antecurvature and ante-torsion. Conclusion: Coxa vara results in severe hip joint affection and multisegmental leg deformity. Total hip arthroplasty with certain technical features is the treatment of choice in case of coxa vara.

Abstract no.: 31991

LUMBAR SPINE DISTRACTION EXERCISE A USEFUL INNOVATION IN CONSERVATIVE TREATMENT OF DEGENERATIVE LUMBAR SPINE DISORDER

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Conservative treatment offered today help minimize the load coming on lumbar intervertebral disc[IVD] but has no useful effect in improving the nutrition of IVD. Nutrition of the IVD is at best on expansion of disc space due to increased diffusion inside the disc created by increased negative pressure. Considering this, an exercise named lumbar spine distraction exercise was developed to distract intervertebral space and improve outcome. A study was conducted to see the effect of this exercise in 100 patients from June 2008 to August 2009 with chronic low backache with sciatica. MRI was done before treatment. Patients having functionally disabling pain were put on a brief rest before the start of exercise. Back care was taught to all. Patients were followed up at one week and four weeks. Clinical response was measured in terms of improvement in symptoms like pain relief in on scale of 1 to 10, improvement in walking distance, in straight leg raising, in capacity of lifting weight and improvement in movements. Repeat MRI was done at 4, 8 and 24 weeks in a sample of 20 patients. 80 % patients had significant clinical relief and improved functional capacity on average follow up of 9 months. On follow up MRI widening of canal, increased inter spinous distance, decompression of nerve root, increased water content of IVD, regression of Schmorl's nodule and correction of intervertebral angle were seen in all. Conclusion: lumbar spine distraction exercise could reduce number of surgery in degenerative lumbar spine disease.

Abstract no.: 32003

NECK OF FEMUR FRACTURE: DO WE NEED A LATERAL VIEW?

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Introduction: Neck of femur accounts to about 86000 cases per annum in UK. AP and Lateral radiographs form an essential investigation in planning the management of these fractures. Recently it has been suggested that lateral view doesn't provide any additional information in majority of the cases. Materials and methods: We looked retrospectively at 25 consecutive radiographs with intracapsular and extracapsular fracture neck of femur each presenting to our department between May 2010 and January 2011. These radiographs were put on the CD in 2 folders as AP and Lateral. It was reviewed by 2 Observers who suggested their preferred treatment. The results were compared for the intra observer agreement to assess the necessity of the lateral view of the radiographs. We also compared the treatment options with the gold standard. Results: Our results showed that lateral view didn't make any difference in the management in majority of the cases with excellent agreement based on kappa statistics. Conclusion: We feel that the Lateral view doesn't make any difference in most of the cases as shown by a good intraobserver agreement.

Abstract no.: 32008

SURGICAL TREATMENT OF VOLKMANN CONTRACTURE: 18 CASES.

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INTRODUCTION Volkmann contracture results from an ischemia of the forearm muscles and nerves. It remains frequent in the Moroccan country, considering the use of traditional methods in particular Jbira, for the treatment of fractures. We report our experience about 18 cases. **MATERIAL AND METHODS** The average age was 24 years with a male prevalence, 72% of our patients were of rural origin. The forearm fracture was the most initial lesion and Jbira was the most direct cause (66%). Clinically, we encountered 8 syndromes of compartmental syndrome and 10 Volkmann's contracture. On the therapeutic level, the attitude depended on the stage and the clinical lesions. For the compartmental syndrome, we perform 5 aponevrotomy, and one hand amputation. For Volkmann contracture we perform a Page Scaglietti Gosset procedure (PSG) associated with a tendinous lengthening of flexor of the fingers and carpus in 4 cases, a PSG only in 3 cases, a tenoarthrolysis of MP joint with proximal row carpectomy in 2 cases, and finally a MP joint arthrolysis in one case. **RESULTS** We obtained 14 good results and 4 bad results. The results depended on the stage of the lesion. **DISCUSSION** Volkmann contracture by Jbira is at the origin of important adherences between the forearm skeleton, the soft tissues and the skin. This makes the PSG procedure used only often ineffective. Lengthening of the anterior forearm muscles, to correct the flexum fingers and wrist is often necessary.

Abstract no.: 32058

ELECTIVE ORTHOPAEDIC SURGERY FOR SEVERAL HEMOPHILIA PATIENTS: FIRST RESULTS.

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As a first result of our commencing a program of elective orthopaedic surgery for patients in haemophilia, We have performed 35 operations on 30 patients; 2 of these patients have developed inhibitor factor. The majority have been knee synovectomy (17 cases). The patients have a chronic synovitis, and recurrent haemarthroses. They fell into radiographic classification in groups 3 and 4 with. We have performed 10 knees replacements, associated with ankle arthrodesis (2 cases), and with synovectomy(2 cases). All these knees are stiff. We also performed 4 operations on 3 patients for sequels of muscle hematomas. We work closely in collaboration with our haematologists and our physiotherapists. Whenever possible we use regional anaesthesia in nine patients, using ultrasound to identify the peripheral nerves and have found that peripheral nerve blocks are beneficial in the post-operative rehabilitation. As a result of our study, we had 6 postoperative hemarthrosis (4 post synovectomy, 2post knee replacement), one case of skin necrosis. The average of the follow up for synovrctomy is 12months, and have a good evolution of the haemophilia rating scale..For knee replacement the follow-up is short, and according to IKS score are rated good, but functional score is just medium because of polyarticular damage. The improved mobility is modest. All the studies show that the best indication of Synovectomy is at the first's stage of arthropathy to preserve joint from deterioration. Our study shows also that the synovectomy in young children with joint damage gives a reel amelioration of the function.

Abstract no.: 32115

OPTIMISING FEMORAL TUNNEL PLACEMENT IN ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION: EFFECT OF A 70-DEGREE ARTHROSCOPE AND PORTAL POSITION

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Purpose: The aim of this study was to assess the accuracy of femoral tunnel placement for ACL reconstruction using either an accessory medial(AM) portal or a 70-degree arthroscope compared to the standard technique. **Methods:** The medial wall of the LFC in a knee simulator was modified to allow indentation with an arthroscopic hook. A computerised 3D model of the femur was obtained with 4 reference points marked around the LFC. Using the simulator held at 90-degrees flexion, 2 consultant knee surgeons marked 5 consecutive femoral tunnel points with a 30-degree arthroscope in the lateral portal, then with a 30-degree arthroscope in an AM portal and finally with a 70-degree arthroscope in the lateral portal. This was repeated after one week. Subjects then marked their target femoral tunnel positions (T) on the free femur. After each episode, the distances from the marked tunnel point to the 4 reference points (d1-d4) were measured using vernier callipers. The co-ordinates of each marked tunnel position was determined. The distance (r) from T was calculated for each episode. **Results:** The median value of r was 1.27mm using the 30-degree arthroscope in the antero-lateral portal, 0.54mm using the 30-degree arthroscope in the AM portal and 0.20mm with the 70-degree arthroscope in the lateral portal. r was significantly smaller when the 70-degree arthroscope was used ($p < 0.0001$). **Conclusions:** A 70-degree arthroscope in the lateral portal allows greater accuracy in ACL femoral tunnel placement compared to a standard 30-degree arthroscope in either the lateral or the AM portals.

Abstract no.: 32143

DISTAL FEMUR FRACTURES : NAILING VERSUS PLATING : A PROSPECTIVE, RANDOMIZED, CONTROLLED STUDY, AN ANALYSIS OF MORE THAN 100 CASES.

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Distal Femur fractures has always created a dilemma concerning the Indications, limitations and contra-indications concerning the use of Retrograde Nailing versus Locked plating. This paper describes in detail all the pros and cons of various fixation methodologies depending on various fracture configuration, their personality, intra-articular extension and achieving the functional and clinical outcome.

Abstract no.: 32145

UPPER THIRD TIBIA FRACTURES : NAILING VERSUS PLATING : A PROSPECTIVE, RANDOMIZED, CONTROLLED STUDY, AN ANALYSIS OF MORE THAN 150 CASES.

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Proximal Third Tibia fractures has always created a dilemma concerning the Indications, limitations and contra-indications concerning the use of Antegrade Intramedullary Nailing versus Locked plating. This paper describes in detail all the pros and cons of various fixation methodologies depending on Reduction techniques, various fracture configuration, their personality, intra-articular extension and achieving the functional and clinical outcome.

Abstract no.: 32147

ANKLE DISTRACTION AS A RELIABLE ALTERNATIVE IN ADVANCED POST-TRAUMATIC ANKLE ARTHRITIS IN YOUNG ADULTS – A PROSPECTIVE STUDY WITH FUNCTIONAL OUTCOMES

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Introduction: Young patients with advanced ankle arthritis that remains symptomatic in spite of conservative treatment and following arthroscopic debridement are usually offered either ankle fusion or ankle replacement. Both these options are far from ideal in this age group. The purpose of this study was to evaluate functional outcomes following ankle distraction to determine whether it is a reliable alternative for the treatment of advanced ankle arthritis in the young adults. Methods: Data was collected prospectively for 15 patients (9 males and 6 females, mean age 28.3 years) with advanced ankle arthritis who failed conservative treatment and continued to be symptomatic following arthroscopic ankle debridement. Distraction was done using a dynamic constrained ankle circular frame and all patients were allowed full weight bearing all through the distraction process. The subjective functional evaluation was based on the Manchester Oxford Foot questionnaire (MOXFQ), the Short Form (SF) 12 patient satisfaction questionnaire, the American Orthopaedic Foot and Ankle Score (AOFAS) and the Foot Disability Index (FDI). Results: At a minimum follow-up of 18 months none of the patients required fusion or replacement. There was a significant improvement in the AOFAS, FDI and the MOXFQ score and both the physical and mental components of the SF12 scores. Discussion: Based on these results the use of ankle distraction can be considered a useful option for the treatment of advanced ankle arthritis in young adults. Longer-term follow-up and comparison with alternative techniques will be required to evaluate the true effectiveness of this treatment option.

Abstract no.: 32153

DIGITAL TEMPLATING IN TRAUMA SURGERY - DEMONSTRATED BY THE DYNAMIC HIP SCREW (DHS)3

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INTRODUCTION: Pre-operative planning for trauma may raise awareness of the surgeon to any potential problems that may occur in the operation. New digital radiographs have resulted in the use digital templating. We assessed the accuracy of one digital templating system. **METHODS:** Thirty patients undergoing Dynamic Hip Screw were divided into 3 groups. Ten case were both templated and performed by the templating author (TO - Templated and Operated); 10 by surgeons that were blinded to the templated shaft screw lengths performed by the author (TN - Templated and Not-operated); 10 by surgeons blinded to the screw lengths predicted without templating (NT - No Templating). Each predicted screw size was compared to that used at surgery. The three groups of 10 were compared to observe any effect involved with templating by the operating surgeon. **RESULTS:** The accuracy of the templating when performed by the surgeon (TO group) was 72.5% compared to 55% for surgeons that were blinded to the templating sizes (TN Group). The accuracy of the non-templating prediction was 47.5% (NT Group). The overall accuracy of the TO group was statistically significantly higher than the NT group ($p < 0.05$). The accuracy of all templating was 98.8% when assessing accuracy to within one size of screw length. **CONCLUSION:** Accuracy of templating is improved if the operating surgeon is the one performing the templating. It is more accurate to template than simply predict the size from experience. Templating is very accurate if used to predict screw length to within one size.

Abstract no.: 32171

SEGMENTAL SPINE INSTRUMENTATION IN THORACOLUMBAR AND LUMBAR FRACTURES – 12 YEARS EXPERIENCE

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Introduction: Thoracolumbar and lumbar fractures are serious lesions. The objective of this study is to retrospectively analyze the functional outcome of segmental spine instrumentation of unstable thoracolumbar and lumbar fractures, and the association with neurological impairment. Material and Methods: This retrospective study included 70 patients with acute unstable thoracolumbar and lumbar fractures, between 1996 and 2007 treated with segmental instrumentation (61 transpedicular fixation and 9 sublaminar wiring fixation). The medium age was 38.22 years (15-70 years) and the medium time of follow up was 75.60 months (20-150 months). The fractures were in 14 cases D12, 26 L1 and 30 in other locations. The evaluation included location, mechanism and fracture type; associated injuries, neurological symptoms, complications, radiograph evaluation of reduction degree, Thoraco-Lumbar Injury Classification and Severity Score (TLICS), Oswestry Disability Index (ODI) and visual pain analogical scale. Results: The lesion in 71,4% resulted from a fall from height. The angle of kyphosis was on average 22.1°. Vertebral body was completely restored in 48 cases and incompletely in 22. TLICS was 5 in 25,7%, 6 in 21,4%, 7 in 11,4%, 8 in 11,4% and 9 in 8,6%. 55,7% of the patients had no neurologic lesions; 7,1% nerve root, 14,3% incomplete and 20% complete cord lesion and 2,9% cauda equina. 71,4% returned to work. According to the ODI 36 patients had <20% disability, 21 >20-40%, 7 >40-60% and 6 >80%. Discussion: Work status correlated directly with neurological impairment but not to injury level or mechanism. Although the important trauma experienced by these patients, return to work and results in the ODI were good.

Abstract no.: 32185

**CHANGE OF THE PATELLAR HEIGHT AND TIBIAL INCLINATION AFTER
OPENING AND CLOSING WEDGE HIGH TIBIAL OSTEOTOMY**

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This study aimed to evaluate the changes of the patellar height, tibial inclination and the joint height after closing wedge high tibial osteotomy (CW HTO) and opening wedge high tibial osteotomy (OW HTO). The lateral radiographs taken with the knee in 30° of flexion. 46 CW HTOs and 32 OW HTOs were assessed regarding the patellar height by the Insall-Salvati Index, the Blackburne-Peel Index and the tibial inclination by the Moore-Harvey method. The joint height was measured between the tip of fibular head and the lateral tibial plateau. In the CW group, both the ISI and BPI were increased at the postoperative and the final follow-up periods, while the BPI showed a statistically significant increase. In the OW group, both the ISI and BPI were decreased, while the BPI showed a statistically significant decrease. There was a tendency of a decrease of the tibial inclination in the CW HTO group without statistical significance. But in the OW HTO group, there was a statistically significant increase of the tibial inclination. The frontal plane H-K-A axis correction did not influence the change of the patellar height and tibial inclination in both groups. The joint height measured between the fibular tip and the lateral tibial plateau showed a significant decrease in the CW group, while no significant change in the OW group. The anatomical alteration of the patellar height was significantly influenced in opposite way by the two methods of HTO. The joint height was significantly decreased in the CW HTO group.

Abstract no.: 32191

THE USE OF CARBON FIBER CAGE FOR MULTIPLE LEVELS CERVICAL SPONDYLOTIC MYLOPATHY

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This work has been done at orthopedics department, Assiut university hospital Assiut Egypt from January 2008 to December 2010. It was done to assess the effect of use of these cages filled with artificial bone paste, in multiple levels CSM up to 4 levels through the anterior approach instead of posterior wide decompression for such cases. Fifty five patients were included in this study (age was 37-78 years with mean 55). Forty were males and 15 were females. They were followed up for one year in the average (at least 4 months). The patients were chosen according to the inclusion criteria: chronic complaint of more than 3 months, with any grade of spasticity according to ODI score, with failure of conservative treatment, with radiological (plain and MRI) and electrical studies preoperatively. On follow up, the entire patients were assessed using Nurick score. They showed neurological improvement of one grade at least. No deterioration was reported in this study. The degree of kyphosis, foraminal and canal widening, and the fusion was reported in all patients within 3 months in the average. No cage extrusion or retropulsion was reported. No tracheal or oesophageal fistulae were reported. Superficial wound infection was reported in 2 cases that was relieved by repeated dressings for short time with good wound healing. The conclusion is that this solution is a very good technique to manage CSM compared with other posterior techniques, with avoidance of complications of using iliac bone graft with no or minimal complications.

Abstract no.: 32214

**THE INTRODUCTION OF MICROSURGICAL TECHNIQUES BY
COMBINED INJURY OF HAND**

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The aim of our investigation was to develop an organizational conception by surgical interference using microsurgical techniques combined with hand injury. Materials and methods: Since 2001 has been doing systematic program of national development and implantation of new surgical techniques for the surgical treatment of pathology of the musculoskeletal system in the Astana Research Institute of Traumatology Orthopaedics. There is the experience of emergency microsurgical operations with hand injury, which revealed new aspects of microsurgery. The work is based on the experience of treating 112 patients with combined injuries of the hand. One-stage combined surgical procedures were performed in 112 patients, of whom 77 had a combined trauma of hand and 35 with various types of traumatic amputation of fingers. Simultaneous combined surgery included a full-fledged primary debridement, vascular reconstruction - the nerve bundle using microscopic techniques, performing fusion of hand bones in various ways, the restoration of tendons, performing different types of primary cutaneous plastic. Results: Outcomes of simultaneous combined surgery with combined wrist injury were studied in 98 out of 112 operated patients. In general, positive results were obtained in 95 patients (88.9%). Good and satisfactory results were achieved with the localization of injuries at the hand and wrist in 99.3% and in the fingers with 91.3% properly. Conclusion: In the development of surgical treatment of combined injuries involving damage to the wrist of the most important anatomical structures is important the restoration of damaged structures with the use of microsurgical techniques with introduction of new technologies.

Abstract no.: 32215

RECENT TREND AND CLINICAL ANALYSIS OF THE INFECTIOUS SPONDYLITIS

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Introduction The infectious spondylitis is one of the common spinal disorders. There are quite a few patients who need the surgical treatment. In this presentation, the recent trend and clinical analysis of the infectious spondylitis is reported. **Materials and methods.** 68 cases with the infectious spondylitis are reviewed. There are 45 males and 23 females. Their average age is 70.7 years old from 47 to 90. 57 out of them are pyogenic spondylitis, 8 are tuberculous spondylitis and 3 mycotic spondylitis. Yearly change of the numbers of this lesion, infected site of the spine, causative bacteria, treatment methods and prognosis are analyzed. **Results** The infected sites of the spine are as followd. 45 cases in lumbar spine, 10 cases in thoracic spine, 9 cases in cervical spine and 4 cases in thoracolumbar. The causative bacteria is identficated in 22 cases among 39. Staphylococcus aureus is the most popular causative bacteria. MRSA and MSSA are followed. Diabetes mellitus is the most popular complication. 38 cases are treated by the conservative therapy, 9 cases by the percutaneous drainage and 21 cases by surgical procedure. 54 cases have good recovery and returned to the social life. **Discussion and conclusions** Recent clinical feature is characterized by the increase of the elder patient, compromised host and the patient unless acute inflammatory symptoms. The devertification of the causative bacteria and resistant bacteria is also a trend. It is concluded that early surgical treatment must be considered for the patients with progressive neurological paralysis.

Abstract no.: 32221

COMPARISON OF ARTHROSCOPIC BONE PATELLAR TENDON BONE VERSUS HAMSTRING ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION USING INTERNATIONAL KNEE DOCUMENTATION COMMITTEE SUBJECTIVE SUBSCORE.

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Introduction: A modern sporting lifestyle and increased high speed motor vehicular trauma have led to increased Anterior Cruciate Ligament (ACL) injuries with an estimation of 250,000 ACL injuries per year worldwide. The aim of this study was to analyse Arthroscopic Bone Patellar tendon Bone Versus Hamstring Anterior Cruciate Ligament Reconstruction using International Knee Documentation Committee Subjective Subscore which has been shown to correlate well with patient satisfaction. **Materials and Methods:** 50 individuals with anterior cruciate ligament injuries who underwent arthroscopic anterior cruciate ligament reconstruction were divided into 2 groups. Group 1 underwent Bone Patellar Tendon Bone ACL reconstruction with titanium interference screws. Group 2 underwent Hamstring ACL reconstruction using bioabsorbable implants (De Puy RigidFix). Preoperative IKDC subjective sub scores were calculated and post operative at 4 weeks, 8 weeks, 12 weeks and 6 months thereafter for 2 years. **Results:** ACL reconstruction improved knee stability and average IKDC subjective subscore from mean pre op 56.97 to 84.67 in the BTB sub group and from 57.22 to 93.33 in the hamstring sub group. 48% of BTB patients had anterior knee pain as compared to 4% in the hamstring group. The return to work was quicker in the hamstring subgroup with an average of three weeks. **Conclusion:** Hamstring ACL reconstruction group compared favorably to BTB group.

Abstract no.: 32225

DISTAL RADIAL FRACTURE COMBINED WITH SCAPHOLUNATE DISSOCIATION: A REPORT OF A RARE CASE AND REVIEW OF THE LITERATURE

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A 79-year-old Asian female with bladder urothelial carcinoma was treated by TUR-BT and CCRT. She fell on outstretched extended left wrist, and presented to our hospital by swelling and severe pain at left wrist. Limited range of motion at left wrist and inability of left thumb extension developed after the accident. Radiographs including anteroposterior(AP), lateral views were obtained. Radiographs revealed left distal radial fracture with dorsal metaphysis comminution and dorsal tilting. Increased scapholunate interval from AP radiograph was noted (Terry Thomas sign). Left wrist computed tomography with 3-dimensional reconstruction revealed more detailed anatomic deformity. Closed reduction of distal radial fracture and scapholunate dissociation and extraskelatal fixation were performed. Reduction of distal radial fracture and scapholunate dissociation was confirmed by distal radial fracture and scapholunate dissociation. Post-operative radiography showed good reduction of distal radial fracture and decreased scapholunate interval with good position of extraskelatal fixation. Dorsal intercalated segment instability was noted from lateral radiograph of left wrist (static dorsiflexed position 20 degrees). Distal radial fracture combined scapholunate dissociation is uncommon although a high incidence of intercarpal soft tissue injuries has been noted in association with distal radius fractures. Injury to the scapholunate interosseous ligament (SLIL) has been reported to occur in 16% to 40% of patients with distal radius fractures, injury to the lunotriquetral ligament injury in 8.5% to 15% of patients, and injury to the triangular fibrocartilage complex in 39% to 43%. To our knowledge, no case of distal radial fracture combined with scapholunate dissociation has been reported.

Abstract no.: 32229

MINIMALLY INVASIVE POSTERIOR LUMBAR INTERBODY FUSION (PLIF) WITH UNILATERAL PEDICLE SCREW FIXATION AND ONE DIAGONAL CAGE

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Objective: To investigate the clinical outcome of percutaneous unilateral pedicle screw fixation plus one diagonal cage interbody fusion with Quadrant system. **Methods:** From January 2010 to June 2010, 21 patients underwent unilateral pedicle screw fixation plus single cage one-level interbody fusion through spatium intermuscular of multifidus. There were 10 males and 11 females with the mean age of 55.6 years (range, 32-65 years). There were 15 cases of lumbar disc herniation with segmental instability, 2 cases of recurrent lumbar disc herniation, and 4 cases of symptomatic DDD. All the cases were treated with posterior lumbar interbody fusion with decompression on one side with Quadrant system, percutaneous pedicle fixation with Sextant system on the other side. The operating time, blood loss, duration of hospital stay, functional outcome measured by JOA score, and fusion rate assessed by radiology were recorded. **Results:** The average operative time was 100 minutes (range, 80 to 150 minutes), and the average blood loss was 130 ml (range, 100 to 380 ml). The duration of hospital stay was 9 days (range, 7-14 days). All cases were followed up for 18-24 months (average 20.6 months). There was no sign of flexion-extension hypermobility and pedicle screw loosening or breakage during the follow-up period. The mean JOA score was improved from 13.5 ± 4.1 preoperatively to 25.2 ± 3.2 at the final follow-up. **Conclusions:** It is feasible to perform percutaneous unilateral pedicle screw fixation plus one diagonal cage interbody fusion for the advantages of minimal invasiveness.

Abstract no.: 32237

THE CLINICAL STUDY ON THE APPLICATION OF CALCIUM SULFATE/DEMINERALIZED BONE MATRIX (DBM) GRANULE IN THE CERVICAL INTERBODY FUSION

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Objective: To investigate the clinical outcome of interbody fusion with calcium sulfate/demineralized bone matrix (DBM) granule in the cervical spine. Methods: Thirty-five patients had undergone anterior cervical discectomy and interbody fusion (fifty-nine segments) with the polyetheretherketone (PEEK) cages filled with calcium sulfate/DBM granules. The fusion was augmented with anterior cervical plate. There were 19 male and 16 female. The mean age was 53.2 years old (range, 32~65). There were 12 cases of cervical spondylotic radiculopathy, 15 cases of cervical spondylotic myelopathy and 8 cases of combined cervical spondylosis. The JOA score, cervical curvature and the fusion status were evaluated after the operation. Results: All the patients were followed up consecutively for 24 months. The preoperative JOA score was 7.7 ± 2.1 . At final follow-up, the score was 14.2 ± 2.9 ($P < 0.01$). The recovery rate was 69.9%. There was no breakage, looseness or migration of the implants. The fusion rate was 100%. Conclusions: It is feasible to achieve the cervical interbody fusion with the PEEK cage filled with calcium sulfate/DBM granule.

Abstract no.: 32244

MANAGEMENT OF PROXIMAL TIBIAL FRACTURES WITH BIOLOGICAL PLATTING

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Introduction: Tibial plateau fractures are often high energy injuries. They are often associated with significant soft tissue damage, compartment syndrome, articular surface disruption, & neurovascular injury. Traditional t/t with ORIF results in extensive dissection, high rates of wound breakdown & infection. The aim of treatment should be to minimize disturbance of soft tissue envelope thus reducing the rate of complications. Methods: 64 cases of proximal tibial fractures were treated with percutaneously passed plating technique. Lateral surface was preferred for 'minimally invasive' plating. If required, a medial plate was used to act as a buttress or antiglide plate. The articular congruence and axial alignment were checked by image intensifier. Early mobilisation and range of movement exercises are the key to successful treatment. ROM can begin on the 2nd post op day. However, motion is not performed at the expense of loss of fracture reduction. Care must be taken to prevent equinus contracture of the foot. Results: There were no non-unions & all fractures eventually united. Complications encountered were superficial infection & delayed union. Non-weight bearing at 6 weeks; partial at 9-10 weeks, and full weight bearing at 14-16 weeks (only after radiological evidence). Results were evaluated with modified Rasmussen scoring system. Most patients had excellent to good results. Conclusion: The aim of surgery is to restore anatomy, regain axial length, establish adequate stability, preserve blood supply, and mobilize early. Indirect reduction techniques and other soft tissue preservation methods safeguard periosteal vascularity and promote early fracture healing.

Abstract no.: 32255

ODONTOID FRACTURES: DIFFERENT OPTIONS OF SURGICAL TREATMENT

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Introduction: Optimal management of odontoid fractures is controversial. Methods: Twenty three patients (20 males and 3 females) with a mean age 39 years with type II odontoid fracture were operated upon between 2005 and 2010 (minimum follow up one year). All fractures were recent except 2 with duration more than 3 months. All patients were neurologically free except 2 who had unilateral weak hand grip. Associated lower cervical injuries were present in 4 cases and associated limb fractures in 5 cases. CT and /or MRI were done for all cases. Anterior screw fixation was performed in 21 cases. Two non cannulated screws were used in the first 12 cases and one cannulated screw was used in the last 9 cases. Posterior atlanto-axial wiring with or without Magerl's screws were used in the 2 old cases and in another 2 cases with failure of anterior screw fixation. Results: No intraoperative vascular, soft tissue or neurologic complications occurred. Recovery of the neurologic deficits occurred in the 2 cases with preoperative deficits. Revision of surgery was done for one case because of reposition of the screw and for removal of the screw in another 2 cases. Deep infection occurred in one case and the screw was removed after 4 months postoperatively. Follow-up average was 35 months (12 to 53) Radiological union occurred in 17 of the anterior fixation cases including 2 cases with mal-union. Two cases had nonunion without marked disability and the patients refused to do posterior fixation.

Abstract no.: 32270

SPARE PART SURGERY FOR THUMB RECONSTRUCTION

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Introduction: In mutilated upper extremity injuries “Spare parts” represent components that may be overlooked in a pile of tissues with less useful function and may include skin, bone, nerves, tendons, vessels, nail bed, or portions of composite functional unit like finger. This case series demonstrates the use of spare parts in both traumatic and congenital thumb defects. Methodology: From 2007 - 2010, nine patients underwent surgeries to restore thumb function using the above concept. The entire digit was transferred as on top plasty in eight patients and as composite vascularised joint transfer and tendon transfer in one patient. Distraction of a short index finger stump followed by its transfer was done in two stages in one of the patients. Ectopic replantation of middle finger was done in one patient. Results: Out of nine patients, trauma was the cause for loss of thumb in six adult cases. Two children had acrosyndactyly and one had symbrachydactyly. Overall function was assessed based on five parameters 1) holding small objects with tip pinch 2) holding large objects with grasp 3) cosmesis and patient satisfaction 4) primary wound healing 5) restoration of length. Discussion: Though this procedure has been well described in literature for post traumatic defects in adult population, the three successful pediatric cases in our series show that this is a useful viable option in children. In all our cases, the goal of tripod pinch was achieved except in one where a useful prehension of lateral pinch was achieved.

Abstract no.: 32352

LONG TERM RESULTS AFTER AUGMENTATION PROCEDURE IN PARTIAL ACL TEARS

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Introduction: The purpose of this study was to investigate the 3-year follow-up clinical results of 25 patients who underwent anterior cruciate ligament (ACL) augmentation procedure using an autogenous semitendinosus tendon and the EndoButton in cases of partial ACL tears. Methods: The ACL augmentation was performed similar to a "traditional" single-bundle technique using AM portal while sparing the intact ACL fibers. We followed up 25 patients for more than 3 years after their ACL augmentations. Of these, 21 were anteromedial (AM) bundle reconstructions and 4 were posterolateral (PL) bundle reconstructions. They were assessed using a KT-2000 knee arthrometer at 30 lb by joint position sense, Lysholm knee score, IKDC score. Results: There was significant improvement in patients based on Lysholm & IKDC scores. ACL augmentation group showed significant improvement in AP stability and terminal stiffness as side-to-side difference of anterior displacement measured by the KT-2000 arthrometer was average of 0.7 mm. Discussion: Selective AM or PL bundle reconstruction showed improved joint stability, joint position sense, and Lysholm scores postoperatively. This procedure can be a treatment option for patients with partial ACL tears.

Abstract no.: 32365

SOMATOSTATIN RECEPTOR SCINTIGRAPHY (SRS): THE VALUE IN THE DIAGNOSIS OF DESMOID TUMORS

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Introduction: Magnetic Resonance Imaging is considered as imaging modality of choice in diagnosis of desmoid tumors, though even this technique can lack to distinguish aggressive fibromatosis from other benign or malignant soft tissue tumors. The aim of this study was to investigate if desmoid tumors would show an adequate tracer uptake in somatostatin receptor scintigraphy and moreover to correlate these results with immunohistochemical staining. Methods: Thirteen patients with desmoid tumors were examined with somatostatin receptor scintigraphy. Additionally, specimens of seven affected patients have been tested for the immunohistochemical expression of somatostatin receptor subtype 2A. The results of somatostatin receptor scintigraphy and the results of immunohistochemical staining (somatostatin receptor subtype 2A) were evaluated and correlated. Results: Somatostatin receptor scintigraphy revealed that eight of 13 affected patients (62%) showed an enhanced tracer uptake. On the other hand, the correlation between the results of somatostatin receptor scintigraphy and immunohistochemical investigations was poor (two out of seven cases). Conclusion: The current study demonstrated that desmoid tumors frequently express somatostatin receptor subtype 2, while immunohistochemical investigations did not correlate with these findings. This may likely be due to lack of standardization of this technique and also due to heterogeneous receptor distribution within the tumors.

Abstract no.: 32399

STEM CELL THERAPY FOR THE TREATMENT OF SPINAL CORD INJURY (MET ANALYSIS)

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The use of stem cells in spine surgery is compelling, regenerative medicine using stem cell therapy has sparked much interest in the 21 century not only because of controversies that surround the ethics involving stem cells, but their potential for use in clinic. The ability of stem cells to repair and regenerate new tissues and organs hold tremendous promises for the treatment of many serious diseases and injuries attempted repair of human spine problem by transplantation of stem cells depends on complex biological interactions between the host and graft. This is a Meta analysis for what was written about these topics, which shows obvious variability in outcome and various ways of application from so many points of view. Hopefully I shall clarify some dark spots on this complex topics.

Abstract no.: 32450

**AGE DYNAMICS FEATURES OF BASIN AND BACKBONE GROWTH
OSTEAL ACTIVITY RADIOLOGICAL CHARACTERISTICS AT PATIENTS
WITH THE IDIOPATHIC SCOLIOSIS**

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The aim of work was to study a basin and a backbone growth osteal activity to determine features of its age dynamics at patients with an idiopathic scoliosis (IS). Materials and methods: Age dynamics basin and backbone growth osteal activity at 2006 patients with IS, 4-20 y.o. initially, with deformity basic arch in frontal plane from 5 to 168 degrees was investigated. The radiological method of research was applied. Basin growth activity was estimated under Risser tests, and the backbone – under Sadof'eva tests. Results and discussion. It was revealed that with IS the basin and the backbone enters in apophysis ossifications period, synostosis and osteal growth end in later age terms, than in norm; the taped backlog was from 1 till 4 years. It was noticed that with IS the backbone began and finished the physiological growth with certain delay in relation to pelvic bones for the term from 1 till 3 years. It was defined that at patients with IS it is necessary to survey the test of Risser as objective, but the indirect information to characterize backbone growth activity. The test of Sadof'eva was objective and necessary to consider corresponding accuracy about backbone osteal growth activity condition; it reflected backbone stage of development immediately.

Abstract no.: 32478

THE RESULTS OF THE COMBINED TREATMENT OF BENIGN BONE TUMORS WITH ALLOGRAFTS

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Results of treatment of patients with benign tumors and tumor-like diseases were studied in 63 out of 84 operated patients, which accounted for 75%. Periods of observation was from 1 month to 5 years. The operation was performed under general anesthesia (intravenous, intubation, mixed). After radical surgery we used allograft and the collagen material collost, which fills all space, both between allografts, and between them and the mother's bed. To analyze the effectiveness of various methods of therapy has been used 3-steps scale (good, satisfactory, poor) based on clinical and radiological data. We analysed the following symptoms: 1-the presence or absence of a pathological process; 2 - Dynamics of restoration of bone structure; 3 - function limbs; 4 - anatomical characteristics of the bone. In our long-term study had shown good results - 70%; satisfactory results - 20% and poor results - 10%. The study of long-term results of surgical treatment of benign tumors and tumor-like diseases using the proposed methods has shown that as the time elapsed after surgery, the number of good results increases. Complication was observed in only one case, when it was revealed recurrent disease associated with non-radical tumor removal. Thus, strictly differentiated approach in the tactics of treatment of patients with benign tumors and tumor-like diseases is the best, and developed methods of bone grafting, including the combined use of allograft and COLLOST and are highly effective and provide an uncomplicated and rapid restoration of the structure of bones and joints.

Abstract no.: 32482

INTRAOPERATIVE ISO-C C-ARM BASED NAVIGATION IN CHALLENGING CERVICAL SPINE FIXATIONS

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Cervical Pedicle Screw fixation remains a technically demanding procedure. Most of the surgeons opt for alternative modality of stabilization in presence of significant morphological and pathological alterations. The relevance of Iso-C based navigation in such cases has not been adequately discussed in literature. The challenging cervical fixations was defined as presence of one or more of the following: 1) obscure anatomical landmarks as in ankylosing spondylitis, severe arthritis or traumatic disruptions, 2) altered anatomy with pedicle variations as in congenital anomalies, 3) gross instability, 4) altered spinal alignment as in trauma, tumor or infective pathology and 5) pediatric cervical spine. Twenty one patients (14 male, 7 female) with mean age of 37.5 years fulfilling above criteria underwent stabilization using intraoperative Iso-C 3D C-arm based navigation. Postoperatively CT scan was done to assess the accuracy of screw placement. Good intraoperative pedicle visualization in multiple planes was achieved with navigation in all cases. Surgeon felt that 15 of the 86 of cervical pedicles were not suitable for screw placement. Of the 71 cervical pedicle screws implanted, 66(93%) had a correct screw position, 4(5.6%) had a minor breach and one(1.4%) had a major breach in postoperative CT assessment. There were no procedure or implant related complications in postoperative and follow-up period. Intraoperative Iso C navigation is a valuable aid to the surgeon, while stabilizing cervical spine in challenging situations.

Abstract no.: 32515

THE HINDFOOT ARTHRODESIS NAIL – FIRST CLINICAL EXPERIENCES AND OUTCOMES

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Introduction: Treatment of patients using tibiototalcalcaneal arthrodesis aims to eliminate deformity, pain, and instability with the creation of a stable, plantigrade foot for ambulation. It results in a completely stiff ankle and subtalar joint, considerably limiting global foot function and is therefore reserved as a salvage option for severe conditions. The Hindfoot Arthrodesis Nail (HAN) enables an intramedullary approach for the fixation and the fusion of the ankle and of the subtalar joints. This retrospective study documented the current clinical experience gained from the use of the HAN in the treatment of patients with various ankle and foot pathologies. Materials and Methods: Seven participating clinics (Europe, USA) recruited 38 patients who underwent ankle arthrodesis using the HAN. Information was collected relating to surgical details, functional and quality of life outcomes after tibiototalcalcaneal fusion using the HAN (SF-36, AAOS-FAOQ and NRS of pain). Results: A fusion rate of 84% was achieved (65%-100% in the literature). The superficial infection rate was 2.4% (<10% in the literature). No osseous infections were recorded in any of the patients. Low pain levels were reported (mean NRS 2.2) at a mean followup of 2 years. Twelve out of thirteen patients on sick leave prior to HAN were able to fully return to work. Conclusions: Our findings indicate that the HAN offers a safe and reliable salvage option for patients undergoing tibiototalcalcaneal arthrodesis. A large socioeconomic benefit appears to stem from this procedure due to the high proportion of patients who were able to return to work.

Abstract no.: 32517

**ANTERIOMEDIAL PLATING FOR HUMERUS SHAFT FRACTURES .A
PROSPECTIVE STUDY**

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Introduction: The indications for surgical management of fractures of the shaft of the humerus are clear and plate osteosynthesis remains gold standard. The surface on which the plate can be placed is debatable. Methods and Materials: We have prospectively studied 40 cases of fractures shaft of humerus where ORIF was done with 4.5 DCP placed on anteriomedial surface .Acute closed and upto grade II open, AO Type A and B fractures were included. Results: 40 cases with Average age of 35.2 years. The study was conducted from 2008 to 2011 with an average follow-up of 20 months. RTA was the most common mode of injury and 2 patients had pre operative radial nerve palsy, which recovered by 6 weeks. All the fractures united with average duration of 105 days. 8 cases needed primary bone grafting and 2 cases needed secondary procedure for non union.1 case had refracture at 10 weeks of follow-up for which ORIF with bone grafting was done. Conclusions: Anteriomedial surface is relatively flat, safe & effective method for plate osteosynthesis for acute middle third diaphyseal fractures. This method has less chances of having post operative radial nerve palsy and satisfactory union achieved.

Abstract no.: 32539

THE CERVICAL SPINE ABNORMALITIES AND DEFORMITIES SYNDROMATIC APPROACH IN DECISION MAKING AND HYBRID SURGERY TECHNICS

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Objective. To perform the surgical algorithm for management of patients with cervical spine abnormalities and deformities Material and methods. The analysis of case histories of 72 patients (1-60 years old) with cervical spine abnormalities and deformities was made. We used clinic, Rg, functional 3D CT, MRI, angiography and neurophysiologic methods to determine the main syndrome and to plan the treatment. 40 patients underwent 54 surgical procedures: halotraction, anterior and posterior instrumentation and fusion, brain, cord and cervical arteries revision and decompression. Results. All patients were divided in 4 groups according to the basic syndrome: neutral, instable, compressive and ischemic. Each group had its own important subgroup. Combined cases were available. Conclusion. The division of patients with cervical spine abnormalities and deformities in to the four groups made it possible to create individual algorithm of management for every patient which results in exclusion of neurological deficit. Hybrid surgery using Ilizarov halo-traction devices and internal anterior and posterior instrumentation was the only successful decision in very hard cases.

Abstract no.: 32540

ROLE OF US/MRI IN DIAGNOSING MORTON NEUROMA

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Background: MRI scanning and ultrasonography are used widely for the diagnosis of Morton's neuroma. The aim of our study was to assess the accuracy of MRI and USS as a diagnostic tool in Morton's neuroma and cost effectiveness. Method: Fifty feet in forty - seven consecutive patients (39 women, 8 men; age 46 range, 36-64 years) who presented in between January 2005 and June 2008 were included in the study. Twenty five feet were investigated with a USS and twenty five with MRI scans. Morton's neuroma was confirmed surgically and histologically in all the patients. Cost of per MRI scan of foot in NHS is around £100 while USS is less than £10. Results: Twenty two MRI scans were diagnostic (sensitivity 88%). Three patients with negative MRI findings underwent USS and were found to have a neuroma less than five millimetres in size. Twenty four USS demonstrated the neuroma (sensitivity 96%) with five neuromas being less than five millimetres in size. Conclusion: USS has a slightly higher sensitivity in the diagnosis of Morton neuroma particularly of neuromas less than 5 mm in size and is cheaper. It should be the preferred imaging modality in suspected cases and MRI should be reserved for cases with difficult diagnosis.

Abstract no.: 32542

CRYOTHERAPY TO THE SURGICAL TREATMENT OF GIANT CELL TUMOR OF BONE

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Recurrence of giant cell tumor or a malignancy of the bone (osteoklastomy) - a common complication after surgical treatment. Increased radicality of surgery on this disease is an urgent problem. Ablastics operation can be achieved by the influence of low temperatures. Purpose - improving the efficiency of surgical treatment of osteoclasts, due to uncontrolled destruction of the visual cells and tissue elements in the resection of the tumor affected bone. Experimental studies on fragments of tumors in vitro. Pathological tumor tissue was filled with liquid nitrogen (boiling point - 195.80) three times. The time of each freeze-thaw cycle was up to three minutes. After instillation of liquid nitrogen on giant cell tumor, marked by the temperature of -1540. In the area of cryotreatment, with morphometric evaluation of the intervention is determined from 60% to 80% of necrotic tumor tissue. In clinical practice, use the same cooling agent instillation in the bone defect after resection of the mechanical removal of the tumor. The study of 67 operated patients (52 cryosurgical intervention and 15 - the traditional resections) showed that among patients exposed to cryogenic treatment, positive results were obtained in 40 patients and in 8 cases a relapse was recorded. Good results after conventional surgery were 10 patients and 5 noted the recurrence of the tumor. Ultra-low temperatures lead to destruction and devitalization of cells and tissue giant cell tumor.

Abstract no.: 32563

COMBINED ACL& PCL INJURIES ARTHROSCOPY ASSISTED SINGLE STAGE RECONSTRUCTION

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., . (INDIA)

Title : Combined ACL& PCL Injuries Arthroscopy Assisted Single Stage Reconstruction.
Background: The purpose of this study is to find out the results of Arthroscopy Assisted Single Stage Reconstruction of Combined ACL& PCL Injuries. Methods: A prospective study of 58 subjects with combined ACL/PCL injuries & associated PLC/MCL injuries operated and monitored on regular interval for Pain , ADL, ROM. Results: We got satisfactory result in 49 patients with no pain, no ADL & good ROM. Average in 7 patients occasional pain , occasional ADL & loss of Flexion > 20. Poor in 2 patient with instability & loss of Extension. Conclusion: By keeping bony bridge of 2 cm between ACL & PCL tibial tunnels, managing tourniquet time and fixation sequence, and good prone mobilization we can achieve satisfactory results with good stability. Key Words: Bony bridge, PLC reconstruction , prone mobilization.

Abstract no.: 32564

“MEDIAL HIGH TIBIAL OSTEOTOMY IN SOCIO-ECONOMIC NEED IN SOME GEOGRAPHICAL AREA”

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HTO is an effective treatment for Medial compartmental Osteoarthritis and Varus misalignment of the knee causing pain and functional limitation. Method Medial opening wedge HTO is often used to treat varus painful knee in the younger subjects. The classic close wedge osteotomy has given way to the medial opening wedge osteotomy which is more acceptable and accurate. Consecutive of 45 subjects with 45 medial opening wedge HTO for varus knee were fixed with conventional AO 'L' plate Results Total of 45 subjects 29 Male, 16 female. 2 delayed union, 2 Nonunion, 3 pain during mobilization, 2 loss of alignment All subjects had full range of motion, 2 subjects had recurrence of pain in three years. Radiologically all Osteotomy united, 2 Nonunion required bone grafting without revision of implant. Partial weight bearing started on 4th week with crutches and full weight bearing in 6 weeks. The current development of knee replacement must not eclipse, the improvement gained from high tibial osteotomy in the treatment of varus knee uni-compartmental arthritis in younger subjects. High Tibial osteotomy decreases stress in medial compartment and widens joint space. Conclusion Medial high Tibial Osteotomy is quite an easy procedure, it is also very less expensive and more suitable for some geographical area of socio-economic needs. In comparison with newer implant device the techniques are much simpler and extremely of low cost. This relieves pain, re-distributes weight bearing forces to improve functional limitation and thereby potentially increases the longevity of the nature knee joint.

Abstract no.: 32619

**ANATOMIC LIGAMENTOUS RECONSTRUCTION OF THE UNSTABLE
DISTAL RADIO-ULNAR JOINT**

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Chronic instability of the distal radio-ulnar joint usually occurs due to failure of healing of the distal radio-ulnar ligaments. Anatomic reconstruction of the distal radio-ulnar ligaments can restore stability and provide a full painless arc of forearm rotation. 13 males and 5 females {mean age: 33 years (17 – 44 years)} with symptomatic post-traumatic global instability of the DRUJ underwent anatomic ligamentous reconstruction as described by Adams and colleagues. The mean delay in reconstruction after the initial injury was 8 months {6 – 16 months}. The mean follow up was 38 months {25 – 48 months}. Stability was completely restored in 16 patients. The average forearm arc of rotation was 150 degrees {140 – 165 degrees} compared to 165 degrees {155 – 180 degrees} preoperatively. The mean grip strength improved by 26% and was 88% of the normal at last follow up. The mean quick DASH score improved to 6 {2.3 – 22.7} compared to 37.5 {31.7 – 47.5} preoperatively. Similarly the Mayo wrist score improved to 86 ± 7 compared to 63 ± 8 preoperatively. Two patients continued to have partial instability more in dorsal direction but were symptomatically better. There was no radiological evidence of arthritis during follow up. Anatomic ligamentous reconstruction satisfactorily restores stability and can significantly improve symptoms and wrist function.

Abstract no.: 32646

BODY MASS INDEX, RANGE OF MOTION AND DEFORMITY TYPE AFFECTS MUSCLE STRENGTH IN PATIENTS WITH SEVERE KNEE OSTEOARTHRITIS

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Introduction: The aim of our study was to investigate the relationship between the isokinetic knee muscles strength and patient's body mass index (BMI), range of motion (ROM), Knee Society Score (KSS) and deformity (varus or valgus) type in severe osteoarthritis (OA) cases. Methods: 40 consecutive severe OA patients were admitted for total knee arthroplasty surgery. OA grade was assessed according to Burnett's radiographic atlas and KSS was applied. Only patients with a score ≥ 14 were included in the study (21 max). Preoperative BMI, ROM, knee deformity type was recorded. The mean muscle strength was examined with Biodex 3 isokinetic dynamometer in 90° and 60° angles. Studied variables were correlated with isokinetic strength of knee extensor/flexor muscles using a Spearman's test. Results: The mean age of patients was 68(8.7) years with BMI 32(6.3). The mean radiological OA grade was 17(1.9), KSS objective score was 43(11.6), functional score – 43(10.8). Greater BMI correlated with more severe radiological OA (0.343, $p=0.03$) and with greater muscles strength in 90° (0.336, $p=0.042$) and 60° (0.338, $p=0.041$) of extension. Greater ROM correlated with greater muscle strength in 90° of flexion (0.459, $p=0.006$) and 60° of extension (0.356, $p=0.036$). Valgus knee alignment correlated with weaker muscle strength in 60° of extension (-0.354, $p=0.031$). Conclusion: Patients with greater BMI had more severe radiological OA but greater knee muscle strength. Valgus knee deformity correlated with weaker muscle strength. Our findings could have a prognostic value assessing results after TKA.

Abstract no.: 32681

**NONUNION OF INTRAARTICULAR TIBIAL PLATEAU FRACTURES:
MANAGEMENT OPTIONS AND REVIEW OF LITERATURE**

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Nonunion of intraarticular tibial plateau fractures are rare. The management of intraarticular nonunion tibial plateau was rarely discussed in literature. Only few patients were found to be treated for intraarticular nonunion tibial plateau in different case series and case reports. Method of treatment in these cases reported was internal fixation along with bone grafting in all patients with varying results. We review the literature on this rare condition and present here our four cases of intraarticular nonunion tibial plateau treated at our institute with four different methods. We treated these cases with POP cast, internal fixation along with bone graft, arthrodesis with k-nail and total knee replacement and found good results. Method of treatment was according to the patient profile. We conclude that internal fixation may not be only mode of treatment in case of intraarticular nonunion tibial plateau and other methods of treatment should be considered other than internal fixation while treating these rare non-unions.

Abstract no.: 32691

DELAY IN DIAGNOSIS OF ACL INJURIES: IS IT STILL A PROBLEM?

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Aim: Anterior cruciate ligament (ACL) rupture produces instability of the knee. Many patients struggle to return to manual jobs or sporting activities. There is evidence that delay in treatment leads to an increased incidence of meniscal tear and chondral injury. In 1996, the average delay to diagnosis from first presentation was 21 months and the original treating doctor suspected the diagnosis in only 9.8% of cases (Bollen and Scott). **Method:** A retrospective case series of 50 consecutive patients who underwent ACL reconstruction were studied to determine the current delay to diagnosis and initial diagnostic accuracy. **Results:** The mean delay to diagnosis was 61 days. Patients first presenting to their general practitioner had a mean delay to diagnosis of 40 days, versus 90 days when initially presenting to the emergency department. At first presentation, ACL rupture was suspected in only 13% of cases. **Conclusions:** Since 1996, the delay to diagnosis has significantly improved allowing earlier treatment. This is likely to be due to increased fracture clinic capacity and shorter waiting times for orthopaedic outpatients. However, a higher degree of initial clinical suspicion and a lower threshold for specialist referral is still required.

Abstract no.: 32694

**OPEN WEDGE HIGH TIBIAL OSTEOTOMY FOR MEDIAL COMPARTMENT
OSTEOARTHRITIS**

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Background: non-arthroplasty surgical treatment for uni-compartmental osteoarthritis of the knee in young active patients is a valuable alternative. Material and methods: thirty one patients with medial compartment knee osteoarthritis associated with varus deformity had an arthroscopy followed by open wedge high tibial osteotomy. Thirty five percent of these patients had arthroscopic partial meniscectomy and another 30% had microfracture of the medial femoral condyle. An oblique osteotomy was performed above the tibial tubercle, correction of the varus deformity and fixation by T-plate and large set screws. Calcium triphosphate bone substitutes were impacted into the open wedge. Patients were prospectively evaluated using the Oxford knee score pre-operatively then at 6 and 12 months post-operative. Results: at an average follow up period of 34 months all patients except one were satisfied with the procedure. The Oxford knee score has improved from 24 pre-operatively to 40 at the latest follow up ($P < 0.05$). The varus deformity was adequately corrected in 29 out of the 31 and no collapse was seen at any of the osteotomy sites. Conclusion: off-loading the medial compartment of the knee through correction of the varus deformity achieves excellent to good results in terms of pain relief at the short term. The technique followed in this series can adequately correct the varus deformity and maintain that correction.

Abstract no.: 32696

CORRELATION OF THE ARTHROSCOPIC APPEARANCES OF THE MENISCOFEMORAL LIGAMENTS WITH MAGNETIC RESONANCE IMAGING

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Methods&Results: MRI scans were performed on 50 knees. The radiological presence or absence of the MFLs was assessed by examination of sequential coronal and sagittal proton density/DESS and fat suppressed T2-weighted MRI scans. Arthroscopic examination of the knees was performed and the MFLs were identified. In these 50 knees, 43 (86%) aMFLs and 9 (18%) pMFLs were identified on MRI scanning, whilst 47 (94%) aMFLs and 5 (10%) pMFLs were identified arthroscopically. Identification of the presence or absence of the aMFL was classed as easy in all 47 (94%) knees, whilst the pMFL was easy to identify in only 5 (10%), of which 3 (6%) had a ruptured Posterior Cruciate Ligament (PCL). Using arthroscopy of the aMFL as the gold standard, the sensitivity and specificity of MRI in detecting the aMFL were 84% and 71%, respectively. Equivalent values for the pMFL were not calculated due to the difficulty of identifying the pMFL arthroscopically. Thus, with the exception of PCL-deficient knees, it was felt that many pMFLs were missed due to difficulties in identification through anterior portals. **Conclusion:** This is the first study correlating the MRI appearances of the MFLs with arthroscopic findings. MRI is relatively sensitive in identifying the aMFL, but its accuracy in identifying the pMFL remains undetermined. Accurate identification of the MFLs at MRI is of value when assessing the status of the PCL, as these ligaments may contribute to stabilising the PCL-deficient knee. This will also aid future studies examining the role of the MFLs in stabilising the PCL-deficient knee.

Abstract no.: 32705

PERIOSTEAL TUBERCULOSIS OF LATERAL MALLEOLUS: A CASE REPORT

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We report an unusual case of periosteal tuberculosis of lateral malleolus in a young male patient. The patient was presented to us with symptoms of progressive increasing pain and swelling over the outer aspect of the right ankle with painless ankle movements comparable to normal side. On radiological evaluation, Ankle radiographs showed a small periosteal reaction at lateral part of lateral malleolus and rest of bones was reported as normal. Later MRI scan showed increased signals within the lower end of the fibula on T2-weighted images. The FNAC smears of the lesion showed Langhans giant cells and epithelioid cell granuloma. Culture failed to grow any organism. Polymerase chain reaction analysis, of the FNAC specimen, had confirmed *M. tuberculosis* infection. The patient responded to anti-tubercular treatment with complete resolution of symptoms and significant decrease in swelling. Total count and ESR returned to normal with 2 month 4 drugs anti tubercular therapy. Follow up radiographs taken on completion of anti tubercular therapy showed sclerosis around the lesion. Patient is now completely asymptomatic and swelling is subsided.

Abstract no.: 32708

THE 'SENTINEL VESSEL': AN ANATOMIC LANDMARK TO IDENTIFY THE PES ANSERINUS DURING HAMSTRINGS HARVEST FOR ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION

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The purpose of this study is to describe the presence and location of a 'sentinel' blood vessel that lies in the vicinity of the pes anserinus insertion (gracilis and semitendinosus) and serves as an easy landmark in identifying the pes insertion, thereby minimising graft harvest site morbidity. **Methods & Results:** Between July 2009 and December 2009, 100 consecutive patients (100 knees) undergoing primary arthroscopic Anterior Cruciate Ligament (ACL) reconstruction by the anterior approach for hamstring graft harvest were prospectively included in the study. We sought to identify the presence of a sentinel vessel and studied its position, orientation and perpendicular distance from the pes tendons. The sentinel blood vessel of the pes was present in 98 out of 100 knees. It passed from the superficial fascia to the periosteum at the pes insertion at a mean perpendicular distance of 8mm from the upper border of the pes tendons. **Conclusion:** Hamstrings autograft harvest by the anterior approach is an established technique in primary ACL reconstruction. Identification of the pes anserinus insertion using this approach can be difficult at times, however, and risks potential nerve injury. The sentinel blood vessel was a consistent anatomical finding in the vicinity of the pes insertion on the tibia and served as a reliable guide in determining the pes insertion. Identification of this anatomical landmark permitted use of a small 2cm skin incision and limited wound dissection to minimise the risk of injury to the infra-patellar branch of saphenous nerve.

Abstract no.: 32718

**DYNAMICAL ANALYSIS OF FORCE IMPULSE IN BONE BY A
PHYSIOLOGICAL SHORT STEM PROSTHESIS – ANALOGIES BETWEEN
BONE AND IMPLANT**

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For the Simulation of stabilisation Systems in femoral fractures with finite elements three factors are essential: (1) the geometry of the bone, (2) the loading of the acting muscle forces in combination with the body weight and (3) the inhomogeneously distributed orthotropic behaviour of the bone material must be known. This study will focus on the third condition. A technique is presented for transferring the density distributions gained from clinical Computer tomographies to inhomogeneous, orthotropic material distributions suitable for finite element calculations. First, the algorithm for determining the orthotropy directions from the local Variation of the density field is explained phenomenologically. Subsequently, a function for setting up the orthotropic elasticity matrices from the absolute CT field values is derived. Finally, the validation procedure for the cortical bone is presented in principle.

Abstract no.: 32723

ISOLATED PCL AVULSION FRACTURES

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PCL avulsion fracture of tibia is not a rare injury in countries like India where motorcycle accidents are common. Arthroscopic fixation of such an avulsed bony fragment is technically demanding and might not be feasible in all set-ups. We assessed 42 patients (30 males and 12 females) with a mean age of 27.45 years who underwent open reduction and internal fixation of the PCL avulsion fracture through a modified posterior approach. 30 patients were operated within 3 weeks of injury. A note was made of occult intrasubstance tear of the PCL (15 patients) as seen in MRI in all the patients. Objective, subjective and functional assessment of patients was made based on the Hughston criteria. The average follow up consisted of 19.33 months (range 10-42 months). The statistical analysis demonstrated significant difference ($p < 0.05$) in the outcomes between acutely treated patients and patients with chronic injury; patients with acute fixation were found to fare better. Nevertheless the results were fair or good in majority of the patients (9 out of 12) with treatment delays. A statistically significant difference in the outcomes was also seen in patients with occult injury to PCL as seen on MRI who had poorer outcomes. To conclude, we believe that fixation using the modified posterior approach should be attempted in all the cases of PCL avulsion injuries whatever might have been the delay in treatment. We also believe that the patients with occult PCL injury are better treated with PCL reconstruction at the primary setting.

Abstract no.: 32746

**RELIABILITY OF THE COLUMN THEORY TO EVALUATE
THORACOLUMBAR SPINAL INSTABILITY**

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The concept of spinal instability is still evolving. The column theory was used to evaluate the spinal instability. Since the introduction of the three column, many investigators explained their findings according to it but most of these studies did not correlate it with the postoperative neurologic and radiographic findings. In this study, we try to correlate the column theory of the spine with the preoperative and postoperative clinical and radiological findings. One hundred and twenty-two patients with unstable thoracolumbar or lumbar spine treated surgically were studied. *The patients were classified according to their pathogenesis into three groups:- Trauma patients, Tumors patients, and Infectious patients. The results of this study did not support the column theory for evaluation of spinal instability. Comparing each group separately does not reveal any significant relationship between the number of the columns involved and radiographic or neurologic findings either before or after surgery.

Abstract no.: 32780

PERCUTANEOUS TRANSCATHETER EMBOLIZATION FOR RARE VASCULAR INJURIES DURING HIP ARTHROPLASTY AND RECONSTRUCTION SURGERY.

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Vascular damage is a rare intra-operative complication of hip arthroplasty and reconstruction surgery. It is often associated with delay in diagnosis with subsequent delays in definitive treatment that may result in significant morbidity and mortality. We describe a cohort of NHS patients who underwent total hip replacements with undiagnosed postoperative hemorrhage at our institution in last two years. Each patient required large transfusion of blood products; one underwent two further operations with no cessation of the hemorrhage and in one case a CT angiogram was performed that were inconclusive. All the patients in this case series required a multidisciplinary approach to management and treatment by percutaneous transcatheter embolisation by interventional radiologists for the postoperative haemorrhage. We recommend early referral to intervention radiologist in suspected cases of postoperative hemorrhage. We conclude that prompt percutaneous embolisation as treatment for significant vascular injuries following hip arthroplasty is safe and effective potentially a life/limb saving procedure.

Abstract no.: 32821

TREATMENT OF THE FRACTURES OF THE BASE OF 5TH METATARSAL BONE

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Introduction:The fractures of the 5th metatarsal base are an increasing problem among athletes and young people with a high level of physical activity. Despite the different therapeutic methods, conservative or surgical, the outcome is not always as expected. The purpose of this study was to identify the appropriate therapeutic method for each type of metatarsal base fractures. **Methods:** We conducted a retrospective clinical and radiological review of 100 patients diagnosed with Type I-III of metatarsal base fracture. They were treated with conservative or surgical methods, between 2008 and 2010. **Results:** There were 17 patients with Type I metatarsal base fracture, 68 with type II and 15 with type III. Seven patients with type I fracture received POP treatment, 4 received walking brace, 2 surgery and 4 no intervention. 35 patients with type II fracture received POP treatment, followed by 18 who received walking brace, 13 with no intervention and 2 with surgery. The patients with type III fracture received the treatment as follows: 6 received POP treatment, 4 walking brace, 2 no intervention and 4 surgery. Complications included nonunion and residual pain. **Conclusions:** All type I fractures treated with soft dressing and weight-bearing were united and patients returned to activities quickly. The patients with type II metatarsal base fracture who received WB treatment had less complications and an early discharge. For type III the best treatment was POP but active patients had a faster recovery after surgery and could start earlier weight bearing, usually within days.

Abstract no.: 32825

RELATIONSHIP BETWEEN DISC DEGENERATION AND BONE MINERAL DENSITY IN THE PATIENTS WITH LUMBAR SPINAL DEGENERATIVE DISEASE

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Objective: To study the relationship between bone mineral density (BMD) and lumbar disc degeneration in the patients with spinal degenerative disease. Material and Methods: 103 patients (male 50, female 53) with Lumbar disc herniation were included. The patients were performed lumbar MRI by 1.5 Tesla scanner. At the same period, they were also performed hip and lumbar BMD by DXA. Lumbar disc degeneration was assessed using Modified Pfirrmann grading system; Modic changes and Schmorl's node were also observed. BMD was classified by T-score calculation. Results and Conclusion: Significant relationship was observed between hip BMD and severity of disc degeneration in L12 L23 L34 segments. But this not happened in lumbar spine BMD. Both hip and lumbar BMD have no significant relationship with Modic changes and Schmorl's node phenomenon. Schmorl's node were mainly located in L45 L5S1 segments, where were the predilection sites of disc herniation.

Abstract no.: 32861

OUTCOME OF PERCUTANEOUS NEEDLE FASCIOTOMY FOR DUPUYTREN'S DISEASE:A PROSPECTIVE CONSECUTIVE CASE SERIES.

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We present a prospective consecutive day case series of 76 patients. PNF was performed on 108 digits including MCP,PIP and DIP joints. Primary outcome measures were pre and post PNF contractures and complications of procedure at a minimum follow up at 18 months. We recorded average post fasciotomy contractures were 42 and 3 degrees respectively for MCPJ and 51 and 16 degrees for PIPJ and 41 and 19 degrees at DIPJ. Our case series showed excellent results at a mean follow up of 22 months (18-36) with low complication rates. PNF is an effective and safe day case procedure with patients highly satisfied with the results

Abstract no.: 32864

THE CONSERVATIVE TREATMENT OF STABLE UPPER CERVICAL SPINE FRACTURES IN CHILDREN

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Background; The anatomical and biomechanical features of the immature cervical spine make the upper segments at C1-3 especially susceptible to injury. 2-3% of all cervical spinal injuries involve children. Approximately 75% of these fractures in younger children, they are more likely to occur in the upper cervical region and fractures of odontoid are the most common. Spinal cord injury and cervical fractures occur at different levels in children than in adults. In children less than 8 years old 80% of cervical fractures take place in first 3 vertebrae. The treatment of the upper cervical spine fractures without displacement and neurological damage in children and adolescents is generally conservative. Material and method; From 2000 to the 2011, 8 stable upper cervical spine fractures were treated. There were 5 boys and 3 girl. The mean age was 6,8years (4-12). The classification based on the patients age of 8 years old, shows 5 patients under 8 and 3 above. There was 1 patient with occipital condylar fracture, 4 with C1 fractures, and 3 with C2. Children were treated using Minerva orthosis for 85 days (66-125) after injury. Results; The follow up was 55 months (9-96). CT scan 3 months after the injury has been done in all patients. Good bone consolidation was obtained in all cases. Conclusion; In younger children spinal injuries concerned in upper cervical segments. The cervical orthosis provide sufficient stability during treatment.

Abstract no.: 32875

SPIN CLASS, AN UNUSUAL CAUSE OF BILATERAL THIGH COMPARTMENT SYNDROME

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Introduction: We would like to share our experience of managing an extremely rare case of acute bilateral thigh compartment syndrome. Methods: A 22 year old healthy female developed thigh pain after an intense spinning class. She remained mobile, but progressively the pain increased. By 24 hours she was systemically unwell and anuric, finally presenting to the emergency department complaining of bilateral thigh pain and vomiting. She was admitted by the medical team with a provisional diagnosis of acute renal failure secondary to rhabdomyolysis. Referral was made to the orthopaedic team 36 hours after admission, and 72 hours after injury. Results: A clinical diagnosis of bilateral anterior compartment syndrome of the thigh was made. Pre-operative serum biochemistry was as follows: Urea 16.1 mmol.L⁻¹, Creatinine 459 µmol.L⁻¹, Potassium 7.8 mmol.L⁻¹ and Creatine Kinase of 152160 IU.L⁻¹, therefore dialysis was administered. Bilateral anterior and posterior compartment fasciotomies were performed through lateral incisions. The muscles of the anterior compartment of both thighs were pale, non contractile but actively bleeding. No muscle debridement was performed initially. Biochemical markers and pain improved post operatively. Surgical inspection after 24 hours revealed a significant improvement in the colour and some contractile elements within both anterior compartments. The patient is currently awaiting further surgery and neurohistopathological screening to exclude underlying muscle disease. Conclusion: We as clinicians feel obliged to report this unusual case that developed after vigorous exercise. We hope to share our experience and educate our colleagues in recognizing and managing this rare but serious entity.

Abstract no.: 32896

ACL DEFICIENCY HAS NO INFLUENCE ON MENISCAL REPAIR RESULTS WITH OUTSIDE IN TECHNIQUE.

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Introduction: Meniscal laesions are difficult problem for the orthopaedic surgeon. This study describes prospective results of chronic medial meniscus bucket handle tears depending on ACL status . Materials: We prospectively evaluated 84 patients after “bucket handle” medial meniscal repair using outside in technique. Average age was 26 years. All surgeries were done by the same surgeon and same technique. According to ACL status during sugery patients were divided into 3 groups: ACL intact (I), ACL deficient (II), ACL deficient- reconstruction (III). Due to limitation of ROM in Group II, ACL reconstructions were performed within next 6 months. Lysholm Scale, and the International Knee Documentation Committee (IKDC) form were completed at 12 and 24 months FU. Results: In 5 cases meniscus didn't heal: 2(I),1(II),2(III). In group II all meniscal results were confirmed arthroscopy during ACL reconstruction, in Groups I and III by clinical exam and ultrasound. At 1 year and 2 years follow –up we found no statistical differences in knee function according to Lysholm, and IKDC scales between groups. Average Lysholm score was 90(I), 95(II), 95(III); average IKDC was 88(I), 86(II), 90(III) at 24 months FU. Conclusion Our results showed that two needle outside in meniscal repair technique gives good stabilization after meniscal suture and regardless of the ACL status provides good results at 2 years FU.

Abstract no.: 32964

DOES RADIAL OR DORSAL BACK SLAB MAKE A DIFFERENCE TO THE OUTCOME OF INITIAL TREATMENT OF DISTAL RADIUS FRACTURES IN PATIENTS OVER SEVENTY YEARS OLD ?

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Distal radius fracture is the most common fracture encountered in emergency orthopaedic practice in adults. A radial plaster slab as advocated by John Charnley, has the theoretical advantage of three point moulding of the fracture, to prevent displacement. However, there is no literature to support a preference for using either dorsal or radial backslab in the initial management of these fractures. We compared 2 trauma units' practices, using dorsal or radial slab, for extra-articular distal radius fractures, in elderly patients presenting with these injuries, with or without dorsal comminution. Exclusion criteria include open injuries, multiple injuries, previous injury on the same side, patient opting out, loss of reduction after one week and intra-articular fractures. Blinding of the patients and surgeons was maintained until the time of plaster slab application. Post reduction radiographs were taken after initial fracture manipulation, which is the usual practice in most centres. Loss of reduction was checked by comparing radiological parameters with radiographs taken at week one follow up. There was no statistically significant difference, in the change in radial height, radial inclination as well as dorsal or volar tilt, between the two groups of patients. To our knowledge, this is the first study comparing the effects of radial and dorsal slab in maintaining initial fracture reduction. We found no difference in the outcomes of initial management of the distal radius fractures using dorsal or radial slabs in maintaining fracture reduction, and so both methods can be recommended for the initial management of these injuries.

Abstract no.: 32974

PIE CRUSTING TECHNIQUE OF THE MEDIAL LIGAMENT FOR TIGHT KNEES IN KNEE ARTHROSCOPY. IS IT HELPFUL?

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Pie crusting technique was used in total knee replacement in correcting the soft tissue balance in valgus knee by pie crusting the lateral collateral ligament or the iliotibial band. Lately it was used in knee arthroscopy, when trying to suture the medial meniscal root tears. We have used pie crusting technique for medial meniscectomies and meniscal suturing in tight knees, especially when the red zone or red white zone is inadequately visualized, with mild varus or when the concavity of the medial femoral condyle is obstructing a good view. Pie crusting of the medial ligament in arthroscopic procedures using a 20 gauge needle is a simple, quick, easy technique. We have used the pie crusting technique in 34 patients so far out of the last 200 arthroscopies with no complications or delay in rehabilitation or symptomatic medial ligament laxity.

Abstract no.: 32984

TRANEXAMIC ACID IN TOTAL JOINT REPLACEMENTS: A NEW CONCEPT

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Background: Tranexamic acid (TXA) is a synthetic antifibrinolytic agent that has been successfully used intravenously to stop bleeding. Topical application is easy to administer, provides maximum concentration of TXA at the bleeding site and avoids systemic absorption of the TXA. Aims: Double blind randomized control trial to assess the efficacy of TXA in reducing blood loss and transfusion rates. (National Research Ethics Service 08/H0906/57 and 09/H0906/62) Method A double blind randomised controlled trial of 161 patients undergoing unilateral primary THR, and 157 patients undergoing unilateral primary cemented TKR. The primary outcome was blood transfusion rate. Secondary outcomes included drain blood loss, haemoglobin drop; generic quality of life (EuroQol); Oxford Hip Score; length of stay; cost analysis and complications Results: for THR, TXA reduced the average: risk of blood transfusion from 32% to 12.5% (risk difference: 19.5% 95%CI: 6.9% to 32.1%; p=0.003); blood loss by 129 ml (95% CI: 47 to 211 ml, p=0.002), Hb drop by -0.84 g/dl (95%CI: -0.41 to -1.28; P<0.0001); length of stay by 1.0 days (95% CI: -0.23 to 2.28, p-value 0.109); and cost per episode by £305 per patient. For TKR, TXA reduced the average: risk of blood transfusion from 16.7% to 1.3% (risk difference: 15.4% 95%CI: 7.5% to 25.4%; p=0.001); blood loss by 168 ml (95% CI: 80 to 256 ml, p=0.0003), Hb drop by -0.83 g/dl (95%CI: -0.84 to -1.43; P<0.0001); length of stay by 1.2 days (95% CI: 0.053 to 2.425, p-value 0.041); and cost per episode by £333.

Abstract no.: 33003

EVALUATION OF INTER AN INTRA OBSERVER AGREEMENT OF THE CLASSIFICATION SYSTEMS FOR DISTAL RADIUS FRACTURES

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Distal radius fractures are among the most frequent fractures of the upper extremity. There are more than twenty classification systems for his type of fractures. The aim of this study is to evaluate the reliability of classification systems by determining inter and intraobserver agreement. Sets of anteroposterior and lateral wrist radiographs of 50 patient with displaced distal radius fractures were assessed by two different groups. Group 1 consisted of minimum five years experienced ten orthopedic surgeon and group 2 consisted of ten resident of orthopedics within the first two years of their practice. Each participant performed two assessment with at least two months intervals. Universal, Fernandez-Jupiter, Frykman and AO classification systems were evaluated. The results were processed with kappa statistics and used in assessment of inter and intra observer agreement of the classification systems. According to our results, agreement rates for all evaluated classification systems were not sufficient. And there is stil a strong demand for a new classification system which has a higher inter and intraobserver agreement.

Abstract no.: 33040

ANATOMY OF THE TIBIOFIBULAR SYNDEMOSIS

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The tibiofibular syndesmosis is composed of three ligaments and two bones. The tibia and fibula are held together by the antero-inferior tibiofibular ligament (AITFL), the posterior or postero-inferior tibifibular ligament (PITFL) and the interosseous tibiofibular ligament. The inferior segment of the interosseous membrane also helps stabilise the tibiofibular syndesmosis. The distal tibia just above the tibia plafond has two distinct margins; an anterior and a posterior margin. The anterior margin becomes the anterior or Chaput's tubercle. This tubercle ensures that the fibula does not translate forward during ankle injury. Conversely, the posterior tubercle is smaller, and is unable to prevent posterior translation of fibula. The AITFL has its site of origin at the Chaput's tubercle, which is approximately 5 mm proximal to the articular surface and inserts into the anterior aspect of the lateral malleolus, also known as Wagstaffes' tubercle of the fibula. Interestingly, one fifth of the distal fibres of AITFL are intrarticular. In a cadaveric study, the AITFL has been shown to maintain strong apposition of the fibula in relation to the tibia, and also prevent exaggerated movements of the fibula and eversion of the talus. The PITFL is a powerful ligament composed of a deep and superficial layer. Its superficial fibres pass diagonally and laterally to insert posteriorly into the lateral malleolus. The PITFL further reinforces the AITFL and functions to embrace the fibula in its groove on the tibia. The aims of this paper are to illustrate the anatomy of the ankle syndesmosis using cadaveric specimens.

Abstract no.: 33046

A NOVEL SPINAL BRACE IN MANAGEMENT OF SCOLIOSIS DUE TO CEREBRAL PALSY

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Severe scoliosis in patients with cerebral palsy (CP) causes difficulty in sitting balance and increased nursing demands. Surgical stabilization has proven to be a valuable method to stop progression of scoliosis. However, the complication rate after such surgery is substantial. Additionally, many patients with quadriplegia and large curvatures of the spine have impaired general health, epilepsy, and reduced respiratory capacity, making them poor candidates for major surgery like spine fusion. Therefore, other treatment alternatives should be available. We have newly developed a spinal brace named Dynamic Spinal Brace (DSB), which is a custom-molded, polycarbonate orthosis characterized by lightness and flexibility. Unlike the other underarm orthoses, DSB does not fix the pelvic girdle rigidly and thus it potentially contributes to good compliance with bracing. The purpose of this study is to examine the efficacy of DSB. 107 patients with CP and scoliosis have been treated by DSB (Age: 15.3 ± 7.3 yrs). The mean follow-up period was 27.5 months. Cobb Angle without and with DSB were 66.1 ± 35.0 and 50.0 ± 33.4 degrees, respectively. The curvature progression per year was 3.17 ± 10.8 degrees. 84.9% of the caretakers reported that DSB enhanced sitting stability. Only two patients were dropouts. Many of the spinal braces designed for idiopathic scoliosis do not necessarily match the need of CP patients with more complicated medical conditions. The low dropout rate and the results of the questionnaires demonstrated the good compliance. In conclusion, DSB could be an option for the management of scoliosis in CP patients.

Abstract no.: 33099

THE CHONDROPROTECTIVE CAPABILITIES OF CURCUMIN (CURCUMA LONGA) AND CURCUMIN-DERIVED POLYENOLIC ZINC-BINDING INHIBITORS AGAINST IL-1 β - AND OSM-MEDIATED CHONDROLYSIS

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Introduction: Osteoarthritis (OA) is characterized by progressive destruction of extracellular matrix in articular cartilage. Pro-inflammatory cytokines, i.e. interleukin-1 β (IL-1 β), contribute to pathogenesis by stimulating chondrocytes to release cartilage-degrading enzymes. Turmeric's active component curcumin has shown inhibitory effects on IL-1 β -induced glycosaminoglycan release from cartilage and NF- κ B-mediated gene expression. Curcumin is unfortunately limited by poor solubility and rapid metabolism. Chondroprotection can be enhanced by using improved curcumin derivatives. We compared novel curcumin-derived polyenolic zinc-binding inhibitors in hopes of identifying enhanced chondroprotective effects against IL-1 β and Oncostatin M (OsM)-induced chondrolysis. Methods: 3mm full-thickness articular cartilage explants trephined from bovine femoral condyles were pulse-labeled with 35S sulfate and separated into eight groups: "Negatives/Media-Only", "Positives", "Curcumin", or "Derivatives" (H1.1, H2.5, H2.14, H2.23, and H2.24). All groups except "Negatives" were challenged with IL-1 β +OsM. 35S release was evaluated 24, 48, and 72-hours post-treatment. Explants were lyophilized to obtain counts-per-minute (CPM)/mg dry-weight and stained with Safranin O for histological examination of matrix integrity. Results: "Negatives" demonstrated baseline 35S release throughout the 72-hour period. "Positives" demonstrated high release of 35S compared to Negatives at all timepoints. "Derivatives", specifically H2.14, H2.23, and H2.24, exhibited significant chondroprotection evidenced by lower 35S release. Compared to "Positives", all "Derivatives" exhibited some degree of protection following 24-hour pre-treatment that was sustained 48-72 hours post-treatment. Histological evidence supported these findings. Conclusions: Our results demonstrate improved chondroprotective effects of novel curcumin derivatives against IL-1 β and OsM-induced chondrolysis. This new evidence allows for speculation that these compounds may play a role in future treatment of OA.

Abstract no.: 33122

ROLE OF TOTAL KNEE ARTHROPLASTY IN IMPROVEMENT OF CARDIOVASCULAR STATUS AND ITS CORRELATION WITH FUNCTIONAL OUTCOME

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Abstract Patients with symptomatic osteoarthritis of the knee are typically obese and relatively less active and may be associated with cardiovascular deconditioning and increased risk of heart disease. Purpose of this study was to evaluate the impact of the total knee arthroplasty upon cardiovascular status of the patient, as indicated by assessment of the endothelial function and correlation of the same with the functional outcome. Endothelial function has been found to correlate with the cardiovascular health of an individual closely and therefore was chosen as a noninvasive means to study the same. This study was conducted prospectively in 20 patients of advanced Osteoarthritis of knee joint (7 male, 13 female) who underwent unilateral (15) or bilateral (5) total knee arthroplasty at a mean age of 57.55±10.04 years (range 40-74 years). All the patients underwent preoperative assessment of endothelial function by the method of flow mediated dilatation (FMD). All the patients were followed up at 6 months and 18 at 18 months with reassessment of the endothelial function. Functional outcome in terms of Knee society score was also measured. We noted excellent improvement in Knee society score (mean of 102.3±22.9 at 6 months and 152.5±19.8 at 18 months compared to 65.4±30.3 preoperatively). There was good improvement in endothelial function at 6 months (29.98±19.28%) and excellent improvement (69.87±35.57%) at 18 months. Significant improvement in endothelial function can result following total knee arthroplasty.

Abstract no.: 33139

**DAY CASE PAEDIATRIC ANTERIOR CRUCIATE LIGAMENT
RECONSTRUCTION USING CONTINUOUS FEMORAL NERVE
CATHETER**

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BACKGROUND: Effective pain management following anterior cruciate ligament reconstruction is fundamental in achieving same day discharge and positive rehabilitation outcomes. The purpose of our study was to investigate post-operative pain management in relation to short-term functional mobility in an intervention group receiving a continuous infusion of local anesthetic via a femoral nerve catheter (CFNC). **METHODS:** 48 pediatric patients with ACL-reconstruction were prospectively to measure the effect of a CFNC on post-operative pain management and functional mobility prior to hospital discharge. Ethical approval was taken from local ethical committee. Post-operative pain scores, analgesic intake were calculated and readmission was considered as failure to achieve satisfactory analgesia. The amount of pain and nausea scores, active range of knee movement (AROM) and readmission rate were used to evaluate the efficacy of CFNC. **RESULTS:** None of the patient got readmitted for analgesia. There was significant decrease in pain scores when CFNC was being used. The average discharge time after recovery was 1.5 hours. All patients gained quadriceps control before discharge and were mobilized without brace. There was significantly improvement in knee control in the first three days when catheter was being used. Oral Analgesia was minimal in the first three days while CFNC was used. No incidence of infection, residual neuralgia was noted in our study. **CONCLUSIONS:** Our study showed improved pain control and early discharge was noted along with time elapsed since last oral analgesia and pain score. We conclude that hamstring ACL-reconstruction is well tolerated as a daycase procedure using CFNC

Abstract no.: 33144

COST ANALYSIS OF COMPLEX TIBIAL FRACTURES TREATED WITH CIRCULAR FRAMES

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Complex tibial fractures are difficult to treat. The costs associated with hospitalization can be substantial, yet it is unknown how these vary depending upon the type of implant used. The purpose of this study was to compare the cost of treatment of complex tibial fractures with reimbursement given to the hospital in treating such injuries. Methods We evaluated the economical data of 200 patients with complex tibial fractures treated with illizarov frame or taylor spatial frame. Demographic data, fracture classification and method of surgical treatment along with the length of hospital stay were recorded in detail. The total cost calculated was then compared to the range of reimbursement price based on HRG (Human Resource Group) coding. The implant cost was determined from the buying cost of institution. Results Average age of the patients operated was 43.4 years. 196 fractures healed in a mean time of 18.3 weeks. The average cost of treating isolated tibial fracture with illizarov frame was 5058.2 pounds. The average cost of treating tibial fractures in a polytrauma patient was 18285.4 pounds in our series. The reimbursement to the hospital varied considerably ranging from 1600 pounds to 13000 pounds. Conclusion Hospital source utilization for tibial fractures treated with illizarov and TSF is quite high compared to the reimbursement being given to hospitals for treating such patients. Current recording system for these fractures is unclear resulting in discrepancy between resource utilization and reimbursement thus resulting in substantial loss of remuneration for hospitals that perform these procedures.

Abstract no.: 33149

THE EFFECTIVENESS OF HYALURONIC ACID INTRA-ARTICULAR INJECTIONS IN KNEE OSTEOARTHRITIS. A SYSTEMATIC REVIEW

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Introduction: Knee osteoarthritis is a common and progressive disease with important socioeconomical implications for the patients and the society. Treatment options vary from simple analgesia for mild forms to knee replacements for the severe cases. For the intermediate stages of the condition intra-articular injections may be useful. Hyaluronic acid intra-articular injections are frequently used in managing knee osteoarthritis. The evidence on its efficacy however is divided with many studies suggesting good results and others suggesting that it is ineffective. Aim: To review the literature and assess the effectiveness of intra-articular hyaluronic acid injections. Methods: The literature was searched using the electronic databases MEDLINE, EMBASE, CINAHL and the COCHRANE library for randomised controlled trials, systematic reviews and meta-analyses on the effectiveness of hyaluronic acid in knee osteoarthritis. Results: The search yield 188 studies in total. Of these studies 37 met the eligibility criteria and were systematically reviewed. Conclusion: There is a large degree of heterogeneity in the trials studied suggesting poor methodology of the trials and possible publication bias. Overall, the effectiveness of hyaluronic acid intra-articular injections is at the very best modest. It peaks at week 8 post last injection and usually its effect has subsided by 6 months. Patient selection is important in order to maximise the potential effect of hyaluronic acid injections.

Abstract no.: 33151

**PRIMARY TOTAL HIP ARTHROPLASTY WITH MODULAR NECK STEMS
OUR EXPERIENCE AT FOUR-YEAR FOLLOW-UP**

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Introduction: Modular hip replacements are becoming increasingly popular. The theoretical advantages of this design include the optimization of femoral anteversion, limb length, and offset of the femoral component. Methods: Patients were evaluated retrospectively at a minimum of six months postoperatively. From January 2007 to December 2010, 311 primary surgeries were performed with a modular neck stem. The stems we used were Profemur Z and Profemur Xm, from Wright Medical Implant. At a minimum of six months postoperatively 17 total hip arthroplasties had been lost to follow-up. The latest clinical and radiographic evaluations were performed at a mean of 43 months after surgery. Mean age of patients at time of arthroplasty was 59.4 years. A short-neck modular femoral head component was used in 107 hips, and a longneck component in 204 hips. Results: The straight neck was implanted in 158 hips (50.8%), the Ante-Retro 8° neck in 113 hips (36.3%), the Ante-Retro 15° neck in 22 cases (7%) and the Varus-Valgus neck in 18 hips (5.9%). None of the 311 prostheses implanted needed revision for a modular neck failure. The complication rate was 4.5%. There were 5 dislocations, 4 deep infections, 4 cases of stem subsidence and one intraoperative femur fracture. Kaplan-Meier survivorship analysis revealed a cumulative survival rate of 97% (95% confidence interval, 95% to 99%) at four years. Conclusions: Modular neck stems are useful even for simple and difficult hips. The benefits of modularity allow for intraoperative adjustments to promote optimal positioning of the prosthesis.

Abstract no.: 33156

CLINICAL EVALUATION OF THE PRELIMINARY SAFETY AND EFFECTIVENESS OF A MINIMALLY INVASIVE INTERSPINOUS PROCESS DEVICE APERIUS® IN DEGENERATIVE LUMBAR SPINAL STENOSIS WITH SYMPTOMATIC NEUROGENIC INTERMITTENT CLAUDICATION

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Purpose New interspinous process decompression devices (IPDs) provide an alternative to conservative treatment and decompressive surgery for patients with neurogenic intermittent claudication (NIC) due to degenerative lumbar spinal stenosis (DLSS). The APERIUS® device is the first IPD that can be implanted percutaneously, offering a minimally invasive option. Reported here are results of a preliminary evaluation of safety and effectiveness of this IPD up to 12 months post-implantation. **Methods** After percutaneous implantation of the IPD, 156 patients with NIC due to DLSS were followed up regularly for up to 12 months. Data on NIC symptoms (Zurich Claudication Questionnaires [ZCQ]), quality of life (EuroQoL 5 dimension), pain (visual analogue scales), and use of pain medication were obtained. Positioning and maintenance of the IPD was confirmed radiographically. **Results** Symptom relief and physical function improvement were evident from 7 days and maintained for up to 12 months. At 12 months 60% and 58% of patients maintained an improvement higher than the Minimum Clinically Important Difference for ZCQ Symptom Severity and Physical Function, respectively. Leg, buttock/groin, and back pain decreased significantly from baseline at all time-points, and the use and strength of pain medication for spinal stenosis symptoms were reduced. Twelve serious adverse device effects were reported during the study, the most common being back pain (4 patients) and spinal claudication symptoms (3 patients). **Conclusions** Preliminary results indicate that the procedure and the IPD are safe and effective and may offer a minimally invasive option in patients with NIC due to DLSS.

Abstract no.: 33161

LATE STREPTOCOCCUS BOVIS INFECTION OF TOTAL KNEE REPLACEMENT COMPLICATED BY ENDOCARDITIS AND ASSOCIATED WITH COLONIC ULCERS

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Background: Streptococcus bovis is a very rare pathogen causing late infections in Total Knee Replacements. Although the relationship between Streptococcus bovis sepsis and infective endocarditis has been reported before, it is a unique combination of conditions when a patient develops both septic endocarditis and infected TKR with background of colonic ulcers. Report: A previously healthy 76-year-old male patient who underwent bilateral total knee replacement for primary osteoarthritis three years previously presented with painful, warm, unilateral knee swelling. Clinical presentation and infection markers suggested septic arthritis of his replaced joint. Aspiration and culture of joint fluid confirmed infection with Streptococcus bovis. As this pathogen is associated with various gastrointestinal conditions and this patient developed microcytic anaemia, different CT scans, gastro- and colonoscopy were carried out which revealed colonic ulcers additionally. Despite intravenous antibiotic treatment this patient developed a sudden onset of shortness of breath which has been investigated including an echocardiogram. It was found that this patient developed severe endocarditis which required aortic valve replacement. Conclusion: Despite the fact that Streptococcus bovis has been isolated in cases of septic endocarditis and it is associated with colonic conditions, this unique combination of infected TKR, endocarditis and colonic ulcer has not been reported before.

Abstract no.: 33187

ACL-RECONSTRUCTED KNEES DERIVED FROM CROSS COUNTRY SKIING HAD HIGHER AMOUNTS OF ADDITIONAL LIGAMENT INJURIES THAN THOSE FROM OTHER SPORTS.

Stig HEIR

., . (NORWAY)

Additional ligament and meniscal injuries worsen the prognosis following reconstruction of ACL deficient knees. The aim of this study was to compare the rate of concomitant ligament and meniscal injuries accompanying ACL injuries sustained in four different sports. Data from patients having ACL reconstructions during 2010 at two collaborating hospitals in the Oslo area of Norway were included in the study. As a routine, the patients consented to have their data archived at the Norwegian National Knee Ligament Registry available for future studies. The four sporting activities giving rise to the largest number of ACL reconstructions were the source of data obtained. Concomitant ligament and meniscal injuries were registered, and the rates of such injuries in the different sports were compared using Chi-square statistical analyses. Two-hundred-and-thirty-six primary ACL reconstructions were performed at the two hospitals during 2010. The four sporting activities giving rise to the largest number of ACL reconstructions were Soccer, Alpine/Telemark skiing, European handball and Cross country skiing. The risk of additional ligament injuries in Cross country skiing was significant higher compared to the other sports (OR 7.32, $p=0.032$). The rates of concomitant meniscal injuries varied from 42 to 54%, the differences between sports being non-significant. Patients undergoing ACL reconstruction due to injuries in Cross country skiing had a significant higher risk of additional ligament injuries compared to injuries from Soccer, Alpine/Telemark skiing and European handball. The risk of concomitant meniscal injuries was not significantly different in these four sports.

Abstract no.: 33196

FIRST METATARSOPHALANGEAL JOINT ARTHRODESIS: A SINGLE SURGEON SERIES USING A MEDIAL & DORSAL PLATE

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Introduction: First metatarsophalangeal (1st MTPJ) joint fusion is considered to be a 'gold standard' procedure for arthritis and a salvage procedure for failed surgery. Various procedures have been utilised for the treatment of hallux rigidus and different methods to achieve fusion have been described. We present here a surgical technique for 1st MTPJ arthrodesis using a medial and dorsal plate and present the early clinical and radiological results of arthrodesis performed by a single surgeon. Methods: The study included 29 consecutive 1st MTPJ arthrodesis in 27 patients performed between April 2009 to October 2010 using a combined dorsal and medial plate construct. The indication for surgery was intractable pain with the most common underlying diagnosis being osteoarthritis. Mean follow-up was 18 months at which stage AOFAS (American Orthopaedic Foot and Ankle Society) scores, patient satisfaction and fusion rates were recorded. Postoperative complications were also noted. Results: All 29 cases went onto achieve fusion at four months postoperatively. Patient satisfaction at the latest follow-up was 100% and the mean AOFAS score was 85. Only one patient required removal of metalwork due to soft tissue irritation. Discussion: The results presented here demonstrate excellent clinical and radiological outcome after 1st MTPJ arthrodesis using a combined low-profile dorsal and medial plate construct. The surgical technique described using specially designed plates is undemanding and is recommended over improvised plates which can lead to plate failure. Double plating will also improve the mechanical strength of the surgical construct and potentially decrease the risk of failure.

Abstract no.: 30698

FEMORAL NECK RECONSTRUCTION: MANAGEMENT OF SEQUELAE OF SEPTIC ARTHRITIS OF PAEDIATRIC HIP

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Aim – To highlight the 2.6 years follow-up of reconstruction of Sequelae of Septic Arthritis of three Paediatric Hips. Background- The ultimate purpose of the management of these Sequelae is to provide a stable hip with minimum loss of movements, thus improving the gait. Case Reports – All three cases were male (average age 6.3 years) with definite past history suggestive of infective pathology hips. All were treated earlier with incision drainage of abscess. All presented with difficulty in walking with shortening. All hips were unstable / dislocated with proximally migrated greater trochanters and painless range of movements. Radiologically, all were Choi Type III B. After initial tibial skeletal traction for mean 2.3 weeks, Y – osteotomy of proximal femur was performed with fixation of remnant of head located in acetabulum with medial arm of this Y by K- wire with POP hip spica for 12 weeks. Weight bearing was allowed gradually depending upon healing of osteotomy. Average follow up was 2.6 years. Average preop shortening was 2.7 cm which was reduced to 1.5 cms. Abductor mechanism recovered in all. No other procedure was performed in any of the patient. No AVN occurred in any hip. Both abduction (>) adduction movements were present in all children and all were able to squat with little difficulty. Conclusion – This procedure provided satisfactory / acceptable hips in all three cases of Sequelae of Septic Arthritis of Paediatric Hips but longer follow up is required.

Abstract no.: 30699

**MANAGEMENT OF NEGLECTED IDIOPATHIC CTEV – PONSETI
TECHNIQUE V/S LIGAMENTOTAXIS**

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Background: The Current trends are to be conservative in management of neglected CTEV. The purpose of the present study was to prospectively compare the results of the Ponseti method with those achieved by ligamentotaxis for the correction of deformity. Methods: we considered neglected CTEV as per definition given later. We prospectively compared patients, treated at our institution either with the Ponseti method or by ligamentotaxis by JESS (standard technique described later) followed by below-the-knee cast. All were evaluated clinically, radiologically, podogrammetrically, and by Catterall Pirani Scoring System, both before and after the correction All were followed up for minimum of two years. Results: Twenty-six clubfeet were treated; thirteen were included in the group that was treated with the Ponseti method, and rests were included in the group that was treated with ligamentotaxis. There was no significant difference between the groups in terms of sex, age at the time of starting of treatment, pretreatment Pirani score or family history. The average number of casts was six in the Ponseti group. Pirani group represented with less duration of treatment. Though complications / recurrence occurred in both groups but they were significantly fewer in Pirani group. All recurrences in Ligamentotaxis group were managed surgically while in Pirani group all were corrected conservatively. Conclusions: While both cohorts had recurrence rate, the Ponseti cohort was managed conservatively requiring no revision surgery. The Ponseti method should now be adopted as the primary treatment for neglected clubfoot.

Abstract no.: 30700

LIGAMENTOTAXIS FOR MANAGEMENT OF COMPLEX FRACTURES OF CALCANEUM

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AIMS & PURPOSE OF STUDY: Controversies in literature exists regarding complex calcaneum fractures management. Such complex Calcaneal fractures managed by ligamentotaxis using external fixator were analysed to evaluate its efficacy. **METHODOLOGY:** Sixty-five complex fractures calcaneum were treated by fixator based on ligamentotaxis, without fracture opening (which brought articular margins together to maintain both alpha and beta angles into normal range) for a mean period of 13 days. After achieving normal range of above angles, the assembly was held in static position for average 6.1 weeks. Twenty-three (35.4%) patients had undergone additional bone grafting (cancellous autograft) with elevation of posterior facet. Patients were evaluated for their functional outcomes by American Orthopaedic Foot and Ankle society (AOFAS) Score for the ankle and hind foot. Average time of union was 10.3 weeks with range of 8.5 to 12.3 weeks. Mean follow-up was 61.5 months. **DISCUSSION:** Improved angles were statistically significant in both types of Essex-Lopresti fracture patterns. The angles achieved remain maintained till fixator removal. No collapse of posterior facet or reversal of angle correction achieved, till the end of follow up was found. Sixty-two (95.4%) of patients did well with the ligamentotaxis. On evaluating final outcomes by AOFAS, approximately 71% of cases showed good results. Only 21 patients (29.2%) complained of persistent heel pain in the long term follow up. No patient complained about the change in size / shape of foot wears. **CONCLUSION:** Ligamentotaxis by fixator provides a viable and user-friendly alternative method of management of complex calcaneal fractures.

Abstract no.: 30704

GROWTH MODULATION BY 8-PLATE IN CONGENITAL ABSENCE OF FIBULA

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BACKGROUND: Children with congenital absence of fibula develop genu valgum, limb length inequality and deformities of the foot. Attempts at limb salvage include multiple operations or amputation and prosthesis fitting is recommended for uncorrectable limb deformities. Such patients treated either by limb salvage or amputations develop genu valgum deformity which causes gait problem and difficulty in prosthesis fitting. Our role in managing these children is to correct and maintain normal mechanical axis. **MATERIALS AND METHODS:** We have managed 27 cases of congenital absence of fibula by methods described above from 1996 to 2010. Out of the 27 cases 9 developed genu valgum deformity and cause problem in normal walking, cosmesis as well as prosthesis fitting. All 9 cases were managed by 8-plate growth modulation at medial distal femoral and proximal tibial hemiepiphysiodesis. **RESULTS:** In this group of 9 patients we noted correction of deformity gradually. There was no hardware complication or rebound deformity. There was improvement in gait pattern as well as correction of mechanical axis. Fitment of prosthesis became easy and painless. **CONCLUSION:** Medial distal femoral and proximal tibial hemiepiphysiodesis by 8-plate corrects the deformity where it occurs. The procedure is simple and allows immediate walking as well as weight bearing in the prosthesis post operatively. There is cosmetic improvement and easy prosthetic fitting.

Abstract no.: 30705

JESS FIXATOR FOR DIFFICULT, NEGLECTED, NON IDIOPATHIC, RIGID AND RECURRED TALIPES EQUINOVARUS FOOT

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Background: Ponseti technique has made management of idiopathic ctev simple and results are very good worldwide including ours. This study was conducted with the aim of evaluating the role of Ligamentotaxis in the management of neglected, rigid (non idiopathic causes like: Arthrogyphosis, Nail patella syndrome, Streeter syndrome, Muscular dystrophy, Myelomeningocele, Spina bifida, Spinal cord defects) and recurrent club foot cases. These cases are difficult to manage by plaster technique and soft tissue surgery. Material & Method: Total 38 subjects (58 feet) were studied, which were corrected by differential ligamentotaxis using Joshi's external Stabilization system. (JESS) at Swami Vivekanand National Institute of Rehabilitation Training and Research, Cuttack, Orissa, India. All were evaluated clinically, radiologically, podogrammmically, and by Catterall Pirani Scoring System, both before and after the correction. Results: Severity of the deformities and clinical correction was assessed by Pirani score. All patients achieved good clinical results as per Pirani score, which was statistically significant. Radiological evaluation showed that all subjects achieved the normal range of values. The pre- and postcorrection difference in values was statistically significant. Conclusion: Differential distraction by JESS fixator for the correction of neglected, non idiopathic, rigid and recurrent CTEV is an effective and patient-friendly method of management which is difficult to manage by traditional methods.

Abstract no.: 30707

REVISION OF LARGE BONE DEFECT OF THE ACETABULUM USING A CEMENTLESS DUAL MOBILITY CUP WITH AN ILIUM FIXATION PEG

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Objective: acetabular reconstruction for treatment of severe bone defect is difficult and challenging. The use of hydroxy-apatite cementless cup with fixation peg may be of interest. In the context of severe bone defect, iliac isthmus remains an area of solid bone that can be used for the anchoring of the fixation peg. Dislocations are also frequent after hip revision. Dual mobility system allows decreasing this risk. The aim of this study was to assess reliability of mid-term fixation of the cup as well as the dislocation rate. Method: we performed a retrospective study on 37 consecutive hip revision arthroplasties. Results: main causes for revision were acetabular failure for loosening and/or polyethylene wear (92%) and infection (8%). According to Paprosky classification, 50% of patients were type III. At a mean follow-up of 24 months (1 to 65 months), 3 complications requiring revision occurred (2 aseptic loosening and one septic loosening). Postel Merle d'Aubigne score improved significantly (from 8.4 points preoperatively to 16.4 points at the last follow-up, $p < 0.05$). We did not observe any significant migration of the cup or radiolucencies. Bone ingrowth is difficult to evaluate with standard X-rays. Bone scan is much more appropriate. No dislocation occurred. Conclusion: this hydroxy-apatite cementless dual mobility cup with ilium fixation peg is an interesting alternative in the management of severe bone defect of the acetabulum.

Abstract no.: 30708

**GALICA CEMENTED UNICOMPARTMENTAL KNEE PROSTHESIS:
DESIGN AND RESULTS AT 9-YEAR FOLLOW-UP**

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Objective: choosing the appropriate type of knee prosthesis depends on aetiology and complications associated with the implant. Unicompartmental knee arthroplasty (UKA) is indicated in moderate deformity without frontal or sagittal instability. Three kinds of UKA can be distinguished: i) UKA with cemented full-polyethylene tibial component, ii) with metal-backed tibial component associated to fixed bearing or to iii) mobile bearing. Fixation of the metal component may be cemented or cementless. UKA is an interesting alternative to total knee prosthesis as it is potentially associated with less frequent complications and more rapid recovery. The aim of this study was to assess reliability of the GALICA UKA, a cemented full-polyethylene tibial component UKA. Method: we performed a retrospective study on 93 consecutive unicompartmental knee arthroplasties. Main outcome criterion was survival probability according to Kaplan-Meier method with revision requiring implant change as endpoint. HSS score and patient's satisfaction were the secondary outcome criteria. Results: aetiologies were primary unicompartmental arthrosis (81.6%), osteonecrosis (13.0%), chondrocalcinosis (3.4%), secondary unicompartmental arthrosis (2.0%). At index surgery, mean age was 71.5 year with 63.2% of women. At 9-year follow-up, survival probability was 94.8% confidence interval[84.0-98.4], HSS score improved significantly (from 53.4 points preoperatively to 88.4 points, $p < 0.001$) and 94% of patients were satisfied or very satisfied. Conclusion: given the results, GALICA UKA is a reliable option, compared to total knee replacement prosthesis, in the treatment of selected unicompartmental diseases.

Abstract no.: 30709

HUMERUSBLOCK: A MINIMAL INVASIVE OPERATIVE TECHNIQUE FOR PROXIMAL HUMERAL FRACTURES. A FUNCTIONAL AND RADIOGRAPHICAL MEDIUM-TERM OUTCOME EVALUATION

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Background: In case of severe displacement of proximal humeral fracture fragments, conservative treatment yields bad functional results, but open operative techniques have a high risk of avascular necrosis (AVN) of the humeral head. We performed a medium-term outcome evaluation of the Humerusblock®, a minimal invasive technique, used in selected cases of proximal humeral fractures, to investigate the functional and radiographical outcome. **Materials and Methods:** Of a total amount of 47 patients operated with the Humerusblock, 34 patients, with a minimum follow-up of 30 months and a mean follow-up time of 4 years and 4 months, were invited for interview, radiographic evaluation and functional analysis by the Constant, the DASH and the UCLA scorings. Paired t-test was used to investigate equivalence of the geometric mean scores of the trauma and control arm; for the scores of the functional analyses and the scores for mobility of the shoulder. **Results:** Scorings and clinical examination showed that 85% of shoulder function and motion were preserved, compared to the control arm. Radiographic evaluation showed very good healing and positioning of the fracture fragments, and only 10% did develop AVN of the humeral head. **Conclusion:** With very satisfied patients, good clinical, functional and radiographical outcomes, a short hospital stay, few complications, a reduced cost of implant and a low incidence of AVN, this technique is a valuable alternative for operative treatment of proximal humeral fractures. **Key words:** Humerusblock, shoulder, fracture, minimal invasive, proximal humerus, avascular necrosis.

Abstract no.: 30721

PRINCIPLES OF ENDOSPINE (DESTANDAE) DISCECTOMY

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Material and Methods: since June 24th 2006, 50 patients complaining of LBP with sciatica and/or proven lumbar spinal compression underwent Microendoscopic Lumbar Decompression Surgery by employing Dr. Jean Destandae Method (EndoSpine), done in Specialized Medical Care Hospital, Al Noor Hospital, AlAin City, AD.and Zheen Hospital, Erbil, Iraq. Results: were comparable to open method, with single important difference; better acceptance by the patients, 3 cases got CSF tapping that stopped in 2nd post-op day without squeal.

Abstract no.: 30725

THE MANAGEMENT OF BITE WOUNDS IN CHILDREN – A RETROSPECTIVE ANALYSIS AT A LEVEL I TRAUMA CENTRE

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Introduction: Animal bite wounds are a significant problem, which have caused several preventable child deaths in clinical practice in the past. In our study we retrospectively investigated the bite source, infection risk and treatment options of paediatric bite wounds. Methods: 1749 paediatric trauma patients were analysed over a period of 19 years in this retrospective study at a Level I Trauma Center, Department of Trauma Surgery, Medical University of Vienna, Austria. Data for this study were obtained from our electronic patient records and follow up visits. In our data base all paediatric patients triaged to our major urban trauma centre have been entered retrospectively. Results: During the 19 year study period, 1749 paediatric trauma patients met the inclusion criteria. The mean age was 7.2 years (range 1.9 to 17.2), 969 (55.4%) were males and 780 (44.6%) were females. In our study population a total of 1311 dog-bites (75%), 174 cat-bites (9.9%), 140 rodent-bites (8%), 88 human-bites (5%) and 36 other-bites (2.1%) have been observed. A total of 62 wounds (3.5%) have been infected at onsite, whereas secondary infection occurred in 151 cases (8.6%). Surgical intervention was done in 39 wounds (2.2%). Conclusion: In this study population we showed a correlation between gender and bite wounds. Antibiotic therapy and surgical intervention has been necessary in only a small number of cases. In our opinion this might suggest that early admittance to the emergency room and close follow up could be taken as an indirect predictor for uncomplicated wound healing.

Abstract no.: 30726

SELDOM COMPLICATION AFTER GASTROSCOPY – SPLENIC DECAPSULATION

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Introduction: Sanguineous splenic complications in elective treatment procedures remain a potentially life threatening complication in patients of all ages. Methods: In our case the patient had a laparoscopic appendectomy in her past medical history when she was admitted to our clinics. One of the diagnostic procedures to find the reason for the epigastric pain, a gastroscopy, can retrospectively be held responsible for the decapsulation of the spleen. Result: During grand rounds 1 hour after gastroscopy the patient complains about increased abdominal pain with pressure pain but no signs of peritonitis. Immediately a laboratory control and a CT scan of the abdomen was performed. The laboratory results showed a blood count decrease and in the images of the CT, scan a massive bleeding in the free abdominal cavity was observed. Within the next several minutes the general condition of the patient became critical and as a consequence, an emergency lapratomy was performed. The intra-abdominal finding was a encapsulation of the spleen from the cranial to the caudal pole without parenchyma leasions of the spleen. A suspicious adhesion between the stomach and the spleen with a very short spleno-gastric ligament and a torn short gastric artery have been observed, but no other adhesions as someone might suspect after an appendectomy. Conclusion: The fact of adverse outcomes, even if they are very rare, should increase our awareness in patients with abdominal pain after endoscopic procedures to prevent unnecessary life threatening complications.

Abstract no.: 30732

DO PATIENTS WANT AMBULATORY ACL RECONSTRUCTION?

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Arthroscopic anterior cruciate ligament reconstruction (AACLR) is routinely performed as a day case procedure. Our unit is unique in performing ambulatory AACLR without regional anaesthesia. Patients are fully weight-bearing without braces prior to discharge. This care package has been designed to optimise outcome. This prospective study assesses patient's experiences of day case AACLR with benchmarking against national targets. We used semi-structured, one-to-one telephone interviews within 48 hours of surgery with all patients having AACLR between June 2010 and June 2011, investigating individual patient's experience of the procedure with specific inquiry into analgesia, post-operative nausea/vomiting (PONV), general feeling, issues with mobility and whether they liked having the procedure as a day case. Fifty patients were surveyed, 13(26%) females and 37(74%) males. The mean age was 32.5 years old (range 15-50). All patients were ASA 1-2 having uncomplicated hamstring AACLR with meniscal surgery if required. 10 patients (20%) were admitted unexpectedly overnight. Of these, two for pain, seven for nausea and one having surgical complications. 21(42%) had PONV. 45(90%) described minimal pain, with 5(10%) admitting to moderate pain. No-one described severe pain. 40(80%) patients rated their experience as 'very good' or 'good', 6(12%) as 'reasonable' and 4(8%) 'worse than expected'. All patients were either satisfied or very satisfied with their care from referral to discharge. In conclusion, patients like having ambulatory AACLR. This is despite an unexpected overnight admission well in excess of national targets (2%). This audit will be used to further refine the care we offer to these patients.

Abstract no.: 30737

REVERSE SHOULDER ARTHROPLASTY FOR COMMUNUTED PROXIMAL HUMERAL FRACTURES IN THE ELDERLY: A SYSTEMATIC REVIEW

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BACKGROUND: Optimal management of highly comminuted fractures of the proximal humerus in elderly patients remains controversial. Locking plates may provide adequate angular stability in the face of axial load, but have uncertain results with severe osteoporosis and comminution. Shoulder hemiarthroplasty offers good pain relief, but results in significant functional deficits in the range of motion. Tuberosity migration, non-union, malunion or resorption and rotator cuff dysfunction result in poor clinical outcomes. The reverse shoulder does not rely on the integrity of the rotator cuff or the tuberosities. As a result of this potential benefit, the reverse shoulder arthroplasty has recently been introduced as an alternative treatment option for elderly patients. **OBJECTIVES:** (1) To assess pain-relief and function following reverse shoulder arthroplasty for comminuted proximal humerus fractures. (2) To assess clinical and radiological complications. **METHODS:** A literature search was performed on MEDLINE(Ovid), EMBASE and the Cochrane & DARE databases. Eligibility criteria included studies in English, patients >60 years and undergoing primary arthroplasty for acute comminuted fractures. **RESULTS:** Six retrospective case-series met the eligibility criteria. The studies demonstrated that reverse shoulder arthroplasty was able offer good pain-relief, function and range of forward flexion and abduction. Restrictions in shoulder rotation have yet to be fully addressed. **CONCLUSIONS:** Reverse shoulder arthroplasty reliably offers good pain relief, forward flexion and abduction. The temptation to offer this procedure needs to be balanced by an awareness of the considerable complication rates, cost and the potential for deteriorating function and development of scapular notching with the passage of time.

Abstract no.: 30738

OUTCOMES OF TOTAL HIP REPLACEMENT FOR DISPLACED INTRACAPSULAR NECK OF FEMUR FRACTURES

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INTRODUCTION: The best treatment for healthy, independent and mentally alert elderly patients with a displaced intracapsular NOF# remains controversial. Many orthopaedic surgeons often opt for hemiarthroplasty over THR in the management of these patients. The purpose of this study was to report on the outcomes of THR performed for displaced intracapsular NOF#. **METHODS:** Retrospectively reviewed 55 patients that had undergone a THR for a NOF# in 4 hospitals over 5 years. Patients 65-75 years with displaced intracapsular NOF#, previously independently active and MTS 10/10 were included. Pathological fractures were excluded. Outcome measures were recorded for: dislocations, need to revise, blood transfusions requirements, infections, DVT/PE and mortality. **RESULTS:** 40 underwent an antero-lateral approach and 15 posterior approach. 32 had a cemented Exeter hip replacement, 21 uncemented Corail/Pinnacle and 2 uncemented Furlong. 4 patients dislocated post-operatively (7.3%), 1 from antero-lateral and 3 from posterior approach. 3 patients required revision surgery (6.5%), 2 due to recurrent dislocations and 1 due to a deep infection. 8 blood transfusions, 4 chest infections, 3 UTI's, 2 wound infections and 2 symptomatic DVTs were reported. No mortalities were reported. **CONCLUSIONS:** Our findings suggest that THR can produce good results for this cohort. The antero-lateral approach may reduce the incidence of post-operative dislocation for trauma. There was a relatively high incidence of medical complications, perhaps due to the increase in operative time. The number of pre-existing medical conditions was a significant factor influencing patient morbidity. THR for NOF# should be strongly considered in healthy patients aged over 65.

Abstract no.: 30740

CEMENT AUGMENTATION IN OSTEOPOROTIC INTERTROCHANTERIC FRACTURES – A NOVEL TECHNIQUE

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Despite reliable results of the dynamic hip screw (DHS) for stable fracture patterns, complications of inadequate bone anchorage occur frequently in elderly osteoporotic patients with comminuted intertrochanteric fracture. In spite of reports in literature about use of polymethylmethacrylate (PMMA) bone cement to prevent these complications in fresh intertrochanteric fractures, concerns about risk of thermal necrosis and joint penetration by bone cement remain. We present a simple technique of PMMA augmentation using a custom made cement gun designed by the presenting author. Using this technique a prospective study was conducted in 64 osteoporotic patients with an average age of 72 years, (range 60-94 years) and a T score < -2.5 on DEXA scan, having intertrochanteric fractures (AO type 31-A2 in 46 and 31-A3 in 18). PMMA augmentation of DHS was performed by injecting a very small amount (3-5 ml) of conventional bone cement precisely into the femoral head. All patients had bony union at an average of 13.86 weeks (range 12-16 weeks). There was no incidence of varus collapse or superior screw cut out inspite of weight bearing from early postoperative period. None of the patients had joint penetration by cement or thermal necrosis around lag screw. Most of the patients were able to regain their pre fracture mobility status with a mean hip pain score of 8.6 at the final follow up (average 21 months). Using this technique, cement augmentation appears to be an effective method of preventing osteoporosis related complications in intertrochanteric fractures without any apparent limitations or side effects.

Abstract no.: 30743

RESULTS OF PATIENTS USED MINUTE AMOUNTS OF BONE-CEMENT AROUND CEMENTLESS STEM TIP IN TOTAL HIP ARTHROPLASTY

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Introduction: We have been using minute amounts of bone-cement around cementless stem tip in total hip arthroplasty (THA) up to now, in order to improve initial stability, promote of bone-ingrowth, inhibit stem sinking, reduce thigh pain, by preventing distal micro movement. We have ever reported good results of these cases in the medium term, and now we are reporting the summary evaluated them clinically and radiographically, which were able to be observed for more than ten years. Methods: Two or Three small lumps of bone-cement (about 1g) were inserted around stem tip just before the time of cementless stem insertion. 38 hips in 34 patients, average age at the time of an operation is 57.9 years old, 7 men, 27 women, average observation period is 13.6 years. In these cases, we investigated clear zone, sinking, cancellous condensation osteolysis, cortical hypertrophy, stress shielding, Engh's fixation classification as radiographical evaluation, thigh pain, Japanese orthopaedic association (JOA) scoring system for hip arthritis, and perioperative complications as clinical evaluation. Results: In Engh's fixation classification, the cases of 81.6% were bone-ingrown fixation, and 18.4% were stable fibrous fixation. Thigh pain occurred in no case. Conclusion: Increasing occupation rate in medullary cavity by using minute amount of bone-cement result in stem initial stability, and good results were acquired. There was no problem caused by using bone-cement.

Abstract no.: 30744

EVALUATION AFTER INTRODUCTION OF A LIAISON CLINICAL PATHWAY IN THE TREATMENT OF FEMORAL NECK FRACTURES

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Introduction: Since a liaison clinical pathway in the treatment of femoral neck fractures was introduced into our hospital in April 2007, rehabilitation has been performed in postoperative patients during the convalescent period. In this study, to evaluate the effects of a liaison clinical pathway, we compared the clinical symptoms at the time of admission and discharge. Subjects and Methods: The subjects were 70 patients. There were seventeen male and fifty-three female patients, with an average age of 83.3 (between 57 and 95) years old. Osteosynthesis was performed in forty-one patients, and twenty-nine patients underwent bipolar hemiarthroplasty. A liaison clinical pathway plays the role of a progress report during hospitalization and a referral request consisting of the following patient information: (1) general and preoperative information; (2) general condition on discharge; (3) walking and basic movements. The Functional Independence Measure (FIM) scores at admission to and discharge, the admission periods for the treatment in convalescent stage (in our hospital), were examined. Results: After introduction of a liaison clinical pathway, the FIM score was 78.4±30.2 points at the admission to our hospital and 91.8 ±29.5 points at discharge, with a significant improvement (p<0.05). The admission period was 75.1 days in convalescent stage. Conclusions: The present study demonstrated some effects of a liaison clinical pathway, including significant improvements in FIM scores. On the other hand, to achieve reduction in the length of hospitalization, it is necessary to establish specific goals for rehabilitation in convalescent stage.

Abstract no.: 30747

MODIFIED BRISEMENT PROCEDURE AND ITS GOOD OUTCOME FOR MANAGEMENT OF NON-INSERTION ACHILLES TENDONITIS

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Introduction: Achilles tendon disorders are among the more common maladies seen by foot and ankle surgeons. Understanding the anatomy and biomechanics of the Achilles tendon and contiguous structures is essential to the diagnosis and treatment of achilles tendon pathologies. The Achilles tendon is not encased in a true synovial sheath but is encased in a paratenon made up of a single layer of cells. Objective: The objective of our study was to assess the outcome of modified brisement procedure in the management of non-insertion tendonitis. We used to VISA – A questionnaire which was sent to the patients post operatively. Method: We perform a Modified Brisement procedure tenolysis for non insertional achilles tendonitis in which we use a longitudinal approach made 1 cm medial to the Achilles tendon to avoid the sural nerve. By sharp dissection, the involved tissue is freed from the underlying tissue. In addition to this we also insert an epidural catheter in between the paratenon and tendon posteriorly slide it both proximally and distally and inject about 20ml of saline under pressure to enhance our mechanical effect of tenolysis. This is a day case procedure and patients are encouraged to mobilise straight away. Results: We have got excellent results with this procedure. We did a questionnaire survey of 30 patients using The VISA-A questionnaire score and found this procedure to be extremely rewarding. There is no complication noted so far. Conclusion: Modified Brisement Tenolysis is a novel and successful method of managing non insertion tendonitis.

Abstract no.: 30749

SECONDARY PREVENTION OF FRAGILITY FRACTURE IN PATIENTS WITH FRACTURE NECK OF FEMUR – ARE WE FOLLOWING NICE GUIDELINES?

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Introduction: Osteoporotic fractures are becoming a major cause of morbidity and mortality across the world. In the UK, over 3 million people suffer from osteoporosis and someone has a fracture due to osteoporosis every 3 minutes. Orthopaedic surgeons are often the first and only physician to see these fracture patients; hence, they have an important role in the secondary prevention of fragility fractures. Objective: To see whether we are providing adequate secondary prevention to this extremely vulnerable population of the society or not at our DGH or in other words are we following NICE guidelines for secondary prevention of osteoporotic fracture. Methods: We looked into case notes, drug charts and discharge summaries of 125 patients admitted with fracture neck of femur in our DGH from Dec 2009 to April 2010, with special reference to operative procedure used and use of bone protection medication at the time of hospital discharge. Results: There were two major sub groups, one who had hospital discharge done by orthopaedics team and other which were discharged by the medical team. Nearly half of the patients discharged by the orthopaedic doctors didn't get osteoporotic prevention on their discharge. However patients discharged by the medical team were all getting some form of osteoporosis medications. There was also vast difference in the choice of medications used with majority of patients getting alendronic acid. Conclusion: The aim of this study is to create awareness among the junior orthopaedic doctors of the NICE guidelines for secondary prevention of osteoporotic fracture.

Abstract no.: 30750

**RUPTURE OF QUADRICEPS TENDON IN A 13-YEAR-OLD BOY
TREATED SUCCESSFULLY BY OPERATION**

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Introduction: Ruptures of quadriceps muscle are rare in children. We report a case of rupture of Vastus lateralis (partial rupture of quadriceps tendon) in a 13 year old healthy boy following direct blow which was treated successfully by operation. Objective: In children physis is the weakest link. A healthy child's tendon can withstand more tensile force than the bones. Therefore if a major trauma occurs in a child, an avulsion fracture is much more likely than a tendon rupture. Method: 13-year-old boy was "kneed" i.e. hit by a friend just above his left knee cap while standing. Clinical examination revealed that the patient had good passive movement of knee but he was unable to do active straight leg raising (SLR). An ultrasound scan was done which was reported as vastus lateralis muscle rupture. Operative finding include ruptured vastus lateralis with the proximal end retracted. A repair was done and knee was immobilised in plaster cast for six weeks and this was followed with intense physiotherapy. Results: Three months following the repair patient was walking without any difficulty, had good range of movement from 0-120 degree, was able to do active straight leg raise of 90 degree and had good extension of knee with power MRC grade 5. Conclusion: Our case is unique as this is a partial rupture of quadriceps tendon in fit and healthy 13-year-old boy who sustained this injury by direct blow to his thigh and this was managed successfully by operation.

Abstract no.: 30759

PEDICLED FILLET FLAP FOR RECONSTRUCTION OF SEVERE GLUTEAL MUSCLE NECROSIS FOLLOWING TRANSCATHETER ANGIOGRAPHIC EMBOLIZATION FOR PELVIC FRACTURE: A CASE REPORT

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Introduction: Gluteal muscle necrosis following transcatheter angiographic embolization (TAE) for pelvic fracture is rare. No reports in the literature have yet described the details of treatment for gluteal muscle necrosis after TAE. We present two cases who developed severe gluteal necrosis after TAE. Using the adequate methods of reconstruction, we obtained satisfactory outcomes in both of them. Case reports: Case1: A 58-year-old man developed gluteal necrosis on the right buttock after TAE for pelvic fracture (A.O.type A2). After several debridements, we were able to cover the defect with anterolateral thigh-vastus lateralis muscle flap. Case2: A 32-year old man developed bilateral gluteal necrosis with sepsis after TAE for severe pelvic fracture (A.O.type C1). Extensive skin and soft tissue defects were generated after several debridements. However, using a pedicled fillet flap from the upper and lower leg in combination with hemipelvectomy, the patient survived and returned to his previous job. Conclusion: Gluteal muscle necrosis after TAE for severe pelvic fracture is a rare but severe complication, particularly in cases complicated by sepsis. Frequent debridements and intensive care are necessary to rescue the patient. A pedicled upper and lower leg fillet flap may be useful for extremely large defects of the pelvis.

Abstract no.: 30770

RESULTS OF AUTOMATED PERCUTANEOUS LUMBAR DISCECTOMY FOLLOWED BY INDIRECT DECOMPRESSION USING INTERSPINOUS SPACER

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Contained discs causing foraminal stenosis can be treated performing an automated percutaneous discectomy under local anaesthesia followed by indirect decompression of neural foramina using percutaneous interspinous spacer. Study aims to find results of combined direct and indirect decompression. Patients with contained discs presenting with radiculitis are made to lie prone on the table. Under image control and local anaesthesia a guide wire is passed into affected disc from side in which the patient has radiculitis. If nerve root is injured by the guide wire, the awake patient complains of radicular pain. In this way injury to the nerve root is avoided. A cannula is passed over the guide wire and an automated probe that cuts and sucks the disc is passed through the cannula. The pulposus is sucked and the disc bulge decreases. The patient is intubated in the prone position followed by insertion of a guide wire into the interspinous space. After the dilators are passed, the interspinous spacer (inspace, Synthes) is placed as close to the base of the spinous process. The spacer opens up prongs to stabilise itself and distract the interspinous space resulting in indirect opening up of the neural foramina. We treated 18 cases with contained disc and radicular symptoms. patients improved leg pain scores and Oswestry disability index from 64 to 28 at 2 years follow-up. None had recurrence of symptoms. It is a day care procedure that relieves radiculitis, minimal blood loss and scar. It is not useful in extruded discs, predominant axial pain and uncooperative patients.

Abstract no.: 30771

EARLY RESULTS OF FENESTRATED PEDICLE SCREWS WITH CEMENT AUGMENTATION IN LUMBAR SPINE STABILISATION: OUR EXPERIENCE IN THE INDIAN POPULATION

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Background: screw cut out is a big problem in osteoporotic spine. The spongy vertebral body does not hold screws resulting in implant cut out and failure of fixation. Cement (calcium phosphate) augmentation of the screws increases the cut out strength and decreases chances of implant failure. We have used fenestrated screws with cement augmentation for various conditions in osteoporotic spine and we share our experience in Indian population. Methods: All ten cases selected were severe osteoporosis (T score < - 2.5). Major indications were canal stenosis with instability: 3 cases, Spondylolisthesis: 2 cases, potts spine: 2 cases, post traumatic burst fracture: 1 case, osteoporotic wedge compression fracture: 2 cases. The screws were placed into the vertebral bodies over the k wire. Then cement (slow setting calcium phosphate) 1.5 ml was pushed under low pressure from each of the screws into the vertebral body. Routine fixation with rods was done to achieve stabilisation. Results: We did not have any screw cut out in any patient. One patient had cement extrusion into the epidural space which was removed then and there, but fortunately she did not have any deficit post operatively. There were no implant failures. Conclusion: cement augmentation using fenestrated screws has shown excellent results in the osteoporotic spine .Long term results in Indian population are awaited. The indications for their use in osteoporotic spine can be expanded.

Abstract no.: 30775

USE OF NEXGEN® ROTATING HINGE KNEE IN REVISION AND COMPLEX PRIMARY TOTAL KNEE REPLACEMENTS

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We report the early outcome of using NexGen® rotating hinge knee(RHK) implant in complex primary and revision total knee replacement surgery in fourteen knees over six years. Five knees had complex primary and nine revision surgery. The reasons of using rotating hinge knee were incompetent medial collateral ligament (10 knees), stiffness (3 knees) and conversion to total knee replacement from arthrodesis (1 knee). Average follow-up was 31 months (13-76 months). At most recent follow-up the radiographic evaluation showed no evidence of loosening and migration of the prosthesis in all the knees except in one knee, which was found to be loose and painful due to recurrence of infection. All other knees were clinically stable and showed improved range of movement. Early results are encouraging. Where more constraint was required, low profile NexGen® RHK provided proper constraint especially in knees with incompetent MCL. Further follow up is underway to know the midterm and long term results.

Abstract no.: 30779

LOOSENING AND INFECTION IN HYDROXYAPATITE-COATED VERSUS UNCOATED EXTERNAL FIXATION PINS USED FOR LEG LENGTHENING: A SYSTEMATIC REVIEW

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INTRODUCTION: Indications for the use of external fixation include damage control orthopaedics, definitive fracture treatment, deformity correction and leg lengthening. Despite many advances in the development of external fixation techniques, pin-tract infection and loosening are still significant complications. They are the most commonly occurring complications during limb lengthening using external fixation, with some studies reporting an incidence of up to 80%. **OBJECTIVES:** The main aim of this systematic review was to investigate HA-coated versus uncoated external fixator pins used in patients undergoing leg lengthening and determine benefits in terms of pin loosening, infection and loss of reduction/malunion. **METHODS:** A systematic literature search of MEDLINE (PubMed), EMBASE and Cochrane library databases was undertaken. Comparative trials investigating HA-coated versus uncoated external fixation pins used in patients undergoing leg lengthening procedures were identified. These were critically appraised as per the CASP (Guyatt et al) and CONSORT guidelines (Schulz et al., 2010). Primary outcome measures included pin loosening and infection. Secondary outcome measures included loss of reduction/malunion. **RESULTS:** All studies identified had different criteria for defining pin loosening and infection. However, they all demonstrated a statistically significant reduction in loosening with HA-coated pins. Review of the studies included demonstrated insufficient evidence to determine any significant clinical benefit with regards to infection and malunion. Critical appraisal demonstrated average methodological quality of the studies. **CONCLUSION:** HA-coating of external fixator pins improves bone fixation and reduces loosening in patients undergoing leg lengthening procedures, but the influence on infection and malunion is not clear.

Abstract no.: 30785

A PROSPECTIVE STUDY ON FACTORS AFFECTING LENGTH OF STAY FOLLOWING HIP AND KNEE ARTHROPLASTY

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Introduction: Prolonged lengths of stay (LOS) after Joint Replacements compromise quality, increase risk of hospital acquired infection and drive up costs. Hence early discharge and care at home are encouraged. Aim: To identify the factors significantly influencing the Length of Stay of elective primary lower limb arthroplasty patients. Methods: This was a prospective study. Data collection started on admission using case records and electronic patient record and completed on discharge. The inclusion criteria was elective primary hip and knee arthroplasties. We conducted the study for a duration of 10 months from January 2010 to October 2010. We did statistical analysis using SPSS software (Spearman's Rho Test for assessing continuous variables, Mann-Whitney U Test for categorical variables and multiple linear regression test to identify the most statistically significant variables). Results: We had a total number of 400 patients (TKR: 205, THR: 150, Hip Resurfacing: 24, Uni compartmental Knee Replacement: 15, Patello-Femoral Arthroplasty: 6). Factors significantly correlating with increased LOS when all the procedures are taken together (P value < 0.05) are increasing age, Haemoglobin(Hb) level - Pre-op/post-op/drop in level, blood transfusion, sex (LOS significantly greater in women) and presence of any post operative complications. Multiple linear regression analysis have shown that the significant predictors of LOS (explaining 55 % of the variance) are age, pre-op Hb, blood transfusion and complications. Conclusions: Length of stay is a key issue in Arthroplasty patients. Statistically significant factors influencing Length of stay are increasing age, post-op Haemoglobin level, blood transfusion and complications.

Abstract no.: 30786

FUNCTIONAL OUTCOME OF BALLOON KYPHOPLASTY AMONG PATIENTS WITH VERTEBRAL COMPRESSION FRACTURES BETWEEN 2009 AND 2011

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There has been an increasing number of reports regarding the benefits of Balloon Kyphoplasty for the treatment of vertebral compression fractures. Functional outcome are used to document the impact of kyphoplasty on pain and function. Nineteen patients were included in the study done at a tertiary hospital. Patients had been treated for pain due to osteoporotic compression fracture. Visual analog scale, time to ambulate, and presence of neurologic deficits were used to evaluate changes in pain and functional capabilities. A total of 19 patients with a mean age of 69.89 years ranging from 55 to 89 years old were included in the study. Majority, 68.42%, were females and 31.58 % were male. Most of the compression fractures seen at L1 with 28.58%. More than 79% of the patients who underwent Kyphoplasty were admitted with a diagnosis of Osteoporosis. The mean and standard deviation of the Visual Analog Scale preoperatively was 4.75 + 1.23 out of 10. Postoperatively, VAS of the patients were 0.58 + 0.67 / 10. Post-operatively, the time to ambulation was taken into account by the authors. Patients who underwent Kyphoplasty the mean time to in-hospital post-operative ambulation was 2.08 + 0.95 days. Patients were allowed ambulation as tolerated. There were no neurologic deficits noted on the patients post operatively. Kyphoplasty is an effective treatment for patients with intractable pain due to osteoporotic vertebral compression fractures. Improvement in pain scores and time to ambulate that were found postoperatively.

Abstract no.: 30792

EXPLORATION OF FUNCTIONAL REORGANIZATION IN CERVICAL SPONDYLOSIS MYELOPATHY – A DTI AND FMRI STUDY

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Introduction: The morphological and signal change in anatomical magnetic resonance images (MRI) did not necessarily parallel with clinical symptoms in cervical spondylosis myelopathy (CSM), which poses a big challenge to clinician for early diagnosis and precise prognosis. Functional reorganization may play an important role in the pathophysiological mechanism of this chronic degenerative disease. The present study sought to explore the relationship between functional reorganization and structural damage in CSM. **Methods:** Fourteen healthy subjects (56 ± 13 yrs) and six CSM patients (65 ± 12 yrs) were recruited. Cross-sectional area, compression ratio, T2-weighted signal change, Fractional anisotropy (FA) value and somatosensory stimuli-induced blood-oxygen-level-dependent (BOLD) signal change were quantitatively measured via conventional T2-weighted, diffusion tensor and functional MRI on a 3T MR system. **Results:** BOLD signal change was significantly higher in myelopathic cord ($7.86\pm 0.95\%$) compared to healthy cord ($5.52\pm 0.21\%$) ($p < 0.01$). Significant difference was detected between healthy and myelopathic cord with cross-sectional area, compression ratio and FA value ($p < 0.05$). FA value indicated a much stronger correlation with BOLD signal change (Healthy: $r = 0.4887$, $p = 0.0764$; CSM: $r = 0.8938$, $p = 0.0163$) compared to T2-weighted signal change or morphometry data. **Conclusion:** Greater microstructural damage was found to significantly and linearly correlate with enhanced functional activation in myelopathic cord, which possibly suggests the extent of microstructural damage is a factor relevant to the extent of functional reorganization in CSM. This study demonstrates a quantitative structure-function relationship in healthy and myelopathic cord, which might provide a promising method to gain additional insight into the role of structural damage/functional reorganization in the spinal cord diseases.

Abstract no.: 30793

A SIMPLE SMALL SUCTION DRAIN SYSTEM FOR OSTEOMYELITIS AND PYOGENIC ARTHRITIS OF THE DISTAL FINGER

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Introduction: Surgical debridement is common treatment for osteomyelitis or pyogenic arthritis in any part of bodies. However, for the distal finger, continuous suction drain is less likely to be applied. One reason seems it is relatively large for the distal finger. Another reason could be that the defect after debridement is not huge. We created a new smaller suction drainage system and used this after debridement for two cases. Method: Under digital anaesthesia, first, surgical debridement was performed. Second, a 4 or 6 Fr tube was connected with a 5ml disposable syringe and the tip of the tube was put in the curetted area. Third, the skin closure was done. Last, vacuum was created by pulling the piston out and the negative pressure was kept by putting a needle cover between the end of the piston and the end of the outer syringe. The vacuum was created again once a day and the drain system was removed five or seven days after surgery. Antibiotics were prescribed for six weeks. Results: The amount of drainage was 0.1 to 1.0 ml a day without obstruction of the outflow. Now there are no infectious recurrences three and ten months after the surgery. Conclusion: Surgical debridement with suction drainage is a standard treatment for local infection. Our suction drain was modified to be smaller and simpler than before reported, in order to apply to the distal finger. This drain system does not need any special or expensive materials, leading to good outcomes.

Abstract no.: 30794

AUTOGENOUS BONE GRAFT FROM FEMORAL HEAD FOR RECONSTRUCTION OF ACETABULUM IN TOTAL HIP ARTHROPLASTY IN DYSPLASTIC HIP DISORDER

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Total hip arthroplasty is a known procedure for treatment of degenerative joint disease after dysplastic disorders of hip joint in older age. In crew classification type 1 and 2 with a large acetabulum consist of immerge and connection of true and false acetabulum with each other, we have two options. One is reaming the depth of acetabulum and inserting larger cup in the depth and in some more vertical position, but the second option, is filling the defect with the autogenous bone graft of the head of femur of the patient after cutting the neck and fixation with screws and reaming through it and inserting the cup in more horizontal position. We have done these procedures in 32 consecutive cases (15 bone graft, 17 no bone graft) and follow them for mean 20 months(16 to 30 months) for Harris hip score, graft resorption, dislocation, leg length discrepancy and loosening of cup .In comparison of these two groups: in the first group (bone graft of femoral head), Harris hip score improved from 65 to 94 ,no graft resorption, no dislocation and no loosening of cup with mean 1 centimeters leg length discrepancy but in the second group(no bone graft) , Harris hip score improved from 67 to 93, two dislocation and no loosening of cup with mean 2.5 centimeters leg length discrepancy in final visit.

Abstract no.: 30796

A COMPARATIVE STUDY ON EARLY OUTCOME OF FAST-TRACK JOINT REPLACEMENT WITH TRADITIONAL JOINT REPLACEMENT

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Introduction: We have been using the fast-track protocol (developed by Northumbria NHS Trust, UK) for performing hip and knee arthroplasties for the past one year. This protocol focus on patient education, better analgesia and early mobilisation. The aim our study was to compare the results of the fast-track joint replacement with that of traditional joint replacement. Method: Retrospective assessment of case notes. Our inclusion criteria was elective joint replacements with a minimum follow up of 2 months by single surgical team. Results: Total number of cases was 100. 51 Fast-track (28 TKR, 23 THR) and 49 Non Fast-track (33 TKR, 16 THR). The mean age, BMI and ASA were comparable in both groups. The mean length of stay (number of nights spend in the hospital) was 2.66 for the fast-track group and 5.96 for the non fast-track group. We used the t-test to assess the statistical significance. Complications in the fast-track group included one early post operative wound infection, 4 patients with wound leakage and one undisplaced peri-prosthetic fracture. Complications in the traditional group were one deep infection, 2 patients with wound leakage, 4 patients had postoperative hypotension and one patient had acute confusion post operatively. Conclusions: Length of stay following Fast-track joint replacement is than less than half of that of the traditional joint replacement. This difference in length of stay in our small cohort was found to be statistically significant. Complications and short term outcome of fast-track joint replacement are comparable to that of traditional joint replacement.

Abstract no.: 30803

**RESULTS OF TOTAL KNEE ARTHROPLASTIES IN PATIENTS WITH
SYNOVIAL CHONDROMATOSIS**

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This retrospective analysis examines the outcome of total knee arthroplasty for severe arthritis in patients with synovial chondromatosis. All 13 patients have been treated with total knee arthroplasty returned for follow-up at a mean of 4.5 years after surgery. Pain and functional scores improved significantly in all patients. Knee range of motion improved in all patients. Synovial chondromatosis recurred only in 1 knee. Total knee arthroplasty is a valuable treatment option for these patients with predictable improvement in pain and function. Knee range of motion is likely to improve but may be less than expected for primary total knee arthroplasty. Patients remain at risk for recurrence. Because of the nature the disease, we have to do a synovectomy in the process of total knee arthroplasty, so it is necessary to begin physiotherapy very soon to save the range of motion. Key words: knee joint, total knee arthroplasty, synovial chondromatosis

Abstract no.: 30804

IMPACT OF BODY MASS INDEX ON OUTCOMES OF CONVENTIONAL TOTAL KNEE ARTHROPLASTY IN ASIAN PATIENTS

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This study aimed to evaluate the impact of body mass index (BMI) on outcomes of conventional total knee arthroplasty (TKA) in Asian patients. All patients who underwent TKA by a single surgeon from 2006 to 2010 in Singapore General Hospital were reviewed. Of the 368 patients reviewed, 254 were of BMI less than 30 kg/m² and 114 were of BMI more than or equal to 30 kg/m². Outcome measures studied include range of motion, function score, knee score, oxford knee questionnaire and SF-36 questionnaire. At 2 years follow-up, there was a significant difference in the mean flexion and mean function score between the two groups. However, analysis for correlation showed that BMI correlated poorly with all the outcome scores. This poor correlation was statistically significant. In conclusion, BMI (ranging from 18 to 40) probably has little clinical impact on outcomes of conventional TKA in Asian patients in the hands of an experienced surgeon.

Abstract no.: 30808

ENTWINEMENT OF SCIATIC NERVE AROUND A TOTAL HIP PROSTHESIS FOLLOWING CLOSED REDUCTION OF DISLOCATED TOTAL HIP REPLACEMENT

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We report a case of entwinement of the sciatic nerve around a total hip prosthesis following closed reduction of a dislocated total hip replacement. Case Report: 70-year-old lady underwent revision of her total hip replacement through a lateral approach. Postoperative recovery went according to plan and patient was discharged 5 days after surgery. Two weeks following operation patient was trying to get off the chair when she felt severe pain in her hip and a pop sound. She was not able to weight bear and was brought to the hospital where X-ray confirmed a posterior dislocation. Patient was taken to the theatre where closed reduction was tried repeatedly but was unsuccessfully. She was planned for open reduction of the dislocation in three days' time on the index surgeons operating list. Two days after failed closed reduction patient developed foot drop and was taken to theatre where the index surgeon performed an open reduction of the dislocated hip. Operative finding included a posterior dislocation with the sciatic nerve entwined around the prosthetic femoral neck. This was released by unscrewing and taking out the neck of the long femoral stem. Six weeks following the procedure sensation in lower limb is coming back to normal but patient still has got motor weakness. Discussion: To our knowledge, there is one more case report of entwinement of the sciatic nerve around a total hip prosthesis following closed reduction of a dislocation. This is a unique finding which can have disastrous effect and should be considered before performing repeated closed reduction of dislocated total hip replacement.

Abstract no.: 30810

**USE OF TRANEXAMIC ACID IN REVISION HIP ARTHROPLASTY
– A CASE CONTROL STUDY**

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INTRODUCTION: Revision Hip Arthroplasty is associated with significant blood loss. Topical use of tranexamic acid has been found to be useful in reducing blood loss in major surgery. We looked into topical use of tranexamic acid and its effect in reducing blood loss in revision hip arthroplasty. **METHOD:** We did a retrospective case control study. 20 cases of revision hip arthroplasty in which 0.5 gm topical tranexamic acid was used 5 minute before closure of wound were matched with another 20 cases in which no traxexamic acid was used. These cases were matched on the basis of type of surgery performed, there pre operative anticoagulation status and ASA grade. All these operations were done by one senior orthopaedic surgeon with common approach between case and control group. **RESULTS:** Change in the haemoglobin level from pre operative to post operative level was used to assess the effect of intervention i.e. topical use of tranexamic acid. Pre operative and post operative haematocrit post operative blood transfusion rate were looked at. The post operative haemoglobin level was higher in patients were topical tranexamic acid was used compared to patients were it was not used and it was statistically significant ($p < .005$). There was no difference in post operative complication most importantly deep vein thrombosis. There was also lower rate of post operative blood transfusion in patients in whom topical tranexamic acid was used. **DISCUSSION:** Our study shows that tranexamic acid used topically helps in preventing blood loss and subsequent need for transfusion in revision hip arthroplasty without any adverse effect.

Abstract no.: 30811

THE CHOICE OF TREATMENT TACTICS AT METACARPAL BONES FRACTURES

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Treatment of fractures of metacarpal bones depends on concrete features of each fracture. We result observation of 115 patients at the age from 16 till 55 years and older with fractures of metacarpal bones treated in last 6 years in clinic TMA in unit of emergency traumatology and the Centre of surgery of large joints and a hand from which 40 patients were treated conservatively, the others 75 patients were performed an operative treatment: at transversal and slanting fractures of a neck and the distal extremity of a metacarpal bone applying distraction device at 28 patients were performed; at malunioned diaphyseal fractures of a metacarpal bone the wedge-shaped resection of a metacarpal bone with fixation of osteal fragments on Panfilov at 35 patients were performed; at malunioned fractures of the proximal extremity of a metacarpal bone the plane resection of a metacarpal bone at 15 patients were performed. In work were used research methods: Radiography, MSCT on which basis the algorithm of diagnostics and medical tactics depending on level and damage term was developed. The nearest treatment results were studied at all patients. The remote results of treatment (in terms from 1 to 5 years) have been studied at 85 patients. At 58 (68 %) patients the result of treatment is recognised as good and at 25 patients (30,3 %) – as satisfactory, and at 2 (1,7 %) patients – as unsatisfactory. Thus, the choice of treatment tactics at metacarpal bones fractures depends on localisation and prescription of damage.

Abstract no.: 30814

NON-FUSION STABILIZATION FOR THE ADJACENT SEGMENTAL DISEASES AFTER POSTERIOR SPINAL FUSION

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<Introduction> Posterior lumbar fusion with instrumentation is an accepted treatment. However, adjacent segment disorder (ASD) remains a mid/long term issue. Recently dynamic non-fusion stabilization devices are being implanted to treatment the segmental instability. Segmental Spinal Correction System (SSCS) is one of the dynamic pedicle screw rod system, which control rotation and translation but allow some motion of flexion and extension. We applied non-fusion stabilization with SSCS to ASD occurred after posterior lumbar fusion. < Methods> 21 patients (13 males and 8 females) in the past five years were chosen. The average age was 69.4 years. The average period between the primary surgery and the revision surgery was 5 years and 9 months. Site of ASD was upper level in 16 patients, lower level in 4 patients and upper/lower level on 1 patient. We removed the previous implants and stabilize adjacent segments using SSCS. Mean follow-up period was 19.6 months. <Results> Preoperative JOA score was 14.8 ± 2.6 and it improved to 22.6 ± 5.8 during the follow-up (improvement rate: 54.9%). Mobility of the operated segments was significantly decreased from 8.4 ± 1.6 degrees to 1.8 ± 3.6 degrees in average (paired t-test $p<0.01$). Two implant pedicle screw breakages were observed in one asymptomatic patient; and the failure rate was 2.2%. There was no screw loosening and hinge breakage. We applied SSCS to salvage ASD occurred after posterior lumbar fusion with instrumentation. In case that further spinal fusion is applied to ASD, it could result in running in circle. Therefore non-fusion stabilization seems to be meaningful.

Abstract no.: 30815

PRIMARY STABILITY AND BONE REACTION OF TAPERED WEDGE-SHAPED CEMENTLESS STEM FOR PATIENTS WITH TYPE C BONE – BIOMECHANICAL ANALYSIS OF MICROMOTION

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Primary stability and bone reaction of tapered wedge-shaped cementless stem for DDH with type C bone are unclear. We evaluated radiographic bone reaction and biomechanical micromotion (MM) of tapered wedge-shaped cementless stem for DDH with type C bone (44 hips). We constructed preoperative femur surface model from preoperative CT data with a calibration phantom, and the postoperative femur and a rough surface stem model from postoperative CT data. The technical procedure was iterative closest point algorithm by computer-assisted design data of stem and finite element model (FEM). We obtained a patient-specific model which simulated immediately postoperative stem and femur, which included the precise proximal bone geometry, stem alignment, and bone mineral density data. We estimated MM between stem and bone during weight bearing on stairs climbing. The Peak of MM, the average of MM and the ratio of area with MM of higher than 40 micrometers at porous-coated surface were calculated. Radiolucent lines were observed in 15.9 %. Spot-welds could be detected in 88.6 %. Bone atrophy due to stress-shielding was observed in 56.8 % by 1st grade. In type C bone, the peak of MM was 246.9 micrometers. The average of MM was 29.4 micrometers, and the ratio of area with MM > 40 micrometers at porous-coated surface was 4.7 %. There were no significant differences in the average MM and ration of area with MM > 40 micrometers between type A, B and C bone. Tapered wedge-shaped cementless stem can be applied for DDH with type C bone.

Abstract no.: 30816

**VENOUS THROMBO-EMBOLISM: THE GRAVITY OF THE MATTER
– A COLLECTIVE STUDY OF PUBLICATIONS IN ORTHOPAEDIC
LITERATURE**

**Michael LAURENCE
(UNITED KINGDOM)**

An introductory paragraph will cover the pathology and investigation of intravenous thrombosis, from the writings of Oschner and de Bakey (1938), Tubiana and Duparc (1961) and Wiley et al (1970). From these the fundamental principles are: 1. the prevention of intravascular clotting, and 2. the emptying of the venous pool, thereby speeding flow through the veins. Concentrating on the latter, the evidence of efficacy is compared, between the various methods of aftercare, measuring vein engorgement, flow and pressure measurements, Criticisms emerge from both the various methods of anti-coagulation, and also the mechanical modes to compress the venous pool. Yet little or no reference is made in publications, to the effect of emptying the leg veins, using gravity (elevating the foot of the bed through a varying range (11- 15 degrees). I have collected all the investigative measurements, from academic departments, on observable efficacy, from which no imperative emerges; but the use of gravity is demonstrated to be both effective at emptying the veins and keeping them so, for the duration of the patient's stay in hospital. As the method of choice for prophylaxis, this is recommended as effective, devoid of complication, free of all cost, and possesses a number of other positive recommendations.

Abstract no.: 30819

A COMPARISON STUDY BETWEEN DISTAL AND PROXIMAL FEMORAL OSTEOTOMY IN TOTAL HIP REPLACEMENT FOR DYSPLASTIC DISORDER OF HIP JOINT

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We retrospectively evaluated the postoperative results of total hip arthroplasty (THA) in patients presenting with Crowe group IV dislocated hips. Overall, results were compared with regard to the level of osteotomy performed (distal or proximal) to define the correct indications for surgical technique. Twenty three subtrochanteric shortening and derotational osteotomies in primary THA were performed in 21 patients secondary to congenital hip dislocation. Proximal osteotomy was performed in 14 cases and distal osteotomy in 9. The surgical approach was posterior, and surgery was aimed at restoring the anatomic hip center. Femoral and acetabular fixation was uncemented. Mean follow-up was 32 months. According to Harris Hip score, the overall clinical results were good in 15 cases, satisfactory in 6, and fair in 2. Union of the osteotomy occurred in 97% of cases, and the mean time required for osteotomy union was 6 ± 2 months without significant differences between distal and proximal osteotomies. At last follow-up, there was loosening of 1 cup and 1 stem, and revision was necessary. Twelve percent of patients experienced postoperative dislocation and 9% developed neuropraxia of the sciatic nerve. The clinical and radiological results were similar in both groups, with a high rate of pain relief, an improvement in limb-length discrepancy, and reduced limping, leading to a smaller or no insole.

Abstract no.: 30821

EFFECT OF LYSINE AND ARGININE ON FRACTURE HEALING – AN EXPERIMENTAL STUDY

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There is an ongoing worldwide search for drugs which promote fracture healing. Amino acids like arginine and lysine have been suggested to hasten the process of fracture healing. An experimental study was conducted on 40 rabbits subjected to ulnar osteotomy. They were divided in control and test groups, the latter fed with diet rich in lysine and arginine. Both the groups were followed with serial radiographs till the date of their sacrifice at regular intervals and ulna harvested for histology/autopsy. It was concluded that fracture healing is definitely faster in the lysine and arginine supplemented rabbits as compared to those who were unsupplemented. This healing showed a temporal association as there was better healing in early post-op period, i.e. by 3 weeks in terms of better vascularization, callus formation and mineralization followed by healing at physiological rate and then a surge in healing again at 9-10 weeks post-op showing better remodeling and repair. Thus, on an average rate of healing was faster and time of healing was reduced by a period of 2 weeks. Arginine supplementation hastens fracture healing. Nitric oxide released by Arginine stimulates Vascular endothelial growth factor (VEGF) which helps in fracture healing.

Abstract no.: 30824

LUBRICATION THEORY IN HARD-ON-HARD BEARINGS IN TOTAL HIP ARTHROPLASTY

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Friction and wear of total hip arthroplasty (THA) strongly depends on the mode of lubrication. An increase in fluid film thickness will greatly reduce friction and wear. We aimed to theoretically study the mode of lubrication in THA for different hard-on-hard articulations (metal-on-metal (MoM); ceramic-on-metal (CoM); ceramic-on-ceramic (CoC)) considering biomechanically hip joint motions and loading. Implants relative motions were considered according to a standardized gait cycle and relative velocity was calculated. A static numeric model to calculate the mode of lubrication was extended by the dynamic hip loading profile and the changing relative velocity in the contact point. The mode of lubrication was calculated in respect to a full gait cycle. During a full gait cycle the fluid-film thickness was calculated to be between 0.014 μm and 0.056 μm for the CoM, 0.019 μm and 0.077 μm for the MoM and 0.023 μm and 0.092 μm for the CoC. As expected the fluid film thickness was higher during swing phase compared to stance phase and all articulating combinations showed fluid film lubrication at least during swing phase. The clinical outcome of THA is affected by friction and wear. As the mode of lubrication highly influence friction and wear a numeric model as presented here may help to understand this mechanism in particular during the design process of new implant components or concepts. Regarding lubrication the investigated CoC bearings seems to be advantageous whereas the CoM bearings showed worse lubrication conditions even compared to MoM. The results of this study further needs to be validated experimentally.

Abstract no.: 30826

**LENGTHENING WITH EXTERNAL FIXATION ONLY VERSUS
LENGTHENING OVER NAIL**

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This study included 33 patients (prospective randomized) study 15 patients had lengthening with Ilizarov external fixation while 18 had lengthening over nail inclusion and exclusion criteria are explained and the outcome including complications and duration of treatment were reviewed . Both groups were comparable and the complications were less common but more serious in the group of lengthening over nail.

Abstract no.: 30827

FOOT FUNCTION AFTER TIBIAL OVER LENGTHENING

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This study included a retrospective review of cases required tibial lengthening of more than 30 % of the original length to treat cases as PFFD or chronic infection with stiff knee. Cases were reviewed for foot function after lengthening and before and after 1, 2, 3 years from Ilizarov removal the foot showed marked affection of foot function according to AOFAS score and deformation in the form of equino cavo varus. This improved gradually over time with faster recovery of foot function in children.

Abstract no.: 30829

THE INTERSPINOUS DEVICE 'SPINOS' FOR SURGICAL MANAGEMENT OF LUMBAR CANAL STENOSIS

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Introduction: Interspinous devices can be used to achieve distraction between the spinous processes to improve symptoms in spinal canal stenosis. These devices have theoretical advantages with regards their potential for minimally invasive day case surgery and insertion under local anaesthesia. The aim of the review was to identify radiological and clinical outcomes when using the Spinos (Privelop Spine) device. All patients who underwent Spinos implant insertion were identified and retrospectively analysed. Pre-operative and post-operative canal area and Oswestry Low Back Pain Disability questionnaire scores were recorded. Results: 9 patients underwent surgery, one which underwent distraction at two levels. Most underwent surgery at L4/5 (67%). All patients underwent general anaesthesia, and had a mean 4 day inpatient stay. The mean percentage increase in canal area at the level of surgery was 44%, range -3% to 158% (8% at the level above, 21% at the level below) which equated with a mean area increase of 41 mm², range -7 mm² to 98 mm² (14 mm² at the level above, 23 mm² at the level below). Patients reported an improvement of 3% in their questionnaire results. 2 of the 9 patients underwent further surgery and removal of their implant due to pain. Conclusion: The Spinos device seems to show promising results with regards to improvement in canal size, however patient outcomes are disappointing. The potential for day case surgery under local anaesthesia needs to be evaluated further, but would have significant theoretical advantage in terms of anaesthetic morbidity and cost effectiveness.

Abstract no.: 30832

MANAGEMENT OF UNSTABLE DISTAL RADIUS FRACTURES USING VOLAR LOCKING PLATES VERSUS EXTERNAL FIXATION: A SYSTEMATIC REVIEW OF THE LITERATURE

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Background: The management of distal radius fractures has changed over the last decade. Although the trend is changing more towards operative management of unstable distal radius fractures but the choice of optimal surgery remains controversial. The purpose of this study was to systematically review the literature regarding clinical and radiological outcome after operative management of unstable distal radius fractures in adults with the use of either volar locking plates or external fixator. **Methods:** A systematic literature search was carried through Medline (Ovid) using predefined inclusion/exclusion criteria. DASH score was the primary outcome. Grip strength and range of movements were secondary outcomes. **Results:** Of 101 articles in English language, only 31 were related to operative management of distal radius fractures using external fixators and internal fixation. After application of inclusion/exclusion criteria, 5 prospective randomised controlled trials were deemed suitable for this review. The ranges of movements and DASH scores are better in early postoperative period (up to 3 months) after internal fixation with volar locking plates. However, the difference gradually decreases and results are similar at 12 months after the operation. **Conclusion:** On the basis of this review it can be concluded that open reduction, internal fixation with volar locking plates is preferable for unstable extra articular and simple articular distal radius fractures, as compared to external fixators, as it provides early functional recovery. However, further properly designed trials are required to assess the superiority of volar locking plates for complex articular distal radius fractures.

Abstract no.: 30838

BIOLOGIC PLATING OF FRACTURES WITHOUT C-ARM

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Biologic plating of fracture with C-arm is a routine treatment. Once performing Biological plating, there was no C-arm in our hospital so I managed the operation with no C-arm. 52 patients (8-54 years old) were treated by this method. There were 33 femur (one patient both femoral fractures), 19 tibia and one humerus fractures. The procedure follows the same principles of the biological plating. The fracture is fixed by a long plate without exposing the fracture site. The length of the injured limb is set equal to the length of the intact limb that was previously measured. Attention should be paid to the X-ray to choose the proper direction of plate sliding. Achieving an acceptable rotation of the tibia is straightforward. The ASIS, patella and the second toe should be arranged. Proper femur rotation is complex. After a temporary fixation of the fracture, internal and external rotation is checked. If satisfactory, then other screws are attached. If unsatisfactory, remove the distal screw and make the correction. Results: Prompt union were achieved. Complications are: Leg Length Discrepancy: There was 0.5-1.5 cm shortening of the operated limbs in five patients. Plate failure: In two femoral and one tibial fractures, the plates broke. Malrotation: Maximum reduction of internal rotation of 10 degrees was observed only in femoral fractures. Discussion: Regardless of the separated fragments in X-rays, if the surgeon follows the correct procedure while paying attention to limb length and rotation, an operation with no C-arm is satisfactory. This procedure is less time consuming.

Abstract no.: 30840

MICROORGANISMS AND THEIR SENSITIVITY PATTERNS IN SEPTIC ARTHRITIS OF NORTH INDIAN CHILDREN: A PROSPECTIVE STUDY

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Purposes: Rapid diagnosis and early effective antibiotics therapy is the most important aspect of treating septic arthritis. Changing trends in microbiological spectrum and emerging drug resistant strains pose a big challenge before surgeons. Present study evaluates the bacterial strains and their sensitivity pattern in septic arthritis of North Indian children. Methods: Fifty children with septic arthritis of any joint were evaluated clinically and radiologically. Joint was aspirated and two cc of aspirated fluid was sent for gram-stain and culture and sensitivity. Simultaneously two blood culture samples were sent for bacteriological evaluation. Results: Fifty percent of children had definite radiological evidence of septic arthritis whereas ultrasound could reveal fluid in joint in 98 percent cases. Aspirated fluid and blood culture could isolate the organism in 72 percent and 34 percent cases respectively. Most common organism isolated was *S.aureus* (62 percent) followed by *S.pneumoniae* and Gr.B Streptococcus. The bacterial strain showed significant resistance to commonly used empirical antibiotics. In 39, 31 and 17 percent cases, these organisms were resistant to cloxacillin, amoxycillin and ceftriaxone respectively. However none were resistant to vancomycin and linezolid. Conclusion: *S. aureus* is still the most common organism in septic arthritis of North Indian children. Though a significant resistance to common antibiotic cocktail is noticed, the strain is susceptible to higher antibiotics like vancomycin and linezolid. These antibiotics may be used as empirical therapy till culture and sensitivity report is available. Key words: Septic arthritis; North Indian Children; *S aureus*; vancomycin; linezolid.

Abstract no.: 30844

THE RELATIONSHIP BETWEEN PREOPERATIVE MRI AND THE SCAR PATTERN OF RUPTURED ACL AT RECONSTRUCTION, AND THE ANTERIOR INSTABILITY OF THE KNEE

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INTRODUCTION: The purposes of this study were to evaluate the relationship between preoperative MRI and the scar pattern of ruptured ACL at reconstruction, and the anterior instability of the knee. **METHODS:** There were 56 patients, 35 males, 21 females, with an average age of 31.6 years. We classified the types of ACL injury on preoperative MRI: bridging between femur and tibia (type I), indistinct or enlargement (II), descent (III), absent (IV). Anterior laxity was measured anterior-to-posterior drawer distance against the normal opposite knee using KT-2000 preoperatively. Arthroscopic evaluation of the scar pattern was investigated using a modified Evan's classification: partial rupture (A), scarring to roof of notch (B), scarring to lateral wall of notch more anterior and distal (C), scarring to posterior cruciate ligament (D), and resorption (E). **RESULTS:** There was correlation between the type of MRI and ACL scar pattern ($P < 0.01$). The values of KT were 2.4mm in type I, 4.0mm in type II, 4.4mm in type III, and 4.6mm in type IV. There was a significant difference between the values of KT in type I and IV ($P < 0.05$). The KT values of group A (3.2mm) and group B (3.8mm) were significantly different from group E (5.3mm) ($P < 0.05$). **CONCLUSION:** The ACL scar could be predictable from preoperative MRI. Conservative treatment is suggested for patients with ACL injury who had MRI type I. If ACL scars are A or B in arthroscopy, ACL augmentation surgery may be performed.

Abstract no.: 30846

INTRAMEDULLARY NAILING OF PERTROCHANTERIC FEMORAL FRACTURES

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Intramedullary nailing of pertrochanteric femoral fractures has gained growing popularity over the past 2 decades as this procedure is associated with a low risk for postoperative morbidity and a fast recovery of function. Up to now, outcome evaluation has mainly based on objective measures. The purpose of the present study is to correlate patients' health-related quality of life results after intramedullary nailing of pertrochanteric fractures with objective outcome measures. We conducted a single-center study including 62 patients (mean age 80 ± 10 years) with pertrochanteric fractures treated with a Gamma 3 Nail. We assessed range of motion of both hips, leg length, Harris Hip Score and Body Mass Index. The neck-shaft angle and the grade of osteoarthritis were evaluated radiographically. For patient-related outcome evaluation, the Short Form-36 questionnaire was completed and the results were compared with United States and sex and age-matched Austrian population norms. According to the Harris Hip Score 43 patients (67%) had excellent or good results. We found significant differences between the bodily pain, social functioning and mental health subscales and two summary scores of the Short-Form 36 in comparison to Austrian population norms. The satisfactory results in terms of function of the present study confirm what has already been described in literature. Despite good functional and radiographic results we noticed a substantial fall off in patients' quality of life up to 12 months after operation which outlines the fact that a linear correlation does not necessarily exist between the functional capacity and patients' quality of life.

Abstract no.: 30850

OBSERVER VARIABILITY IN THE ASSESSMENT OF THE ACROMIOHUMERAL INTERVAL USING ANTEROPOSTERIOR SHOULDER RADIOGRAPHS

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An acromiohumeral interval narrower than six millimeters measured on anteroposterior shoulder radiographs has been considered pathologic and strongly suggestive of rotator cuff tears. This prospective study was conducted to assess inter- and intraobserver variation in the radiographic assessment of the acromiohumeral interval and its critical value on routinely taken anteroposterior shoulder radiographs off study use to evaluate the accuracy of this measurement method. The acromiohumeral distance from the inferior anterior acromial aspect to the humeral head was measured in millimeters. Thirty blinded anteroposterior shoulder radiographs (from six private institutes taken by 11 different radiographers) were independently reviewed by five board certified orthopedic shoulder surgeons at two timepoints in random order. Results: The results of three investigators showed significant intra-observer variation. Five investigator pairs showed significant inter-observer variation at both examination timepoints. The maximum inter-observer difference for the same radiograph was eight millimeters (range 0 to 8mm). Our results indicate that the assessment of the acromiohumeral interval using non-standardized anteroposterior radiographs off study use cannot be seen as a reproducible and reliable method of measurement.

Abstract no.: 30855

RECENT TRENDS IN MANAGEMENT OF LISFRANK INJURIES

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Lisfrank injuries may be more common than thought because this injury is difficult to appreciate both clinically and radiologically. 21 cases of Lisfrank injuries were evaluated between January 2009, and January 2012, 19 of them were males, the left foot was injured in 11 cases, while the right was injured in 10 cases, the mean age was 39 years (range 18-61). Of the 21 injuries 14 were closed and 7 were open, 16 were combined (Bony and ligamentous) and 5 were purely ligamentous, according to modified Hardcastle classification, 13 were type B, 5 type A, and 3 type C. Of 17 injuries treated by open reduction 13 were fixed by K-wires and screws, 3 were fixed by screws, and only 1 was treated by K-wires Closed reduction and percutaneous screws were done in 3 cases, and primary fusion was done in only 1 case. The mean follow up was 15 months, anatomical reduction was obtained in 18 cases, and 5 cases were complicated by osteoarthritis. According to the AOFAS scoring system 5 patients had excellent results, 4 good, 7 satisfactory and 5 poor results. Lisfrank injury is infrequent but not rare, the quality of initial reduction is the major determinant for obtaining an excellent results.

Abstract no.: 30856

ANALYSIS OF TOTAL HIP ARTHROPLASTY FOR DISPLACED INTRACAPSULAR NECK OF FEMUR FRACTURES IN A TERTIARY REFERRAL TRAUMA CENTRE

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Introduction: Recent UK NICE guidelines suggest that Total Hip Arthroplasty (THA) be offered to all patients with a displaced intracapsular neck of femur fracture (NOF) who: are able to walk independently; not cognitively impaired and are medically fit for the anaesthesia and procedure. Methods: A retrospective review of data collected between Jan 2009 – Nov 2011 on NOFs admitted to a tertiary referral orthopaedic trauma unit. Data was analysed to determine if patients meeting NICE criteria received a THA. Case notes were reviewed for outcome and complication rates. Results: 546 patients were admitted with a NOF over the described time period. Sixty-five patients met the NICE criteria to receive a THA (mean age 74 years, M:F = 16: 49); however, 21 patients had a THA. The other patients received a hemiarthroplasty. Within the THA cohort there were no episodes of dislocation, venous thromboembolism or complications requiring further intervention. Within the hemiarthroplasty cohort there were 2 mortalities and 5 implant related complications. Conclusion: The relative number of THAs performed for NOFs was low and below the current standards set by NICE. Although there is an increasing awareness and published evidence to support improved levels of pain and function after THA in well selected patients, time and resource issues may have caused bias and increased the threshold for the more extensive and technically demanding procedure. There is a need to optimise and improve infrastructure, time and resource to cope with the increased demand for THA after NOFs.

Abstract no.: 30857

USE OF BIPOLAR SEALER DEVICE REDUCES BLOOD LOSS AND TRANSFUSIONS IN POSTERIOR SPINAL FUSION FOR ADOLESCENT IDIOPATHIC SCOLIOSIS

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Reducing perioperative blood loss and transfusions in patients undergoing posterior spinal surgery (PSS) is important. We are using a bipolar sealer device as an adjunct to electrocautery to reduce blood utilization. We reviewed the operative time, estimated blood loss, cell saver use, and perioperative transfusion rate in patients undergoing PSS. Fifty patients fit criteria since initial use of the device. We compared these to a control group of fifty patients for whom the device was not used. The surgical technique did not differ between groups. Baseline characteristics between the groups were similar except for the number of levels fused, which was larger in the investigational group (12.5 versus 11.8, $p=0.027$). There was no difference in operative time or hospital stay. Intraoperative blood loss was 597mL in the study and 1085mL in the control group ($p<0.0001$). Total perioperative blood loss, including postoperative drain output, was 1266mL in the study and 1600mL in the control group ($p=0.01$). Intraoperative cell saver transfusion was 127mL in the study and 200mL in the control group ($p=0.001$). Eleven patients in the study and twenty-six in the control group required additional perioperative transfusions ($p=0.004$). The number of packed red cell units transfused per patient was 0.26 in the study and 0.58 in the control group ($p=0.034$), reducing transfusions by over 50%. Total blood volume transfused, including cell saver, was also significantly lower in the study group (212mL vs. 388mL, $p=0.001$). Use of a bipolar sealer device significantly reduces total perioperative blood loss and transfusion requirements in PSS.

Abstract no.: 30858

THE ROLE OF UNIVERSAL CLAMPS IN THE TREATMENT OF NEUROMUSCULAR AND SYNDROMIC SCOLIOSIS

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The purpose of this study was to evaluate the use of Universal clamps in neuromuscular and syndromic scoliosis. These are sublaminar implants with a wide polyester band and titanium clamp. They can be repeatedly tensioned and provide similar corrective power to pedicle screws. We identified 20 patients with Universal clamps. We evaluated their preoperative clinical data and initial radiographs and those at most recent follow-up. There were 12 males and 8 females with a mean age at surgery of 13 years (range, 3-28 years) undergoing 21 posterior spinal procedures with Universal clamps. Seventeen patients had neuromuscular scoliosis and 3 syndromic scoliosis. When used with other implants, this was most common at the thoracolumbar spine (11 at T10 and T11, 12 at T12, 16 at L1, and 10 at L2). In salvage procedures, they were most often used in the proximal thoracic region (8 at T1, 5 at T2, 7 at T3, and 6 at T4). Different constructs were used including Luque-Galveston (11), hybrid (4), all-pedicle screw (4), and one all-Universal clamp. Fifteen patients had primary posterior spinal fusions, but two patients each had anterior/posterior, growing rod, and revision procedures. The mean preoperative curve was 75 ± 31 degrees. The mean surgical time was 6.2 hours (range, 4.3-8.7 hours). The mean postoperative curve was $25\pm 15^\circ$. Mean curve correction was $65\pm 16\%$ (range, 37-89%). There were no complications related to the use of Universal clamps. Universal clamps can be useful in neuromuscular and syndromic scoliosis and other deformities with a large curve and osteopenic bone.

Abstract no.: 30861

ACUTE KIDNEY INJURY FOLLOWING LOWER LIMB ARTHROPLASTY

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Introduction: Acute Kidney Injury (AKI) formerly known as “acute renal failure” results in rapid reduction in kidney function associated with a failure to maintain fluid, electrolyte and acid-base homeostasis. The UK NCEPOD published a report in 2010 on AKI that revealed many deficiencies in the care of patients with AKI. In our study we determined retrospectively the occurrence of this problem in a District General Hospital after lower limb arthroplasty. Materials and methods: Data was collected retrospective study over 3 months from theatre registers and the hospital database system. 359 patients were identified. Preoperative (baseline) and postoperative blood investigations were analysed. Data collection also included type of anaesthesia, timing of operation, duration of procedure, length of stay and time required for blood results to come back to baseline. A diagnosis of Acute Kidney Injury was based on the International Kidney Disease Improving Global Outcomes (KDIGO) staging classification as recently recommended by UK Renal Association. Results: In our study 11.97% (43/359) of patients developed acute kidney injury following lower limb arthroplasty. Patients with acute kidney injury stayed longer in hospital (12.58days) compared to similar age group of patients (5.95days) admitted during the same period. Conclusion: Acute Kidney Injury following lower limb arthroplasty is a sensitive marker of postoperative care. A successful surgical outcome may not mean a successful renal outcome. The new AKI definition and staging system allows an earlier detection and management of this condition. Further prospective audit with large number of patients are required.

Abstract no.: 30862

**A RARE AND POTENTIALLY SERIOUS INTRAOPERATIVE
COMPLICATION OF SPINAL SURGERY**

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Complications following spinal surgeries can range from simple wound infections to complete paralysis. Risk management remains a vital pillar of clinical governance and, Healthcare sector has continued to take steps to recognise the preventable causes and lay guidelines to decrease the incidence of such complications. We report a case of broken tip of osteotome instrument in the spinal canal following a posterior decompression of lumbar spine. Such a complication has not been reported so far in the literature.

Abstract no.: 30866

LONG-TERM RESULTS BY USING IMPLANT BICON PLUS FOR POSTDYSPLASTIC COXARTHROSIS

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INTRODUCTION: Authors present own results by using acetabular component Bicon plus and their long-term results for postdysplastic coxarthrosis. OBJECTIVES: The aim of our study was to evaluate the use of Bicon plus cup for dysplastic acetabulum for long term. METHODS: We evaluate 210 patients/295 cups/ implanted from year 1993-2000. The average age was 58.5y/ 28-65/. 80 men and 130 women. Clinical evaluation was performed by Harris Hip Score. Imagine studies: AP. RESULTS: The patients were followed for average 10 years. Primary coxarthrosis was in 65%, postdysplastic in 24% and posttraumatic 11%. According to Harris Hip score, results excellent 49%, good 45%, fair 5%, and poor 1%. We note good osteointegration on X-ray and note only 1 loosening cup after 6 years in patient with rheumatoid arthritis. CONCLUSION: Bicon plus has excellent long-term results, excellent primary stability in severe dysplasia and minimal complications.

Abstract no.: 30868

UNICOMPARTMENTAL KNEE ARTHROPLASTY WITH KINEMATIC NAVIGATION – FOLLOW UP 6 YEARS

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INTRODUCTION: Kinematic navigation reduces the possibility of surgeons' mistake, accuracy of the femoral and tibial components, resection level, soft tissue balancing. **OBJECTIVES:** To evaluate short term results of 126 computer-assisted unicompartmental knee arthroplasty (UKA) with ligament balancing. **METHODS:** Between September 2003 and November 2005 we have performed 126 computer assisted surgery UKA preservations. We used kinematic navigation Ci system. This is cemented system with mobile or fixed bearing. Our groups included 72 women and 54 men. Average age at surgery was 71,2 years. The indication for UKA includes primary or posttraumatic osteoarthritis limited to one compartment and functional anterior cruciate ligament, no inflammatory disease. Clinical evaluation was performed by hospital for special surgery knee scoring system (KSS). Imaging: AP, lateral, and stress X-rays **RESULTS:** The average KSS score was 57 points /range, 40-79 points/ preoperatively and 94 points /range 62-100 points/ postoperatively. 90% patients were classified as excellent. There was no infection, fracture of tibial plateau, poor pain, or sign of patellar impingement **CONCLUSION:** UKA together with modern design, reproducible instrumentation and kinematic navigation can eliminate the previous cause of early failures, contralateral tibio-femoral degeneration and tibial loosening.

Abstract no.: 30874

ALTERNATIVE TO SURGICAL, NEW EFFECTIVE CONSERVATIVE TREATMENT OF JUVENILE IDIOPATHIC SCOLIOSIS (IS) BY MEANS OF RESTORATION OF PHYSIOLOGICALLY CORRECT BIOMECHANICS OF SPINAL MUSCLES, USING ORTHOPEDIC INSOLES AND MAGNETO-ACOUSTIC THERAPY

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Treatment of IS with unknown etiology remains key problem in orthopedics. From 1999 till 2011 more than 7000 patients with IS (mostly juvenile form) and associated spinal pain syndrome were under our investigation and treatment. Conclusions: scoliotic deformation of backbone has compensatory-adaptive nature and conditioned reflexive origin. Essence of this process consists in one-sided hypertone of spine extensors, associated with structural features of brain, fixed in vestibular apparatus and cerebellum (reflex of "wrong" vertical body position). Tilt of the body leads to rotation of vertebrae around their axis in all regions of spine and subsequent development of lateral curvature. Traditional treatment of IS is linked with spine's fusion, with some negative signs: problems for skeletal growth in young children; metal fixator may cause reaction of biological incompatibility and infection development; surgical treatment is expensive and traumatic, etc. Our non-surgical method of scoliosis treatment includes: 1. Correction of balance of spinal muscles as well as axis of spine using complex of detorsional exercises. 2. Prolonged wearing of orthopedic insoles of necessary height for compensation of relative shortening of one leg for restoring vertical position of the body and formation of "correct" reflexion. As a result elimination of lateral curvature is achieved. This new body position is fixed in the brain and preserved in later life. 3. Magneto-acoustic therapy with its anti-swelling, anti-inflammatory and analgesic effects, restoring microcirculation in affected areas, stimulates normalization of spinal cord function, cerebral and spinal blood flow and regression of pathological symptoms, typical for scoliosis patients.

Abstract no.: 30876

METHOD OF ACETABULAR RECONSTRUCTION IN REVISION HIP ARTHROPLASTY

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Between January 2000 and December 2010 in the Joint Replacement Department of The Central Institute of Traumatology and Orthopedics we used the technique of acetabular reconstruction with the usage of bone allograft and reinforcement cup in revision hip arthroplasty. We applied this technique in 114 patients. Age of patients was between 29 and 78 years. Patients have had acetabular 2C-3B W. Paprosky classification bone defects. Follow-up from 6 months to 10 years. We used the previously resected and specially prepared lyophilized femoral heads as bone allografts, bone chips as spongy plastic material and Ganz-type reinforcement rings. We observed postsurgical complications in 14 cases: 12 cases of superficial and deep infection, peroneal nerve palsy in 1 case, which was relieved after taking neuroprotective drug, pulmonary embolism in 1 case. The study results were evaluated by the standard methods of patient examination, X-ray control, assessing the Harris hip score and subjective patient evaluation according to the principle of excellent, good, satisfactory and unsatisfactory results. In 114 cases of application of this technique the satisfactory, good and excellent results were obtained in 94 cases. Unsatisfactory result in 20 cases. The unsatisfactory results included: 10 cases of deep infection, which has required implant removal, 8 cases of aseptic loosening and cup destabilization, 2 cases of chronic pain. Thus, based on these results we assume the indicated technique of acetabular reconstruction in revision hip arthroplasty as an effective method of treatment for patients with the instability of the acetabular component.

Abstract no.: 30877

ANALYSIS OF DIFFERENT STEM LENGTHS AND FIXATION TECHNIQUES IN HINGED TOTAL KNEE ARTHROPLASTY

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Objective: To improve component stability in hinged Total Knee Arthroplasty (TKA), different stem lengths with or without cement could be included during surgery. A numerical model was developed to compare different fixation techniques and stem lengths in hinged TKA during a lunge and a squat. **Methods:** A physiological 3D tibia model was created from Computed Tomography images of a left mechanical-equivalent Sawbone tibia. A hinged TKA (RT-PLUS, Smith&Nephew) was selected for the study. Four different configurations were considered: a short cementless stem, a long cementless stem, a short cemented stem and a long cemented stem. **Results:** The maximal average compressive stress was higher for the cementless long stem configuration (squat 18.2 MPa, lunge 17.7 MPa) and lower for the cemented long stem configurations (squat 11.5 MPa, lunge 10.1 MPa). Also, for the short stem, the cementless configuration showed a higher average compressive stress (squat 13.3 MPa, lunge 14.6 MPa) compared to the cemented configuration (squat 9.5 MPa, lunge 10.4 MPa) in the region situated around the stem tips. However, cemented and cementless short stems showed similar maximal stresses in a region below the stem tip. Cementless stems show higher micromotions compared to cemented stems (~50%). Long cemented stems result in lower micromotions (~50 µm) compared to short cementless stems (~120 µm). **Conclusions:** The presence of cemented stem induces lower stresses in the tibial bone-stem interface and lower micromotions between implant and bone compared to cementless stem. A short stem shows similar maximal stresses in a region below the stem tip.

Abstract no.: 30881

OPTIMAL ANTEROLATERAL DISTAL TIBIAL PLATE POSITIONING TO REDUCE THE RISK OF PROUD METALWORK

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MIPO technique can often be used for distal tibial fractures using a LCP anterolateral distal tibia plate. Although anatomically contoured, often the plate may stand off the distal tibia either near the ankle joint or more proximally. This may cause patients pain due to the subcutaneous placement of the proud metalwork. In this anatomical study, optimal placement of the plate was identified to reduce the risk of proud metalwork. Method: Twenty cadaveric tibia with no previous surgery or pathology were utilized. A 16-hole LCP anterolateral tibia plate was applied to the tibia either 0, 5 or 10mm from the syndesmosis and 5, 10, 15mm from the tibial plafond. Vertical distances were measured from the tibial cortex to the plate at 6 positions along the plate to assess how proud the plate was. Results: Optimal LCP plate position was 3mm from the syndesmosis and 13mm from the tibial plafond in the left tibia. This was similar in right tibia where optimal positioning was 1mm from the syndesmosis and 13mm from the tibial plafond. In a suboptimal position (plate 10mm from the syndesmosis and 15mm from the tibial plafond) the proximal extent to the plate may be 10.7mm off the tibia. Conclusion: The distal tibia morphology may vary greatly amongst patients causing metalwork to remain proud after fracture fixation. This anatomical study demonstrates that optimal plate position can easily be found by placing the anterolateral distal tibial plate approximately a finger breath above the tibial plafond and 1-3mm from the syndesmosis.

Abstract no.: 30883

TITANIUM ELASTIC STABLE INTRAMEDULLARY NAILING OF DISPLACED MIDSHAFT CLAVICLE FRACTURES – A REVIEW OF 38 CASES

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Introduction: Clavicle fractures accounting for 3-5% of all adult fractures are usually treated non-operatively. There is an increasing trend towards their surgical fixation. Objective: The aim of our study was to investigate the outcome following titanium elastic stable intramedullary nailing (ESIN) for midshaft non-comminuted clavicle fractures with >20mm shortening/displacement. Methods: 38 patients, which met inclusion criteria, were reviewed retrospectively. There were 32 males and 6 females. The mean age was 27.6 years. The patients were assessed for clinical/radiological union and by Oxford Shoulder and QuickDASH scores. 71% patients required open reduction. Results: 100% union was achieved at average of 11.3 weeks. The average follow-up was 12 months. The average Oxford Shoulder and QuickDASH scores were 45.6 and 6.7 respectively. 47% patients had nail removal. One patient had lateral nail protrusion while other required its medial trimming. Conclusion: In our hands, ESIN is safe and minimally invasive with good patient satisfaction, cosmetic appearance and overall outcome.

Abstract no.: 30885

ACCURACY OF PREOPERATIVE TEMPLATING IN PRIMARY THR USING TRAUMA CAD

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Introduction: Successful hip arthroplasty is achieved through restoration of normal hip biomechanics – via use of appropriate implant choice and sizing. Preoperative templating provides a “dry run” of intended operation and helps to identify any potential complications or hardware issues. Traditionally this was achieved on plain films with transparent acetate overlays and an estimation of magnification. Digital templating allows the surgeon to electronically overlay a template onto a magnification-calibrated image. Objective: To assess the accuracy of digital templating using the Trauma CAD software on PACS for patients undergoing primary total hip replacement. Methods: Core patient database (CPD) was used to retrospectively identify all patients of senior author who underwent Primary THR from 01/01/2009 to 31/12/2009. Revision cases were excluded. For each patient, following data was obtained from CPD: Templating data was collected on component types and sizes for both acetabulum and stem, and details on actual implants used were collected from operative notes. The two sets of data were compared to assess accuracy of templating. Results: 42 patients met the inclusion criteria. 23 of these were cemented (Exeter stem and cup), and 19 were hybrid (Exeter stem and trident cup) THR. Accuracy for the cemented cups was 86% while it was 84% for uncemented cups. Cemented cups were oversized on templating while uncemented cups were undersized. The overall accuracy for Exeter stem was 90% and 95% for the offset. Conclusion: The Trauma CAD application has proved reliable for preoperative templating of primary THR with our results being comparable to published literature.

Abstract no.: 30889

ARTHRODIASTASIS IN PERTHES DISEASE

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The course and prognosis of Perthes disease are variable, and difficult to predict. Arthrodiastasis is a relatively new treatment for Perthes disease. It may encourage fibrous repair of defects of articular cartilage and the preservation of an intact and congruent femoral head. Aim of the work: The aim of this work was to assess the effect of arthrodiastasis in patients who would normally be expected to have poor outcome by conventional methods of treatment. Patients and methods: This study included twelve patients. All cases had late onset of the disease (after nine years) or a rapidly progressive course. Ilizarov external fixator with hinges at the center of rotation of the hip was used in all cases. The final results were assessed using Harris hip score, Herring lateral pillar classification system, and the modified Stulberg classification system. Results: The final Harris hip score ranged from 62 to 93 points (mean: 85 ± 7.3). The final herring classification was class B in ten patients and class C in two patients. The modified Stulberg classification was fair in eleven patients and poor in one patient. All patients had grade I pin tract infection at some stage during treatment. The external fixation time was three months in all patients. We had no pin loosening, pin fracture, or pin tract osteomyelitis. Conclusion: Ilizarov arthrodiastasis is safe and reliable in the treatment of cases of Perthes disease that are known to have a poor prognosis when treated by the conventional methods.

Abstract no.: 30890

EFFECT OF TRAUMATIC BRAIN INJURY ON HEALING OF FEMUR SHAFT FRACTURE

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Purpose: Among the fracture patients, there is a tendency to form more callus and get fracture united earlier in groups with traumatic brain injury. This retrospective study is to evaluate the factors that might accelerate the bone formation by comparing two groups in serologic tests, clinical and radiologic results. Materials and Methods: From March 2001 to July 2009, femur shaft fracture patients were divided in two groups 1) without traumatic brain injury (32 cases), 2) fracture with traumatic brain injury combined (30 cases). We evaluated the routine serologic exams, amount of callus formations during the follow up period. Results: There was no statistical difference in WBC, CRP, total calcium, LDH level between two groups, except Alkaline phosphatase level. Amount of callus formation on AP radiograph at the last follow up period was 74.9% in study, 42.6% in control group. Lateral radiograph showed 73.2% of callus formation rate in study group and 32.0% in control group. Conclusion: Two groups had no significant difference with the routine serologic exam except Alkaline phosphatase. Group with traumatic brain injury had a much greater amount of callus formation but there was no evidence of traumatic brain injury accelerating the fracture healing.

Abstract no.: 30891

THE ACCURACY OF LOWER EXTREMITY ALIGNMENT IN TOTAL KNEE ARTHROPLASTY USING NAVIGATION SYSTEM

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Purpose: To evaluate the accuracy of the alignment of lower extremity in 661 cases of total knee replacement arthroplasty (TKA) using navigation system. Materials and method: From June 2006 to September 2008, 661cases (431patients) of TKA using navigation system were operated. To analyze the mechanical axis, the weight bearing full length lower extremity radiographs were taken preoperatively and 3 weeks after the operation. The results from a well- experienced surgeon (423 cases) were compared with those from a less-experienced surgeon (238 cases), and they both used the navigation. Results: The mean of mechanical axis was -13.3° (range: $-33.3^{\circ}\sim 10.6^{\circ}$) preoperatively, but it was corrected as -2.0° (range: $-14.3^{\circ}\sim 7.5^{\circ}$) after TKA using navigation. There was no significant difference between the mean, -1.8° (range: $-13.4^{\circ}\sim 6.8^{\circ}$) by a well-experienced surgeon and the mean, -2.2° (range: $-14.3^{\circ}\sim 7.5^{\circ}$) by a less-experienced one. Conclusion: According to the radiologic results, the navigation is beneficiary for the accuracy of mechanical axis in TKA. The navigation system helps a less-experienced surgeon increase the accuracy of lower extremity alignment.

Abstract no.: 30892

TREATMENT OF TIBIAL PLATEAU FRACTURES

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The purpose of this study is to acknowledge the importance of precise reduction of articular surface of tibial plateau fractures and to make a guideline of treatment method by evaluating outcomes and effectiveness of surgical treatment using locking plate and MIPO techniques. Twenty-nine patients who underwent surgery for tibial plateau fracture from November 2005 to March 2010 were enrolled. The Shatzker classification was used to classify fractures, and as a surgical method we used lateral submeniscal approach to precisely reduce the articular surface. Radiologic evaluation of surgical outcome was determined by presence of bone union, malalignment, and reduction loss or joint depression of articular surface. Post-operative infection, time of active movement of the knee joint, time of partial weight loading, range of motion of knee joint were evaluated. Lysholm Knee Score was used for functional evaluation. Bone union took place in all but one case. As for post-operative infection there was one case of osteomyelitis and one case of superficial surgical site infection. There were satisfactory clinical results, with an average time of active knee joint movement and weight loading of 6 weeks. The average ROM of knee joint was 125° in the last follow up. As for functional evaluation using Lysholm Knee Score, showed an average of 94. In cases of tibial plateau fractures, if a skilled surgeon accurately reduces the articular surface of joint and use minimally invasive locking plate, it will be a useful method of treatment.

Abstract no.: 30893

EVALUATION OF BONY FUSION AND CLINICAL OUTCOME IN SPINAL FUSION WITH BETA-TRICALCIUM PHOSPHATE

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Introduction: β -tricalcium phosphate (β -TCP) has been used as a bone graft substitute for PLF or PLIF. However, there are few reports about PLF using β -TCP combined with PLIF. Purpose: To assess the bony fusion and evaluate clinical outcome in PLF using β -TCP combined with PLIF. Materials and Methods: 105 patients undergoing PLF combined with PLIF were enrolled. Their average age was 66.7 years. Single level fusion was performed in 55 patients, whereas the remaining 50 had two or more levels. In PLF, local bone was grafted on the decorticated transverse processes. In case of insufficient quantities of local bone, β -TCP granules were mixed with local bone. Bony fusion was defined as the presence of continuous bridging trabecular bone on the coronal plane of CT scans as well as $< 2^\circ$ of angular motion on lateral dynamic radiographs at 1 year after surgery. Clinical outcome was evaluated according to the recovery rate of JOA score. Bony fusion and clinical outcome were compared between the groups with local bone mixed with β -TCP (T-group) and those with local bone only (L-group). Results: Bony fusion rate was not significant between the two groups in single level fusion. In multi-levels fusion, it is statistically higher in T-group ($P=0.03$). The recovery rate of JOA score was not different between the two groups in either single or multi-level fusion. Conclusions: Our results showed β -TCP could play an important role as a scaffold to achieve bony fusion in multi-levels fusion in case of insufficient quantities of local bone.

Abstract no.: 30894

RISK FACTORS FOR AXIAL SYMPTOMS FOLLOWING CERVICAL LAMINOPLASTY

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Cervical laminoplasty has been accepted for the treatment of cervical myelopathy. However, it often induces axial symptoms. We investigated risk factors for axial symptoms after laminoplasty. 31 patients who underwent a spinous process-splitting laminoplasty were enrolled. Preoperative diagnoses were CSM in 25 patients, OPLL in 5, and CDH in 1. The levels of decompression were C2-7 in 2 patients, C3-4 in 1, C3-6 in 8, and C3-7 in 20. Enrolled patients were divided into two groups; the patients with axial symptoms (group A) and those without these symptoms (group B). Gender, age, preoperative diagnoses, preoperative JOA score, recovery rate of JOA score, levels of decompression, operative time, blood loss, and duration of cervical orthosis were compared between the two groups. Preoperative cervical curvature, preoperative ROM, and loss of cervical lordosis and ROM at the final follow-up were calculated and assessed. The levels of decompression of group A were C2-7 in 2 patients and C3-7 in 7. Recovery rate of JOA in group A was significantly lower than that of group B. The loss of lordosis showed a tendency to be larger in group A. The loss of ROM in group A was significantly larger than that in group B. There was no significant difference in the other parameters. These results suggest that the loss of lordosis and ROM may affect the incidence of axial symptoms after laminoplasty. To maintain cervical curvature and mobility, it is important to preserve the extensor muscles attached to C2 and C7 spinous processes.

Abstract no.: 30898

USE OF AUTOGRAFT IN PRIMARY TOTAL KNEE REPLACEMENT

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Bone grafts are a useful option to treat large posteromedial defects in tibia which are usually seen in medial condyle of tibia in severe varus knees and lateral condyle in valgus knees. Contained defects can be treated using cancellous bone chips/graft .uncontained peripheral defects may be treated using cement with or without screw augmentation for small defects. Large defects > 25 % of tibial plateau and > 5 mm deep may need structural bone graft or impaction bone grafting or metal wedges. The use of bone grafts is a viable alternative for the treatment of massive bone loss. For stable fixation of the components, we performed osseous reconstruction of tibial condyle using autologous structural bone grafts /impaction bone grafting. We used structural bone graft for 62 tibial defects in severe varus knees in 675 primary TKR. Grafts originating from the femoral condyles were fixed with screws. Morselised autograft supported by mesh, fixed with screws, were used in 8 patients. Bilateral bone grafting was done in 28 patients. Goal was to obtain firm seating of the tibial tray on a rim of viable bone along with rigid press fixation of the medullary stem. We observed an average 70-point postoperative increase in knee function according to HSS score. Graft incorporation was seen in all patients at av 7 yr follow-up. Autologous bone grafts can be successfully used for reconstruction of large osseous defects. It is available then and there, is biological and cost effective.

Abstract no.: 30904

ORTHOPAEDIC “TREATMENT INJURY” IN NEW ZEALAND: AN EFFECTIVE ALTERNATIVE FOR MEDICAL MISADVENTURE OR MEDICAL MISHAP

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In New Zealand, accident related medical complications are considered as “treatment injuries” through a government based private insurance called Accident Compensation Corporation (ACC). This is a “no blame” system which may be effective in delivering compensation to victims while maintaining the treating physicians’ credibility. The analysis of the past seven years has been presented which shows that the ACC in New Zealand provides a superior outcome in relation to medical misadventure than schemes in any other comparable country. This study reports the initial experience of “treatment injury” in New Zealand between 2005 and 2011. Conclusions: 1. “Treatment injury” system offered quicker compensation to a greater number of injured patients 2. There are more effective processes for complaint resolution and provider accountability. 3. This system is one of the simplest in the world for patients to claim through. 4. There is more reporting of medical complications as there is no blame or fault.

Abstract no.: 30913

**DEROTATION OSTEOTOMY FOR CONGENITAL RADIO-ULNAR
SYNOSTOSIS**

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Congenital radioulnar synostosis is a rare condition. It is the result of failure of segmentation between the radius and ulna. It may be isolated or associated with other abnormalities. It may also be found as a part of well-known syndromes. It is bilateral in 60% of the cases. This series includes 5 patients with congenital radioulnar synostosis. There were 3 females and 2 male. The mean age at surgery was 10 years (range from 5 to 22). All patients were unilateral. The right forearm was involved in 4 patients and the left in 1. One patient had associated ipsilateral symbrachydactyly. The indication for surgery was limitation in performing the activities of daily life regardless the degree of pronation deformity. They were treated by transverse rotational osteotomy through the synostosis in 4 cases. In the 5th case, the osteotomy was performed at the diaphysis of the radius because the synostosis was so proximal and short. The osteotomy was fixed by small set DCP plate in all cases. The mean time of union of osteotomy was 7 weeks (range from 5 to 12). The functional results after surgery were satisfactory in all patients.

Abstract no.: 30914

SECOND-LOOK ARTHROSCOPIC EVALUATION AND CLINICAL RESULTS OF ANATOMICAL DOUBLE-BUNDLE ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION – RELATIONSHIP BETWEEN GRAFT SIZE AND CLINICAL RESULTS

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Introduction: The purpose of this study was to evaluate the relationship between the size of the graft, the clinical results and the arthroscopic findings at second-look arthroscopic examination in double-bundle anterior cruciate ligament reconstruction. Methods: At 1 to 2 years after surgery, 46 patients were evaluated the arthroscopic findings at second-look arthroscopic examination, the side-to-side anterior laxity, the pivot-shift test and the Lysholm knee score. Results: There were no significant difference between the graft size, the clinical results and the second-look arthroscopic findings statistically. But there was the tendency that in the group of poor arthroscopic findings cases showed poor anterior stability and high rate of positive pivot shift test than the other groups.

Abstract no.: 30916

A BIOMECHANICAL ANALYSIS OF THE IMPACT OF PROXIMAL FEMORAL MORPHOLOGY ON FAILURE STRENGTH WITH THE BIRMINGHAM MID-HEAD RESECTION

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The Birmingham Mid-Head Resection (BMHR) is a short stem alternative to hip resurfacing and has been previously shown to be less sensitive to mechanical preparatory error. It is unclear whether native neck-shaft angle (NSA) impacts ultimate failure load, thus, the current work investigated the effect of NSA and coronal implant alignment on proximal femoral strength using the BMHR. Thirty-six synthetic composite femurs with two different proximal femoral morphologies, 18 femurs with a varus NSA of 120° and 18 femurs with a valgus NSA of 135°, were prepared in one of three coronal implant alignment angles: 10° of valgus, 10° of varus or neutral alignment. Prepared femurs were tested for stiffness and to failure in axial compression. In femurs with a NSA of 120°, there was no significant difference in stiffness nor failure load between femurs implanted with valgus, varus or neutrally aligned implants ($p=0.396$, $p=0.111$, respectively). In femurs with a NSA of 135°, valgus implanted femurs were significantly stiffer and failed at significantly higher loads than femurs implanted in varus alignment ($p<0.001$, $p=0.007$, respectively). Femurs with relative varus native neck-shaft angles do not appear to be sensitive to clinically relevant variations in coronal implant alignment. In femurs with a valgus femoral neck alignment, a relative valgus component alignment strengthened the BMHR construct compared to components in relative varus. The BMHR allows for a larger window of optimal component alignment compared to a traditional hip resurfacing, however, similar to a hip resurfacing, a valgus component alignment remains recommended.

Abstract no.: 30917

ALUMINA HEADS MINIMIZE WEAR AND FEMORAL OSTEOLYSIS PROGRESSION AFTER ISOLATED SIMPLE ACETABULAR REVISION

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Patients with THA that requires cup revision for acetabular osteolysis may have a well-fixed stem component. However, it is unclear whether isolated cup revision halts the progress of femoral osteolysis. We asked whether and to what degree osteolysis progress following isolated acetabular revision with a change of the femoral head; and which bearing surface (alumina or metal head) is better at reducing osteolysis progression and wear with a polyethylene (PE) cup. Methods: We evaluated 150 patients that underwent 165 acetabular revisions but no treatment for a limited proximal femoral osteolysis in hips with well-fixed femoral components. All hips received a new PE cup; 83 hips had a new alumina head and 82 a new metal head. Radiographs (mean follow-up 15 years; range, 10–25 years) were assessed to measure osteolysis, loosening, and PE wear. Results: An isolated cup revision with a change of the femoral head was able to halt femoral osteolysis progression during 10 years in 133 hips (81%) with a greater percentage in hips with alumina head (99% versus 62% with metal head). Alumina head was better at reducing the surface of osteolysis progression (47 mm² with alumina-PE friction and 250 mm² with metal-PE friction) and wear (0.07 mm/year versus 0.14 mm/year), and at increasing the survival probability before femoral revision (98% and 85% respectively at 15 years' follow-up). Conclusion: An isolated cup revision with a new alumina femoral head is able to halt femoral osteolysis progression during a period of 10 years.

Abstract no.: 30918

CAN CEMENTING TECHNIQUE REDUCE THE COST OF A PRIMARY TOTAL KNEE ARTHROPLASTY? EARLY TO MID-TERM RESULTS

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Background: During this era of cost-containment and cost-accountability, hospitals and surgeons have been targeted for cost-control. More than 500,000 total knee arthroplasties (TKA) are done in the US annually, costing more than USD 11 billion. Although research has been conducted evaluating the cost-effectiveness of TKA, the role of cementing-technique in cost-saving has not been investigated. Literature review indicates that two packets of bone-cement (BC) are usually used for a primary TKA (PTKA). The hypothesis of this study was that almost all primary PTKA could be successfully done using just one packet of BC. Material and methods: This retrospective study compared 207 PTKA (2000-04) done using 2 packets of BC to 560 PTKA (2005-09) done using 1 packet of BC (all antibiotic laden). Results: Both groups were comparable in terms of demographics, preoperative and postoperative Knee Society scores and complication rates ($P>0.05$). No case was revised for aseptic loosening in either group. No case had progressive radiolucent line on radiographs. Complications included 2 cases of acute infection, requiring incision & drainage. Five other cases were revised for stiffness (2), instability, periprosthetic fracture and metal allergy (1 each). Conclusions: Our results indicate that almost all PTKA can be successfully done using just one packet of BC, irrespective of the size of the knee, and without any increase in the complication rate. Considering the cost of one antibiotic laden BC packet to be USD 300-500, this would mean considerable cost saving (about USD 300,000-500,000 for every 1000 PTKA) in health-care.

Abstract no.: 30920

AN AMPUTATION MODEL FOR STUDYING HETEROTOPIC OSSIFICATION

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Heterotopic ossification (HO) is a frequent complication following acetabular fractures, hip surgeries, or multiple trauma. HO is also a frequent complication in combat injuries. For amputees sustaining blast injuries and amputation levels within the zone of injury, 80% had HO and 45% had moderate or severe HO. HO limits joint motion, causes severe pain, and interferes with the fitting of prosthesis. Animal models of HO have played an important role in understanding of HO pathogenesis and creating treatment methodologies. However, there are no established models of HO at amputation stump. There was a rabbit model reported, but it was not reproducible due to severe complications. It is known that canine species can ambulate with one limb amputated. Therefore, we present a canine model of HO at the amputation stump. Briefly, the femoral shaft was osteomized at a level 6 cm above the knee. A 8 x 15 mm window penetrating the anterior cortex of the stump was created. The intramedullary canal was serially reamed and the reamings were left in situ. Ischemic injury to the distal quadriceps was induced by clamping for 6 min. The femoral stump was sealed with bone wax and the skin was closed. The animals were allowed to ambulate freely. Radiography and micro-CT showed significant HO formation around the stump at 8 weeks. The average volume of the HO from the 3 animals at 8 weeks is 1400 mm³. In conclusion, the result showed the feasibility of the canine above-knee amputation model for studying HO.

Abstract no.: 30921

“ONE STOP” UPPER LIMB CLINIC – IMPROVING EFFICIENCY AND QUALITY OF SERVICE BY COMBINING ORTHOPAEDIC AND RADIOLOGY SERVICES

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Introduction: In the 2010 an “on the spot” shoulder Ultrasound Scan (USS) service was introduced as an adjunct to the upper limb orthopaedic clinic. All USS were conducted by Consultant Radiologists specialising in musculoskeletal radiology, and patients reviewed with the results of their investigations by a T&O specialist at the same sitting. Treatment plans were formulated and if necessary pre-operative assessment was performed on the same day. Aims: To identify the frequency of performing USS and determine the time from diagnosis to intervention as well as the reduction in follow up visits. Methods: Retrospective data was collected from eight consecutive out- patient clinics led by four upper limb Consultants during January and February 2011. Results: During the assessed period, 928 patients were seen. Out of those 113 (12%) had USS performed during the initial assessment. In total 71 (7.7%) patients underwent an intervention in the mean time of 55.5 days from their first visit. Discussion: This pilot study demonstrates several advantages of a “one stop” upper limb clinic; for those 71 (7.7%) patients diagnosed with a treatable pathology, same day USS resulted in 3 less visits to the hospital: one for the investigation, second for re-review with the results and third for the pre-operative assessment. As a result, time to definitive treatment was reduced. Reduced clinic visits improve the overall efficiency with which the clinics function and therefore potentially reduce the waiting time with which new referrals may be seen.

Abstract no.: 30925

COMBINED USE OF TRANSPEDICULAR ENUCLEATING AND A NEW INSTRUMENTATION FIXATION IN ONE STAGE OPERATION AS A TREATMENT FOR PROGRESSIVE HEMIVERTEBRAL SCOLIOSIS

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OBJECTIVE: Our study is a retrospective assess the effectiveness of combined use of transpedicular enucleating and a new instrumentation PRSS (Plate Rod System for Scoliosis) fixation in the treatment for growing hemivertebral (HV) scoliosis. **METHODS:** From June 2003 to April 2009, total 16 patients with progressive HV scoliosis underwent our combined methods. The mean age at operation was 8.125 ± 1.82 years. The technique involves excision of cancellers bone to eliminate the blood supply of the cartilaginous endplate and destroy the superior and inferior vertebral end plate through the inter side of HV body, followed by PRSS fixation to correct the main curve and compensation curve by its modulating efficiency in normalizing the spinal growth and gradual realignment of the spine. Analysis included age at surgery, measured changes in scoliosis angle and complications. **RESULTS:** The mean follow-up period was 37.25 ± 22.24 months. The scoliosis curve was corrected from average $55.06^{\circ}\pm 25.68^{\circ}$ preoperation to $21.25^{\circ}\pm 15.51^{\circ}$ postoperation with corrective rate 60.5%, and in the latest follow-up, the Cobb angle was $24.38^{\circ}\pm 16.44^{\circ}$ compared with immediate postoperative angle, there was no significant differences ($P>0.05$), indicating no significant loss of correction. No complication of neurological deficit was found in our series. **CONCLUSION:** Combined use of transpedicular enucleating and PRSS fixation is a safe and effective method for the management of HV scoliosis in growing children. It provides and maintains the desirable correction in growing year after one stage operation.

Abstract no.: 30927

OSTEOCHONDROMA FOREARM

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Correction of forearm deformity in a young boy caused by osteochondroma. A case presentation: We present a case of Type I osteochondroma forearm in a young boy 8 years old. It showed a combination of ulnar shortening and bowing of the radius secondary to Osteochondromas of the distal ulna. Operation consisted of excision of osteochondroma, immediate ulnar reconstruction With free fibular graft, while we maintained the distal ulnar epiphysis, the graft had united at both osteotomy sites where the distal ulnar epiphysis continuous to grows. The functional result was excellent at 2 years follow up.

Abstract no.: 30929

PERSISTENT ANKLE DISLOCATION – A RARE PRESENTATION

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Introduction: Persistent dislocation of the ankle joint is a rare presentation. The injury most often is accompanied by other severe extremity trauma or associated with polytrauma, hence goes unnoticed. Delayed treatment carries poor prognosis. Surgical reconstruction using modified Chrisman-Snook method for a persistent ankle dislocation is a unique prospect. Methods: We present the case of an 18-year-old boy who presented to us with a 3-month-old persistent dislocation of the ankle. Intra-operatively after open reduction a decision was taken to reconstruct the lateral ligamentous complex using a simpler Modified Chrisman-Snook technique. Result: Post operatively he had an AOFAS score of 80 which is a good result.

Abstract no.: 30931

THE ANATOMICAL RECONSTRUCTION OF THE HIP GEOMETRY – THE KEY TO A GOOD CLINICAL OUTCOME AFTER THR?

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Introduction: The objectives of THR are the improvement of function as well as the reduction of pain. It was hypothesized that these objectives can be better achieved by reconstruction of the preoperative anatomical joint geometry. The purposes of the study were the CT-based analysis of postoperative changes in the femoral joint geometry and secondly the analysis of the impact of these changes on clinical outcome. Methods: Forty-four patients were clinically investigated pre- and 12 months postoperatively. (1) CT-Scans from the pelvis to the knee were performed pre- and 7 days postoperatively to analyze changes of the femoral joint geometry. Clinical investigation consisted of the evaluation of the Harris-Hip-Score, visual analog scale, and satisfaction score. Results: Preoperatively, mean CCD was 128.8° (118.8 – 146.9°), offset was 39.7 mm (29.3 – 51.5 mm), and AV was 24.9° (7.9° - 39.1°). Mean offset postop was 41.7±4.3 mm (33.2 – 50.6 mm) (increased by 2.1 mm [-7.2 – 18.7 mm] in average [p=0.012]). Postoperatively, mean AV was 7.4° (-11.6° retrotorsion to 25.9°) which means a reduction by 17.5°±8.5° (-37° to 7.8°) in almost all patients (n=43; 98%). Postoperative coronal (varus/valgus) alignment was 0° (-3.2 – 4.5°). 12 months postop, mean HHS, VAS and satisfaction score were 92.6±8.3/1.0±1.5/1.5±0.8. A correlation was found between the higher VAS and the lower postoperative offset only (r=-0.42; p=0.07). Conclusions: Despite the observed high variance of pre- to postoperative changes in AV, CCD, and offset, we only found a reduction of the offset to impact the clinical outcome.

Abstract no.: 30935

MADURAMYCOSIS OF THE FOOT: A CASE REPORT OF BOYD'S AMPUTATION AS A SALVAGE PROCEDURE IN LATE PRESENTATION

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PESIMSR, Kuppam (INDIA)

With the increased movement of the world population, familiarity with the clinical picture of the Madura foot is of growing importance beyond its original endemic areas. The characteristic triad of symptoms consists of indurated swelling, multiple sinus tracts with purulent discharge filled with grains and localization at the foot. An increasing number of new etiologic agents are recognized today. For a better choice of therapy an adequate diagnostic procedure is essential; a deep biopsy for histology appears to give a more substantial contribution to identification of the causal organism than culture. The treatment which should be started early is at first essentially a drug treatment. However, in spite of high expectations with regard to new antimycotic drugs, amputation or disarticulation is often inevitable even today, particularly when the lesion is caused by Eumycetes. We present a case of eumycotic mycetoma with extensive involvement of foot for which a Boyd's amputation was done and treated with antifungal therapy with no recurrence.

Abstract no.: 30938

SHOULD WE REPAIR ADDUCTOR TEARS?

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Insertional tendinopathy of the adductor longus is a common and problematic condition in elite athletes and may lead to rupture. Previous literature has reported good outcomes in these patients when these ruptures are treated with both surgical and non-operative management. This paper will discuss the available literature on management of adductor tears and describe two case reports of deep infection following surgical repair of ruptures in soccer players and the effects this had on their profession. The possible medico legal implications of these cases are discussed. We conclude that given the overall evidence of conservative management of adductor tears and possible complications associated with the surgery this would suggest that acute adductor tears should be treated conservatively.

Abstract no.: 30939

KNEE REPLACEMENTS IN SEVERE FLEXION DEFORMITY

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Introduction: knee replacement in severe flexion deformity in a single stage is a difficult procedure. Methods: 45 patients with 50 knees were treated with cemented fixed bearing posterior cruciate substituting knee replacements, the average flexion deformity was 60 degrees, the maximum being 90 degrees. Most of these patients were having longstanding rheumatoid arthritis. The deformity was correctible to 35 degrees in about 30 knees under anaesthesia. All the patients had low hemoglobin and blood transfusions were given and bilateral knees were done one after the other. Results: we were able to get a complete correction of deformity in all patients. 6 patients had superficial wound problem in the proximal part of the incision. All knees had a persistent quadriceps lag of about 30 degree post op which gradually became better over a period of 6 months, we got good flexion of up to 100 degrees in all knees. All knees went into flexion contracture of 15 degrees and more which required physiotherapy. The joint line was a little higher in all the post operative X-rays and there was patella baja, 19 patients were able to move independently after 8 months of surgery. 4 patients continue to take a walking stick and 2 patients are using a walker. Alignment was restored to within +/- 5 degrees.

Abstract no.: 30940

SYSTEMATIC REVIEW OF SURGICAL TREATMENT OF ACROMIOCLAVICULAR JOINT (ACJ) INJURIES

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Introduction: Rockwood grades I & II ACJ injuries are treated non-operatively, and IV-VI surgically, but there is a controversy regarding the treatment of grade III injuries. There are no RCTs on the surgical treatment of these injuries. Methods: We aim to evaluate whether surgery is the best form of treatment for severe ACJ dislocations. This study includes all prospective and retrospective studies, RCTs and meta-analyses, but excludes comparative or cadaveric studies, literature reviews, case reports/presentations, letters and tips. A PubMed search for relevant articles was done. Results: There were 32 relevant publications, 25 prospective, 7 retrospective. There were no RCTs or meta-analyses. 9 studies were related to grade III dislocations, 2 on Tossy grade III, while 1 on Allman grade III dislocation. 23 other studies focused on combined severe grades (Rockwood III-VI) of dislocations. One third were on grade III injuries, while a few others on grade V injuries separately, but none focused separately on grades IV or VI ACJ dislocations. 888 patients included, mean sample size of 28 patients, 585 males, and 94 females, male to female ratio of 6:1, and age range of 14-78 years. Conclusion: Overall, 19/32 studies gave positive recommendations in favour of surgery, and 13 studies gave equivocal recommendations. No single study gave completely negative outcome or condemned surgical treatment altogether. All studies were level IV evidence, and therefore surgery is only recommended for professional sportsmen, manual labourers, people with overhead jobs, patients presenting with chronic dislocations with persistent symptoms, or failure of conservative treatment.

Abstract no.: 30946

MORPHOLOGICAL CHARACTERISTICS OF POST-TRAUMATIC SYNOVITIS

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The purpose of this study was to determine the morphological features typical of post-traumatic synovitis. Material studies served as tissue biopsies obtained during arthroscopy of the knee in 50 patients. The mean age was 42.54 ± 1.36 (17-52) years. Prescription process varied from one month to one year. Pathomorphological study of the material was carried out by the conventional histological method for studying soft tissue. Sections were stained with H & E, and Van Gieson. In the study group in all cases were diagnosed with mild or moderate chronic nonspecific productive synovitis. Pathomorphologically post-traumatic synovitis characterized by a mild or less moderate hypertrophy of the synovium, hyperplasia of the villi, proliferation of synovial cells, focal lymphocytic and macrophage infiltration, mainly around blood vessels, hemosiderosis, fibroblast proliferation, fibrosis, myxomatosis and liposis. Described morphologic signs are an important diagnostic criterion for the diagnosis of post-traumatic synovitis.

Abstract no.: 30947

RADIOLOGICAL AND MORPHOLOGICAL CHARACTERISTICS OF INTRASPINAL SYNOVIAL CYSTS

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During the 2006-2009 year of 516 MRI examinations of the lumbosacral spine was diagnosed and underwent surgery 6 (0.95%) patients with a diagnosis of intraspinal synovial cyst. In other parts of the spine, this pathology is not met. Materials for pathomorphological studies provided the tissue synovial cyst obtained during surgery. Sections were stained with H & E, and Van Gieson. On MRI revealed extradural rounded formation (11-18mm), adherent to the intervertebral joints, with clearly visualized capsule of varying thickness, which deforms and stenotic spinal canal. These formations were determined against a background of degenerative disc disease, spondylarthrosis, and spondylolysis-thesis. MRI is the most reliable method of preoperative diagnosis. It applies to the differentiation of congenital, neoplastic, or degenerative causes of spinal canal stenosis, as well as to assess the status of the bone marrow, ligaments, and spinal cord. Pathomorphologically in all cases a pronounced pattern of mild chronic nonspecific productive synovitis of reactive genesis. In the synovium were observed proliferative, dystrophic, sclerotic and mild inflammation processes. In three observations occurred mild papillary hyperplasia expressed villi.

Abstract no.: 30948

RADIOLOGICAL AND MORPHOLOGICAL CHARACTERISTICS OF THE DEFORMING GONARTHROSIS IN PATIENTS WITH TOTAL ARTHROPLASTY

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When a random sample conducted a detailed radiological and morphological study of 50 patients with gonarthrosis stages III and IV for subsequent total knee arthroplasty. All patients were conducted X-ray and MRI study. Material for histological study was the soft and bony tissue resected articular fragments. Paraffin sections were stained with H & E, and Van Gieson, IHC-method to the S-100 and Ki-67. MRI is an important additional radiological method to conventional radiography for the detection of deforming osteoarthritis of the knee, allowing him to evaluate how the bone structure and soft tissue components (the joint capsule, articular cartilage, meniscus, ligaments, etc.), which is an important factor in selecting the most rational therapeutic and rehabilitation measures. Stage of disease at MRI diagnosis may be classified as more severe than the X-ray study, in connection with more features of this method. Pathomorphologically destructive changes in the articular cartilage were more pronounced in areas with the greatest load, while there is osteoporosis, varying degrees of severity that requires quantification and has a value in predicting outcomes of arthroplasty.

Abstract no.: 30949

ADAPTIVE RESPONSE OF THE NEUROMUSCULAR SYSTEM AND PERIPHERAL BLOOD FLOW, AND PATHOMORPHOLOGICAL EVALUATION OF BONE-CARTILAGE STRUCTURES IN PATIENTS AFTER IMPLANTATION OF THE KNEE

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Based on the application of triplex scanning electromyographic and rheographic methods study the functional state of the neuromuscular system and peripheral blood flow in 154 patients with deforming arthrosis of the knee joints III-IV degree before and after (10-14 days, 2 months, 3-4 months, 5-7 months, 6-8 months, 12 months or more) total knee arthroplasty. Pathomorphological material (immunohistochemical and morphometric) studies provided the resection bone tissue obtained during operations. In the preoperative period patients observed destabilization of the functional status of muscles of lower limbs combined with reduced levels of blood flow. In the period 5-7 months after total knee arthroplasty revealed the instability of adaptive mechanisms for regulating blood flow and reduced functional status of muscles of lower limbs. These facts are the justification for a particular mode of rehabilitation and in the timing of the contralateral limb prosthetics. Slowing of venous flow on the operated limb in the postoperative period, evidence of the need to control hemostasis and use of medication and physical methods improve blood rheology and accelerate blood flow in the veins of the lower extremities. In-depth pathological studies have shown that the severity of degenerative processes in bone and cartilage structure and depth of their distribution should be considered when choosing a surgical intervention, timing of immobilization and rehabilitation. Determination of the correlation relationship between the severity of degenerative processes in bone-cartilage structure and changes in the neuromuscular system will predict the timing and quality of recovery of motor function and foothold damaged limbs.

Abstract no.: 30955

FUNCTIONAL OUTCOME FOLLOWING ANKLE ARTHRODESIS AS A SALVAGE PROCEDURE

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Background: Ankle arthrodesis has been accepted by many as yielding good long term clinical results. Ankle arthrodesis is still a gold standard salvage procedure for the management of ankle arthritis. The functional outcomes following ankle arthrodesis are not very well known. The purpose of this study was to perform a clinical and radiographic review to determine functional outcome for a group of patients in whom an ankle arthrodesis had been performed using Charnley's compression device. Materials and Methods: A functional assessment of 15 patients who had undergone ankle arthrodesis for post traumatic arthritis (6 cases of post traumatic AVN talus, 4 cases malunited bimalleolar fracture, 3 cases of distal tibial plafond fractures, 2 cases of medial malleoli non-union) between January 2006 to December 2009 were assessed clinically and radiologically for an average follow up of 2 years 8 months (1 year to 5 years and 7 months). Results: All patients studied had a solidly fused ankle and had no complications related to the surgery. Scoring the patients with the American Orthopaedic Foot and Ankle Society (AOFAS) Ankle-Hindfoot scale, we found that eleven of the 15 had excellent results; two good; and two fair results. Conclusion: On the basis of these results, patients should be counselled that an ankle fusion will help to relieve pain and to improve overall function, still one should keep in mind that it is a salvage procedure that will cause persistent alterations in gait with a potential for deterioration due to the development of subtalar arthritis.

Abstract no.: 30957

ANALYSIS OF COMPLAINTS AGAINST TRAUMA AND ORTHOPAEDIC DEPARTMENT IN EAST KENT REGION OVER 9 YEARS

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Introduction: Complaints should be seen as form of feedback to improve service and address problems. Review of complaints is considered a tool to draw lessons and audit performance. This study aims to analysis the patterns of complaints against our department over 9 years period. Methods: Records of all complaints received against T&O directorate between 1997 and 2005 were obtained and analysed. Further information obtained from health services ombudsman and PALS websites. Results: 405 complaints were received between 1997 and 2005. They were categorised in 4 main groups; 104 (26%) of the complaints were in administrative group, 109 (27%) of the complaints were in communication group, 95 (23%) in clinical group and 97 (24%) in miscellaneous group including nursing services, appliances, waiting time and others. 85% of the complaints were resolved within 20 days, 99% were resolved locally. 4 complaints were referred to the convenor, 3 declined and one was reviewed by independent panel, non referred to health ombudsman. Discussion: Although there were 95 complaints in the clinical group, only 17 (4%) had actual clinical problems, the remaining 78 complaints in the same group can be classified as perception of failure of clinical care. More than 50% of the complaints were in administrative and communication groups, these two groups should be the focus of healthcare authorities to improve the service. Administrative complaints could be improved by training and the use of a computerised appointment and admissions systems. Communication skills training should be mandatory to front line personnel dealing directly with patients.

Abstract no.: 30963

POTENTIAL BIOLOGIC CONSEQUENCES UNIQUE TO THE METAL-ON-METAL BEARING COUPLE

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There is increasing awareness of potential biologic consequences unique to the metal-on-metal bearing couple. Adverse local tissue reactions specific to metal particulate debris have been described. Previous studies in this field have shown the biological reaction to be a spectrum of reactivity and soft tissue changes, with a number of potential factors (i.e., female gender, implant design and size, acetabular component position, and obesity) supposedly contributing to or predisposing to the same. Over a period of 20 months, 110 patients underwent revision surgery for metal on metal hip related complications. All patients who underwent revision had clinical failure with substantial pain and functional limitation. Revision was undertaken when the patients felt their symptoms warranted surgical treatment. We describe the MRI findings specific to the failed hips. Incidence and description of certain unique findings like Periarticular soft tissue collection, pseudo tumor, muscle edema, osteolysis, piriformis and obturator internus atrophy is described along with relevant intraoperative findings. A painful metal-on-metal total hip may be difficult to diagnose given our limited experience with these inflammatory synovial reactions and lack of awareness of clinical presentation along with the uncertainty regarding the appropriate treatment. The MRI findings described in this study may prove to be a useful adjunct in reaching a diagnosis and deciding on future course of management.

Abstract no.: 30964

REVISING METAL ON METAL HIPS: TRICKS, TIPS AND TRAPS

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There is increasing evidence that certain metal-on-metal hip arthroplasties may fail early from novel mechanisms of failure in addition to the conventional mechanisms well described for all bearing surfaces. Revision surgeries involve meticulous preoperative planning, optimizing patients' medical condition for a major surgery, expertise and experience in the surgical procedure, special instruments and diligent postoperative care. In last 24 months, 110 patients underwent revision surgery on the account of failure of the metal on metal hip arthroplasties at our institute. In this study we describe trips, tricks and traps of the surgical procedure from our experience from a relatively large series of revision of 110 metal on metal revision hip cases. Technique description involving the appropriate exposure method, technique of removal of components, use of specialized instruments, thorough debridement, choice of revision prosthesis and optimal soft tissue management and closure preferences. We believe that our experience from this large series will help gain insight and plan preoperatively the revision surgeries for metal on metal hip replacements which are currently increasing on a year to year basis.

Abstract no.: 30971

TOTAL KNEE REVISION DUE TO PATELLOFEMORAL PAIN

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Following a literary overview authors give a brief report on their 1647 primary TKA cases analyzed due to the patellofemoral pain and the result for revision is reported too. Material and methods: 1647 primary TKA was performed from January 2000 to December 2010. The patellar surface has not been replaced routinely by authors. In 18 cases the reason for revision was the patellofemoral pain. (1,09%) The average age of these patients was 74,8 (56-84) years, the average follow uptime was 3,9 (1-10) years. The time between primary TKA and revision surgery was 27 (7-86) months. The male/female ratio was 3/13. For evaluation the KSS and the HSSPS scores have been used. Results: 16 out of 18 patients have been evaluated, one patient has already been died and one lost to follow up. 7 patients (43,7%) had great improvement, 4 patients (25%) had moderate improvement and 5 (31,3%) remained unchanged. Discussion: Authors, due to their own experience, support the group of authors, who do not recommend replacing the patellar surface routinely during primary TKA.

Abstract no.: 30972

INCIDENCE OF VENOUS THROMBOEMBOLISM USING 64 CHANNEL MULTIDETECTOR ROW COMPUTED TOMOGRAPHY-INDIRECT VENOGRAPHY AND ANTI-COAGULATION THERAPY AFTER TOTAL KNEE ARTHROPLASTY IN KOREA

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Purpose: This study evaluated the incidence of a venous thromboembolism(VTE) after total knee arthroplasty (TKA) using multidetector row computed tomography-indirect venography(MDCT-indirect venography) and assessed the efficacy of anti-coagulation therapy. **Materials and Methods:** We enrolled 118 patients with 126 cases of TKA. The average age of the patients was 68.4 years. We used 64 channel MDCT-indirect venography for the detection of VTE. We treated selectively proximal deep vein thrombosis (DVT) or pulmonary thromboembolism (PTE) cases according to the results of MDCT-indirect venography. We re-evaluated the change in VTE using follow-up MDCT-indirect venography after 3 months. **Results:** We identified VTE in 35.7%. DVT only was identified in 22.2% including 8 cases of proximal DVT and 20 cases of distal DVT. PTE without DVT was identified in 4.8%, and combined DVT and PTE in 8.7%. All patients with PTE were asymptomatic, but 4 DVT patients had signs of leg swelling. After anti-coagulation therapy, 20 patients showed complete resolution in 16 cases, improvement in 3 cases and one case showed a new distal DVT. **Conclusions:** The incidence of VTE after primary TKA was 35.7% in Korea. Furthermore, anti-coagulation therapy for proximal DVT & PTE patients may be a useful method for preventing the occurrence of a fatal PTE.

Abstract no.: 30973

CLINICAL EVALUATION OF ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION WITH REMNANT-PRESERVING TECHNIQUE

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Purposes: We evaluated functional & clinical results of anterior cruciate ligament (ACL) reconstruction with remnant-preserving technique using autologous single four strand semitendinosus tendon. **Materials and Methods:** Seventy patients were evaluated, those who underwent ACL reconstruction using autologous single four strand semitendinosus tendon. Group I (n=34) were cases with more than half of ACL remnant remained. Group II (n=36) were cases with nearly absent ACL remnant remained. The mean follow-up period was 18.7 month in group I, 20.7 months in group II. We have done clinical evaluation using such as Lachman test, pivot shift test, Lysholm score, Tegner activity score and IKDC score & functional evaluation using the single limb standing test and return to pre-injury sports activity. **Results:** Lachman test, pivot-shift test, measurement of side-to-side difference using KT-2000 arthrometer and Tegner activity score were much improved than preoperative evaluations, but there were no statistical significant differences between two groups. The objective IKDC(international knee documentation committee) score and return to pre-injury sports activity showed no statistical difference between two groups, but subjective IKDC score(p=0.007) and Lysholm score (p=0.001) were better in group I than group II. Single limb standing test was no difference between two groups, but had a tendency to improve than preoperative evaluation. **Conclusions:** We had good results after ACL reconstruction using autologous single four strand semitendinosus tendon. ACL remnant preserving group had better Lysholm score and IKDC subjective score.

Abstract no.: 30975

A SIMPLE RADIOGRAPHIC METHOD TO PREDICT FEMORAL COMPONENT ROTATION IN GAP BALANCING TOTAL KNEE ARTHROPLASTY – MOVING TOWARDS A CONCEPT OF INDIVIDUAL FEMORAL COMPONENT ROTATION

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Introduction: Femoral component rotation for TKA is oriented parallel to the transepicondylar axis (TEA) to improve flexion gap balancing & patellofemoral tracking. Osseous knee anatomy in flexion shows great inter-individual variability. We hypothesized femoral component rotation in tibia first gap balancing TKA is highly variable and may be predicted based on preoperative flexion gap anatomy. **Methods:** We assessed 50 consecutive PCL-sacrificing-ultracongruent-gap-balancing-tibia-first primary TKA (femoral component rotation determined by ligament tension). Using full leg, axial & skyline radiographs we assessed patella tracking before & after TKA, preoperative flexion gap anatomy defined by frontal tibial inclination & condylar twist angle (CTA) and postoperative frontal tibial component alignment, femoral component rotation & flexion gap symmetry. Assuming rectangular flexion gap & neutral frontal alignment of the tibial component, femoral component rotation was predicted by combining preoperative frontal tibial inclination & CTA. Linear correlation coefficients of predicted & actual femoral component rotation were calculated. **Results:** Preoperative flexion gap anatomy varied greatly. Proximal tibial inclination was $2.0 \pm 2.5^\circ$ varus (range, 6° varus- 6° valgus) and preoperative CTA 6.3 ± 1.9 (range, 2-10) $^\circ$ internal rotation (IR). Predicted & actual femoral component rotation correlated strongly ($r=0.77$), particularly after correction for tibial component alignment & flexion gap asymmetry ($r=0.90$). No patella lateralisation was noted despite high variation of femoral component rotation (range, 12° IR- 2° ER). **Conclusion:** We presented a simple radiographic method to predict femoral component rotation in gap balancing TKA based on preoperative flexion gap anatomy. Our technique provides additional guidance in gap balancing TKA and may prove useful to evaluate femoral component rotation after TKA.

Abstract no.: 30976

A REPORT OF TWO CASES OF WORK-RELATED CALCIFIC TENDONITIS OF THE EXTENSOR TENDONS OF THE HAND

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Acute calcific tendinitis is commonly associated with the shoulder, however there have only been limited cases reported of involvement of the hand, which is more often affected by tenosynovitis. It is often misdiagnosed as acute infection, gout or post-traumatic. We describe two cases of acute calcific tendinitis of the extensor tendons of the hand resulting from work-related repetitive strain. Acute calcific tendonitis of flexor carpi ulnaris following trauma has been reported, as well as involvement affecting the metacarpophalangeal joint from idiopathic cause. Whilst the exact pathological pathway is uncertain, it is thought to be caused by tissue hypoxia or trauma and rupture of a calcific deposit, with associated inflammatory response. We believe this is a rare presentation of work-related repetitive stress injury resulting in calcific deposition of the extensor tendons of the hand.

Abstract no.: 30980

RESULTS OF 43 TALAR FRACTURES TREATMENT WITH 8 YEARS MEAN FOLLOW UP

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The aim of this study is to present our experience in the treatment of talar fractures. 43 patients treated for a talar fracture, aged between 19 and 60, (average of 31.5 years) were reviewed. The fracture was caused by a fall from height in 17 patients and a bike accident in the other 26. All patients were males except for two. There were 8 talar body fractures, 34 talar neck fractures and 1 talar head fracture while only two of all the fractures were open (Gustilo grade II). The treatment was conservative in 24 cases and surgical in the remaining 19. The operative treatment included open reduction and internal fixation using k-wires in 12 patients or screws in 7 patients. Postoperatively two cases of skin necrosis, and two cases with superficial infection were observed treated successfully with skin grafts and antibiotics respectively. At 8 years follow up neither malunion nor delay union, pseudarthrosis and deep infection were noted. 8 patients with talar necrosis and subtalar osteoarthritis were submitted in ankle arthrodesis with nail successfully. One patient with Sudeck syndrome lost during follow up. At a mean follow up of 8 years there was an excellent result in 12 patients, very good in 14, fair in 8 and poor result in 9 patients.

Abstract no.: 30981

A RARE CASE OF ULNAR NEURITIS DUE TO OSTEIOD OSTEOMA OF MEDIAL HUMERUS CONDYLE

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The aim of this study is to present this rare entity as a cause of ulnar neuritis. A 28 years old man came into our clinic with right elbow pain and numbness of last two fingers. In clinical examination pain of medial humeral condyle was found especially during night. There was also pain after local pressure which was relieved by aspirin administration. The active and passive movements were painful but not restricted. There were neither neurological signs nor atrophy of posterior thenar muscles. Anteroposterior X-ray of tight elbow showed a lytic lesion in the medial humerus condyle confirmed by elbow CT scanning. The patient was submitted in removal of lytic lesion followed by curettage, placement of iliac grafts and ulnar nerve transposition. Biopsy showed osteoid osteoma. At recent follow up 2 years after surgery the radiological and clinical results were excellent.

Abstract no.: 30982

THE USE OF A TRUFIT PLUG FOR CARTILAGE REPAIR IN THE KNEE

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Purpose: To present our short-term experience with an osteochondral scaffold plug for cartilage repair in the knee. **Methods:** Twenty patients were consecutively treated for their cartilage lesions with the plug technique. These patients were prospectively clinically evaluated at 6 and 12 months of follow-up. Magnetic resonance imaging (MRI) was used for morphologic analysis of the cartilage repair. **Results:** The short-term clinical and MRI outcome of this pilot study are modest. No signs of deterioration of the repair tissue were observed. Of the 15 patients followed up during 1 year, 3 (20.0%) showed persistent clinical symptoms or even more clinical symptoms after insertion of the plug. These patients were considered as failures and therefore eligible for revision surgery. During revision surgery, the repair tissue was carefully removed. The remaining osteochondral defect was filled with autologous bone grafts. Immediate and persistent relief of symptoms was observed in all 3 patients. Histologic assessment of biopsy specimens taken during revision surgery showed fibrous vascularized repair tissue with the presence of foreign-body giant cells. **Conclusions:** The overall short-term clinical and MRI outcome of the osteochondral scaffold plug for cartilage repair in the knee is modest. In this pilot study a modest clinical improvement became apparent at 12 months of follow-up. MRI data showed no deterioration of the repair tissue. Of the 15 patients, 3 (20%) had persistent clinical symptoms after surgery. These patients were successfully treated with removal of the osteochondral plug remnants and the application of autologous bone grafts.

Abstract no.: 30983

A STUDY OF THE USE OF A POLYCARBONATE-URETHANE IMPLANT (NUSURFACE) FOR THE TREATMENT OF MEDIAL MENISCAL PAIN IN MIDDLE AGED PATIENTS WITH STABLE KNEES.

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Purpose: To evaluate short-term clinical and MRI outcome of a polycarbonate-urethane meniscus replacement implant (NUsurface, Active implants) for the treatment of medial meniscal pain in middle aged patients with stable knees. **Methods:** Ten patients aged 41 to 57 years, all of whom completed an informed consent form prior to treatment and met inclusion and exclusion criteria defined in the Ethics Committee approved study protocol. Coincidentally, all five patients had post-meniscectomy medial knee pain and were treated with this new meniscus replacement device. As designed in the study protocol, patients with evidence of grade IV medial articular cartilage loss and instability were excluded. Primary clinical outcome was measured over 12 months by the KOOS, with secondary outcomes measured by IKDC subjective, EQ-5D and VAS for pain. Serial MRI scans were taken at 6 weeks, 6 months and 12 months of follow-up to evaluate articular cartilage. **Results:** The patients included in this study showed a significant clinical improvement after the procedure. The first MRI findings from this study were considered to be promising since no signs of deterioration of the surrounding cartilage or of the device were observed. So far, no failures have occurred among the 5 patients. **Conclusions:** This site is part of a multi-site study designed to evaluate and obtain reasonable assurance of the safety, effectiveness, and risk/benefit ratio of this device in the treatment of a challenging patient cohort. The short-term clinical and MRI outcomes are promising.

Abstract no.: 30985

A PILOT STUDY OF THE USE OF A CONTOURED ARTICULAR PROSTHETIC DEVICE (HEMICAP®) AS A SALVAGE PROCEDURE FOR THE TREATMENT OF FOCAL CARTILAGE DEFECTS IN THE KNEE

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Purpose: To evaluate short-term clinical and radiological outcome of a contoured articular prosthetic device (HemiCAP®) for the treatment of cartilage defects in the knee in challenging patient cohort. Methods: Fourteen patients aged 29 to 51 years with a focal cartilage defect (grade III/IV) were treated with this device (HemiCAP®, Arthrosurface Inc., Franklin, MA, USA) and prospectively followed during 2 years. All patients included in this pilot study underwent previous surgery (failed cartilage repair procedures, partial meniscectomies,...). Clinical outcome was measured by the KOOS, the Tegner activity scale and the VAS for pain. Serial radiographs were taken at 1 week, 6 months, 12 months and 24 months of follow-up. Results: The patients included in this study showed a significant clinical improvement after the procedure. The analysis of the serial radiographs of this pilot study showed no osteoarthritic changes in the affected knee. No signs of loosening of the device were observed. No failures occurred among the 14 patients until now. Conclusions: This pilot investigation provided useful information on the safety and efficacy of this device in a challenging patient cohort. The short-term clinical and radiographical outcomes are promising. Large scale trials are mandatory to confirm the results and the reliability of this device.

Abstract no.: 30986

MIDTERM RESULTS OF THE TREATMENT OF CARTILAGE DEFECTS IN THE KNEE USING ALGINATE BEADS CONTAINING HUMAN MATURE ALLOGENIC CHONDROCYTES

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Purpose: The authors present their midterm experience with the implantation of alginate beads containing human mature allogenic chondrocytes for the treatment of cartilage lesions in the knee. Methods: A biodegradable, alginate-based biocompatible scaffold containing human mature allogenic chondrocytes was used for the treatment of cartilage lesions in the knee. Twenty-one patients were clinically prospectively evaluated with use of the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) and a visual analog scale (VAS). The mean follow-up time was 6.3 years (range, 5-8 years). Magnetic resonance imaging (MRI) data were analyzed based on the MOCART (Magnetic Resonance Observation of Cartilage Repair Tissue) system, allowing morphologic assessment of the repair tissue. Magnetic resonance images were taken at 1 year of follow-up and at a mean follow-up of 6.1 years (range, 5-7 years). Results: During the follow-up period, the WOMAC and VAS scores improved significantly. No signs of clinical deterioration or adverse reactions to the alginate beads/allogenic chondrocyte implantation were observed. Four failures occurred during the follow-up period in this study (19.05%). The MOCART scores were moderate and remained stable in time. Conclusion: This investigation provided useful information on the efficacy of the implantation of alginate beads containing human mature allogenic chondrocytes for the treatment of cartilage lesions in the knee. The midterm clinical outcome of the presented technique was satisfactory. However, these results were not confirmed by the MRI findings.

Abstract no.: 30988

COMPARATIVE STUDY BETWEEN STANDALONE PEEK CAGES VS GRAFT AND PLATE FIXATION FOR ANTERIOR CERVICAL FUSION

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Material and Methods: Anterior cervical decompression and fusion (ACDF) is a widely accepted surgical procedure for the treatment of cervical degenerative disc diseases. A prospective study was designed to analyse and compare the efficacy and outcomes of anterior cervical fusion using stand-alone polyetheretherketone (PEEK) cages and autogenous iliac crest grafts with the anterior cervical plating. A total of 98 consecutive patients suffering from cervical degenerative disc diseases treated with ACDF from October 2003 to Dec 2008 were enrolled in the study. Patients in group A (54 patients, 78 segments) had anterior interbody fusion with stand-alone PEEK cages and patients in group B (44 patients, 61 segments) with autogenous iliac crest graft combined with anterior plate fixation. The operative time and intraoperative blood loss were recorded. Clinical outcomes were evaluated using the modified Japanese Orthopaedic Association (JOA) scoring system; cervical lordosis, intervertebral height, and cervical fusion status were assessed on X-ray. **Results:** The mean follow-up period was 34.6 months in the stand-alone cage group and 31.2 months in the autologous iliac crest graft group. The operative time and intraoperative blood loss in group A were much less than those in group B ($p < 0.045$). Fusion rate was slightly higher in cage group than graft and plate group but with no significant statistical significance ($P < 0.65$). Postoperative JOA scores in both group A and group B were more than the preoperative ones with significant differences ($p < 0.02$). Postoperative cervical physiological curvature and intervertebral height in both groups were better than the preoperative ones with statistical significances ($p < 0.01$).

Abstract no.: 30991

CLINICAL MID-TERM OUTCOMES OF MINIMALLY INVASIVE TRANSFORAMINAL LUMBAR INTERBODY FUSION FOR DEGENERATIVE SPONDYLOLISTHESIS: A 2-6 YEAR FOLLOW-UP

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Introduction: Recent studies on lumbar spinal fusion techniques for low-grade degenerative spondylolisthesis have reported that minimally invasive transforaminal lumbar interbody fusion (MI-TLIF) minimized back muscle injury and exhibited good short-term outcomes. The authors presently describe a bilateral MI-TLIF technique, the associated mid-term clinical outcomes, and observed radiological changes. **Methods:** Two spine surgeons performed MI-TLIF simultaneously on both sides in 40 patients (mean age, 59.4 years) for degenerative spondylolisthesis. The mean follow-up period was 57 months. Clinical outcome was evaluated using the Oswestry disability index (ODI), Japanese Orthopedic Association lumbar (JOA) score, and visual analog scale (VAS). Radiological studies involved examination of slip percentage, fusion status, and adjacent level degeneration through CT and MRI. **Results:** The mean preoperative ODI was 43, which decreased to 16 at final follow-up ($P < 0.0001$). The mean JOA scores were 14.9/29 preoperatively and 25.7 at final follow-up ($P < 0.0001$). The mean back pain VAS at final follow-up was 16. The mean slip percentage was 20.1% preoperatively and 8.3% postoperatively ($P < 0.0001$), and the loss of correction was 1.8% at final follow-up. Radiological examinations indicated that this technique decreased back muscle injury and adjacent level degeneration compared with open techniques. The decompression on MRI was insufficient in 2 cases having remarkable intervertebral cage sinking and loss of correction. Only 1 patient required another surgery for disk herniation at the adjacent level. **Conclusions:** Thus, along with decreasing back muscle injury and adjacent level degeneration, a satisfactory mid-term outcome of bilateral MI-TLIF was observed.

Abstract no.: 30998

AN ATYPICAL AETIOLOGY OF CARPAL TUNNEL SYNDROME; BIFID MEDIAN NERVE AND A THROMBOSED MEDIAN ARTERY

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A persistent median artery of the forearm and wrist is a reported anatomical variant with an approximate incidence of 4-6%. Previous cases are reported in the literature of persistent median artery thrombosis and arteriovenous malformations associated with compression of the median nerve in the carpal tunnel. We present an interesting case of atypical carpal tunnel syndrome symptoms and episodes of digital purpura. Investigations revealed a bifid median nerve alongside a partially thrombosed persistent median artery. This case highlights the importance of clinical examination and persistent investigation with potentially more than one imaging modality, if initial investigations prove unremarkable. Preoperative diagnosis with ultrasonography of this anatomic variation may be of clinical importance as it can map the relevant structures and anatomical variants that can elicit nerve compression. Further it influences the surgical strategy and approach to the carpal tunnel and also identifies structures that require protection or those pathological structures that require excision.

Abstract no.: 30999

PRIMARY PSOAS ABSCESS WITH HIP PAIN IN TOTAL HIP REPLACEMENT – A CASE OF MISTAKEN IDENTITY

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Psoas abscess is a rare condition, and as such little is present in literature. Psoas abscesses can be classified as primary and secondary in origin. Primary psoas abscesses have unknown origin, whilst secondary psoas abscesses develop by haematogenous spread and contiguous infections. This is a diagnosis that is often missed or delayed, with subsequent increased morbidity and inappropriate management. We present a case of an 81-year-old male presenting with systemic signs of infection with unknown origin. Given that he complained of right hip pain, and previously had a right hip arthroplasty, an infection of the right hip prosthesis was suspected and surgical washout performed. As there was no improvement in symptoms, an expert opinion was sought and after further investigation a psoas abscess was diagnosed. The infrequent presentation of psoas abscesses in the adult and paediatric setting remains a challenge, and in this case was complicated by the presence of a hip prosthesis. When considering hip pain following total hip arthroplasty, all possible causes must be investigated before a diagnosis can be reached and appropriate management initiated. This case highlights the importance of thorough investigation and a multi-disciplinary approach to the management of such conditions.

Abstract no.: 31006

TREATMENT OF FRACTURES BY PERCUTANEOUS INJECTION OF BIOLOGICAL CEMENT

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INTRODUCTION: The use of biological osteoinductive, osteoconductive cement, along with temporary fixation provides consolidation without classical surgical intervention. **METHOD:** The use of biological cement with provisory closed percutaneous K-wire fixation enabled the treatment of 12 patients with fractures. Within the period November 2010 – February 2011, we have treated 12 patients using this specific method, namely: 8 humeral fractures: 4 humeral shaft fractures and 4 humeral neck fractures, one fracture dislocation; 1 distal radial fracture; 1 carpal scaphoid fracture; 1 ankle fracture and a delayed union of distal tibial fracture. **RESULTS:** The assessment of the results has to take into account the consolidation range of each type of fracture, and the cast fixation must be extended accordingly. The recovery shall depend upon the fracture's callus biology, the fracture's type and location as well as the age of the patient. We evaluate the results after clinical and radiological criteria. Consolidation was achieved in all cases. We will present also the complications related to first use of this new method. Complications were due to the establishment and adjustment of the surgical technical details during the treatment. **CONCLUSIONS:** The use of KRYPTONITE – X injected under fluoroscopic control in the conservative treatment of the fractures is a novelty. Consolidation was achieved in all cases. The discovery of new substances may enable us in the future to obtain a rapid intimate and resistant interfragmentary fracture contact, without the need to temporary immobilization of the fracture.

Abstract no.: 31010

FACTORS AFFECTING THE TELESCOPING OF THE LAG SCREW OF INTRAMEDULLARY NAIL IN FEMORAL TROCHANTERIC FRACTURES

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Objectives: Excessive lag screw telescoping causes cut out of lag screw or percutaneous thigh pain in femoral trochanteric fractures. The purpose of this study is to compare lag screw telescoping by intramedullary nailing in each intraoperative reduction types retrospectively. Methods: The unstable 129 patients (Jensen type 3, 4, 5) of all 178 patients who underwent intramedullary nailing by IPT nail for femoral trochanteric fractures were estimated. In all cases closed anatomical reduction was attempted except in two cases of muscle intervention between the fragments. In the cases of insufficient reduction we reduced manually without mini-open reduction. All 129 patients of unstable type were divided into three types of intraoperative reduction types according to the position of anteromedial spike of the proximal fragment to the distal fragment by immediate postoperative radiography. The anatomical type were 15 cases, the extramedullary type were 86 cases and the intramedullary type were 28 cases. Results: Lag screw telescoping were 5.3mm in anatomical type, 6.0mm in extramedullary type, and 5.9mm in intramedullary type. There were not significant differences among three intraoperative reduction types. Conclusion: Some authors reported that lag screw telescoping in intramedullary type had been more than in anatomical type or extramedullary type. Also some of those authors recommended converting intramedullary type into extramedullary type with mini-open reduction. However, there were not significant differences among three intraoperative reduction types in our cases, we do not need converting intramedullary type into extramedullary type with mini-open reduction in the treatment by intramedullary nailing.

Abstract no.: 31011

CLINICAL RESULTS OF TANDEM SPINAL CANAL STENOSIS (TSS)

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Objective: The aim of this study is to investigate the clinical results of tandem spinal canal stenosis (TSS) group and no TSS group retrospectively. Methods: Ninety-five patients with CSM underwent cervical laminoplasty. In 44 patients of TSS and 51 patients of no TSS, we estimated preoperative and recovery (the differences between the post- and preoperative) score of motor function and sensory of the lower extremities (LE score, full score six points) according to the Japanese Orthopaedic Association scoring system (full score 17 points). Results: Preoperative LE score were 2.3 points and 2.9 points, respectively in TSS group and no TSS group. The LE score of TSS group was significantly lower than that of no TSS group. Recovery LE score were 1.4 points and 1.2 points, respectively in TSS group and no TSS group. There were no significant differences between the two groups. In TSS group, 20 patients planned to undergo lumbar depression surgery. Ten patients that had severe pain of lower extremities underwent lumbar depression surgery prior to cervical laminoplasty or a few weeks after cervical laminoplasty. Three patients underwent lumbar depression surgery more than two years after cervical laminoplasty. The other seven patients enabled to avoid lumbar depression surgery by cervical laminoplasty. Conclusion: Our new principle of the treatment in TSS is to perform cervical laminoplasty in even the patients with severe lower extremity pain at first. If severe pain is not relieved, we add lumbar depression surgery.

Abstract no.: 31012

**THREE CASES OF INTRAOSSEOUS GANGLION WITH
OSTEOARTHRITIS**

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Introduction: Intraosseous ganglia are rare. We report three cases of intraosseous ganglion with osteoarthritis. Methods: Case1: A 55-year-old woman suffered from right knee pain for five years. Plain MRI revealed cystic lesion in the upper end of the tibia and findings of tear of the lateral meniscus. Enhanced MRI revealed rim enhancement around the lesions. Case2: A 38-year-old man complained of left wrist pain for five years. MRI revealed cystic lesion in the scaphoid communicating to the radioscapoid joint. Case3: A 77-year-old man complained of pain of the right ankle and dorsal side of the foot for three years. MRI revealed cystic lesion in the talus and navicula. Results: In all cases radiographs and CT showed well defined radiolucent lesions with sclerotic bone margins and osteoarthritic changes of the adjacent joints. Plain MRI revealed low signal intensity on T1-weighted images and high signal intensity on T2-weighted images in the lesions. In all cases curettage of the lesions and hydroxyapatite graft were performed. Histologically the wall of the cysts was composed of fibrocollagenous tissue without lining cells and the cysts were diagnosed intraosseous ganglion. Operative treatments produced complete relief of symptoms in all cases. Conclusion: Various hypotheses on the etiology of the lesion are discussed. The etiology of these cases was thought to be vascular disturbance in the bone due to the mechanical stress. The intraosseous ganglions were thought to cause osteoarthritic changes of the adjacent joints in our cases.

Abstract no.: 31019

**ASSESSMENT METHOD FOR ANALYZING BLOOD METAL IONS
RELEASED FOLLOWING HIP REPLACEMENT WITH METAL BEARING
SURFACES**

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Background: The level of Cr, Co and Ti metal ions released from MoM THA can be measured in the venous whole blood with High-Resolution Inductively Coupled Plasma Mass Spectrometry (HR-ICP-MS). The objective of this paper is to assess the accuracy and reproducibility of metal ion level measured using this device. Methods: We have compared the chromium, cobalt and titanium ions level of three whole-blood samples collected at the same time from 101 subjects who had a total hip prosthesis with a metal-on-metal bearing surfaces. Only the first sample had immediate contact with a metal needle during catheter insertion (washout sample). The second sample (reference sample). Final sample was used as reserve for the furthered analysis or repetition. Results: We have observed between the reference sample and the reserve that the average absolute difference were greater than the limit of quantification of the device for the three ions level, 0.35 µg/l versus 0.84 µg/l for chromium ($p \leq 0001$), 0,07 µg/L versus 0,74 µg/L for the cobalt ($p \leq 0001$) and 0,70 µg/L versus 0,88 µg/L for the titanium ($p \leq 0001$). We found no clinical significant differences between the washout and the reference sample. Conclusion: The measurement of metal ions differences between the collected samples from the patients with metal-on-metal THR, have statistically significant low reproducibility value, however, it was not clinically significant. There is no need to discard the washout sample, since no significant measurable sampling-contamination effect was detected between the first and the second sample. The washout technique is not necessary to obtain reproductive clinical results.

Abstract no.: 31023

EFFECT OF PLATELET-RICH PLASMA ON THE OSTEOCHONDRAL LESIONS OF TALUS

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Purpose: It was aimed to investigate the effect of platelet-rich plasma (PRP) on osteochondral healing. **Material and Method:** 35 patients with mean age 38 years (18 to 67) included in the present study. Mean time to diagnosis was 28 months (2 to 120). Lesions were found as Stage II in 10 patients, Stage III in 17 patients, Stage IV in 7 patients and Stage V in 1 patient. Patients in control group underwent micro-fracture alone, while patients in case group received micro-fracture plus PRP. Mean follow-up period was 16.2 months. Patients were assessed by using American Orthopaedic Foot and Ankle Society (AOFAS) scoring system before surgery and at month 12 after surgery. Visual analog scale (VAS) was used in pain assessment. **Result:** In control group, AOFAS score of 46.8 (30 to 58) before surgery increased to 71.0 (45 to 81) at the final control visit ($p<0.05$). In case group, AOFAS score of 42.5 (26 to 59) before surgery increased to 89.2 (81 to 99) at the final control visit ($p<0.05$). In control group, VAS pain score of 7.3 before surgery decreased to 3.8 in the final control visit ($p<0.05$). In case group, VAS pain score of 8.0 before surgery decreased to 2.2 in the final control visit ($p<0.05$). **Conclusion:** It was seen that arthroscopic micro-fracture treatment plus PRP had significant positive effect on functional scores when compared to those in group treated with micro-fracture alone. **Keywords:** ankle, arthroscopy, micro-fracture.

Abstract no.: 31033

SCIATICA CAUSED BY PIRIFORMIS MUSCLE SYNDROME: A CASE REPORT

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Introduction: The diagnosis of piriformis muscle syndrome, an unusual cause of sciatica, is difficult. We report a case of a young patient with sciatica secondary to piriformis muscle inflammation. Case report: A 26 years old man professional footballer, suffered during 18 months prior to admission from pain extending from the sacrum to left hip. Flexing the hip at 90° and adducting across the midline with deep digital palpation produced exquisite tenderness in the left piriformis muscle. MRI revealed an enlarged piriformis muscle. We have treated this case by local injection of nonsteroid anti-inflammatory under image intensifier. Discussion: The piriformis syndrome is a rare entrapment neuropathy. The usual source of this syndrome is thought to be traumatic injury to the piriformis muscle that results in spasm, edema, and contractures of the muscle and causes subsequent compression and entrapment of the sciatic nerve. The diagnosis of piriformis syndrome is based on clinical, and MR imaging. The treatment may include the administration of nonsteroidal anti-inflammatory agents and corticosteroids, injection of local anesthetics, and physical therapy. For patients with symptoms refractory to these conservative treatments, surgical release of the piriformis muscle is often recommended and has been reported to be effective in relieving the symptoms. Conclusion: The diagnosis of piriformis syndrome can be missed or delayed. MRI can be used to make a correct diagnosis, and to differentiate piriformis syndrome from the more common causes of lower back pain and sciatica.

Abstract no.: 31036

OUR EXPERIENCE IN ROTATING-HINGE TOTAL KNEE REPLACEMENT

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INTRODUCTION: Rotating-Hinge total knee prostheses are used predominantly in complex primary or revision arthroplasties with severe deformity, mayor ligament laxity and significant bone loss. **OBJECTIVES:** The aim of our study was present our experience evaluating the clinical and radiographic outcomes of knee reconstruction using modern generation rotating-hinge total knee arthroplasty. **METHODS:** We made a retrospective study of 11 patients who underwent a rotating hinge arthroplasty in our center between 2005 and 2011. We analysed sex, age, indications of the replacement. The patients were evaluated according to the Hospital for Special Surgery Score (HSS), the Knee Society Score (KSS) and by plain radiography. **RESULTS:** The average age of the patients at surgery was 73 years (range, 51-89 years). 10 females and 1 male. 5 arthroplasties were primary and 6 were revisions either for aseptic loosening (2), deep infections (3) or periprostheses fractures (1). The mean follow-up was 19 months (range, 4-36 months). No significant difference was found between the primary arthroplasties and the revisions regarding complications. According to the HSS scoring system, the preoperative score was 10 to 62 with an average of 33. The preoperative KSS-knee was 15 (0-46). At the last follow-up, the HSS score was 57 to 80 with an average of 74 and the KSS-knee was 70 (47-79). **CONCLUSION:** Hinge knee prostheses are used predominantly in complex primary or revision arthroplasties. Reconstruction with Rotating-Hinge Total knee prostheses can reduce pain and improve in function with satisfactory or good results in patients with difficult circumstances.

Abstract no.: 31038

STACK NAILING OF FOREARM FRACTURES, A RETROSPECTIVE STUDY

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Introduction: The purpose of the study was to present the advantages of intramedullary stack nailing of fractures of the forearm. This technique is based on the technique of stack nailing developed by Hackethal in 1959. MATERIAL AND METHODS: In a 5-year period we performed stack nailing in 57 patients with 95 fractures. The rationale of stack nailing is based on elastic jamming, which can only be achieved by following four rules: jamming of the nails in the cortical window, jamming then in the waist of the medullary cavity, spreading the bundle of nails in the metaphysis and filling up the conus of the medullary cavity with short nails. We confined stack nailing to closed and first-degree open fractures of 2nd-5th sixth of the shaft of the forearm. RESULTS: Except for 7 cases, in which a cast was necessary, we achieved sufficient rotational stability. On an average, the nails were removed after 12.6 months. The healing and complication rates were assessed by follow-up examination of 52 patients. The results were excellent and good in 72 per cent patients, satisfactory 16.6 per cent and poor in 11.4 per cent. Complications consisted of infection in 3 cases, non-union in 4, 2 cases with a synostosis, 2 refractures and 5 cases of migration of nails, combined with tendon rupture. CONCLUSION: In conclusion with our spectrum of indications stack nailing is a low-risk method, which leads to rotational stability and early bone healing.

Abstract no.: 31039

THE NEW 4D CT SCANNER ALLOWS DYNAMIC VISUALIZATION AND MEASUREMENT OF NORMAL ACROMIOCLAVICULAR JOINT MOTION

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INTRODUCTION: A study was performed using the new 4D CT scanner to determine the pattern of the acromioclavicular (AC) joint during adduction of the arm, with and without resisted superior elevation. **METHODS:** Sixteen healthy volunteers (5 female, 11 male, mean age 42±11 years), were positioned supine with their arm elevated 90° in the sagittal plane. During the scan they adducted their arm at shoulder level and then compressed against the gantry for 4 seconds, simulating the Bell van Riet (BvR) test. Four different motions were measured; AC joint width, anteroposterior translation, superoinferior translation, and opening of the superior aspect of the joint. Measurements between arm positions of neutral, adduction and then loaded were compared. **RESULTS:** The predominant movement is anteroposterior translation, the clavicle moving posteriorly. In the coronal plane there is superior translation of the clavicle and some opening of the superior joint space. Width of the AC joint hardly alters with any motion. Changes in posterior translation (1.1±0.9 mm, p=0.001) and superior translation (0.6±0.5 mm, p=0.001) were significantly different, while changes in the opening of the superior aspect of the AC joint (0.2±0.6 mm, p=0.269) were not. Changes in AC joint width and anteroposterior translation were significantly related to age (p=0.016, p=0.006). **CONCLUSION:** The 4D CT scan recorded the motion pattern of a normal AC joint and demonstrated that in adduction plus resisted elevation of the arm, simulating the BvR test, the main movement of the AC joint is posterior and superior translation of the clavicle.

Abstract no.: 31040

4D CT SCANS IMPROVE PRE-OPERATIVE PLANNING IN SNAPPING SCAPULAR SYNDROME

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INTRODUCTION: The 4 dimensional CT scan provides a moving 3D image in real time of the scapula snapping over the chest wall. The study was to determine if this aids the clinician in defining the size and area of scapular bone to be removed arthroscopically in patients with 'Snapping Scapular Syndrome'. **METHODS:** From April 2009 - December 2010 nine consecutive patients with Snapping Scapular Syndrome were included. In six patients, (mean age 21±5 years) conservative treatment failed. Patients were positioned prone and demonstrated their snapping motion during the 7 seconds duration of the scan. The 4D CT machine scans a 16 cm volume with one 360° rotation. Therefore, multiple rotations (each acquired within 0.175 seconds) will result in recording of motion. This ability to perform CT fluoroscopic assessment allows a 3D reconstruction of the scapulothoracic joint, its movements and the dynamic area of impingement of the scapula on the surrounding structures. **RESULTS:** The scan showed in one case not only snapping of the superior medial angle of the scapula on the 2nd rib, but also extra bone impinging on the 3rd rib. Another case showed no real impingement but movement of the 2nd and 3rd rib by a tethering structure. The scans improved delineation of the amount, and position, of the scapular bone that needed to be removed. **CONCLUSION:** Images provided by this new 4D CT scan offer greater pre-operative insight on the pathology in each individual patient with Snapping Scapular Syndrome and improve the efficacy of bone removal.

Abstract no.: 31042

A CASE REPORT OF PNEUMOCOCCAL VERTEBRAL OSTEOMYELITIS

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Introduction: Pyogenic vertebral osteomyelitis with streptococcus pneumonia is an uncommon diagnosis. We report a case of pneumococcal vertebral osteomyelitis in a previously healthy adult following community acquired pneumonia and subsequent bacteraemia. Case report: A 67-year-old previously healthy Caucasian Male presented to casualty with fever, shortness of breath, chest pain and cough. His blood culture has grown streptococcus pneumonia. This was treated with 10 days of Benzyl Penicillin and Clindamycin and discharged home. Later he developed low back and had MRI scan of Lumbar spine. This has confirmed vertebral osteomyelitis involving L3 and L4 vertebrae. His blood culture and vertebral biopsy culture were negative. He was started on intravenous tazocin and fucidic acid. His neurology and pain deteriorated and hence he underwent spinal decompression, posterior instrumentation and fusion. DNA analysis by Polymerised Chain Reaction technique of the specimen has shown streptococcus pneumonia. He was commenced on IV Teicoplanin and Oral Doxycyclin for two months. Unfortunately he had ongoing wound infection and multiple episodes of wound dehiscence and had multiple surgeries. After four and a half months of hospital stay and six weeks of neuro rehab he was discharged home. He is able to walk holding to railings at home. Discussion: Our case report illustrates the difficulty in early diagnosis and isolation of the micro-organism in such a case in clinical practice. This has led to chronic multi drug resistant course with severe morbidity and neurological impairment. Pneumococcal metastatic foci should be considered as a cause of post bacteraemia symptoms.

Abstract no.: 31046

TUBERCULOUS BURSITIS OF THE GREATER TROCHANTER: A CASE REPORT AND LITERATURE REVIEW

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Introduction: Tuberculosis of the greater trochanteric bursa is rare. We present a case of tuberculous greater trochanteric bursitis and review the related literature. **Case report:** A 46-year-old female patient, with no medical history of tuberculosis, presented with complaints of mechanical trochanteric pain in the right trochanteric area. A painful mass was palpated, in the algic area, without any hip mobility restriction. Routine laboratory tests and radiological images were unspecific. MRI showed a voluminous abscess in the trochanteric area. Surgical excision was performed and caseous necrosis was disclosed on the debrided material, which rendered positive on AFB staining and Loewenstein culture. Antituberculous were administered for 12 months. The patient was asymptomatic 4 years later. **Discussion:** Tuberculous trochanteric bursitis accounts for only 1% of all musculoskeletal tuberculosis cases. The clinical onset of tuberculous tenosynovitis is gradual and insidious with slowly progressive swelling in the involved part. Radiographs are initially not useful and CT enables detection of bone abnormality. MRI is especially useful in demonstrating the extent of the lesion and involvement of surrounding structures. Treatment consisting of antituberculous therapy for one month before operation followed by debridement of caseous soft tissue and bone combined with a period of post operative irrigation and suction drainage of the affected area beneath the deep fascia has been found to give very satisfactory results. Antituberculous treatment should be continued for at least a year. **Conclusion:** Both chemotherapy and surgery must be synergic if tuberculosis is diagnosed and an abscess is confirmed by imaging.

Abstract no.: 31048

**HIGH INCIDENCE OF NEGATIVE EXPLORATION OF HAND INJURIES
REFERRAL TO ORTHOPAEDICS IN A DISTRICT HOSPITAL.**

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Many hand injuries are explored in the theatre which takes up a lot of operating sessions in hospitals. We assess the outcome of hand injuries referral to orthopaedic department from Accident and Emergency department. A review of the outcomes of soft tissue hand injury in adults referred from Accident and Emergency department to Orthopaedics department over a 12 months period at a district general hospital. A total of 48 cases were identified in retrospect in the period under review. All of these were taken to theatre for exploration of the injuries. Of these, 22(45.8%) had injuries to the deeper structures (tendons, nerves and blood vessels). 26 patients (54.2%) had no such injuries on exploration. We would recommend that a more detailed physical examination is carried out in Accident and Emergency department including exploration of such under local anaesthesia. This will reduce the number of patients referred to orthopaedic for exploration. One patient who had a negative finding at exploration had wound infection which resolved promptly with oral antibiotic treatment

Abstract no.: 31062

MANAGEMENT OF COMPLEX TIBIAL PLATEAU FRACTURES BY ILIZAROV EXTERNAL FIXATOR

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Despite the evolution of surgical techniques and implants ,complex Intra-articular fractures of the tibial plateau remain a challenging problem. Anatomic reconstruction of the proximal tibia with rigid fixation is rarely the goal. Instead ,The goals of treatment of a complex tibial plateau fracture are to obtain a well-aligned, stable joint with a painless functional range of motion. The ultimate goal should be the prevention of symptomatic posttraumatic arthritis. Indirect reduction techniques and other soft tissue preservation methods safeguard the vascularity and emphasize restoring both joint congruity and the mechanical axis of the limb. The aim of this study was to evaluate the clinical outcome of using Ilizarov external fixator in the treatment of schatziker type V-VI tibial plateau fracture. This study was done from January 2009 to June 2011 on 30 complex tibial plateau fracture (Schatziker type V in 17and type VI in13 patients). The mean age was 32 years(18-60 years) .There were 20 males and the right limb was affected in 16 patients .There were 10 open fractures and there were other associated injuries in 15 patients. The mean of follow up period was 1.5 years. All the fractures were united at a mean of 14.4 weeks .there were pin track infection in 20 patients and other few complications in 6 patients. According to knee society score, there were excellent result in 50%,good in 30%and fair in 20%.

Abstract no.: 31064

EVALUATION OF LIGAMENT BALANCE AND KNEE ALIGNMENT IN POSTERIOR-STABILIZED TOTAL KNEE ARTHROPLASTY USING NAVIGATION SYSTEM

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Great success in achieving good alignment has been reported for TKA using navigation system. There are some reports the measuring knee kinematics especially about the gap and the soft tissue balance during TKA by navigation system. We measured the joint gap and ligament balance using a tensor that can be inserted in the joint gap with a navigation system, while performing posterior-stabilized TKA. Studies were carried out on 56 Knees using the CT-free navigation system. First, we manually adjusted the joint gap and ligament balance with a spacer block at extension and 90° of knee flexion. And then the tensor was inserted the joint gap by setting up the femoral component. The medial and lateral joint gap were measured at extension, 30°, 60°, 90°, 110°, 120° of knee flexion with patellar reduced. The alignment was also measured. We divided into two groups from a result of alignment at extension. Group A: (49 knees) cases within 3° varus. Group B: (15 knees) cases over 3° varus. The ligament balance was well maintained through the all flexion angle in Group A. In Group B, the gap of medial side was smaller than the gap of lateral side at extension to 60° of knee flexion, but the gap of both side was almost equal at 90° to 120° of knee flexion. Superficial portion of MCL has mainly influenced tension of the medial side near the knee extension, and deep portion of MCL has mainly influenced at knee flexion. We thought that the difference in the role of MCL had affected the ligament balance.

Abstract no.: 31065

EVALUATION OF MECHANICAL ALIGNMENT AND CLINICAL OUTCOME IN TOTAL KNEE ARTHROPLASTY USING CT-FREE NAVIGATION SYSTEM.

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Background: The accuracy of implant placement has been one of the important factors that determine the long-term survival of the prosthesis in total knee arthroplasty (TKA). The aim of this study was to assess the radiological and clinical outcome of computer-assisted surgery group (CAS) versus conventional methods group (CONV) for TKA. Methods: From January 2008 to November 2010, 160 knees underwent primary cemented TKA with the PFC sigma PS prosthesis (DePuy, Warsaw, IN). One hundred sixty knees were divided to 82 knees of CAS and 78 knees of CONV. CT- free Navigation system was used for CAS group. There were no significant differences between the groups with regard to age, BMI, preoperative range of motion and mechanical axis. Results: About the alignment, 95.1%(CAS) versus 85.8%(CONV) of knees achieved a mechanical axis within 3° of neutral in the coronal plane. There was a significant difference between these values ($p<0.05$). The mean postoperative Hospital for Special Surgery (HSS) score was 83.2 points of CAS versus 84.6 points of CONV at latest follow up. There was no significant difference between the groups with regard to the mean HSS score and the mean postoperative range of motion (117°of CAS and 118°of CONV). Conclusions: Both of groups were excellent results in the clinical outcome. However, computer-assisted TKA achieved greater accuracy in implant alignment.

Abstract no.: 31069

TREATING PEDIATRIC DIAPHYSEAL FEMUR FRACTURES WITH SIGN-FINN AND PEDIATRIC NAILS

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Purpose: This study was designed to evaluate the effectiveness of SIGN-Finn and Pediatric Nail (a solid nail) in treating femur fractures in pediatric patients. The hypothesis was that the use of solid nail is an effective treatment modality for treating fractures of femur in pediatric patients. **Methods:** There were 15 patients in whom SIGN-nailing was done after they had sustained fractures of femur. The average age of patients was 10.1 years (Range: 6years to 13 years). There were 11 male patients (73.3%) and 4 female patients (26.7%). SIGN-Finn nail was used in 10 patients (66.7%) while SIGN-Pediatric nail was used in 5 patients (33.3%). The fracture was in proximal-third in 6 cases, middle-third in 9 cases. All nails were passed using standard SIGN-technique with hand reaming and without using bone-graft or image intensifier. **Results:** The patients were evaluated for infection, radiographic parameters, range of movements, time to weight bearing (partial and complete) and complications or revision surgery (if needed). No patient developed surgical site infection. All patients had greater than 90 degrees flexion at the knee joint and were full weight bearing at 4 months. No revision surgery was done. **Conclusion:** Use of SIGN-Finn and Pediatric nails are an effective treatment modality in treating pediatric femur fractures. The fact that both are solid-nails, provides excellent mechanical stability and are free of cost; they becomes an ideal treatment modality.

Abstract no.: 31073

RESULTS OF MANAGEMENT OF BILATERAL DDH CASES. PEARLS AND PITFALLS. A LONG-TERM FOLLOW-UP STUDY.

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Aim:The aim of this study was to evaluate the clinical and radiographic results of management of bilateral DDH cases in walking patients, between the ages of 2 and 10 years of age. **Patients & methods:**Between Jan. 1981 and May 2009, there were 51 bilateral cases of DDH, (102 hips). The age of the patients ranged between 2 and 10 years old. Inclusion criteria included bilateral DDH cases not operated upon before, a minimum follow-up period of 5 years post-operatively. Femoral shortening was performed in all but 3 cases, (2 years old cases). Salter innominate osteotomy was performed in 41 cases, (82 hips), and Dega acetabuloplasty was performed in 10 patients, (20 hips). **Results :**The postoperative follow-up period ranged between 5 - 30 years, with a mean of 20 years. Favorable clinical outcomes were reported in 61.7%, while unfavorable results took place in 38.3% of the cases. There were many complications recorded, including, Pain, osteoarthritis, limb length discrepancy, avascular necrosis, residual acetabular dysplasia, and many minor complications as well. 10 of the studied 51 patients had another surgery during the follow-up period, and were considered as failure. **Conclusion**Bilateral DDH is even more difficult to treat. Symmetrical results are required and are aimed for, but sometimes not achieved. The older the age of the patients the more difficult and more challenging is the surgery. All the major complications occurred in children older than 6.. **Significance:**We support the opinion that bilateral DDH should not be reduced above the age of 6 years.

Abstract no.: 31077

INTRAMEDULLARY VERSUS EXTRAMEDULLARY ALIGNMENT OF THE TIBIAL COMPONENT IN THE ZIMMER NEXGEN KNEE

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Introduction: Alignment of the lower extremity, particularly in the frontal plane, has proven to be a critical factor in the long-term success of total knee arthroplasty (TKA). In our institution 104 TKA were performed by two experienced surgeons, each of them performing more than 150 of TKA per year. Our aim was to determine which alignment guide was more accurate in positioning of tibial component in TKA. Methods: Alignment of the tibial component in 52 patients using extramedullary alignment guide (EAG) performed by one surgeon were retrospectively compared to alignment of the tibial component using intramedullary alignment guide (IAG) in another 52 patients performed by another surgeon. The angle formed by the intersection of the tibial mechanical axis and the undersurface of the tibial component (frontal tibial component angle) and the sagittal orientation of the tibial component (slope) were evaluated to check the accuracy of both tibial alignment guides. Radiological alignments of tibial components were analysed. Both surgeons used IAG or EAG of the same manufacturer (Zimmer, NexGen), respectively. Results: Comparing both groups of patients/alignments in the range of not more than 2° of deviation according to the manufacturer's recommendation for tibial component orientation values (varus/valgus $0^\circ \pm 2^\circ$, slope $7^\circ \pm 2^\circ$), IAG turned out to be statistically significantly more accurate in positioning of the tibial component (varus/valgus $p = 0,038$, slope $p < 0.000$). Conclusion: IAG turned out to be more accurate in positioning of the tibial component, particularly in the case of the sagittal tibial component orientation.

Abstract no.: 31078

COMPARISON OF ALUMINA-ALUMINA TO METAL-POLYETHYLENE BEARING SURFACES IN THA: A RANDOMIZED STUDY WITH 9 TO 15 YEARS FOLLOW-UP

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Introduction: Ceramic-on-Ceramic bearing surface with improved acetabular shell and stem design can be a reliable alternative bearing surface. We are presenting the longest follow-up results (9-15 years) of randomized clinical trial comparing Metal on conventional Poly and CoC bearing surfaces. Method: 140 patients (age < 70) randomized to Hybrid-THA using either Alumina-Alumina (ceraver osteal) (71 patients) or MoP (69 patients) bearing surfaces between 1996 and 2001. Clinical scores (WOMAC, UCLA and merle d'aubigné scales) and radiological evaluations (osteolysis, loosening, wear rate using Imagica software) were recorded at average follow-up of 12.1 years (9 - 15). Results: At final follow up, 107 clinical scores were available (107 THR, 55 MoP and 52 CoC) and only 77 x-ray (39 MoP and 38 CoC) were available to review. Total of 9 patients had to be revised (8 of them were in the MoP group). Revision in the MoP group were secondary to loosening, severe osteolysis (femoral 4 patients, acetabular 1 patient), and severe isolated liner wear (3 patients). Revision in CoC group was secondary to stem loosening and osteolysis. Osteolysis were observed in 8 MoP and was significantly associated with annual wear > 0.2 mm/y. Average wear rate was 0.19 mm/y for the poly group and un-measurable for ceramic group. Increased cup abduction angle and decreased femoral offset in MoP group were significantly associated with higher wear rate. Post-operative UCLA score in CoC group is better ($p < .05$). Conclusion: The encouraging long-term result of alternative bearing surfaces using CoC with a zero incidence of fracture or squeaking can classify a well-designed CoC bearing as one of the bearing surface options especially in young and active patients.

Abstract no.: 31079

SERUM HOMOCYSTEIN LEVEL IN OSTEOPOROSIS

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Males and females both affected by osteoporosis. Every one out of two women over age of 50 years - low bone mass. 36 per cent of men above 50 years of age - tendency to develop osteoporosis 1 in 3 women over 50 - fracture due to osteoporosis; increases to 1 in 2 over 60 1 in 5 men over 50 - fracture due to osteoporosis; increases to 1 in 3 over 60,prevention of osteoporosis by identifying risk factors or risk indicators, as well as the development of new treatment strategies, are major issues .AIM:To identify one of the risk factors for osteoporosis through Biochemical analysis and thereby to alert the individualsMETHOD:Selcted individuals were screened for BMD by DEXA (Dual Energy X-ray Absorptiomerty)method. □Blood samples were collected on empty stomach. □Samples were sent to lab for estimation of serum total Homocysteine level:UNDERSTANDINGOur Present Understanding In treatment of Osteoporosis Calcium & Vitamin D Once a week therapy Hormonal therapy Exercise DietIs It complete Combination therapy with Folate, Vitamin B6 & B12 in addition with conventional drugs may be beneficial in reducing the risk of OSTEOPOROSIS CONCLUSION □However, more studies are needed to clarify the mechanistic role of Hcy, folate, vitamin B6 and vitamin B12 in bone metabolism

Abstract no.: 31080

THE RELATIONSHIP BETWEEN TOTAL KNEE ARTHROPLASTY AND THE SAGITTAL ALIGNMENT OF THE SPINE, AND THE LOWER EXTREMITIES

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PURPOSE : To investigate the change of the sagittal alignment of the spine and the lower extremities after total knee arthroplasty (TKA). **METHODS :** Subjects were comprised of 20 knees of 17 patients underwent TKA (6 male and 11 female, average 74.1 years old). All knees had osteoarthritis grade 3-4 according to Kellgren-Lawrence scale. Lateral radiographs were taken in standing position preoperatively and six months after TKA. Radiographic assessments were carried out to evaluate the sagittal spinopelvic alignment using thoracic kyphosis (T1-T12: TK), lumbar lordosis (T12-S1: LL), sacral slope (SS), pelvic angle (PA), C7 sagittal tilt angle (the angle between C7 plumb line and the line from C7 to hip axis: C7 STA), and the sagittal alignment of the lower extremities using femoral shaft inclination angle (FI), knee flexion angle (KF). **RESULTS :** Preoperative mean values were 48.4° in TK, 48.7° in LL, 33.4° in SS, 26.3° in PA, 0.1° in C7 STA, 3.5° in FI, and 6.7° in KF. Postoperative mean values were 51.6° in TK, 49.3° in LL, 34.8° in SS, 27.8° in PA, 0.9° in C7 STA, 3.8° in FI, and 8.7° in KF. There were no significant differences in all indices between before and after TKA. Significant correlations were observed between preoperative C7 STA and postoperative KF ($r=0.51$, $p<0.05$), and the improvement of KF ($r=0.61$, $p<0.05$). **CONCLUSION :** Better sagittal spinal alignment before TKA could contribute to better knee flexion angle in standing position after TKA.

Abstract no.: 31083

DOMESTIC ELECTRIC DRIVERS IN THE SERVICE OF ORTHOPAEDIC SURGERY

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Aim: To assess contamination potential of the exhaust air from venting ports of running DED's which are commonly used in orthopaedic surgeries by means of both microbiological sampling and particle counting. **Material and Method:** In empty operating room, exhaust air from five running sterile domestic electric drills was directed to particle counter from 10 cm distance for one minute and repeated for five times. Subsequently, microbiological sampling was made into blood-agar containing petri dish for 5 minutes via aspirating isolator while 10 cm distant to the ports of running drills. Control agar plate was left open in the operating room to rule out environmental contamination. Following incubation, colony formations were noted for 2-week-period of time. International Organization for Standardization 14644 criteria were implemented with respect to the sterility standards. **Results:** All of the drills produced statistically significantly higher levels of particles than the ambient air ($p < 0.01$). There was no statistically significant difference in number of collected particles among drills ($p > 0.05$). No bacterial growth was detected in microbiological sampling via blood-agar medium in the ambient air. Conversely, *Staphylococcus epidermidis*, *Micrococcus luteus*, and *Staphylococcus capitis* were isolated from the exhaust air of all running drills. There was no correlation between the number of particles produced by drills and the microbiological sampling. **Conclusion:** Domestic electric drills are not safe and may be a direct source of surgical site infection, since use or re-use of these drills during orthopaedic surgery increases the risk of infection with contaminated aerosols that are produced by these devices.

Abstract no.: 31084

COMPUTER-ASSISTED PLANNING OF CARPAL SCAPHOID FRACTURES SCREWING

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The scaphoid is the most common fractured bone in the carpus. Such fractures often occur after poor reception of a fall. Stable fractures can be treated by cast immobilisation. Unstable fractures require surgical interventions consisting in the insertion of a screw to stabilise both parts of the broken bone. However, closed treatment can result in delayed union, non-union, malunion, cast-induced joint stiffness, and lost time for employment, even for non-displaced scaphoid fractures. Therefore, percutaneous fixation of scaphoid fracture is recommended for both displaced and non-displaced scaphoid fractures to minimize such complications. Compression screws are often used and can be inserted using volar or dorsal approach. The fracture reduction and the K-wire insertion are assessed by fluoroscopy. Coupling with arthroscopy control allows a better estimation of the reduction quality, eventual associated lesions, the compressive effect of the screw and its intra-articular penetration. Recently, experimental percutaneous approach with computer-guided system has been reported: the « wrist-hand-fingers » complex is immobilised by a malleable, stable and radio-transparent device, and the K-wire insertion is guided by virtual fluoroscopy. However, the 3D shape of the scaphoid is complex and precise planning remains difficult on only 2D images. This work proposes a new technique using 3D computed tomography (CT) images to compute the optimal axis location of the screw. Usability of this information in operating theatre is also addressed.

Abstract no.: 31085

IN VIVO PROGRESSION OF BONE INGROWTH INTO POROUS-COATED IMPLANTS EMPLOYED TO FILL LONG BONE DEFECTS

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We report the measured progression of bone ingrowth into load-bearing porous coated titanium implants. Our hypothesis was to know if this metallic structure could be used as a scaffold to obtain bone ingrowth and fill in long bone defects. We quantitatively and histologically documented, every month during a year; the progression of new bone in a series of 10 commercially pure titanium porous-coated cylinders implanted into the radius diaphysis of rabbits and compared to the progression of bone in a group control where we didn't implant any material. We analyzed the bone growth seen on radiographs with software to study bone densities and morphometries. We evaluated the densitometry of the new bone regenerated through a CT-Scan. A histological study has been done to determine the porosity of the implant and the volume fraction bone ingrowth. At 5 months, 90 % have filled their osseous defect while 100 % of the group control didn't fill it. On the CT-Scan the new bone was similar to normal bone. There was a continuous progression of bone ingrowth, with a plateau occurring around 6 months. In conclusion, our findings show that maximal bone in growth is achieved around 6 months and that the progression of cancellous bone ingrowth into the porous coating of this implant is high (80%). To analyze this information we must be concern that in the time for achieve the bone ingrowth of the implant is a little bit longer that in the research animals.

Abstract no.: 31086

**DOES COMPUTER ASSISTED SURGERY HAS AN INTEREST ON THR?
RESULTS OF A RETRO AND PROSPECTIVE STUDY.**

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The aim of this study is to analyze the results obtained in 60 patients with a THR done with Computer Assisted Surgery. We have done a retro and prospective study including 60 patients (mean age of 67 years). All the patients were operated by the same surgeon between 2005 and 2007. Clinical and radiological findings were studied prospectively. No statistically differences according the complications and the length of hospital stay were noted comparing with standard THR. Complications: - during the surgery: one calcar split and two navigations stops - the first three months (2 dislocations) - after three months (1 dislocation) - after one year (1 death, 2 patients slight limping) 90 % of the patients were satisfied with the result of the surgery. A statistical analysis has been done between the similar results (implants sizes + leg lengthening) obtained with the Computer and the surgeon (templates-x-rays pre and post-op) measures. There was a difference pre and postop of a 10 % on the leg lengthening discrepancy. The computer calculates exactly the acetabular implant size in 73 %, the neck size on the 75 % and the femoral implant size in 76 % of the patients. The anteversion and lateralisation showed an adequate orientation in 93 % of the patients. This technique allows a better positioning of the implants and improves the reproducibility of the technique. CAOS allows a better joint reconstruction and facilitates the implantation of the prostheses in patients with very deformed hips.

Abstract no.: 31087

DOES THE DOUBLE MOBILITY ACETABULAR IMPLANT REDUCE THE RISK OF DISLOCATION?

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We present the results of a homogeneous series of 373 patients, operated between 2003 and 2008. Clinical and radiographic parameters were analyzed prospectively. The mean follow-up was 25 months. Clinical and radiographic results were evaluated. Results 373 patients (Mean : 81,3years): 57,63% primary hip osteoarthritis; 5,77 % femoral necrosis ; 1,13 % rheumatoid arthritis; 16,95 % revision surgeries; 13,45% femoral neck fractures; 3,2% acetabular fractures and 1,5 % hip tumours. HHS before surgery was 45, 83 points and post-surgery HHS 80, 03 points. Post-surgery complications: 8 dislocations; 1 peri prosthetic fracture ; 4 deep infections (2 acute; 2 late ones); 2 Deep vein thromboses; 10 urinary infections; 2 urinary retentions and 42 deaths . The survivorship rate measured by the Kaplan-Meier method taking into account all the patients and the complication was 98, 4 %. Discussion Double Mobility acetabular implant has shown good results in all the following indications: Revision surgery, hip osteoarthritis, femoral necrosis, Rheumatoid arthritis, femoral neck and acetabular fractures, hip tumours and as an implant for Computer Assisted Hip Surgery. Conclusions: The complications founded while this acetabular implant is used appeared with the same percentage than others. The dislocation rate is lower than standard acetabular implants, especially in patients with neuromuscular or cognitive illnesses (one third of the patients of this series). Those clinical results are hopeful and they could increase the number of actual indications (hip osteoarthritis in people over 70 years old, multiple illnesses associated, iterative dislocations...) for the double mobility implant on the future.

Abstract no.: 31090

CLASSIFICATION OF CHEST DISTORTION OF CHILDREN

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We have an increasing number of operation methods, but it is necessary to use less traumatic method. Therefore we need a differentiated approach to choose a technology and extent of operation depending on character and type of deformation. At present there are many classifications of congenial chest distortions, however they have the following disadvantages: all of them disclose one of components of deformation, absence of full characterization of type and grade of chest distortion, too lengthy and unhandy in practice. Aim of study: To develop the classification of chest distortion with the purpose of ensuring differentiated approach when choosing a treatment of different types of chest distortion. Materials and methods. We propose the universal classification of chest distortion to ensure differentiated choice of treatment in different chest distortions. It based on analysis of current classifications and approbations on 253 patients with different types of chest distortion operated in our clinic. All chest distortion are classified as congenial and acquired. Congenial type includes funneled, carinate, hypoplastic and local deformations. And acquired type includes postprimary and iatrogenic deformations. Hypoplastic deformation includes Poland syndrome and hypoplasia. Group of local deformation has costal arch except dichotomy and synostosis. Acquired deformations are divided into post primary (posttraumatic deformations as a result of scoliosis) and iatrogenic (recidivation, nodular as a result of pleuracotomy). Thus, proposed classification clearly presents the character of pathology of chest distortion and defines the technique of surgeon in planning and extent of operation.

Abstract no.: 31093

CEMENTLESS TOTAL HIP ARTHROPLASTY WITH LARGE DIAMETER HEAD METAL ON METAL SYSTEM IN TREATMENT OF DYSPLASTIC HIPS

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Ever since the introduction of metal on metal articulation, it has been always a curious concern about the performances in the clinical scenario weighed against the much talked about wear of the surfaces. When first introduced, total hip replacements offered pain relief and improved mobility in elderly patients. Our main objective is to report on the impantation of Large Diameter Head Metal on Metal in Dysplastic Hips irrespective of ages. Materials and methods: The bearing surface is a key feature of the performance of replacement joints. Metal-on-metal resurfacing is increasingly becoming widely used. A retrospective analysis was conducted on 137 patients who underwent 150 Total Hip Arthroplasties ranging from an age group of 18-67 at our centre. Results: The clinical results are excellent; none of the problems associated with the metal on- metal resurfacing have been encountered. Clinical analysis was based on Harris Hip Score counting Pre and Postoperatively. Advantages are less bone destruction, less bone resection, normal femoral loading, avoidance of stress shielding, maximum proprioceptive feedback, restoration of normal anatomy and reduced risk of dislocation. Conclusion: The final clinical results of Cementless total Hip Arthroplasty with Large Diameter Head Metal on Metal system in Treatment of Dysplastic Hips after 5 years of follow-up of patients corresponding to daily approved International scoring system. All of this indicates the advantages of this system comparing to its other daily analogues

Abstract no.: 31094

RISK FACTORS FOR CAGE RETROPULSION FOLLOWING POSTERIOR LUMBAR INTERBODY FUSION

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Posterior lumbar interbody fusion (PLIF) is a widely accepted procedure and various perioperative and postoperative complications regarding PLIF were reported. However, there are very few studies identifying the specific risk factors for cage retropulsion, one of complications following PLIF. We experienced 10 cases of cage retropulsion (7 men and 3 women) following PLIF combined with posterolateral fusion among 1200 patients with degenerative lumbar disease or skeletal deformity, and analyzed the risk factor for cage retropulsion, by comparing the cage retropulsion group with the control group. The mean age of cage retropulsion group was 68.7 (57-77) and the mean fusion level was 3.6 (2-5). The cage had migrated at L5/S in 6 patients, at L4/5 in 3, and at L3/4 in 1. The mean preoperative ROM and the mean disc height at the level of cage retropulsion was 10.5 ° (7-16) and 11.6mm (10-15), respectively, and the values were significantly greater in cage retropulsion group. In addition, the patients with a pear-shaped disc space showed a higher rate of cage retropulsion. These results indicate that L5/S with a pear-shape, a wide disc space with instability and multilevel fusion are the risk factors for cage retropulsion.

Abstract no.: 31095

PATTERNS OF BONE UPTAKE IN SEQUENTIAL POSTOPERATIVE BONE SCAN IN UNDISPLACED FEMUR NECK FRACTURES

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Introduction: We want to investigate the changing pattern of the uptake of isotopes in the sequential bone scan test for the prediction of osteonecrosis of the femoral head in patients with an undisplaced femoral neck fracture. **Methods:** Fifty four cases of sequential bone scan for non-displaced femoral neck fracture treated by internal fixation with cannulated screws between 2000 and 2007 were retrospectively studied. The mean follow-up period was 4.2 years. The first postoperative bone scan was performed 2 weeks post-surgery in all the patients. Then second, third, and fourth follow-up bone scans were performed at 1 to 6 months, 12 to 18 months, and 18 to 24 months post-surgery, respectively. **Results:** The mean femoral head ratio (FHR) in the first postoperative bone scan was 0.99. Although such FHR was less than 1.0 in 38 patients (70.4% of the 54 patients), only one patient developed osteonecrosis of the femoral head. The others showed hot uptake in their second follow-up bone scan. The mean FHRs in the second, third, and fourth postoperative bone scans were 1.69, 1.29, and 1.05, respectively, and there were significant statistical differences in each follow-up period ($P=0.035$). In addition, there were unique patterns of uptake of isotopes with the passage of time, such as cold uptake in early stage, hot uptake in a couple of months, and iso-uptake in the late stage. **Conclusion:** The early postoperative bone scan results should not be overestimated for the prediction of osteonecrosis of the femoral head.

Abstract no.: 31097

THE NEW WAVE OF CEMENTLESS TOTAL KNEE REPLACEMENT

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although cemented total knee replacement has been considered the golden standard in management we are presenting a short term follow up of cementless total knee replacement on 600 patients with follow up of 3 years conclusion we have great hope in the new wave of the cementless total knee replacement using the trabecular metal technology results to be discussed

Abstract no.: 31103

OPERATIVE VERSUS CONSERVATIVE MANAGEMENT OF FLOATING SHOULDER

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Introduction: The floating shoulder is defined as ipsilateral fractures of shaft of clavicle and the neck of the scapula. The upper extremity is suspended primarily from the axial skeleton by a bony and ligamentous ring, the superior shoulder suspensory complex (SSSC). The ring consists of the middle and distal clavicle, coracoclavicular and acromioclavicular ligaments, acromion, coracoid process, and glenoid . A double disruption of the SSSC ring results in an unstable construct and is the most accurate description of a floating shoulder. While acceptable results can be expected with non-operative management of minimally-displaced fractures, displacement at one or both sites is best managed with surgical reduction and fixation. **Methods:** It is a prospective study of 25 patients of floating shoulder. Follow up ranges from 24 to 36(average 30) months. Thirteen patients were managed conservatively and twelve operatively(fixation of clavicle alone). Patients were followed up with the help of X-rays at regular interval and the clinical outcome was measured using scoring system. **Results:** Shoulder stiffness was the main complication found in our patients which were more in conservative group. Patients in the surgical group scored better than the conservative group in all the 4 quality of clinical outcome scoring system used. Road traffic accident was the most common cause of floating shoulder injury in our series. **Conclusion:** Fixation of the clavicle alone in floating shoulder with early mobilization and return to activity gives excellent results and provides better clinical outcome and quality of life compared to conservatively managed patients.

Abstract no.: 31104

ROLE OF TOPICAL TRANEXAMIC ACID IN CONTROLLING POST OPERATIVE BLOOD LOSS IN TOTAL KNEE ARTHROPLASTY- A RANDOMIZED CONTROLLED TRIAL

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Introduction: Topical application of tranexamic acid reduces oozing from cut surfaces without systemic side effects. We present the results of topical application of tranexamic acid in controlling post operative blood loss after unilateral cemented total knee arthroplasty. **Method:** 49 patients who underwent unilateral cemented total knee arthroplasty between 2010 and 2011 were randomized to receive 20mg/kg body weight of tranexamic acid in 100ml of normal saline solution or an equivalent volume of normal saline (placebo) applied into joint surface for 5 minutes after the deflation of the tourniquet after surgery. The primary outcome was the blood loss in the two groups calculated from the amount of blood collected into the suction drainage apparatus over the period of first 24 hours immediately after application of tranexamic acid. Preoperative and the lowest post-operative hemoglobin levels before blood transfusions were also studied and correlated. **Results:** The mean post operative blood loss was significantly lower in the tranexamic acid group (255ml) as compared to the placebo group (473ml). The mean post operative hemoglobin levels were higher in tranexamic acid group (10.4g/dl) as compared to the placebo group (9.3g/dl). There were no significant differences among any other post operative complications between the two groups. **Conclusion:** We believe that topical application of tranexamic acid is an effective tool to control post operative blood loss in total knee arthroplasty leading to lesser requirements of post operative blood transfusions without increasing any post operative complications.

Abstract no.: 31108

ILIZAROV EXTERNAL FIXATION IN COMPLEX TREATMENT OF PATIENTS WITH LIMB INJURIES

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Background: Complex treatment defined when associated with the type of injury, involvement of bone site, fracture configuration, infection, bone defect, failed previous internal or unstable external fixation, deformity and improper selection of implant. **Objective:** To achieve the bone union and functional outcome according to Ilizarov techniques for anatomical restoration and rehabilitation of patients. **Material and Methods:** This study was conducted at Department of Orthopaedic Surgery & Traumatology Liaquat University of Medical & Health Sciences Jamshoro Sindh Pakistan from April 2005 up to March 2010. We managed 341 patients with limb injuries of long bones, of either sex, with age group of 14 to 60 years were included in the study. Ilizarov external fixator was used. For evaluation of bone and functional result ASAMI criteria was followed **Results:** Out of 341 patients the tibia was 226 (66.27%), femur 84 (24.63%), humerus 21 (6.17%) and radius and ulna were 10 (2.93%). The range of bone defect was 1 to 12 cm and limb length discrepancy was 1 to 10 cm. According to ASAMI criteria the bone results were excellent in 249(73.02%), good 69 (20.23%), fair 16 (4.69%) and poor 07 (2.05%). The functional results were excellent in 271 (79.47%), good 57 (16.71%), fair 09 (2.63%) and poor 04 (1.17%). **Conclusion:** Ilizarov fixator gives excellent results in complex treatment of patients with limb injuries. technique also creating tissue regeneration, prevent necrotic processes and reduce the periods and improve the outcome.

Abstract no.: 31110

EPIDEMIOLOGY OF FEMORAL NECK FRACTURES IN THE REPUBLIC OF KAZAKHSTAN

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The aim of study was to study the incidence of fractures of proximal femur in Kazakhstan between 2003 and 2009. Methods: The research was done by method of extract of data and calculation based on the statistical form approved by Agency of Statistics of RK. It includes three sections and information about causes and incidents in major age-sex groups of population of the RK. Results: During this period it was noted that cases of lower extremity injuries have reduced among all cohorts except cases of sport injuries among all population. In structure of fractures of proximal lower extremity in adults and adolescents prevailed femoral neck fractures as a result of home traumas. The frequency of them tends to increase from 12.7 to 13.5 between 2003 and 2005, 11,3 per 100 thousand population in 2006, and 8.8 respectively toward 2009. Pertrochanteric fractures took the second place, and subtrochanteric fractures took the third place, the frequency of which tends to decrease. The incidence of subtrochanteric fractures in the structure of fractures of proximal femur among all population has increased due to increase of work-related injuries among adults and sports injuries among children. In the structure of work-related injuries the pertrochanteric fractures are more frequently noted, and the frequency of which decreased from 2.8 to 0.4 per 100 thousand populations between 2003 and 2009. Conclusion: The results showed that it is necessary to take the following measures: to reduce home accidents, to hold the preventive actions, to reduce the incidence of osteoporosis, to prevent work-related fractures.

Abstract no.: 31114

COMPARISON OF ALPINE SKIING AND SNOWBOARDING INJURIES

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INTRODUCTION: The Norwegian Ski Lift Association has surveyed the injury types on major ski slopes since 1996. **METHODS:** The injuries occurring on the slopes of 14 major ski resorts were recorded by ski patrols the winters 2009 and 2010. **RESULTS:** A total of 8547 injured skiers were recorded. The number of skier/boarder days was 6.621 millions, and the injury rate was 1.3 per 1.000 skier/boarder days. Injured alpine skiers suffered more knee (24%) and lower leg (12%) injuries than snowboarders where the corresponding prevalences were 8% and 3% respectively ($P<0.001$). Alpine skiers suffered also more lower leg fractures (7%) than snowboarders (0,5%) ($P<0.001$). In contrast, snowboarders suffered more wrist (22%), shoulder (14%), back (11%) and arm (10%) injuries than alpine skiers where the corresponding prevalences were 4%, 11%, 8% and 5% respectively ($P<0.001$). Most of the injuries were caused by own falls (85%), but collision was more often the injury cause for alpine skiers (14%) than for snowboarders (8%) ($P<0.001$). More snow-boarders (35%) than alpine skiers (17%) suffered their injuries in terrain parks ($P<0.001$). The percentage of knee injuries was double as high for females (31%) as for males (15%), but males suffered more shoulder injuries (18%) than females (7%) ($P<0.001$). This gender difference was observed both among skiers and boarders and in all ability groups. **CONCLUSION:** Alpine skiers were prone to knee injuries and snowboarders to wrist injuries. The percentage of knee injuries among females was twice that of males whereas the reverse was observed for shoulder injuries.

Abstract no.: 31116

NEGLECTED LATERAL PROCESS OF TALUS FRACTURE PRESENTING AS A LOOSE BODY IN TARSAI CANAL

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Lateral process fractures of talus are rare injuries with a potential to cause significant morbidity if misdiagnosed. The appropriate management of these fractures is still controversial and only a few reports are available on this subject. We presented a case of a 37-year-old male with neglected fracture on the lateral process of talus which was misdiagnosed at the time of injury. The patient presented to 7 months after misdiagnosis with a chronic ankle pain. Our case is unique in the sense that it is a rare case of neglected fracture on the lateral process of talus which presented as a loose body in sinus tarsi. However, a surgery with an excision of the loose body presented a satisfactory outcome along with 2 years' follow-up. To our knowledge, it ought to be the first case reported in the English literature. Through this case report, we highlight the importance of high index of suspicion for such rare bony injuries while evaluating trauma to the lateral side of ankle and discuss the principles of management of these fractures.

Abstract no.: 31117

NORMAL DEVELOPMENT OF THE KNEE ANGLE IN HEALTHY INDIAN CHILDREN: A CLINICAL STUDY OF 215 CHILDREN

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The normal development of the knee angle in children has been studied in various ethnic groups. However, there is a scarcity of such literature for Indian children. Using clinical methods, the tibiofemoral angles (TFAs) were measured in 215 healthy Indian children ranging from 2 to 15 years of age. A record of the intermalleolar distance (IMD) and intercondylar distance (ICD) was also kept of all of the subjects. We found that physiological varus rarely persists beyond 2 years of age in Indian children. A progressive increase in knee valgus occurs after 2 years of age, with peak knee valgus averaging almost 8° at around 6 years of age. Thereafter, the valgus at the knee decreases and, after the age of 10 years, stabilizes to around 4-5° in most of the children. Indian girls show, overall, more valgus alignment of the knees as compared to boys. The overall pattern of development might be slightly different in Indian children, especially in Indian girls, with early reversal of physiological varus (<2 years of age) and a late peak of maximal valgus at the knee (6 years of age). Varus after 3 years seems atypical for Indian children. We provide an elaborate set of data for the mean TFA of different age groups and believe that this data could be of potential benefit to the physicians while evaluating lower limb alignment in Indian children aged 2-15 years.

Abstract no.: 31118

USE OF GENTAMICIN-LOADED COLLAGEN SPONGE IN INTERNAL FIXATION OF OPEN FRACTURES

Nitesh GAHLOT

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we assessed the outcome of immediate plate osteosynthesis via application of antibiotic impregnated collagen fleeces(gentamicin-collagen and antibiotic sponge) locally in the surgical treatment of open fractures presented to us 6 hours after injury.All cases were treated in our tertiary level trauma center and teaching hospital including 35 patients with open fractures who were treated by immediate open reduction and plate fixation from January 2008 to August 2010.All fractures were treated by irrigation and debridement, immediate open reduction and plate fixation along with placement of antibiotic-releasing collagen fleeces around the plate just before closure of wound. Patients were assessed to determine postoperative infection, delayed union or nonunion and development of other postoperative complications.The 31 patients with adequate final follow-up were assessed at a mean time of 40 weeks(15-160 weeks). Most fractures united primarily in an acceptable time period according to area of involvement. Local wound complications (superficial infection and skin loss) were found in 3 patients(9.67%). Deep infection was noted in 2 patients(6.45%). None of these patients needed implant removal and both fractures united in due time. Delayed union was noted in 5 patients(16.13%). No patient progressed to nonunion or implant failure in long term follow-up.Immediate plate osteosynthesis after adequate debridement and placement of collagen film eluting antibiotics locally produces excellent results regarding bone union and absence of deep infections and is a safe technique in the management of open bone injuries.Local antibiotic-impregnated collagen sponges along with systemic antibiotics for 3 to 5 days offer promising results in open fracture management

Abstract no.: 31119

**TRUE CONGENITAL DISLOCATION OF SHOULDER: A CASE REPORT
AND REVIEW OF THE LITERATURE.**

Nitesh GAHLOT

PGIMER, CHANDIGARH (INDIA)

The dislocation of a shoulder joint in infancy is extremely rare and is usually the result of traumatic birth injuries, a sequel to brachial plexus injury, or a true congenital dislocation of shoulder. With more advanced obstetric care, the incidence of first two types has drastically decreased. We report a case of true congenital dislocation of shoulder, second of its kind, in a child who was delivered by cesarean section thereby negating any influence of trauma. We report the case because of its rarity, and review the available literature on this topic. We also discuss the management options when encountered with such a rare case scenario.

Abstract no.: 31121

REMOVAL OF A BENT TIBIAL INTRAMEDULLARY NAIL: A RARE CASE REPORT AND REVIEW OF THE LITERATURE.

Nitesh GAHLOT

PGIMER, CHANDIGARH (INDIA)

Intramedullary interlocking nailing is a gold standard for treatment of tibial shaft fractures. Bending of a nail secondary to trauma is a rare complication, which may be encountered in healed or unhealed tibial shaft fractures. Removal of such bent nail is always a challenge. We reported this case to discuss various techniques for removal of bent nails and to share our experience in removing a bent tibial intramedullary nail in a 30-year-old man, who was admitted in our department with re-fracture of the right tibial shaft due to a roadside accident two years after the initial surgical treatment. The intramedullary nail, bent by 30 degrees and visible on anteroposterior as well as on lateral radiographs, was firstly weakened by partially cutting the convex wall, then straightened by applying external force, and finally removed by using the standard nail removal method.

Abstract no.: 31122

**RESULTS OF OPEN REDUCTION AND INTERNAL FIXATION IN
NEGLECTED PCL AVULSION FRACTURE WITH MCL INSUFFICIENT
KNEE – A CASE REPORT AND REVIEW OF LITERATURE**

Nitesh GAHLOT

PGIMER, CHANDIGARH (INDIA)

We report a case of neglected posterior cruciate ligament (PCL) avulsion fracture with medial col- lateral ligament (MCL) injury and our experience with delayed (2 year post injury) open reduc- tion and internal fxation of this fracture in combination with MCL reconstruction stabilization. After open reduction and rigid screw fxation, combined with a posteromedial stabilization using a hamstring tendon autograft, the patient returned to full activity in daily life. We recommend that if PCL substance is sufficient, delayed fxation of an old PCL avulsion fracture seems to be a viable alternative to PCL reconstruction.

Abstract no.: 31125

BLOOD LOSS IN BILATERAL TOTAL KNEE REPLACEMENT: EFFECT OF ANTICOAGULANTS

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Introduction: Upto one third of patients undergoing Total knee replacement (TKR) need 1-3 units of blood postoperatively. A blinded randomized control trial (RCT) can minimize bias due to external factors, but not the metabolic and physiological differences among individuals. We hypothesized that comparing the blood loss in different knees of same patient has the advantage of reducing bias due to inherent physiological differences. Methods: An RCT comparing result of topical Tranexamic acid (TXA) versus normal saline in TKR was completed in 2009. A cohort of twenty six patients with bilateral TKR was identified who were randomized to receive TXA in the trial while the other side had placebo in the form of normal saline. The operative technique and postoperative management was identical. The primary outcome was blood transfusion rate. Secondary outcomes included drain blood loss, hemoglobin drop, length of stay and complications. Result: 6 (23%) patients needed blood transfusion following TKR on the placebo side while none needed on the side where tranexamic acid was used. Average hemoglobin drop was 3.2 on the placebo side as compared to only 1.8 on the test side. Average drain output on the placebo side was 516ml compared to 340ml on the test side. Discussion: Routine use of TXA can significantly reduce the need for blood transfusion following TKR. In the same patient, topical application of tranexamic acid resulted in significant reduction of drain output, Hb drop and blood transfusion rates when compared to the knee where it wasn't used.

Abstract no.: 31126

MEDIUM TERM OUTCOMES OF THE GLOBAL SHOULDER HEMIARTHROPLASTY FOR ARTHRITIS

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AIM: To review the outcomes of Depuy Global Shoulder Hemiarthroplasty for arthritis.
METHODS: We obtained the details of all patients who had had a shoulder hemiarthroplasty in the last 12 years by reviewing the theatre logbooks. We then reviewed their notes and invited patients for a current review to assess their function, and obtain Disabilities of the Arm, Shoulder and Hand (DASH) and Oxford Shoulder Scores (OSS).
RESULTS AND DISCUSSION: 28 patients were identified out of which one had since died and 8 were lost to follow up, leaving a total of 19 with full data. There were 11 female and 8 male patients. All but 3 patients had osteoarthritis, the rest rheumatoid arthritis. The mean age at time of surgery was 68.9 years (SD 8.52) while the mean length of follow-up was 5.8 years (range 1.3 - 11.1 years). The average active range of movement at follow-up was: flexion 101.1o (SD32.26), Abduction 81.6o (SD 33.87), external rotation 31.3o (SD 18.69); and passive: flexion 121.6o (SD 28.34), Abduction 100.5o (SD27.78), External rotation 40.5o (SD 17.86). The median MRC grade of rotator cuff power was 4 (range 3-5). The mean DASH score was 47.4 (SD 24.93) and OSS 29.7 (SD 10.01). While we did not have any dislocations, one patient needed revision due to massive cuff tear.
CONCLUSION: Our results suggest that patients with hemiarthroplasty achieve a functional range of movement with reasonably good cuff function; however the reported scores do point to moderate shoulder dysfunction.

Abstract no.: 31130

**A NOVEL SCREW RUSH NAIL TO PREVENT ULNAR NAIL BACKOUT:
EARLY EXPERIENCE**

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BACKGROUND: Both bone forearm fractures are one of the commonest fractures of the upper limb. Various treatment options include conservative, open reduction and DCP plating, closed/open nailing and external fixator application. Closed nailing has the advantage of preserving fracture haematoma, avoiding soft tissue disruption, thereby increasing the chances of early union. Disadvantages include nail backing out, malunion or rotational abnormalities, and occasional transient neuropraxia if distraction apparatus is used. **PROCEDURE:** We describe our experience with method for preventing ulnar nail backout which is a frequently encountered complication(10% of cases). The ulnar nail is pushed in the usual way after reduction of the fracture. At the end the nail is screwed with a hexagonal screw driver which takes grip into the olecranon thereby preventing back out. **DISCUSSION:** Rush nails are frequently used for nailing of forearm bones. Even though nails are properly placed and inserted backing out of nail is a frequently encountered complication. Methods like bending the tip or using a radial entry point or using stack nail technique may reduce the chances of backing out. One of the reasons for backing is a straight medullary canal which aids nail retraction. To prevent this we use a rush nail which has threads on one end with hexagonal screw socket. These threads take purchase into the olecranon just like a cortical screw which prevents nail backing out. **RESULTS:** Our combined experience of 27 cases show none of the nails backed out & is a very effective procedure.

Abstract no.: 31132

SUBSEQUENT FRACTURES OF AN ESTABLISHED DISTAL RADIUS MALUNION

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Purpose: To clarify management of subsequent fractures of an established distal radius malunion **Patients and Methods:** Subjects were 2 men and 4 women with a mean age of 62 years. Complaints before subsequent fractures were deformity of the distal forearm in two and mild limitation of ROM in one, but none of the subjects complained of pain or disability. All subsequent fractures of the distal radius were displaced dorsally and classified as A2 in one, A3 in four and C3 in one according to the AO classification. All patients were treated using a volar locking plate. The follow-up period averaged 15 months. **Results:** Bony union was achieved in all patients and there was no postoperative loss of reduction. According to the Mayo modified wrist score, 3 patients showed excellent results and 3 patients showed good results at the final evaluation. **Discussion:** It is difficult to determine the appropriate reduction and select implants for the treatment of subsequent fracture of an established distal radius malunion. We consider it desirable to reduce the fracture to the status just before subsequent fractures. Care must be taken that the recent anatomical plate may not adjust to the deformed volar surface of the distal radius.

Abstract no.: 31140

BIOMOLECULAR INVESTIGATIONS IN OSTEOARTHRITIS

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Introduction: The classification of OA is based mainly on clinical and radiographic evaluations. Proteogenomic investigations have taken a significant role in the etiology of OA. Aim of the study was to correlate clinical and radiographic grading of OA with proteogenomic data. Material. We enrolled 87 patients candidates for knee surgery with arthroscopy or arthroplasty. Patients were divided into two age groups: 54-70 and 71-86. Clinical evaluation was performed using Knee Society's score. The radiographic evaluation was performed with the KL scale on anteroposterior and lateral views of the knee. Genotyping analysis was performed using blood samples and was expressed into 3 types: wild-type genotype in both alleles, polymorphism in one allele and polymorphism in both alleles. Proteogenomic analyses were performed using urine, synovial fluid and synovium samples. Clinical, radiological and genotyping data obtained were processed using statistical correlation's algorithms. Results. The A group consisted of 24 patients, 17 Y and 7 O. The KS was poor in 13 cases and fair in 11 cases. The B group consisted of 21 patients, 14 Y and 7 O. The KS was poor in 19 cases and fair in 3 cases. The C group consisted of 22 patients, 11 Y and 11 O. The KS was poor in all 22 cases. Each test was associated with a genotype panel of each analyzed gene. Conclusions. This study will facilitate the understanding of the molecular mechanisms involved in OA and allows a better definition of the grading of the pathology.

Abstract no.: 31141

**PERIPROSTHETIC SUPRACONDYLAR FEMORAL FRACTURES:
COMPATIBILITY FOR FIXATION WITH A RETROGRADE
INTRAMEDULLARY NAIL**

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INTRODUCTION: Periprosthetic supracondylar femoral fractures present a particular challenge. Incidence is increasing as more patients undergo total knee replacement (TKR) and the patients are more active and survive longer. Use of a retrograde intramedullary nail is a commonly used treatment option. It is essential to know the compatibility of the TKR prostheses with retrograde nails and in particular the minimal intercondylar distance. **OBJECTIVES:** The aim of this study was to review all the potential Total Knee Replacement prostheses available and their compatibility for use with retrograde nails. **METHODS:** Data was sought from the manufacturers and collated into a comprehensive table giving the minimal intercondylar distance by manufacturer, name of prosthesis and size. The comprehensive table will soon be published in the literature and online and presented at the conference oral presentation. **RESULTS:** It is clear that many TKR's on the market will accept a retrograde intramedullary nail. **CONCLUSION:** The presence of an intercondylar notch, however, may be too posterior in some TKR's and will therefore still not accept a retrograde nail. Prior to use of a retrograde nail to fix these difficult fractures we suggest checking compatibility with our table and the manufacturer .

Abstract no.: 31143

ANEURYSMAL BONE CYST OF RIB: UNUSUAL PRESENTATION

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Aneurysmal bone cyst is commonly a benign cystic lesion which generally occurs in long bones. Rarely it may affect the ribs which is a highly rare occurrence. Only about 50 cases have been reported in literature till date. We report a 35 year old labourer presenting with vague pain in the left side of chest of 9 to 12 months duration. On subsequent evaluation with Xrays and CT scan an expansile lytic lesion affecting 5th rib was found. Subsequently extraperiosteal resection of the rib with the tumour was done. Histopathology confirmed to be an aneurysmal bone cyst of rib. No recurrence has been observed at 4 years follow up. Vague pain may be the only presentation which needs to be investigated if not responding to routine treatment.

Abstract no.: 31147

HYPOVITAMINOSIS- STUDY OF 1000 PATIENTS

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M.D.OSWAL CANCER TREATMENT&RESEARCH FOUNDATION,G.T
ROAD SHER PUR BYEPASS, LUDHIANA (PB) (INDIA)

It is known that poor people suffer from anemia, but reverse is true in young corporates & rich people for VIT D deficiency like sub-clinically active osteomalacia, frank osteomalacia & non specific musculoskeletal complaints like low back pain, vague symptoms like tingling sensations. Study is done over a period of four years on 1000 patients coming to ortho OPD. 70% of patients visiting OPD suffer from hypovitaminosis to severe VIT D deficiency.If total metabolic profile seen ,abnormality seen in more than 80 %. 80% of these patients responded very well to VIT D & calcium, though VIT D level may be normal. On the other hand, low levels of VIT D are seen in only 15% of patients with frank osteoporosis rather in most cases the levels are above normal in old people with no toxicity. 15% of patients of LBA with PIVD response very well to this treatment & in them surgery can be avoided if there no neurological symptoms. 20% of patients even with severe deficiency has only mild complaints and vice versa with mild deficiency. 80 % of patients with Rheumatoid Arthritis & metastatic bone disease has this deficiency. Further research required in higher centres to find other factors for hypovitaminosis like genetic, environmental etc. It is concluded those having indoor work must expose to sun light & should take vit d every 3 months to keep bones and extra-skeletal system healthy. It is quite possible this continent of world needs redefining normal levels.

Abstract no.: 31149

RESULTS OF MAX PAGE MUSCLE SLIDING OPERATION FOR THE TREATMENT OF VOLKMANN'S ISCHEMIC CONTRACTURE OF THE FOREARM.

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Introduction: Volkmann's ischemic contracture is a less common but crippling condition affecting the extremities. Once the condition sets in, then even after long and intensive physiotherapy and various restorative surgical techniques, the prognosis always remains guarded. This study was undertaken to evaluate the long term functional results of Max Page muscle slide operation in patients with Volkamann's Ischemic Contracture of the forearm of moderate degree (Tsuge classification).Methods: Nineteen patients treated between 1997 and 2009 were evaluated. Post-operatively the functional outcome (measured as dexterity score, hand grip strength, sensibility and appearance) was analyzed and discussed and the results were graded as good, fair and poor. Observations & Results: The average age at the time of presentation was 18 years (range 3-25 years). Tight external splintage for injuries around elbow and forearm was the primary factor. Mean period of follow up was 3.53 years. Fifteen patients were able to achieve good functional results. Three had fair and one had poor results. Although the study population was small, we could observe a good functional outcome in most of our patients. Wound dehiscence was the most common complication. One patient needed a second surgery to restore good hand function. Conclusion: The Max Page muscle sliding operation for treating Volkmann's ischemic contracture of moderate degree gives good functional results. The procedure is simple and easy to perform. Adequate muscle release and proper post operative physiotherapy are the keystone to achieving good results.

Abstract no.: 31151

MANAGEMENT OF SIMPLE (TYPES A&B), CLOSED TIBIAL SHAFT FRACTURES, USING PERCUTANEOUS MINIMAL INTERNAL FIXATION, AND ILIZAROV EXTERNAL FIXATION IN ADULTS.

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Introduction: Low-energy tibial shaft fractures, could be treated in several methods. The aim of this study was to evaluate the results of management of these simple fractures, using inter-fragmentary screws, or Kirschner Wires, percutaneously, and mount a tibial Ilizarov frame to allow weight bearing. Patients & Methods: between 2004, and 2010, there were 51 adult patients treated using this technique. all the patients were followed till complete fracture healing and then the frame was removed. Results: Partial weight bearing was allowed within 3 days after surgery, and full weight bearing was permitted, as tolerated. Healing occurred in all the studied patients within 3 month. Only few complications were encountered and shall be presented in details. Discussion & conclusion: although this is a technically demanding expensive procedure, it should be considered as a simple, reliable, and efficient method of treatment of simple tibial shaft fractures in adults as it guaranteed adequate healing time, early ambulation and weight bearing, excellent ankle and knee motion, and a very low complication rate.

Abstract no.: 31156

BILATERAL TOTAL KNEE ARTHROPLASTY IN OCTO & NONAGENARIANS

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Worldwide, the population of the elderly continues to grow. This increase naturally will be associated with a parallel increase in the number of TKAs done in this age group. The results of TKA in octogenarians have been well documented. But the reports & results of TKA in patients >90 years old (nonagenarians) are not well documented & bilateral simultaneous TKA in a single sitting has not been reported. We report a series of 19 patients with an average age of 84 years (80-93 years) who have had bilateral simultaneous TKA in a single sitting. They were operated under spinal /epidural anesthesia, after detailed pre op medical evaluation. None of these patients have had any significant or untoward post operative medical events. They were followed up for average of 5.6 years (range 6 months to 11 years) . Increased age and cardiac risk factors are associated with increased morbidity and mortality in elderly patients & hence these patients must taken up for surgery after a thorough pre operative medical check up & under the cover of good post op intensive care facilities. For nonagenarians, TKA provides excellent clinical improvement (measured by pain relief and knee score) with only moderate function improvement, allowing improved ability to handle activities of daily living and improving quality of life. There is a definite increase in mortality and morbidity associated with these patients, however, and the statistically few number of years remaining to them should be taken into account when doing TKA in this age group.

Abstract no.: 31157

TREATMENT OF BIPHOSPHONATE INDUCED ATYPICAL FEMORAL FRACTURES

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The use of bisphosphonates in the treatment of osteoporosis is very common & popular. Various randomized trials have shown that treatment with bisphosphonates reduces the risk of osteoporotic fractures. However, some concerns have recently emerged that bisphosphonate-related suppression of bone remodeling may adversely influence bone strength. Some case reports have reported atypical subtrochanteric fractures with long-term bisphosphonate therapy, generally after minimal trauma. We report 5 such pathological fractures which were treated successfully using proximal femoral nails (PFN). Both female patients, aged 65 & years sustained major subtrochanteric femoral fractures after minor falls. These patients were both on Alendronate therapy for more than 3 years. All the fractures were fixed using PFN (A2) by closed reduction on a fracture table. All the fractures had healed in an average duration of 4.5 months, after internal fixation. Closed reduction & internal fixation of these fractures is the treatment of choice & we recommend that PFN is the implant of choice for fixing these fractures.

Abstract no.: 31158

EXTENSOR MECHANISM DISRUPTION FOLLOWING TOTAL KNEE ARTHROPLASTY

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Extensor mechanism rupture following total knee arthroplasty (TKA) is a rare. We present a series of 6 cases, who had extensor mechanism rupture following TKA. 2 had infrapatellar, whilst 3 had transpatellar injuries and the remaining 1 had suprapatellar rupture. The average duration of injury since primary surgery was 8.16 weeks (1 to 24 weeks). 4 had fall off stairs or on a floor. 3 patients were surgically treated. After our follow up from 10 to 20 months (Avg: 14.57 months), they had extensor lag ranging from 10° to 45° (Avg: 20°). The patients with infrapatellar tendon rupture had maximum lag, whilst the suprapatellar lesions produced the least lag. The average ROM after treatment of extensor mechanism was 94.5° (0°-120°). Discussion: Treatment depends upon the integrity of extensor mechanism, fixation status of the patellar implant, and quality of the remaining bone. Several techniques had been described including cast/brace immobilization with or without operative repair, fixation with sutures/staples, reinforce/reconstruct using autograft, synthetic graft, bovine xenograft and even allograft transplantation. Still the treatment results can be discouraging because of altered tissue characteristics. Avoid overstuffing the patellofemoral compartment but obtain proper patellofemoral tracking at the time of the primary TKA. Although these complications may be successfully treated, most may be largely avoided with proper surgical technique and prosthetic component design. Conclusion: We believe that the infrapatellar rupture is the most serious one and carries the worst prognosis. The best treatment option for these injuries is to reconstruct the extensor apparatus using hamstring autograft.

Abstract no.: 31165

MORBIDITY IN PATIENTS AFFECTED WITH SICKLE CELL DISEASE UNDERGOING ORTHOPAEDIC PATIENTS.

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Introduction: The aim of our study was to identify the patient with sickle cell disease who underwent orthopaedic procedures. Use of tourniquets and immobility postoperative and dehydration can lead to increased risks of complications. Patients with sickle cell disease (SCD) who undergo surgical procedures experience greater risk for preoperative and postoperative complications than patients without SCD. We recently performed an analysis comparing postoperative outcomes in patients with SCD who underwent Orthopaedic surgery. Methods: We looked at the case notes of patients presented to our department with Orthopaedic conditions. We recorded their investigations, operative interventions and postoperative recovery. Hospital stay along with the number of admission for each patients recorded and. We identified total of 40 patients who underwent 34 procedures for orthopaedic condition. There were 20 joint replacement performed, 8 arthroscopies, 4 trauma cases and 2 day case procedures. Patients were being followed up ion clinics and these records were used to see how many follow up appointments they had before final discharge. Results : The results showed that there significantly prolonged hospital stay in patients with sickle cell disease. Two of our patients had problems related to wounds, one patient had knee stiffness and rest of the patients did not have any complication. The average hospital stay was 6.6 days. The average follow up appointments for these patients were 5 times in outpatient clinics. Our results confirmed though the complication rates was not higher for this group of patients but the hospital stay and recovery was prolonged.

Abstract no.: 31171

PATELLAR RESURFACING IN TKA

Mahmoud A. HAFEZ

October 6 university, Cairo (EGYPT)

This community Arthroplasty Register is an individual initiative to document arthroplasty procedures performed from 2007 to 2011 in a sample area in Cairo, Egypt. Currently, there is no published study or official documentation of the incidence of osteoarthritis (OA) or the rate of total hip and knee arthroplasty (THA & TKA). The registry sheet is 3 pages; pre-, intra- and post-operative. It is available in printed format and online as demonstrated below www.knee-hip.com. The replacement of the patella is controversial and there is no strong evidence to suggest or reject routine replacement. The practice is variable and depends on surgeons' preference and type of patients. KA with and without patellar resurfacing. Due to economical and technical constraints replacement of patellar components in TKA is not popular in Egypt. Other possible causes are the low incidence of rheumatoid arthritis. Data from our arthroplasty register showed no single case of primary patellar resurfacing in a consecutive series of 138 cases. There were 2 patients who complained bitterly of anterior knee pain and dysfunction due to patellar problems following TKA. One of them required revision for patellar resurfacing and the second patient refused surgery. This study is waiting statistical analysis of pre and postoperative scores with comparison to other studies in which patellar resurfacing was done as a routine. The x-ray below shows the secondary resurfacing of the patella in this patient.

Abstract no.: 31172

EGYPTIAN ARTHROPLASTY REGISTER - 2011

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Introduction: This community Arthroplasty Register is an individual initiative to document arthroplasty procedures performed from 2007 to 2011 in a sample area in Cairo, Egypt. Currently, there is no published study or official documentation of the incidence of osteoarthritis (OA) or the rate of total hip and knee arthroplasty (THA & TKA). Methods: The registry sheet is 3 pages; pre-, intra- and post-operative. It is available in printed format and online as demonstrated below www.knee-hip.com. During the registry period, there were 270 cases collected prospectively and 206 collected retrospectively. This initial analysis included only prospectively collected data of 150TKA and 120 THA. Results: For THA, the mean age was 35 years ranging from (19-86). Female to male ratio was 1.03:1. The rate of uncemented THA was 92.97%, Cemented was 8.03% and hybrid THA was 6.25%. We have observed significant growth in the uncemented type of fixation. The rate of primary was 45 % (complex primary 33%), while revision procedures was 22%. Conventional THA techniques were done for 56.15%, while computer assisted surgery was used in 43.85% of cases. For TKA, there was 74% primary and 18% complex primary, 8% revision arthroplasty. A female to male ratio was 3.5:1. The main indication for TKA was OA in 73%. Preoperative radiographic evaluation showed that 47% had severe varus and 16% had significant bone defect. 77.3% of all implants were cemented while 22.7% were uncemented. Conventional THA techniques were done for 67.5%, while computer assisted surgery was used in 32.5 % of cases.

Abstract no.: 31175

OPEN REDUCTION AND INTERNAL FIXATION OF INTRA ARTICULAR CALCANEAL FRACTURES – A SHORT TERM ANALYSIS.

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BACKGROUND: Malunion of calcaneal fractures often results in a varus deformity with heel widening, loss of calcaneal height, and subtalar joint incongruency. Open reduction and internal fixation restores the anatomic morphology of the calcaneus, and thereby the biomechanics and function of the hindfoot. Plate osteosynthesis of the intra-articular fractures is a standard treatment method, but it has potential complications such as poor wound healing and infection. **METHODS:** We analysed 25 adults with intra articular fractures of the calcaneum who underwent open reduction and internal fixation through extended lateral approach using tentacle locking plate. There were 19 males and 6 females with 8 cases of Sander's type –II fracture, 11 cases of Sander's type-III, and 6 cases of type IV. All patients were operated at a mean of 14 days after injury. **RESULTS:** The patients were followed up for 6 to 36 months. The functional assessment was done using Weber's Foot Scoring Scale. Among 25 patients operated, 14 patients were very much satisfied, 10 were satisfied and 1 patient had a poor result. All type II fractures, 6 out of 11 type III fractures had excellent results. 5 out of 11 type III fractures and 5 out of 6 type-IV fractures had good results. Complications of wound healing were recorded in three fractures Mean Bohler angle was 24 degrees postoperatively. **CONCLUSION:** This study reports the short-term functional results and complications following operative management of calcaneal fractures. **KEYWORDS:** calcaneal fractures , locking plates, Weber foot scoring

Abstract no.: 31176

**HEMIARTHROPLASTY FOR OSTEOARTHRITIS OF
METATARSOPHALANGEAL JOINT WITH TOWNLEY IMPLANT**

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Osteoarthritis of the metatarsophalangeal joint is common and is associated with stiffness, pain and alteration of gait. The first metatarsophalangeal joint (MTPJ) is most commonly effected. The initial treatment is conservative. In the severe cases and where a conservative major has failed, the some of the surgery options are fusion, hemiarthroplasty or total joint replacement. We performed Townley hemiarthroplasty for great 3 and 4 osteoarthritis of first MTPJ in 52 joints. This was carried out in 40 females and 8 men with a mean follow-up of 4.4 years, the patients were assessed pre and post operation with AOFAS and a visual analogue scale for pain. There was no significant change in the range of movement, but there was a significant difference between the mean pre-operative AOFAS (52) and post operative AOFAS (82). The visual analogue scale for pain improved from 6 to 2.1. There was one case of infection for which the implant was removed and had fusion later. The outcome was very satisfactory and most patients were pleased as they had less pain post surgery. Townley hemiarthroplasty in our review had a satisfactory outcome with very few complications in the short term review.

Abstract no.: 31180

PAIN PERCEPTION BEFORE AND ACTUAL PAIN AFTER K-WIRE REMOVAL IN TOE JOINT FUSION IN THE OUTPATIENT SETTING

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Introduction: Removal of Kirschner wires (K-wire), in the outpatient setting, following toe joint surgery can be a painful and unpleasant experience for patients. We conducted a study to assess the perception of pain before and actual pain after K-wire removal in patients who had proximal interphalangeal joint (PIPJ) fusion using a validated outcome measure. Methods: All patients with PIPJ fusion of the toes between April and November 2011 were selected. The patients were asked to score their pain level on a 10 point visual analogue scale (VAS) before and after K-wire removal. Results: Over the audited period 47 patients, with an average age of 60, underwent 58 PIPJ fusions. For 44 patients the K-wires were removed easily and no patients required any local anaesthesia. All but 2 patients had a higher pain perception score before K-wire removal with a significant reduction noted in the reported scores following removal (Wilcoxon signed rank test, $P < 0.05$). The three patients where K-wire removal was more difficult had bent their wires with walking and two patients from this group reported an increase score in actual pain after K-wire removal. Conclusion: This study objectively supports K-wire removal as a safe and well-tolerated procedure, which can be performed without local anaesthesia in the outpatient setting. Simple reassurance and explanation of the procedure ensures a more patient-centred experience and this would help ease patient anxiety and pain perception prior to K-wire removal. In those patients where the K-wire is bent or distorted local anaesthesia may be considered.

Abstract no.: 31181

THE OUTCOME OF VARUS IMPLANTATION OF A POLISHED TRIPLE TAPERED FEMORAL STEM

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Introduction: Although loosening and failure of cemented composite beam implants have been related to Varus positioning of femoral stems but there have been no published results of the same effect on taper-slip designs. Material and Methods: We have prospectively analysed 500 consecutive polished triple-tapered implants performed on 455 patients between March 2000 and December 2005. The average duration of follow-up in surviving patients is 88 months (64 -136 months). Results: There were 70 femoral implants in 70 patients implanted with more than 5 degrees of varus (14%) with respect to the long axis of the femur, and 23 in 23 patients in more than 5 degrees of valgus (4.6%). Alignment within 5 degrees of neutral was achieved in 81.4% of cases. Subsidence of the femoral stem within the cement mantle was noted in 96% of the entire series. In the varus group 71% subsided less than 2mm compared to 83% in the neutral group. A higher degree of subsidence was noted in the varus group with 24% of stems subsiding between more than 2mm as opposed to only 14% in the neutral group. The implants did however subside into a more neutral alignment and were therefore self-correcting to a degree. There was no evidence of aseptic loosening, dislocation or negative bone remodelling associated with femoral implant malpositioning. Conclusion: The polished triple-tapered femoral implant therefore appeared to subside to a greater degree when implanted in varus alignment, but the stems appeared to be self-correcting.

Abstract no.: 31184

CLINICAL COMPARISON OF ANATOMICAL SINGLE-BUNDLE AND DOUBLE-BUNDLE ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION USING HAMSTRING TENDONS.

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PURPOSE: The purpose of this study was to compare the clinical outcomes of anatomical single-bundle(SB) anterior cruciate ligament (ACL) reconstruction with double-bundle(DB) reconstruction using hamstring tendons. **METHODS:** Seventy three consecutive patients, 31 of whom underwent anatomical SB ACL reconstruction and 42 of whom underwent DB reconstruction. The same postoperative rehabilitation protocol was used for all patients. Each patient was examined one year after surgery. We evaluated manual knee laxity tests (Lachman test, the pivot-shift test), range of motion, the IKDC score, activity and sports participation. **RESULTS:** No serious complication were experienced in either group. There were no significant differences between the 2 groups with regard to range of motion, Lachman test , the IKDC score and sports participation. **CONCLUSIONS:**Anatomical single-bundle ACL reconstructions have good outcome as well as double- bundle ACL reconstruction .

Abstract no.: 31188

BIOMIMETICALLY SYNTHESIZED HYDROXYAPATITE-COLLAGEN SELF ASSEMBLY REINFORCED WITH MULTIWALLED CARBON NANOTUBES AS BONE GRAFT SUBSTITUTE – AN EXPERIMENTAL STUDY

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The objective of the proposed work is to investigate the incorporation of the biomimetically synthesized, Hydroxyapatite-Gel self assembly reinforced with multiwalled Carbon Nanotubes(HAP-Gel-MWCNTs nanocomposite) into surgically created osteoperiosteal defect in ulna of rabbits and study the process of biocompatibility, bone regeneration, and mechanical stability in order to create a suitable substitute to fill large size skeletal defect arising from trauma, tumours, etc. In this present investigation we synthesized nanocomposites of gelatin-hydroxyapatite (Hap-Gel) using biomimetics principles. These composites were subjected to a novel mechanical processing technique in order to achieve a microscopic level morphological resemblance to natural bone. The composite was characterized with respect to its physical and chemical properties. An animal experimental model was utilized for in-vivo study, which has yielded results showing the biocompatibility and features of osteoconduction as evidenced by radiological and histological studies. The results are encouraging for further research in this area and works are in progress to maneuver the composition slightly to achieve a biomaterial as optimum bone grafting substitute

Abstract no.: 31192

MULTICENTRIC GIANT CELL TUMOUR OF BONE

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Although giant cell tumour of bone is seen frequently, the synchronous multicentric presentation is exceptional and not well elucidated. We have seen six such cases at our institute in the last 20 years. We are reporting an interesting and rare case of a 20 year old female presenting with simultaneous involvement of seven bones. The patient presented with pain and swelling around bilateral knee and ankle region for the last six months. The plain radiograph showed 7 foci of expansile lytic lesions involving bilateral distal femur, bilateral proximal tibia, right patella and bilateral distal tibia. Diagnosis was confirmed by histopathological examination. Augmented intralesional excision by curettage of the lesions of distal femur, upper tibia and distal tibia along with autologous and allogeneic bone grafting was done on left side lesions and the patella was excised with repair of extensor mechanism. The lesions on left side were kept under observation as they were small in size. None of the foci showed malignant transformation. During 18 months of follow up, the distal tibial lesion on right side increased in size with no signs of recurrence at other sites. In the other five cases, the lesions were at 2 to 3 locations only. There was female preponderance (5 cases). We recommend that a high suspicion of multicentricity of giant cell tumour should be kept in mind when a young female patient presents with a solitary lesion.

Abstract no.: 31193

PEDIATRIC ORTHOPEDICS

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Reverse Y-type osteotomy of humerus with correction of “complicated” varus deformity of elbow joint in children and teenagers Ilkhom E.Khujanazarov MD /Scientific-Research Institute of Traumatology and Orthopedics, Tashkent, Uzbekistan/ From 1998 to 2011 we treated 222 children with varus deformities of elbow joint by using different types of osteotomy. For correction of “supracondylar syndrome” with the varus deformity of the elbow joint we used a new inverted V-type of osteotomy with fixation by Ilizarov apparatus. The results were assessed by clinical and radiological means using the indicators of Oppenheim et al. The clinical indicators were the volume of movements after the surgery and availability of complications. Radiological indicators were the size of correction of varus deformity and presence of lateral protuberance. Out of 222 children 202 had excellent results and 20 patients had good results after the final examination during the average 16 month term (from 12 to 36 months) after the surgery. The average size of postoperative shoulder-elbow angle of the deformed elbow joint made 7,30 (from -2 to +14). The average shoulder-elbow-wrist angle on the healthy side made 7,20 (from -3 to +12) of physiological valgus and the average of correction made 24,10 (from 17 to 36). Our fixation method using the Kirschner’s wire and Ilizarov’s apparatus with 2 D-rings was modified to increase the stability and functionality of osteosynthesis. It gives the opportunity of anatomico-functional recovery under the correction of the varus deformity of the elbow joint in children.

Abstract no.: 31199

EASY TO EVALUATE THE ACETABULAR COVERAGE OF THE HIP WITH ANTEROPOSTERIOR AND FALSE PROFILE RADIOGRAPHS

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Introduction: It is well recognized that acetabular dysplasia of the hip progresses to coxarthrosis and then begins to cause clinical symptoms. Acetabular coverage has been evaluated on the basis of anteroposterior radiographs of the hip. However, in patients with dysplastic hip, it is necessary to estimate the degree of anterior as well as lateral cover. To assess the three-dimensional acetabular coverage, we focused on CE angle on anteroposterior radiographs and Lequesne's vertical-center-anterior margin angle on false profile view. We examined three-dimensional coverage using a calculation program for determining acetabular coverage from anteroposterior radiographs of the hip (ACX). Our aim in this study was to assess its value. Methods: AP and false-profile view were taken in 201 patients. The CE angle, Sharp angle, AHI, total/anterior/posterior acetabular coverage, were measured by ACX on AP views, and the VCA angle was measured on false profile views. Correlations were examined among total coverage, CE/Sharp/VCA angle. Correlations were tested among predictor variables (sex/age/CE angle/Sharp angle/VCA angle.) Results: We investigated patients showing normal CE and Sharp angles, despite having clinical symptoms, but abnormal VCA angles. This was the finding for 11hips. Therefore, to assess acetabular coverage, it is important to examine not only the CE angle but also the VCA angle. The VCA angle reflects both anterior coverage and pelvic tilt in the standing position. This technique makes it possible to estimate acetabular coverage without special facilities and may be useful for the mass screening of hip joints for detecting acetabular dysplasia.

Abstract no.: 31200

BEWARE OF IMPLANT RELATED COMPLICATIONS IN THIS DECADE

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With the increasing use of implants in daily practice in trauma & non traumatic conditions, surgeons especially in Asian countries should be aware of the complications of over usage. These are increasing & the young generation will see the complications which they might have not even read in the literature. The young surgeon who is usually shown good looking x-rays of anatomical reduction of fractures gets disappointed when he sees the complications which at times are horrible as for example repeated non union & others. At times the fracture goes to non union because of repeated surgical intervention, though nature wants to help, doctor does not want. Interfering too much with nature may prove as bad as leaving everything to nature. Implant related complication may be more difficult than complication of conservative treatment. Though research has to go side by side but its application has to be very judicious as in joint replacement & poly trauma. It has definitely helped the patient. But to use in colles & clavicle # etc one has to be conscious. If a method cannot benefit the poor person we should not disown a method which benefits poor. Factor may be any. Different companies coming with different type of instrumentation for the same purpose needs discourage. Young generation does not know to apply the simple pop & then labelled as complication of pop what a sorry state of affairs this is a study of 250 cases of implant related complications.

Abstract no.: 31202

ANTEGRADE INTRAMEDULLARY NAILING OF HUMERAL SHAFT FRACTURES

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The purpose of this investigation was to document the clinical outcome and complications after antegrade intramedullary nailing of humeral shaft fractures. Between January 2008 and December 2010, 35 consecutive acute humeral shaft fractures were treated by antegrade humeral locked nailing. The mean age was 55.9 years . 12 fractures were in the proximal third and 23 fractures were in the middle third. The operation time, time to union, hospital stay, union rate complications and functional recovery of shoulder were recorded. The mean follow-up was 18.5 months. The operation time averaged 80 minutes. The hospital stay averaged 7 days. Fracture union was achieved in 23 cases and the average time to union was 8.2 weeks. 2 fractures in our series had nonunion and required additional operations. Two proximal locking screws backed out and caused shoulder pain and removed under local anesthesia. There was a fracture at the distal end of the nail after the patient fell down six weeks after the operation and the fracture was treated with a u-slap. No patients had complications of infection, ectopic ossification or implant failure. At the final examination 19 patients had excellent or satisfactory recovery of shoulder function. 15 shoulders had no pain, 5 shoulders were associated with minimal discomfort, 2 moderate discomforts and one severe pain. On the basis of these results we conclude that treatment of proximal and middle third humeral shaft fractures with an antegrade intramedullary nail leads to good healing and functional results, and an acceptable re-operation rate.

Abstract no.: 31204

SEPTIC KNEE AND HIP ARTHROPLASTY: IS ONE STAGE SURGERY MORE COST EFFECTIVE THAN TWO STAGE SURGERY?

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Introduction: Periprosthetic infections associated with hip and knee arthroplasties are increasing not only in Europe and North America. Besides the clinical problems, the financial burden of each case is high and socioeconomic costs are increasing each year. Methods: Two major concepts have been established to treat the entity in terms of one- or two stage exchanges. Within this contribution we tried to estimate the direct costs of treatment for these patients with our local administration: length of hospital stay, antibiotics, laboratory tests, and surgical procedures performed. Results: Insurance reimbursement in Germany for one-stage surgery of infected THAs is 50 % and infected TKAs 42-50% less, compared to a two-stage procedure. It is well documented that one stage surgery is associated with less stress for the patient, less complications, better surgical conditions and better functional results. However earlier aseptic loosening and lower overall success of infection control compared to two stage surgery are discussed in the literature. The economic impact of arthroplasty infections is considerable high. The extra costs are mainly due to an extended hospital stay consuming significant substantial human and material resources. Cost increases associated with unnecessary investigations, surgeries, prolonged hospital stay and use of expensive implants should be avoided. Thus, one stage surgery can shorten the length of inpatient time and surgical procedures.

Abstract no.: 31206

THE RELEASE OF A QUINOLONE (CIPROFLOXACIN) FROM BONE CEMENT AND FIBRIN CLOT. A LABORATORY INVESTIGATION.

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The purpose of this study was to investigate the release of ciprofloxacin from acrylic bone cement and fibrin clot. Under sterile conditions, bone cement and fibrin clot were individually mixed with ciprofloxacin. Ten specimens of each complex were placed in 1ml of nutrient broth and incubated at 37°C. The nutrient broth was changed daily, and the removed samples were stored at -70°C until the antibiotic concentration in each sample was determined by a microbiological method. The maximum level in bone cement specimens was obtained at the second day (80.80µg/ml) and its diffusion was rapid at first, decreasing gradually over a period of 365 days. Fibrin clot biodegradable specimens release high concentrations of ciprofloxacin (1.52-49.91µg/ml) in vitro for the period of time needed to treat bone infections (i.e. 65 days). We conclude that the high release of ciprofloxacin in vitro from acrylic bone cement and fibrin clot is very promising since the obtained levels are much higher than the required minimal inhibitory concentration (MIC) against the implicated pathogens in soft tissue and bone infections. The in vivo relevance of the obtained results requires carefully performed studies in animal models.

Abstract no.: 31208

USE OF THE GAMMA NAIL IN THE TREATMENT OF FRACTURES OF THE PROXIMAL FEMUR

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Fractures of the proximal femur are more than ever, an important challenge in the field of traumatology. The Gamma nail, a combination of advantages of the sliding screw with the intramedullary nail, represents an efficient technique in the management of these fractures. A series of 490 fractures of the proximal femur in which this nail was used is reported. The mean age of the patients was 78.6 years. The fractures were classified on the basis of the preoperative x-rays as 50 A1 (stable pertrochanteric), 297 A2 (unstable pertrochanteric), and 143 A3 (unstable intertrochanteric) fractures. The mean healing time was 8.5 weeks in 96.5% of the cases. There were 15 cases of delayed consolidation but no pseudarthroses. Postoperative complications occurred in 28 cases (6.1%). Four cases of migration of the proximal screw and one shaft fracture were the most important complications. The most frequent complications (16) were seromas and hematomas of the surgical wound, which resolved satisfactorily in all cases. Superficial infections (7) also evolved favorably, once the appropriate antibiotic treatment had been instituted. The patient's recovery after suffering the fracture and the operation were evaluated and the 80% (340 patients) recovered their previous walking ability. The Gamma Locking Nail is a promising method for the treatment of pertrochanteric hip fractures. This implant enables the surgeon to treat intertrochanteric and high subtrochanteric fractures with a less invasive technique, and permits early mobilization and unprotected weight bearing with excellent clinical results.

Abstract no.: 31210

ORTHOPAEDIC APPLICATIONS OF BONE MARROW DERIVED STEM CELL. ELHADARA UNIVERSITY HOSPITAL EXPERIENCE

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The important components of the bone marrow related to orthopaedics are the stroma stem cells, which are capable of giving rise to a number of different lineages including the osteogenic, chondrogenic lineage. As the stem cell moves toward a more differentiated phenotype, it is the interaction between intrinsic genomic potential and extrinsic local signaling which combine to complete the developmental pathway of the proliferating tissue. We are reporting our 10 years clinical experience in the use of bone marrow derived stem cell in different orthopaedic applications including the treatment of fracture non union whether infected or non infected, the filling of bony defects following the excision of benign tumours, and the management of some orthopaedic congenital problems like congenital tibial pseudoarthrosis. We will include the results of a study performed on the use of bone marrow in the treatment of closed non infected tibial fractures with delayed union which was the first use of this technique in our hospital. This was followed by the use of this technique in more difficult clinical situations including infected non union with internal fixation, open infected non united fractures with external fixation as well as the previously mentioned orthopaedic problems. Our experience has showed that bone marrow is a very simple and effective non-invasive method of treatment of many orthopaedic problems.

Abstract no.: 31218

HYDATID DISEASE OF SPINE WITH PARAPARESIS AND PULMONARY INVOLVEMENT – A CASE REPORT

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Hydatid disease should be considered in the differential diagnosis of spinal pathology in endemic areas. Spinal involvement is very unusual. There is nothing typical of spinal involvement. We present a case report of 35 year male with hydatid disease which has pan vertebral involvement leading to paraparesis and communicating lesions between vertebrae and pleural cavity. Patient Operated by decompression and fixation by pedicle screw fixation. completed chemotherapy and recovered. High index of suspicion on clinical examination, haematological and serological correlation with imaging modalities can lead to proper diagnosis. Adequate surgical and medical treatment can cure even very aggressive involvement as in this case.

Abstract no.: 31220

IS PLANTAR FASCITIS RELATED TO CALCANEAL SPUR ?

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Heel pain is a common presenting symptom which doesn't have a known cause; a mechanical etiology is most common. The most common cause of heel pain is plantar fasciitis, a condition that leads to medial plantar heel pain, especially with the first weight-bearing steps in the morning and after long periods of rest. Obesity, excessive running, and prolonged standing are risk factors for developing plantar fasciitis. Diagnosis is primarily based on history and physical examination. Patients may present with heel pain with their first steps in the morning or after prolonged sitting, and sharp pain with palpation of the medial plantar calcaneal region. Diagnostic imaging is rarely needed for the initial diagnosis of plantar fasciitis. This study was conducted at Department of Orthopaedics and Gandhi Medical College, Bhopal to evaluate the relationship between plantar fasciitis and calcaneal spur. Not all patients with plantar fasciitis have calcaneal spur and not all patients with calcaneal spur are symptomatic. This study doesn't show any correlation between calcaneal spur and plantar fasciitis.

Abstract no.: 31224

THE PSYCHOGENIC PARALYSIS OF UPPER LIMB

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We analyze ten cases of nerve paralysis caused by a psychogenic response. Ten patients consisting of seven males and three females ranging from 18 to 58 years old were analyzed (average 30.5). Five patients presented complete paralysis of the upper limb. The onsets were from low energy injuries and none of the paralysis appeared immediately after the injury. Patients presented intact deep tendon reflex and the lack of muscle atrophy. The paralysis did not match the innervations of brachial plexus. Normal contraction of the muscle was observed by nerve conduction tests. The treatment was by informing the patient that the paralysis would recover spontaneously without mentioning the word psychogenic and showing the contraction of the muscle by nerve stimulation. Six patients recovered within 2 to 24 weeks (average 12.7), and four patients were lost to follow. The psychogenic paralysis is considered as one of the cause for nerve paralysis and the treatment can sometimes be challenging. We find that the keys to the successful treatments are 1) correct diagnosis, 2) not denying their paralysis, 3) convincing the patient that the paralysis will recover spontaneously 4) using electrical nerve stimulation to prove axonal continuity and 5) never use the word psychogenic.

Abstract no.: 31235

CONSERVATIVE TREATMENT FOR PEDIATRIC SUPRACONDYLAR HUMERAL FRACTURE

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Introduction: Conservative treatment using collar and cuff immobilization is one of the useful treatments for pediatric supracondylar humeral fracture. The purpose of this study was to retrospectively evaluate the clinical outcomes of 34 pediatric supracondylar humeral fractures treated using conservative treatment with collar and cuff immobilization. Methods: There were 24 boys and 10 girls sustained supracondylar humeral fractures. Their average age at the time of surgery was 5.9. According to the Smith's classification system, 4 patients were type-I, 6 type-II, 9 type-III and 15 type-IV. Manual reduction and collar and cuff immobilization were performed for all patients under intravenous anesthesia. Functional and cosmetic outcomes were evaluated using Flynn's criteria, and postoperative complications were assessed. Results: According to the Flynn's criteria, 26 patients were excellent, 5 good and 3 fair in the functional factors, and 25 patients were excellent, 7 good and 2 fair in the cosmetic factors. The reduction position of 2 patients could not be maintained with collar and cuff immobilization and percutaneous pinning was added. All fractures were united. There were no postoperative complications, such as nerve issues, vascular problems and cubitus varus. Conclusion: No postoperative complication was observed and clinical outcomes were good in this study. Conservative treatment relieves the patients and their family of the troubles related to the surgical treatment. This treatment with collar and cuff immobilization was found to be useful for pediatric supracondylar humeral fractures.

Abstract no.: 31237

NECK-SHAFT ANGLE AND TIP-APEX DISTANCE MEASURED IN SITU RADIOGRAPH ARE CHANGEABLE DEPEND ON THE LOWER LIMB POSITION OF THE PATIENT.

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Purpose: Postoperative radiographic measurements of proximal femoral fractures allow the surgeon to quantify fracture reduction. Neck-shaft angle (NSA) and tip-apex distance (TAD) are the two most common measurements taken. However, postoperative radiographic examinations are often performed with the femur externally rotated and/or flexed, rather than viewed in a true anterior-posterior (AP) direction. The purpose of this study was to quantify the differences of the NSA and the TAD between in situ radiographic measurements to true known angles and distances by utilizing a proximal femoral model. **Methods:** Radiological assessment of proximal femur analogs fixed with an intramedullary nail followed traditional methods. Measurements included: 1) NSA and TAD-AP through 50 degrees of internal rotation to 50 degrees of external rotation, and 2) NSA and TAD-AP measurements with 0-30 degrees of flexion. Measurements from each radiograph were compared to true known measurements. **Results:** Radiographic measurements were dependent upon proximal femur positioning. The ranges of the NSA and the TAD-AP measured in 0° to 50° of internal rotation were 116.4-133.0°, 8.6-20.3 mm, measured in 0° to 50° of external rotation were 116.4-126.7°, 8.6-15.6mm, and measured in 0° to 30° of flexion were 115.1-116.4°, and 8.6-9.4 mm, respectively. **Conclusion:** When comparing presentation, intra-op, post-op, and follow-up radiographs of the supine patient, maintaining the same leg position in each scenario is not plausible. Surgeons should compensate for these discrepancies or only rely on radiographic measurements when taken in the correct manner.

Abstract no.: 31239

**FAILED QUADRICEPS TENDON REPAIR SECONDARY TO PATELLA
BAJA**

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Introduction; Patella baja after quads tendon rupture, results in a high failure rate for quadriceps reconstruction. It is important to deal with the patella baja in order to improve the success rate of quadriceps repair. Method; A subset of patients with quadriceps rupture associated with patella baja was noted. These patients had a very high failure rate for their quadriceps repair. This was felt to be due to the high tension in the repaired quadriceps mechanism, due to the contracted patellar tendon. A proximal transfer of the tibial tubercle was carried out in order to "normalize" the height of the patella. This allowed repair of the quadriceps tendon without excessive tension. Results; Thirteen patients underwent combined proximal tibial tubercle transfer and quadriceps tendon repair. Three patients had two prior attempts at repair and one patient had three attempts. Twelve patients had excellent results and one patient had a good result. This last patient developed avascular necrosis of the patella, requiring patellectomy. In spite of this complication, the patient was stable and able to climb stairs, unaided.

Abstract no.: 31241

**MRI CLASSIFICATION OF LUMBAR SPINAL CANAL STENOSIS;
COMPARISON WITH CONVENTIONAL MYELOGRAPHY IN SURGICAL
CANDIDATES**

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Introduction: Lumbar spinal canal stenosis (LCS) has been one of the most common spinal diseases among silvering society. Increasing LCS patients necessitates increasing diagnostic modalities including MRI, however its clinical implications has not been well studied. The purpose of this study is to compare MRI and conventional myelography (MLG) in consecutive surgical candidates, using modified MRI classification of LCS. Methods: Consecutive LCS patients (56% spondylotic/ 37% spondylolisthesis; DS / 7% scoliosis; DLS) who underwent both MRI and myelography were studied. MRI was graded as 0 (normal), 1 (mild), 2 (moderate), and 3(severe) according to the distribution of cauda equinae and modification in surrounding canal space. Total disappearance of contrast agent due to thecal compression by MLG was diagnosed as radiologically-definite stenosis. Results: Forty-four most severely-graded levels by MRI were concordant with MLG up to 92.3% in spondylotic LCS, whereas the concordance rate dropped to 73.4% in DS and DLS cases. False negative rate was significantly greater in subjects with DS and DLS than spondylotic LCS ($p=0.0062$, chi square test). Conclusions: MRI grading for LCS yielded practical diagnostic value which might make MLG obsolete in spondylotic LCS. Patients with DS or DLS were underestimated when diagnosed only by MRI with 1.2-grade discrepancy, and MLG was necessary especially for surgical candidates with DS or DLS. Epidemiological studies of LCS also should take current results into account that unstable-form of LCS patients are underdiagnosed by supine MRI screenings.

Abstract no.: 31243

IS A MODIFIED TECHNIQUE OF VERTEBROPLASTY WORTH IN OSTEOPOROTIC VERTEBRAL COMPRESSION FRACTURES? YES

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Vertebroplasty(VP) is widely used for treating Osteoporotic vertebral compression fracture (OPVCF), metastasis and other conditions like tumors etc. We have exclusively treated 42 OPVCFs by VP using conventional bone cement, instead of the vertebroplasty kit, which is comparatively costlier and did not have much difference in the outcome. In this technique, we used bone marrow needles, barium sulphate and conventional bone cement. A small portion of the bone cement is replaced with Barium sulphate which reduces the viscosity of the cement and also technically useful to detect the cement intraoperatively. In our series, more than 80% of the patients had significant pain relief and were able to return to pre-fracture activity within a week, which is the aim of our treatment. So VP using conventional bone cement mainly addresses pain, restores biomechanical stability and early recovery to pre-fracture activity. However, there is very little correction of deformity. Key words: OPVCF – osteoporotic vertebral Compression fracture Bone cement, VP- vertebroplasty

Abstract no.: 31244

MODIFICATION OF SPINAL PEDICLE SCREW-PLATE FIXATION FOR TREATING BILATERAL SACRO-ILIAC FRACTURE-DISLOCATION IN PEDIATRIC PATIENT

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Introduction: Severe bilateral pediatric pelvic ring fracture-dislocation caused by high-energy mechanism is rarely occurred. It commonly associates with multiple organ injury and the risk of poor long-term outcome. Until now, there is no definite guideline of treatment in complex disruption of the pelvic ring, especially for the very young-aged patient. Among the possible surgical options, constrained locking screw plate device, such as pedicle screw plate (PSP) system, could be applied to reduce and stabilize this posterior fracture-dislocation pattern. **Methods:** Spinal pedicular screw was modified to treat the bilateral fracture-dislocation of sacro-iliac joint pattern in 2-year-old girl by using bilateral minimally invasive posterior approach. A 40-mm spinal pedicle screw was inserted just below the postero-inferior iliac spine of both iliums, then the plate was percutaneously placed and constrainedly locked with the screw to compress both iliums against the sacrum. Intra-operative fluoroscopy was used to confirm the quality of reduction and fracture stability. The patient was followed for fracture healing, pelvic asymmetry, pain score, functional outcome and complication by 6-month period. **Results:** The intraoperative near-anatomical reduction was obtained after fixation and the fracture was stable without additional support. Postoperative radiographs showed appropriate healing time without pelvic asymmetry, implant loosening or failure. Pain score and functional outcome were improved postoperatively. Neither of wound complication, infection nor thromboembolism was found during follow-up period. **Conclusion:** Application of a PSP system in unstable posterior pelvic ring injury can be a possible surgical option in pediatric pelvic fracture especially for bilateral sacro-iliac joint fracture-dislocation.

Abstract no.: 31247

PRELIMINARY EXPERIENCE WITH PROXIMAL FEMORAL LOCKING COMPRESSION PLATE (PF-LCP) IN COMPLEX PROXIMAL FEMORAL FRACTURES

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Background : Complex fractures of proximal femur are challenging injuries & prone to complications. Locking compression plate for proximal femur [PF-LCP] is a newer implant with promises of locking concept. We aim to evaluate results of PF-LCP in such fractures with special reference to learning curve & complications. Materials and Methods: From August 2010 to July 2011, 22 males and 8 females, aged 18 to 80 years ,with AO classified Unstable/Complex proximal femoral fractures were treated with PF-LCP. Fresh(<10 days), Closed ,Extra-articular proximal femoral fractures, were included while poly trauma, pathological & open fractures, drug & alcohol abuse, were excluded from study. 18 followed RTA & 12 fall. Plate was fixed either by open or MIPO technique depending on acceptability of reduction at table. Partial weight bearing started as pain permitted .Final follow up was at one year. Results were evaluated as per Leung 2006. Result: Average union time was 17.02 weeks (range 18-22) in open and 13.2 weeks(range 14-16.5) in MIPO technique. Excellent ,Good ,Fair functional outcome was seen in 83.34% ,13.33% respectively. There was no implant failure ,Infection and Limb Length discrepancy. Discussion and conclusion PF-LCP requires lesser inventory than Interlocking nailing; Learning curve is not steep with adequate pre op planning. It allows adequate stability by angular-stable locking head screws with early functional rehabilitation. It is an innovative and viable option for stable fixation of complex proximal femur fractures.

Abstract no.: 31251

POSTEROLATERAL APPROACH FOR THE TREATMENT OF POSTERIOR MALLEOLUS FRACTURE OF THE ANKLE

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Background: Treatment of posterior malleolus had always been a debate among orthopedic surgeons. Most orthopedic surgeons will fix the posterior malleolus if it is larger than 25-30% of the distal articular surface. The most common method of fixation of the posterior malleolus is by indirect reduction and anteroposterior screws. Purpose: To assess the results of the posterolateral approach to posterior malleolus fracture of the ankle. Method: In this study, we describe the technique and the results of treatment of posterior malleolus by direct reduction through the posterolateral approach to the ankle. Decision to fix the posterior malleolus depended on its size and displacement. Twelve consecutive patients had posterolateral approach to reduce the posterior malleolus and these were fixed by posterior plate. Two patients were lost to follow up in the early post operative period (both after 2 months). Results: There were no cases of deep infection or wound dehiscence. Ten cases had adequate (less than 2mm displacement of the articular surface) radiological reduction at the final follow up. There were two cases of 2mm or more of articular surface displacement at the final follow up (one case had 2mm displacement noted at the immediate post operative period and one case had adequate reduction in the beginning but was displaced with further follow up). Conclusion: The posterolateral approach to the ankle is useful tool to treat certain cases of posterior malleolus

Abstract no.: 31252

OSTEOCHONDROMA OF PROXIMAL FEMUR – A CASE REPORT

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Introduction: Osteochondroma is the most common benign bone tumor, accounting 35% of benign and 9% of all malignant tumors. Most are asymptomatic but can occasionally cause mechanical symptoms depending on their location and size. An osteochondroma of proximal femur can present with limb length discrepancy, increased femoral anteversion, valgus angulation and acetabular dysplasia, bursal inflammation, pain and occasionally compression on the sciatic nerve. This article presents a novel case of a proximal femoral osteochondroma leading to the development of symptoms and radiographic findings consistent with compression of sciatic nerve. Case History: A 68 year old female presented with complaints of radiating pain with paraesthesias in left lower limb since 5 to 6 months which were affecting her activities of daily living. Patient had no history of trauma, weight lifting or constitutional symptoms. On examination a bony hard swelling was palpable on the supero lateral quadrant of left buttock. Nerve stretch tests and fabers test were positive. No distal neurological deficit was found.

Abstract no.: 31257

RESULTS OF PROXIMAL FEMORAL NAIL IN INTERTROCHANTERIC FRACTURES OF THE HIP WITH COMPROMISED LATERAL FEMORAL WALL: A CLINICAL OUTCOME STUDY

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Introduction: The ideal method of fixation of intertrochanteric fractures of femur associated with compromised lateral femoral wall is still not clearly defined. The aim of the present study is to evaluate the outcome of proximal femoral nail in unstable intertrochanteric fractures with compromised lateral femoral wall in terms of low rate of complications and re-operation. Methods: Twenty-four consecutive patients who had sustained an unstable intertrochanteric fracture according to AO/OTA classification were operated with proximal femoral nail under image intensifier by a single surgeon within a week of sustaining trauma and were followed clinically and radiologically for at least 6 months. Results: Twenty-three patients were available for follow-up after 24 weeks. One patient died due to effects of prolonged immobilization 2 months postoperative as the patient wasn't able to bear weight on affected extremity due to screw cut-out and subsequent varus collapse in immediate postoperative period. There was a mean limb length shortening of 4.29 mm. In 19 of 23 (approx 83%) patients the shortening was less than 10 mm. Four of 24 patients (16%) had developed postoperative complications but none of the patients were re-operated during the subsequent follow-up of 6 months. Conclusion: Proximal femoral nail provides a good outcome in intertrochanteric fractures of the hip with fractured or compromised lateral femoral wall with an acceptable rate of technical difficulties and complications

Abstract no.: 31261

**OUTCOME OF INFECTED HIP HEMIARTHROPLASTIES FOLLOWING
NECK OF FEMUR FRACTURES**

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Aim: To review the outcome of deep prosthetic infection in patients following hip hemiarthroplasty surgery, in order to establish a valid treatment strategy. Method: Patients who had undergone hip hemiarthroplasty between 2004-2006 were identified from our hospital's database. A retrospective case note review was performed to identify patients who encountered deep prosthetic infection. Results: Deep infection developed in 14 of 1428 hemiarthroplasties. The mean age at time of fracture was 83. 11 cases had an American Society of Anaesthesiologists score of 3-4. Eight of the 14 hips were treated with open debridement and washout with implant retention. This was successful in 4 hips. Infection recurred in 4 hips, one of which was revised to total hip replacement. The remaining 3 hips with recurrent infection were treated with excision arthroplasty. Three of the 14 hips were treated initially with excision arthroplasty. One required a further debridement and another required 3 debridements to control infection following implant removal. In 2 hips, one stage revision to total hip replacement was performed. In one there was recurrent infection, which was treated successfully with open debridement and washout. In one hip, no further surgery was performed. The 90-day mortality for patients with infected hemiarthroplasty was 36%. Conclusion: Deep infection following hip hemiarthroplasty has serious consequences in an already frail population. In our study, recurrence of infection was common and the mortality at 90 days was high. This highlights the importance of infection prevention to reduce the morbidity and mortality following hip fracture surgery.

Abstract no.: 31264

NEGATIVE PRESSURE WOUND THERAPY TO PREVENT SEROMAS AND TREAT SURGICAL INCISIONS AFTER TOTAL HIP ARTHROPLASTY

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Purpose: To evaluate the use of Negative Pressure Wound Therapy (NPWT) to ameliorate wound healing after total hip arthroplasty (THA) and its influence on the development of post operative seromas in the wound area. Materials: The study is a prospective randomized evaluation of NPWT in patients with large surgical wounds after THA, randomizing patients to either a standard dressing (group A) or a NPWT (group B) over the wound area. The wound area was examined with ultrasound to measure the postoperative seromas in both groups on the 5th and 10th day post surgery. Results: There were 19 patients randomized in this study. Group A (10 patients, 70.5 ± 11.01 years of age) developed after ten days post surgery a seroma with an average size of 5.08 ml and in group B (9 patients 66.22 ± 17.83 years of age) 1.97 ml. The difference was significant (p=0.021). Conclusion: NPWT has been used on many different types of traumatic and non traumatic wounds. This prospective, randomized study has demonstrated decreased development of post operative seromas in the wound area and improved wound healing.

Abstract no.: 31265

**HORIZONTAL CLEAVAGE TEAR OF DISCOID MEDIAL MENISCUS
DIAGNOSED ON MRI AND TREATED WITH ARTHROSCOPIC PARTIAL
RESECTION**

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Introduction: To provide an evidence-based summarisation of the discoid medial meniscus in conjunction with a case report describing a novel management approach which includes MRI-assisted pre-operative planning and a limited meniscal resection. Methods: Case report and structured literature review of Medline referenced articles from 1941 to 2011. Results: Forty-one papers describing 61 patients and 82 discoid medial menisci were identified. Data extracted included patient demographics, diagnostic techniques, operative interventions, and associated pathological findings. These findings were compared with the index case report. A new technique involving MRI-assisted pre-operative planning and limited meniscal resection is described. Conclusion: The discoid medial meniscus remains a rare abnormality with significant associated morbidity. It continues to provide physicians with both diagnostic and interventional challenges. MRI-assisted pre-operative planning can provide surgeons with the opportunity to plan for limited resection so as to maximally lessen the probability of early-onset osteoarthritis which may result from loss of meniscal tissue.

Abstract no.: 31266

CAN A DEDICATED WARD FOR PATIENTS WITH FRACTURED NECK OF FEMUR IMPROVE THE OUTCOME RESULTS OF 30 DAYS MORTALITY RATE AND ACUTE TRAUMA BED STAY?

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Objectives: to evaluate effect of a dedicated ward for patients with fractured neck of femur on length of acute bed stay and 30 days mortality rate. Design: a retrospective study of two different cohorts of patients with fractured neck of femur, one admitted to a general trauma / surgical ward and the second to a ward dedicated for patients with fractured neck of femur. Cohorts: the first group includes 348 patients, who have been diagnosed and admitted with a fractured neck of femur in a 12 months period into a general trauma / surgical ward. The second cohort includes 432 patients, who have been diagnosed and admitted with a fractured neck of femur in a 12 months period into a dedicated ward for patients with fractured neck of femur. Outcome measures: lengths of hospital stay in an orthopaedic bed and 30 days mortality rate as main outcome measures. Secondary outcome measures considered to be theatre waiting time and discharge destination improvement. Results: length of acute trauma bed stay has been reduced from 18.3 in the first group to 10.9 ($P < 0.01$) in the second group. Thirty days mortality rate did not show significant difference (10% vs. 10.8%). There were some improvements in the secondary outcome measures including reduced theatre waiting time. Conclusion: (with acknowledge of study design limitations) our study has shown a dedicated ward for patients with fractured neck of femur, could shorten acute trauma bed stay, but did not have significant effect on 30 days mortality rate.

Abstract no.: 31271

NEUROPHYSIOLOGICAL CRITERIA FOR THE ASSESSMENT OF FUNCTIONS OF THE SPINAL CORD AT CRANIOVERTEBRAL STENOSIS

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Craniovertebral stenosis (CS) leads to the compression and irritation of the neural and vascular formations at the segmental level of the spinal cord and at the supraspinal level. The aim of the research was to develop neurophysiological diagnostic (ND) and ultrasound diagnostic (UD) criteria for neural and blood vessels disturbances. Materials: 63 patients with traumas and congenital abnormalities of the occipital-cervical transition. The ND was based on the registration of evoked potentials in response to stimulation by electric and magnetic impulses: somatosensory evoked potentials (SSEPs - n. medianus), blink-reflex, motor evoked potentials (MEPs - mm. linguae, diaphragma, thenar). The UD included the colour duplex sonography of head and neck blood vessels. Results: A conjugated progress of ischemic and innervations disturbance, which had a distant nature, was detected. The most informative assessment criteria for spinal cord function were the following: indicator of time of the central motoric conduction at different segmental areas; time of the central afferent impulse conduction in ascending tracts (N20-N13) increased from the normal time 5,7-0,3 ms to 7,0-0,6 ms; ultrasound symptoms of extra- and intracranial arteries dysfunction. The criteria of the supraspinal disturbances was an increase of mean latency time of the second component's (R2) blink reflex from the normal $38,9 \pm 0,9$ ms to $43,1 \pm 0,7$ ms. Conclusion: The criteria of ND are an objective and a highly sensitive screening tools, which help to receive new information about conductivity of spinal cord pathways for patients with CS.

Abstract no.: 31274

SAFETY AND OUTCOME OF TOTAL KNEE ARTHROPLASTY FOR PATIENTS RECEIVING WARFARIN THERAPY

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The aim of this study was to evaluate the clinical results after total knee arthroplasty(TKA) for patients receiving warfarin therapy. We studied 11 patients receiving warfarin therapy (W group) who underwent TKA compared with 20 patients without warfarin or any anticoagulation (C group). Clinical outcomes were evaluated by operation time, amount of bleeding in operation, amount of blood re-infused, transfusion rate, haemoglobin value, incidence of venous thromboembolism (VTE), post-operative range of motion. W group interrupted warfarin therapy from preoperative 1 week and performed heparin bridging therapy and resumed warfarin therapy from postoperative 1 day. Auto transfusion was used for C group, not used for W group. Blood re-infused was used in both groups. There was no significant difference between both groups in the operation time, the amount of bleeding in operation, the amount of blood re-infused, the haemoglobin value, the transfusion rate, and the range of flexion at postoperative 6 months. There was no incidence of embolism including VTE in both groups. Two patients in W group and Three in C group had delayed wound healing. There was no infection in both groups. The incidence of bleeding following TKA in patients on warfarin therapy has been described that a safe alternative is to continue the steady-state warfarin peri-operatively and there is greater risk of embolic events when oral anticoagulant therapy is interrupted. We have shown that the safety and effect of TKA for patients receiving warfarin therapy treated with heparin bridging therapy was equivalent to that for patients without anticoagulation.

Abstract no.: 31278

HIP SCORE AND DISEASE ACTIVITY CORRELATION IN PATIENTS WITH RHEUMATOID ARTHRITIS AFTER TOTAL HIP ARTHROPLASTY

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Objective: The Disease Activity Score including 28 joints (DAS28), the Simplified Disease Activity Index (SDAI) and the Clinical Disease Activity Index (CDAI) were developed in order to provide a quantifiable measure of rheumatoid arthritis (RA) activity. Although inflamed hip joints greatly impact activities of daily living (ADL) and walking ability, the hip joint was not included in the DAS28, SDAI or CDAI assessments. This study aimed to assess the correlation between a hip score and disease activity in patients with RA after total hip arthroplasty (THA). **Patients and Methods:** Twenty-three registered RA patients who had undergone THA (30 joints) between 1997 and 2010 and who had been followed for more than 1 year were included. Hip function and RA disease activity were measured on the same day. They were followed for a mean of 5.2 years after surgery. The Japanese Orthopedic Association (JOA) hip score was used as a clinical outcome measure for hip dysfunction. **Results:** The mean JOA score for hip function was 80.23 at the final follow-up. The mean DAS28-ESR, DAS28-CRP, SDAI and CDAI measuring RA disease activity levels were 3.54, 2.89, 10.59 and 9.41, respectively, at the final follow-up. There was a significant negative correlation between the JOA hip score and all disease activity assessments observed after THA ($P < 0.05$). **Conclusion:** We conclude that THA may have a positive secondary systemic effect on RA disease activity, and tight control of RA disease activity may improve hip function for RA patients after THA.

Abstract no.: 31280

RETROGRADE FIXATION OF PROXIMAL HUMERAL FRACTURES WITH HALDER HUMERAL NAIL

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Proximal humeral are commonest fracture in humerus. Treatment include conservative, internal fixation or hemiarthroplasty. We report our study of retrograde fixation for proximal humeral fractures including 2 part, 3 part and 4 part fracture. Of 203 cases from March 1998 to December 2010 operated in our institution, 121 were 2 part , 65 were 3 part and 17 were 4 part. Age range 21 to 83 years (67). Modified retrograde, triceps splitting technique was used . A hole was made in roof of olecranon fossa. The nail was introduced over guide wire up to head of humerus, after reduction, leaving rotator cuff free from injury. 98% were closed reduced. Occasionally some fractures needed 'Joy stick' through stab incision to reduce the fracture. Rotational stability was maintained proximally by Trio wire and locking screw and distally by two screws. Patients were followed up with X-ray on arrival up to one year. In all cases early pain relief with good movement of shoulder was noted. In 2 part fracture: fixation failed in 4 cases, avascular necrosis in 2 cases; revision surgery in 2 case and lost follows in 5 cases. In 3 part fracture: avascular necrosis 4; mal union 5; lost follow up 3 cases. In 4 part fracture: 2 failed, 1 revision surgery and 2 lost follow up. Constance score of shoulder is 79. Average loss of elbow extension is 15* Conclusion: This Retrograde device is adequate to fix proximal humeral fracture by close technique without damaging the rotator cuff of shoulder

Abstract no.: 31285

COST EFFECTIVE METHOD OF TREATMENT OF COMMUNUTED INTRAARTICULAR FRACTURES OF CALCANEUM

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Material and method: As calcaneum fractures occur due to fall from height which is common in building workers which are from low socioeconomic status. Forty seven such patients form subject for this study. Modified Ollier approach is used. Open reduction and multiple Kirschner wires fixation was done . Modifications in the approach , surgical tips to prevent soft tissue healing problems , fixation sequence as well as postoperative protocol are elaborated in paper. Follow up ranges from six months to ten years. Results are assessed in terms of restoration of shape of heel with special attention to lateral wall, radiological assessment of cruciate angle, varus and valgus movement of heel , pain while walking , patient satisfaction assessment by return to preinjury work. Results and conclusion: All fractures healed well with good radiological and functional outcome with return to preinjury work status in four to six months. Need to change to Kocher approach for calcaneum with right angled incision and elevation of lateral flap is not necessary if surgical tips showed in paper are followed meticulously to achieve good early soft tissue outcome and later good bony radiological and functional outcome. As implants used are very cheap and affordable to worker class , author has developed this method and now feels best for otherwise all class of patients with the said problem therefore this is a Cost effective method of treatment of comminuted intraarticular fractures of calcaneum Key words: intraarticular, tips, socioeconomic, functional

Abstract no.: 31290

IS FIXATION NECESSARY AFTER FEMORAL SHORTENING IN HIP ARTHROSIS DUE TO THE DEVELOPMENTAL DYSPLASIA OF THE HIP

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Introduction:Developmental dysplasia of the hip is an important cause of secondary osteoarthritis. The most common symptoms are pain, limitation of ROM, claudication due to the limb shortening and scoliosis at the late stage of disease. Best results are achieved after replacement of the hip joint with femoral shortening in patients with hip joint arthrosis due to developmental dysplasia of the hip. In this study we have aimed to evaluate the results of the patients to whom square type prosthesis applied and no additional fixation done after femoral shortening Methods:Between March 2009 and April 2011, square type femoral prosthesis was implanted without additional fixation to 15 of 50 patients who were operated for DDH (Developmental dysplasia of the hip). Mean age was 40.2 years (20-55 years) .Crowe classification of seven patients was 3 and eight patients were Crowe 4. An average of 2.1 cm (1.5-2.5 centimeters)femoral shortening below one centimeter from the trochanter minor was performed to all patients. Preoperative Harris hip scores were 39.6 (35-55) and VAS scores were 4.5 (3-7). results:Fixation of the osteotomy site after femoral shortening can be achieved with plates or cables for the purpose of preventing rotation and securing the osteotomy site. In this study we have concluded that avoiding fixation in patients to whom square type prosthesis is adequately implanted, makes no difference in terms with pain, functional outcome, time to union and range of motion

Abstract no.: 31296

EVALUATION OF THE EFFECTIVENESS OF THE EXTRAMEDULLARY TIBIAL CUTTING GUIDES WITH AND WITHOUT PROXIMAL FIXATION IN PROVIDING THE DESIRED POSTERIOR TIBIAL SLOPE

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It is well known that good prosthesis and lower limb alignment in coronal and sagittal planes takes an important place in a successful total knee joint replacement surgery, knee range of motion and on the life of prosthesis. In this study we have aimed to evaluate the effectiveness of two different tibial cutting guides with and without proximal fixation in providing success on creating posterior tibial slope. **METHODS:** Between 2008 and 2011, 120 posterior cruciate ligament protecting total knee replacement surgeries of 83 patients in which two different external cutting guides with and without proximal fixation used are included the study. All surgical procedures were done by the same surgeon. 15 patients were excluded from the study for the inappropriate knee x-rays. 59 knees were included into the proximally fixated group and 61 knees were included into the group without proximal fixation. Posterior tibial slope angles were measured on the postoperative x rays to detect how the 2 different types of cutting guides achieve the preoperative predicting angles and how the body mass index affects the results. **RESULTS:** There were no difference between two groups in terms with age, sex and body mass indexes. The mean postoperative slope angle was 2.66 degrees (0-7 degrees) and standart deviation was 2.01 in proximally fixated group. The values in the group without proximal fixation were 2.46 (0-7) and 2.27 respectively. There was no effect of body mass index on the results in both groups.

Abstract no.: 31298

RESULTS OF PRONATOR TERES AND FLEXOR CARPI ULNARIS TRANSFERS PERFORMED FOR FOREARM SUPINATION AND WRIST EXTENSION DISABILITY IN CHILDREN WITH CEREBRAL PALSY.

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to evaluate the results of pronator teres and flexor carpi ulnaris transfers performed for the purpose of improving forearm supination and wrist extension functions in cerebral palsy patients. Methods: 36 children with cerebral palsy to whom pronator teres transfer was performed between 2000 and 2010 for the purpose of improving forearm supination ability are included the study. Additionally, flexor carpi ulnaris tendon was transferred to the extensor digitorum communis tendon in six patients for improving the wrist extension ability . Mean age was 8 (4-13 years) . The major indication for pronator rerouting surgery identified as ability of full passive forearm supination and inability of active supination of forearm. Patients were evaluated for active and passive forearm range of supination motion, dynamic position of forearm and grip function of the hand. Also six patients were additionally evaluated for active and passive extension and the dynamic position of the elbow. Results : follow up time was 41 months (12-48 months) . Passive supination is improved from six degrees to twenty degrees averagely and active supination is improved from -45 degrees to 5 degrees. Dynamic forearm position advanced from -50 degrees to -5 degrees. In six patients active elbow extension improved form -30 degrees to 0 degree and dynamic wrist position advanced from -35 degrees to 0 degree. There was one radial head fracture in a patient to whom pronator teres transfer was performed. Pseudoarthrosis was seen on follow up radiograms and treated with ORIF and bone grafting

Abstract no.: 31299

CAPSULE-LIGAMENT APPARATUS BALANCE IN PATIENTS WITH POST-TRAUMATIC GONARTHROSIS DURING TOTAL ARTHROPLASTY

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Introduction: Total knee arthroplasty in patients with deforming arthrosis enables prompt pain relief, correction of existing deformity and restoration of affected joint function. During primary arthroplasty in patients with 3rd-4th stages of osteoarthritis marked instability of ligaments can be seen due to imbalance due to various deformities of femoral and tibial condyles that lead to imbalance of ligaments. Two options of capsule-ligamentous apparatus correction are available: knee-joint soft tissue release and various methods of most stretched (unstable) knee-joint part plasty. Purpose: To develop a method of capsule-ligamentous apparatus balance in patients with posttraumatic gonarthrosis during total arthroplasty. Materials and methods: We studied the results of total knee arthroplasty of 410 patients with different stage of gonarthrosis who underwent surgical treatment in city hospitals 29, 54, 59, 17 and Semashko Hospital. In 30 cases knee replacement was performed with SEARCH COMPACT LC, in 4 subjects SEARCH EVOLUTION LC, Aesculap, Germany was used, in 371 cases replacement with AGV V2, Biomet, UK with universal component and in 5 patients – with anatomical femoral component was done. Knee-joint soft tissue release was performed in 68 patients. Shirring and various plastic techniques of ligaments were performed in 27 cases. Conclusion: For knee osteoarthritis resection of articular tips and total arthroplasty was performed. In case of imbalance of lateral ligaments corrugating of collateral ligament in the most stretched part was done. This procedure allows to achieve balanced stability in operated joint.

Abstract no.: 31300

SROM STEM PROVIDES PREDICTABLE LONG TERM RESULTS FOR ANATOMICALLY DIFFICULT HIP

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Aim: Hip replacement in patients with anatomical anomalies pose a formidable challenge. Modular implants like SROM (Depuy Inc) provide multiple options for better balancing of hip, but concerns remain about theoretical increase in debris from modular junctions. **Methods:** 38 patients with arthritis secondary to developmental dysplasia of the hip (DDH), slipped upper femoral epiphysis (SUFE), perthes disease, post traumatic deformity etc. were included in the study. Pre and post operative Harris hip scores (HHS) and complications were recorded. **Results:** Between 1996 to 2002, 38 patients (39 hips) were identified with above inclusion criteria from the database. The mean age at the time of the surgery was 50 years (21-90) with average follow-up of 10 years (8-14). There were 15 males and 23 females. None of the patients were lost to follow up. All patients had metal on polyethylene articulation. The mean HHS increased from 41.2 (19-60) preoperatively to 85.3 (60-99) at the most recent follow-up examination ($p < 0.05$). There were 5 (13.1%) revisions. Two cases (5.3%) were revised for deep infection (both cup and stem). Two cups (5.3%) required revision secondary to loosening one of which presented as late dislocation. There were 2 (5.3%) cases with osteolysis around stem one of them sustained periprosthetic fracture requiring revision (2.6%). **Conclusions:** Use of the S-ROM femoral stem in anatomically difficult hips yielded excellent results with 97.4% survival rate of stem excluding infections. There was significant improvement in function as measured by Harris Hip Score and we recommend its use in such cases.

Abstract no.: 31303

**HIP REPLACEMENT BY LATERAL APPROACH IN SUPINE POSITION
WITH NEUTRAL VERSION STUDY OF 200 CASES**

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200 cases of hip replacements were performed over a period of 10 years by the lateral approach in supine position for displaced intracapsular femoral neck fractures .The cases included hemiarthroplasty, cemented total hip and revision arthroplasty for periprosthetic fractures. The mean age group was 70 years , there were 130 female and 70 male hips.all hips were inserted in neutral version. we found that the straight lateral approach in supine position was convenient to the patient, the surgeon and anesthetist.all our patients had better flexion range and external rotation at the hip , facilitating them to sit cross-legged.we had no dislocations in the immediate or late postoperative period of follow-up.all our patients were mobilized within 48 hours of surgery.the complications included DVT in 10 cases, 2 patients had pulmonary embolism but no mortality.there were no infections or loosening until our last followup.

Abstract no.: 31304

OSTEOSYNTHESIS WITH PLATE VS EXTERNAL FIXATION IN THE FRACTURES OF DISTAL RADIUS

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Introduction: Both external fixation and internal fixation with plates of different configuration are used in surgery of distal radius fractures. The choice of method is still controversial. Methods: 165 patients of the age 16-82 with distal radius fractures were operated using external fixation (76 patients – 1 group) and applying osteosynthesis by LCP plates (89 patients – 2 group). Palmar and dorsal LCP plates were applied for osteosynthesis. In neuropathy of median nerve, having been proved clinically, by thermography and electroneuromyography, the revision of median nerve with internal neurolysis and carpal tunnel release was made with osteosynthesis simultaneously. Results: In osteosynthesis the choice of surgical approach was defined by the presence of carpal tunnel syndrome and the character of displacement of bone fragments. In 37 patients among the patients of the group 2 who had revision of median nerve, appearing of neuropathy was eliminated completely during the period of 2-4 months. Residual neuropathy as moderate paresthesia of the distal phalanges of 3-4 fingers was observed in 7 patients. It was not possible to prevent the signs of neuropathy of median nerve in 2 patients – persistent Sudeck's syndrome had formed. Conclusion: The method of external fixation is recommended in operative treatment of the fractures of distal radius to the patients who do not have any neurological disorders but for the patients with carpal tunnel syndrome, the choice method is open reduction and osteosynthesis of radius by the palmar plate with simultaneous revision of median nerve.

Abstract no.: 31306

BIO-EFFECT OF VARIANT MODES OF ULTRASOUND ON THE CHONDROGENIC DIFFERENTIATION OF HUMAN ADIPOSE STEM CELLS

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Low-Intensity Ultrasound (LIUS) have been shown to be an efficient tool for promoting the chondrogenic differentiation of bone marrow MSCs. The purpose of this study is to evaluate if different mode of ultrasound (continuous vs bursting) will result in different bio-effects on human adipose stem cell or not. Every million of human adipose stem cells were centrifuged to a dense 3-D pellet for culture. After 3 days culture, these pellets were treated with 1.0kHz 48mW/cm² ultrasound either with a mode of 200- μ s tone burst repeated at 1.0kHz or a continuous mode. The results demonstrated TGF- β treatment elevated aggrecan mRNA most to 6.88 folds as control, bursting mode of LIUS elevated aggrecan mRNA most to 25.4 folds, and continuous mode of LIUS elevated aggrecan mRNA most to 33.17 folds. In the meanwhile, TGF- β treatment elevated type II collagen mRNA most to 12.9 folds as control, bursting mode of LIUS elevated type II collagen mRNA most to 22.45 folds, and continuous mode of LIUS elevated type II collagen mRNA most to 28.81 folds. These data revealed continuous mode had better induction on chondrogenic differentiation than bursting mode with the same intensity of 48mW/cm². The results also revealed the bio-effects of LIUS on human adipose stem cells was independent on TGF- β and an additive effect was observed between LIUS treatment and TGF- β on the chondrogenic differentiation of human adipose stem cells.

Abstract no.: 31308

TIBIAL SLOPE AND GAPS BALANCE IN KNEE ARTHROPLASTY

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The success of total knee arthroplasty relies on the appropriate limb alignment with balanced flexion and extension gaps. Saggital plane cuts are involved and posterior slope require restoring the original. Metods. From September 2006 and January 2009, 173 primary CR total knee arthroplasties were performed. Hospital records and radiographs were available for 136 patients (158 knees). The average age at the time of surgery was 69.4 years. The diagnoses included osteoarthritis in 146 knees (95%). A retrospective review was performed by an independent observer to determine whether a posterior cruciate ligament release had been done; whether a manipulation had been done; and the range of motion noted at six weeks and at the time of the most recent follow-up. The posterior tibial slope was measured on x-ray lateral view using a calibrated picture. Results. The median tibial slope was found to be 4°. The posterior cruciate ligament was released in 38% knees. The posterior cruciate ligament was released in 46% of the knees with <4° of tibial slope and 29% where slope >4°. Manipulation was performed in 5 cases (2 in <4° and 3 in >4°), and they not relied on PC release. At the most recent evaluation the ROM was better in the patients with <4°of posterior slope (115°) than it was in the patients with >4° of slope (110°). The patients who did not have a posterior cruciate ligament release had have similar ranges of motion regardless of the tibial slope.

Abstract no.: 31309

A NEW METHOD FOR ANCHORING TRANSFERRED TENDON ONTO BONE

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Anterior transfer of posterior tibial tendon is common used to correct equinovarus deformity. Typically, the transferred tendon is anchored onto cuneiform by pull through sole skin suture and fixed the suture with an under sole button. However, pressure sore and stitches infection frequently happened. To avoid pressure and stitches infection, a new anchoring method was developed .Surgical techniques: when anchoring the transferred tendon into the bone tunnel in cuneiform, the sutures were pulled out the wound which was made previous for detaching posterior tendon from naviculum rather than pulling these sutures through the sole skin. Then, the sutures were tied over through a small bone tunnel in naviculum. From 2002 to 2010, nineteen feet in 17 patients (10 male/ 7 Female) had received this procedure. The average age at operation was 11.8 years and the mean follow up period was 6.4 years. The gait and range of motion were checked in the follow-up revealed all patients had a plantigrade gait. No equinovarus deformity recurred. The average active ROM of ankle: 11.5 degrees in dorsiflexion and 33.6 degrees in plantar flexion. The findings showed that there were 13 excellent, 6 good, and no poor results. There was no graft failure or postoperative skin complications. The results revealed this new method for anchoring anterior transferred posterior tibialis tendon onto cuneiform can efficiently avoid skin complications as pressure sore or stitches infection.

Abstract no.: 31312

RESURFACING ARTHROPLASTY FOR THE TREATMENT OF OSTEONECROSIS OF THE FEMORAL HEAD IN THE YOUNG PATIENT

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We reviewed the clinical and radiographic results of 39 consecutive cases of resurfacing arthroplasty (Durom® metal on metal hip resurfacing, Zimmer, Warsaw IN USA) in 29 patients with avascular necrosis of the femoral head done from January 2005 until January 2010. They were all male patients with an average age of 41.8 years (range, 33-49 years). The average follow-up period was 32 months (range, 10 to 66 months). Posterolateral approach was used in all. The average Harris hip score significantly improved from 54.6 points preoperatively to 81.8 points at the latest follow-up. At the final follow-up, all of the patients reported feeling much better or better than they did before surgery. No hip was converted to total hip arthroplasty. There was no change of leg length. The postoperative neck shaft angle was 127° in average (range, 115°-133°) shown at AP view. The acetabular inclination was 41° in average. A little varus placement of the femoral component was preferable to avoid femoral notching. The results of this study suggest that femoral head resurfacing in a young patient with avascular necrosis can greatly improve symptoms. The disadvantage of this procedure was that skin incision was longer and dissection of the femoral head and neck required wider surgical exposure than conventional total hip arthroplasty. The majority of patients were satisfied with the procedure but outcomes are yet to be observed for longer period of time. We continue to offer this procedure in young patients with osteonecrosis of variable sizes.

Abstract no.: 31315

SCOPE OF TITANIUM ELASTIC NAILING IN PAEDIATRIC FEMORAL DIAPHYSEAL FRACTURES

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Introduction: The conventional method of treatment of paediatric femur fracture by traction, splinting & cast application have reduced over the decade & given way to minimally invasive internal fixation. Material & Methods: 15 patients with femur fracture of age 4-14 years were treated with the use of 2 titanium elastic nails by us. follow up of patient was done clinically & radiologically for up to 1 year. The final result was calculated using Flynn criteria. Results: overall result achieved were Excellent in 10 patients , satisfactory in 5 patients. no patient showed Poor results. All fractures healed with an average time of union of 6- 12 weeks. There was no delayed union, non union, or refracture. shortening & restriction of flexion were hardly observed. Soft tissue irritation around the knee was the most common problem encountered. Removal of nail of 2 mm and proximal migration was technical problem encountered in few cases. Conclusion: we strongly believe that with proper intraoperative technique , appropriate instrument & after care, Titanium Elastic Nailing System may prove to be the most ideal implant for pediatric femoral diaphyseal fractures.

Abstract no.: 31321

MID-TERM RESULTS OF FEMORAL HEAD AVASCULAR NECROSIS PATIENTS TREATED WITH TRAPDOOR OPERATION

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In trapdoor operation, an anterior incision is done on supine position, then necrotic bone fragments are curetted until the subcondral bone through a window on femoral neck and the remaining space is filled with autologous cancellous grafts harvested from the iliac bone. So, collapse of the femoral head is avoided. In this study we have aimed to report the postoperative mid-term results of femoral head avascular necrosis patients treated with trapdoor operation. **MATERIALS AND METHODS:** Patients were evaluated according to the Harris hip scores, VAS and Ficat-Arnett classification. Etiological factors are likely to be in 4 patients was the use of steroid, idiopathic in one patient, trauma in one patient and pregnancy in one patient. The decision about choosing the hip that will be operated was made according to the complaints of these 4 patients. According to the Ficat classification, 5 patients were stage 2a and 2 patients were stage 2b. Postoperatively, all patients were evaluated with Harris hip scores and VAS score at postoperative 3rd, 6th and 12 months. Viability of femoral head was evaluated with MRI and bone scan at postoperative 6 and 12 months. **RESULTS:** Mean follow up time was 9.4 months (6-16 months). While preoperative mean VAS score was 7.2 (7-9) and mean Harris hip score was 51.1 (44-67) postoperative mean scores were 4(3-6) and 77.2(68-86). One patient was treated with hyperbaric oxygen for postoperative pain. In six patients, viability of the bone grafts were approved with bone scan.

Abstract no.: 31322

EPIPHYSEAL INTRAOSSEOUS HEMANGIOMA: A RARE OBSERVED CASE

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Although the first preliminary diagnosis that comes to mind in patients of young adult age group with epiphyseal localized tumors are Chondroblastoma, Giant cell tumor of bone, Chondromyxoid fibroma. METHODS: Fifty year old male patient has slow progressing left knee pain for 4 years. Past medical history, the physical examination and routine laboratory tests were normal. In the conventional radiography (left knee AP / L), an osteolytic lesion which is in proximal left tibia, located epiphyseal, 2x2 cm extended, with no cortex damage , limited with marginal sclerosis was identified. In the preoperative differential diagnosis, when the age of the patient (50), located area of the lesion (proximal tibia epiphysis), and radiographic image of the lesion (osteolytic lesions) are evaluated, the first diagnoses to be considered were: Chondroblastoma and Giant cell tumor of bone. In accordance with these preliminary diagnoses, as surgical treatment intralesional excision, adjuvant application and grafting/cementing was planned. RESULTS: During surgical excision considered as the preliminary diagnosis, while macroscopy supporting chondroblastoma or giant cell tumor was not found, a minimal bleeding cystic lesion has been encountered. As a result of excisional biopsy histopathologic diagnosis was consistent with intraosseous hemangioma. Intraosseous hemangioma is a rare bone tumor, accounting for less than 1% of bone neoplasms. In most cases, the tumor that is progressing slowly is located in the skull or vertebrae. When the disease arises in long bones, most cases are located in the metadiaphysis or diaphysis. Epiphyseal-based juxta-articular hemangiomas of long bones have rarely been reported.

Abstract no.: 31326

FEATURES OF TREATMENT OF LIMB FRACTURES IN PATIENTS WITH DIABETES MELLITUS

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Introduction: Subjects with diabetes mellitus are characterized by marked disturbance of microcirculation, innervation, ischaemia, that in case of fractures is compounded by decreased activity of osteoblasts, insufficient alkaline phosphatase secretion. This leads to bone regeneration deficiency and reduced mineralization. Methods: In order to stimulate regeneration and restore bone integrity after stable osteosynthesis in patients with limb fractures first in modern traumatology periosteal and interfragmentary injections of nitroglycerin (Nitro) 2.0 ml diluted in 2.0 ml of saline solution were applied. Injections were performed once in 2 days, 3 injections in total. After injection of indicated dose of Nitro for the first time decrease of blood sugar level up to normal rate was detected. We observed 19 patients (8 men and 11 women) aged 24 to 72 years with fractures of the humerus (5), forearm (1), femur (2), shin bones (7) and ankle (4) suffering from type 1 diabetes (2), type 2 diabetes (17) in years 2010-2011. All patients were operated using an immersion fixation. Local infusion of Nitro was started on the 7th-8th day after surgery in patient's lying position within one hour after injection. Results: Dynamic X-ray control showed reliable intensity of callus formation, even in patients with comminuted and multifragmentary fractures. Evaluating all the signs of bone formation and laboratory studies, we can state that at least three consecutive Nitro injections in the area of fracture stimulate restoration of secretory function of pancreas with normal levels of glucose achieved and show a direct trophic action on the consolidation process.

Abstract no.: 31348

**GENU RECURVATUM VERSUS FIXED FLEXION DEFORMITY AFTER TKR
– WHICH IS THE LESSER EVIL?**

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Introduction: One goal of total knee arthroplasty (TKA) is to achieve a functional range of motion. A means to achieving this goal is to bring the knee to full extension (ie 0 degrees). However, post-TKA the knee can either end up in genu recurvatum (GR) or with a fixed flexion deformity (FFD). To date, there is no study comparing clinical outcome between post TKA GR and FFD. Methods: We retrospectively reviewed all prospectively collected data on primary TKAs done at a single centre. Patient biodata, post-TKA range of motion as well as clinical scores (Knee Society Clinical Rating, Oxford Knee and SF-36 scores) were reviewed at 6 months and 2 years. Deformities $>10^\circ$ were removed from the study. Results: 3569 primary TKAs were performed between 2004-08 and followed up at both 6 months and 2 years. At 6 months, 228 knees were in GR, while 1589 knees had a FFD. At 6 months, Oxford knee scores were marginally better in GR knees compared to FFD. We went on to analyse 2 year outcomes based on deformity at 6 months. FFDs achieved a better Knee score at 2 years. From 6 months to 2 years, 70.4% of FFDs showed an improvement in the degree of deformity compared to only 50.4% of GRs. Discussion and Conclusion: 6 month deformity may be reflective of intra-operative deformity post-replacement as pain and swelling would have subsided. Based on this study, we conclude it is better to err on the side of FFD.

Abstract no.: 31352

CONSENTING PRACTICE IN HIP ARTHROPLASTY

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Introduction: Consent is a part of GMC Good Medical Practice. Over 68000 hip Arthroplasties are undertaken per year in UK. We looked at the consenting practice for patients undergoing Hip Arthroplasty in our Hospital. Materials and Methods: We looked retrospectively at 50 patients who underwent Total Hip Arthroplasty at our centre. The consent forms were reviewed and proforma filled. We compared our practice to local standards and www.Orthoconsent.com guidelines. Results: we found that we did very well in recording patient demographics but needed improvement in mentioning other complications such as Loosening, Leg length discrepancy etc. The grade of clinician didn't improve the results. Discussion: We need to stress on the importance of filling the consent forms appropriately. We recommend using pre-printed consent forms for all the procedures or at the minimum sticky labels with all the complications and information mentioned on it.

Abstract no.: 31354

THE METHA SHORT STEM FOR REVISION ARTHROPLASTY - WHAT ARE THE ISSUES?

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Background: More and more young patients undergo total hip arthroplasty (THA) for various reasons. The increasing percentage of short stems in primary THA is accompanied by an increasing amount of necessary revisions. The consequently continued bone preserving strategy in the use of short stems in revision THA is high demanding during surgery as well as during critical follow-up. Material and Methods: Twelve revision THA's using the METHA short stem were performed using the situation adapted extended posterior approach. A range of varied diagnoses led to revision including material failure and bacterial infection. Clinical and radiological data was collected prior to and after surgery. The follow-up was at 4, 6 and 12 months to detect possible changes in the structure of metaphyseal bone adjacent to the used implant. Results: All stems showed full integration into the femur after 4 months. Subsidence, fracture, dislocation e. g. was not observed but leg length was hard to handle with consequent limb lengthening and dissatisfaction. Conclusion: The METHA short stem is an excellent alternative in revision THA, especially in the young and demanding patient. Modularity of the neck allows anatomical reconstruction of the version as well as the lateral offset. Revision arthroplasty can be done safely, quickly and with a minimal rate of intra- and postoperative complications even in revision case. The use of short stems is not limited by the "primary indication" but at all costs dependent from the existing bone stock of the metaphyseal femur.

Abstract no.: 31355

POSTERIOR APPROACH: CAN WE IMPROVE FUNCTIONAL OUTCOME & REDUCE DISLOCATION: A CLINICAL STUDY

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Background: Modified posterior approach and its effect on stability and functional outcome in total hip arthroplasty. Material & Methods: A retrospective comparative evaluation was done to assess the functional outcome and rate of dislocation in 233 hips (Group A) operated before 2007 by convention posterior approach and 567 hips (Group B) were operated by modified posterior approach.(2007-2011) In this modified posterior approach technique, 2-3 stay sutures (non-absorbable Nylon) are applied in the piriformis tendon, short external rotator and proximal part of Quadratus muscle. Then a conjoint-myocapsular sleeve is raised by starting cutting (with cautery) linearly over the capsule with adherent fibers of gluteus minimus to piriformis tendon, short rotators and part of quadratus to expose and dislocate the head. After inserting the definite prosthesis, upper part of sleeve (capsule, piriformis tendon) is sutured with same nonabsorbable Nylon at the lower part of tip of greater trochanter by passing through the bone with needle or by drilling the bone; lower part of the sleeve is tied with lateral trochanteric bone. Additional stability to repair was given by closing the tendinous part of the gluteus maximus by horizontal cross mattress sutures up its attachment to the proximal femoral shaft. Results: All patients underwent cementless total hip arthroplasty; average Harris hip score at minimum 3.1 yr follow was 88.7 in Group B & 85.2 in Group A. Group B had only one dislocation while Group A had 12 dislocations (5%). Conclusion: This technique provide enhanced stability and improve functional outcome

Abstract no.: 31356

REVISION SURGERY OF PERSONALIZED CONFORMIS® UNI (PUKA) - AND BICOMPARTIMENTAL (PBKA) KNEE IMPLANTS – WHAT ARE THE ISSUES?

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Background and purpose: Despite concerns regarding a higher risk of revision, personalized unicompartimental (pUKA) and bicompartmental knee arthroplasty (pBKA) continues to be used as an alternative to total total knee arthroplasty (TKA). Nevertheless we had our failures due to several reasons. The consequently continued bone preserving strategy in revision surgery is high demanding during surgery as well as during critical follow-up. Material and Methods: Ten revisions of ConforMis® iUni® and iDuo® (1st generation) personalized implants had been performed using situation adapted differing revision implants. A range of varied diagnoses led to revision including material failure, bacterial infection and mal positioning. Clinical and radiological data was collected prior to and after surgery. By critical follow-up and assessment we like to report about the issues. Conclusion: The revision of personalized implants is high demanding. Personalization allows anatomical reconstruction in primary but leaves fairly controllable situations in revision surgery as there might be no chance to revise by spare part exchange or additional system-identical implantation. Thus all of the performed revisions in our hands led to TKA without regard to reason of failure.

Abstract no.: 31361

SCIATICA- BEWARE OF SACRAL AND VASCULAR PATHOLOGY

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Sciatica is commonly a manifestation of acute lumbar disc prolapse and degenerative lumbar disc disease. However other conditions like tumours, infections and vascular disorders can mimic symptoms and signs of lumbar disc disease. Between 2008 and 2011, we admitted 52 patients who were referred to our institute with severe unilateral sciatica for evaluation and surgical management of suspected lumbar disc disease from district general hospitals. We present six patients who showed sacral or vascular pathology on detailed clinico radiological evaluation (including 2 cases each of sacral tuberculosis, sacral tumours and thrombosis of the popliteal and common iliac arteries) besides two cases of osteonecrosis of the femoral head.

Abstract no.: 31362

MANAGEMENT OF PARTIAL-THICKNESS ROTATOR CUFF TEARS

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Partial-thickness rotator cuff tears causes pain and impairment especially in overhead athletes. The incidence of partial-thickness rotator cuff tears was reported to be from 13% to 32% in cadaveric studies. Improvement of diagnostic imaging and arthroscopic advances changed the way of treatment of this pathology. The causes of partial-thickness rotator cuff tears can be either extrinsic or intrinsic. Intrinsic degeneration within the rotator cuff is the principal factor in the pathogenesis of rotator cuff tears. Extrinsic causes include subacromial impingement, internal impingement, acute traumatic events, and repetitive microtrauma. Partial-thickness rotator cuff tears are divided to bursal side, articular side and intratendinous tears. X-ray, ultrasound, magnetic resonance image and arthroMRI are used for diagnosis of the partial-thickness rotator cuff tears. Conservative and arthroscopic surgical procedures are suggested to treat the pathology.

Abstract no.: 31364

MANAGEMENT OF TIBIAL CONDYLE DEFECTS IN PATIENTS UNDERGOING PRIMARY TOTAL KNEE ARTHROPLASTY

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Severe coronal plane deformities are very common in osteoarthritis patients presenting for primary total knee arthroplasty(TKA) in the developing world. Management of tibial condyle defects is an additional surgical challenge besides extensive soft tissue release and balancing. We present our experience with managing 25 knees with tibial condyle defects in patients undergoing primary TKA including bone cement augmentation with or without screws, bonegrafting and use of intramedullary stems with metal wedges/augments. All patients underwent preoperative and postoperative CT scanogram Hip-knee-ankle scout films for preoperative planning and to check postoperative correction of lower limb deformity. Preoperative templating and plan for management of tibial condyle defects were made in all cases, although final plan was decided intraoperatively after proximal tibial resection. Small posteromedial peripheral defects(<1cm in vertical height) were managed by cement augmentation after multiple drill holes in tibial condyle defect. Larger defects(>1cm in vertical height) were treated with either cortical screw fixation supplemented with cement augmentation or bonegrafting secured with screw fixation to obtain a stable platform for the tibial tray. Extremely large defects were treated with stemmed tibial implants and wedges/augments after preparing the tibial condyle defects to stable base. Two patients had undisplaced intraoperative fractures of the posteromedial tibial condyle (one requiring lag screw fixation) and two had delayed skin healing. Residual varus deformity was observed in patients with significant varus deformities who required screw fixation or use of stemmed tibial implants. Early followup (mean 2 years) didnot reveal any evidence of radiological loosening or need for revision surgery.

Abstract no.: 31376

UNUSUAL PAEDIATRIC ELBOW DISLOCATIONS

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Elbow dislocations in children are uncommon and represent 3-6% of all childhood elbow injuries. Posteromedial elbow dislocation with ipsilateral lateral condyle fracture of the humerus is an even more infrequent injury. The injury results from indirect forces transmitted to the elbow from a fall on the outstretched hand. The author reports two cases of this uncommon injury treated successfully by open reduction and fixation of the distal humeral lateral condyle fragment. At 2- year follow up, both patients had regained full range of motion without instability or pain.

Abstract no.: 31377

A CASE OF FLAIL HIP JOINT AFTER RESECTION OF PELVIC TUMOR

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When tumors have developed in the pelvis involving acetabular region, reconstructive methods such as arthrodesis, pseudoarthrosis, constrained THA, saddle prosthesis and covering with soft tissue only (flail hip) have been applied. We report a case of good extremity function with flail hip at follow up of 18 years. In Aug. 1993, 20-year-old man fell while driving a motor cycle. As pain subsequently developed on the left inguinal region, he visited our department. X-ray shows lytic lesion of left pubis and acetabulum. After open biopsy (Ewing sarcoma), preoperative RT (61Gy) and chemotherapy were performed. In Feb. 1994, the tumor was resected and we made flail hip. At that time, we placed the head of the femur in front of the remaining ilium. At present, he is working as a master of bag shop. Although he has 5 cm leg-length discrepancy, he can walk 300m with 5 cm shoe lift without a cane. Weight bearing may be loaded between the upper side of the neck and the remaining ilium. The upper side of the neck is used like a saddle. The disadvantage of the flail hip method is a significant leg-length discrepancy. However, when the femoral head rises upwards, the dead space decreases in size and the operative wound will heal more easily. Flail hip using an upper side of femoral neck as a saddle is a simple and rewarding method.

Abstract no.: 31379

WHAT DO FOLATE AND MECOBALAMIN WORK FOR OSTEOPOROSIS?

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Osteoporosis is called silent disease, but many osteoporosis patients complain their pain with or without fractures. Long time after fractures mended or taking osteoporosis drugs, their complaints are often continued same as before excluding their aging problems. Many of them also have severe tender points around their epicondyles. I have been looking for medications that reduce their severe tender points and complaints. In 2005, Dr. Sato demonstrated that folate and mecobaramin prevented hip fractures in patients with stroke. In 2009, I adopted his medication for my outpatients who have severe tender points around their joints. I surveyed all my outpatients about their severe tender points from December 1st in 2009 to February 28th in 2010. I screened 755 patients, there were 504 osteoporosis patients and 283 of them had severe tender points in their bones. I divided those patients with severe tender points into 2 groups. Group 1 is the group with more than 10 severe tender points. Group 2 is less than 11 severe tender points. I prescribed them folate 15mg/day and mecobaramin 1500 microgram/day added to previous medication for 8 months. Result: In 229 cases (81%), all severe tender points disappeared. In 32 cases (11%), the numbers of severe tender points decreased. I judged this medication worked well for their severe tender points. In 22 cases (8%), severe tender points remained same as or increased before these treatments started. The deficiency of folate and vitamin B12 may cause severe tender points in osteoporosis patients.

Abstract no.: 31380

VIDEO-ASSISTED THORACOSCOPIC DECOMPRESSION OF TUBERCULAR SPONDYLITIS: CLINICAL EVALUATION

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16 patients with mid-dorsal tubercular spondylitis with paraplegia/paraparesis requiring surgery were included in the study. Every patient had a recent paradiscal disease at a single level. A soft tissue shadow was visible on plain radiographs of the spine, and conservative treatment for at least 3 weeks had shown no recovery. Patients with obvious respiratory insufficiency and likely to have significant pleural adhesions were excluded from the study. Single lung anesthesia and ipsilateral lung collapse using a double-lumen tube were administered. A 3-portal thoracoscopy approach was used, and conventional but long spinal instruments were used through an open port to decompress the spine. Patients were assessed for blood loss, duration of surgery, postoperative incision pain, duration of chest tube insertion, ICU and hospital stay, and neurologic recovery. Patients were observed for a minimum of 6 months. RESULTS: Of 16 patients, 14 (88%) had good neurologic recovery. In 1 patient, thoracoscopy was abandoned, and open thoracotomy was performed because of persistent bleeding. Another patient did not recover, and anterolateral decompression was performed 10 weeks after thoracoscopy. She recovered subsequently. Duration of surgery was 223 minutes (+/-56), blood loss was 497 ml (+/-302), and blood transfusion was required in 3 patients (3 U in 1 and 1 U in 2). Postoperative analgesic (tramadol) was 243 mg (+/-70) for 2-4 days (median 3), median hospital stay was 5.5 days (range 4-9), chest tube requirement was 3 days (range 2-7), and 2 patients were required to stay in the ICU for 1 day each.

Abstract no.: 31382

LATERAL ANKLE SPRAIN: RESULTS OF SURGICAL RECONSTRUCTION

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Background: Lateral ankle sprains are the most common injury in sports. In basketball, ankle sprains account for 45 % of all injuries, and in soccer, up to 31 %. The injuries occur during running, while cutting, or while landing from a jump. Patients describe an inversion, planter flexion or internal rotation mechanism. Non surgical treatment is the mainstay of management for the vast majority of ankle sprains. It consists of wearing ankle braces and rehabilitation programs. The indications for surgical reconstruction are well documented in mechanical instability with intact neuromuscular reflexes and a failed conservative therapy.

Material and Methods: Between March 2003 and February 2008 18 (19 ankle) patients with lateral ankle instability (10 acute, 9 chronic) were operated. 16 patients were located for follow-up. All patients underwent clinical and radiological examination using Goodman grading and Pörringer and Stolz score. Results: 9 patients had excellent results, 5 patients had good results, and 2 patients had fair results. The range of anterior talar translation varied from 0 mm to 5 mm, the range of talar tilt varied from 5° to 10°. Complications were noted in 2 patients. In 1 patient due to postoperative infection (revision was done and completely cured) and the other developed deep vein thrombosis.

Discussion and conclusion: Patients with lateral ankle instability can be successful treated with anatomic reconstruction or reconstructive tenodesis of the lateral ankle ligaments. The indication of surgical intervention should be restricted to young active patients with recurrent instability.

Abstract no.: 31385

MINIMAL INVASIVE (MIS) POSTERIOR APPROACH

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Introduction: Minimal invasive surgery is accepted when the scar is 10 cm or less. The anterior and the antero-lateral approaches had gained recently interest in the total hip arthroplasty because they allow complete muscle sparing. The postero-lateral and lateral approaches were proposed to be less satisfactory from this point of view. Material and methods: From July 2005 to March 2009 a total of 113 (70 males, 53 female) uncemented Nanos-short-stem prothesis were implanted in 111 patients. The patients average age was 53 years (33-73). The indication for this procedure was predominantly coxarthrosis. In all cases a minimal invasive posterior approach was used. The mean follow up period was 2,5 years (range 6 months- 4,5 years). The patients were assessed using Harris Hip Score and radiologically to detect any bone changes, the stand of the prothesis and peri-articular ossifications. Results: The perioperative Harris Hip Score was 53 (28-77), postoperative was 94 (86-100). Until now we have not discovered any prothesis specific complications. There is no evidence of any loosening or migration of the prothesis. No luxation. Calcification was noted in 8 cases (Grad 1), 4 cases (Grad 2), 1 case (Grad 3). In 3 cases we have to change the cup because of malposition. Conclusion: the stem design of Nanos-short-stem prothesis allowed a metaphyseal intertrochanteric multipoint primary fixation. The surgical technique using posterior approach give a good access to the femur and acetabulum. Long term studies still be needed.

Abstract no.: 31387

ANKLE INJURIES: VALIDATION OF A NOVEL TEST TO RULE OUT ANKLE FRACTURES

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Introduction: Ankle sprains are by far the commonest ankle injuries. The traditional clinical approach, to any ankle injury, is clinical examination followed by radiological examination. We have developed a simple clinical test to rule out fractures in ankle injuries and thereby eliminating the necessity for radiological examination. Methods: Fifty consecutive patients with isolated acute ankle injury were evaluated by a single examiner to avoid inter-observer reliability bias. The patient was made to sit on the examination couch with both legs by the side of the couch. The patient was then asked to place the sole of injured foot on examiner's palm and simulate weight bearing. If the patient was unable to do so, as felt by the examiner (due to pain), the test is considered positive, indicating a possible fracture around the ankle. If the patient was able to simulate weight bearing (indicating absence of pain), the test is considered negative, thereby eliminating the possibility of a fracture. After the test, the patient was asked to undergo an ankle radiograph to rule out any fracture. The test results were then validated against the radiological results. Results: Our test has a negative predictive value of 100%, sensitivity of 100% and specificity of 91.49%. Conclusion: We believe that this simple clinical test is very useful in ruling out bony injuries in ankle sprain. It reduces the cost of treatment, radiation exposure risk, saves time for the patient and the clinician and has positively benefited our practice.

Abstract no.: 31389

HIP IMPINGEMENT IN INDIAN POPULATION: HIP ANTHROPOMETRY MEASUREMENTS IN 100 HIPS

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Femoro-acetabular impingement (FAI) of the hip joint is known to be a predisposing factor for the onset of primary osteoarthritis (OA) of the hip joint. Primary OA of the hip joint in Asians, particularly in Indians, is very rare. Although exact reasons for low incidence of primary OA of the hip joint in Asians are not known, there are studies indicating a definite association between hip anthropometry and the onset of OA in the western population. We studied 100 hip joints in Indian patients to measure femoral head sphericity, head-neck offset and alpha angle on radiographs. Our study indicates that the mean values of the above measurements are far below the “danger” level for the onset of femoro-acetabular impingement. It remains to be seen whether these findings explain the low incidence of primary hip osteoarthritis in Indian population.

Abstract no.: 31390

ROLE OF BONE GRAFT SUBSTITUTE IN TREATMENT OF DISTAL RADIUS FRACTURES IN ELDERLY

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Introduction: Fractures of the distal radius in elderly patients are often associated with metaphyseal defect that can lead to collapse, malunion and therefore decreased function. An alternative approach to simple reduction is to fill the defect with a material which provides structural support. Methods: We used synthetic hydroxyapatite (HA) in unstable fractures of the distal radius in twenty-seven elderly patients. All subjects underwent closed reduction with K-wire fixation and HA augmentation. They were followed up at 4, 8 and 16 week intervals post-operatively to assess functional outcome (using Patient Related Wrist Evaluation [PRWE]), clinical outcome and radiological outcome. Results: At the end of mean 4 months, our results show that patients treated with this method showed no metaphyseal defect, no collapse and have satisfactory clinical outcome as assessed by PRWE. Conclusion: We believe that hydroxyapatite augmentation for fractures of the distal radius in elderly patients is an excellent therapeutic option.

Abstract no.: 31392

EVALUATION OF ECHOGENIC EMBOLI DURING TOTAL KNEE ARTHROPLASTY USING TRANSTHORACIC ECHOCARDIOGRAPHY

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Purpose: Transesophageal echocardiography or direct sampling of arterial and/or right atrial blood with histological evaluation are invasive techniques used to evaluate embolic material entering the heart during total knee arthroplasty (TKA). The aim of this study was to develop a non-invasive method of detecting and quantifying the embolic matter using transthoracic echocardiography and to apply this method to compare the incidence and severity of embolism between computer navigated (N) and conventional (C) TKA done under tourniquet. Methods: Twenty-eight patients (15 N-TKA and 13 C-TKA) were enrolled. Transthoracic echocardiography was performed in all standard views prior to surgery and continuously after the tourniquet release for monitoring the echodense particulates appearing in the right atrium. To estimate the severity of echogenic embolization, maximum absolute increase in luminosity after tourniquet release (peak embolic load), and area under the curve (AUC; total embolic load) were both calculated. Results: Twenty-four (85%) had significant particulate matter in right atrium (median time from release of thigh tourniquet to peak embolization in right atrium: 18.0 seconds). Peak embolic load was lower in N-TKA than C-TKA [17.0 versus 35.0 arbitrary luminosity units, $p = 0.03$]. Total embolic load, by area under the curve, was lower in the N-TKA group. Conclusions: Peri-operative particulate embolization during TKA can be quantified non-invasively with the use of transthoracic echocardiography and off-line image analysis. N-TKA, by virtue of avoiding intramedullary guides, causes lesser total embolic load and hence can lead to decreased the severity and incidence of this potentially fatal phenomenon.

Abstract no.: 31404

DEVELOPMENT OF A NEW IRON BASED CELLULAR MATERIAL FOR BONE REPLACEMENT

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Introduction: Metal materials play a key role during repair or replacement of destroyed bones. Due to their mechanical stability they are able to take over the burden of defect bones and have a high damage tolerance. The basic idea of the study is to design degradable implants with a cellular metal structure for bone replacement. In the preliminary experiment we have developed an iron-based alloy with low cytotoxicity. Material and Methods: This material was investigated in an in vivo experiment in sheep. The implant was designed as a porous cylinder, manufactured in a powder metallurgical process with a diameter of 1 cm, a porosity of 1.0 and 1.4 ccm. Ingrowth of the bone at the bone-implant-interface was assessed histologically. The percentage of new bone formation was evaluated by computer-assisted gray-value based system. Blood samples were taken regularly to assess inflammatory reactions. Results: After 6 and 12 months a small part of the implant was degraded. No sediments and no inflammation were detected in the peri-implant soft tissue. Newly formed bone was detected inside the implant; not sufficiently mineralized after 6 and began to mineralize after 12 months. In fact no inflammation and no sediments in visceral organs and the lymph nodes could be seen in the in vivo animal experiment. Conclusion: After evaluating the results of the short-term group, we expect that iron based degradable biomaterials are an interesting alternative to established biomaterials. In the long-term group, we expect further growth of the bone into the implant.

Abstract no.: 31405

EARLY RESULTS OF SINGLE RADIUS TOTAL KNEE ARTHROPLASTY IN INDIAN PATIENTS: A CLINICAL STUDY

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Back ground: Evaluation of the clinical and radiological results of single radius total knee arthroplasty in Indian patients who traditionally sits on low level for routine activities. Materials & Methods: Retrospective study was conducted to evaluate the results of the single radius total knee arthroplasty in 750 patients (900 TKR) operated between 2005 and 2011 at our institute. Results: All the patients were operated by one surgeon; midvastus approach was used in 699 patients and anteromedial medial parapatellar approach in 51 patients. Six hundred patients underwent unilateral and 150 patients underwent bilateral total knee arthroplasty. There were 270 males and 480 females; average age was 49.5 yrs (range, 38 to 76 years); minimum follow up was 3.2 years. Twenty four patients were lost in the follow up so 726 patients were available for the study. Average knee score was 88 and average functional score was 69. At last follow up 668 patients knees had excellent, 58 had good to fair results. Two patients required revision of the patellar components, two patients had periprosthetic fracture; one patient with uncontrolled diabetes required arthrodesis and two patients required two stage revision surgery due to infected prosthesis. No patient had aseptic loosening Conclusion: Although single radius total knee arthroplasty has shown excellent to good early results in Indian patients but prospective randomized studies with long term follow up are needed to further establish the same and evaluate the other proposed advantages of single radius total knee arthroplasty

Abstract no.: 31406

THE PREVALENCE AND RISK FACTORS OF RADIOGRAPHICALLY DETECTED HALLUX VALGUS AMONG JAPANESE.

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Introduction:This is a cross-sectional study to investigate the prevalence, severity, and risk factors of radiographically detected Hallux valgus (HV) among Japanese inhabitants of Miyagawa. **Methods:** The study participants were recruited from among people aged ≥ 65 years who lived in Miyagawa, a mountain village located in the center of Mie Prefecture, Japan. Baseline data obtained by interview using questionnaires included information regarding age, gender and medical history. Height, body weight and body mass index (BMI) measured. Other medical examinations comprised radiography of feet, knees (for the presence of knee osteoarthritis; KOA), hands (for the presence of Heberden's nodes) and bone mineral density (for the presence of osteoporosis). HV was defined regarding a HV angle > 20 degree. The severity of HV was defined as follows; mild (20-30), moderate (30-40), severe (>40).The risk factor of HV was analyzed from multivariate logistic regression analysis. Variables considered in the analysis were age, gender, BMI, KOA, osteoporosis, Heberden's nodes, and low back pain. **Results:** A total of 313 people (men 105; women 208) participated in this study. The percentage of mild, moderate and severe was 61.5%, 30.8% and 7.7%. 81/313 (25.9%) participants have at least one side of HV. HV group significantly differed from the group without HV in terms of female gender ($p=0.0004$, OR: 3.671), BMI ($p=0.0106$, OR: 0.927), and KOA ($p=0.0059$, OR: 2.212). **Discussion:** The prevalence of definite radiographic HV was 25.9%. Moreover, female sex, low BMI and KOA were significantly associated with an increased risk for radiographic HV.

Abstract no.: 31416

PERIOSTEAL ADHESION VARIATIONS IN MATURE AND IMMATURE SPECIMENS: A BIOMECHANICAL AND HISTOLOGICAL COMPARISON

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Aim: Little attention has been given to the biomechanical role of the periosteum. The adhesive strength and its biomechanical role in correlation to the histological changes with age have, to date, not been evaluated. **Methods:** 10 mature and 10 immature bovine metacarpal bones were stripped to their periosteal covering. A 2 centimetre flap was made at the metaphyseal region which was clamped securely to an ascending load reading machine. The bones were clamped tightly between a sliding roller clamp. Controlled upward motion, ensuring that the stripped periosteum was maintained perpendicular to the cortex was then performed whilst recording the forces needed to strip the periosteum along the long bone. **Results:** A regional variation in the forces required to strip the periosteum was noted in between both specimens. The strongest connection occurred over the metaphyseal region, decreasing along the diaphyseal region. Although fewer Sharpey's fiber connections were found in this area, adhesions were reinforced by a thicker periosteum that contained fibres with circumferential as well as axial alignment. More force was required to strip the periosteum in the immature compared to the mature specimens, however the difference did not reach statistical significance. **Conclusion:** Metaphyseal adhesion affects the transmission of load between the physes. The growth of the fibrous periosteum follows the longitudinal growth of the bone, rather than the periosteum having a direct mechanical influence on the growth of plate activity. This suggests that the basic properties of periosteal collagen may undergo a transition during the course of its lifetime.

Abstract no.: 31418

SURVIVAL OF TOTAL KNEE ATHROPLASTIES – AN EAST AFRICAN STUDY

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Total Knee Replacement Athroplasties (TKRA) have been carried out in East Africa for over two decades. Data from European and American centres suggests that cemented implants have survivorship of over 95% at 15years. There is a paucity of data concerning survivorship of implants in Africa. We conducted a follow up study to determine the survival of TKRA implants at a centre in Kenya. Methods: A retrospective cohort study was conducted of all patients undergoing TKRA at the centre since 1999. Patients were followed up in the outpatient clinic. In addition, patients who had not returned for follow-up in the last 12 months were contacted by phone and/or mail. End points of the implant were revision or removal for any reason and death. Survival was analysed by the use of Kaplan Meir tables. The study was approved by the institution ethics committee. Results: A Total of 250 athroplasties were conducted over the 10 year period. Eight knees were removed due to infection. The overall survival was 94%. Discussion: The survival of implants in the East African Region is similar to that reported in other areas. Total Knee athroplasties are successful in this region.

Abstract no.: 31419

THE ROLE OF PERIOSTEUM IN FRACTURE PREVENTION: A BIOMECHANICAL STUDY COMAPRING MATURE AND IMMATURE SPECIMENS

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Aim: The periosteum has a well recognised role in osteogenesis. However its mechanical properties and role in fracture prevention are neglected domains. The aim of this study was to evaluate whether the presence or not of the periosteum effects the strength of bone and hence has a role in fracture prevention. **Methods:** 40 immature porcine metacarpal bones were stripped down to their periosteum. 20 were completely stripped of their periosteal coverings whilst 20 retained it. The bones were then placed on support bars, along the diaphysis or at the growth plates. They were then subjected to 3 point bending tests until failure via controlled relative displacement by a descending plunger. The forces and fracture patterns were compared. **Results:** With the support bars along the diaphysis, more force was needed to fracture the bones with the intact periosteum compared to the periosteal stripped group ($p < 0.05$). In the presence of the periosteum, the fragments were less displaced, being held together by a 'periosteal bridge'. With the support bars at the growth plates, failure occurred at the metaphyseal-diaphyseal region in all cases but more force was required to cause a fracture within the periosteal preserved group. **Conclusion:** The periosteum plays an important biomechanical role in increasing diaphyseal strength. It acts as a shock absorber, increasing the biomechanical capabilities of bone to withstand fracture. The 'periosteal bridge' reduces displacement of fragments and may accelerate the healing process. This is further evidence to support minimisation of periosteal damage during operative procedures.

Abstract no.: 31423

BASAL OSTEOTOMY FOR ADULT HALLUX VALGUS DEFORMITY - OUR EXPERIENCE

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Introduction: Many procedures have been documented in the literature for correction of adult hallux valgus deformity. We present our experience of Basal osteotomy with soft tissue release for correction of this deformity.**Materials and Methods:** We performed 24 basal osteotomies with soft tissue release in 22 patients with hallux valgus deformity between June 2009 and December 2010. We evaluated the results with respect to AOFAS hallux score, radiological parameters (including hallux valgus angle, intermetatarsal angle) and complication rate. The average period of follow-up was 13 months (8-31 months).**Results:** The mean age of the patients was 49 years and 73% of them were females. The average hallux valgus angle was 39.3 pre-operatively and 11.6 post-operatively. The mean inter-metatarsal angle was 16.6 pre-operatively and 6.3 post-operatively. The average AOFAS hallux score was 56.4 pre-operatively and 91.8 post-operatively. Akins osteotomy was performed in 6 of the patients. One patient had superficial infection which subsided with antibiotics. Seven patients had decreased sensation on the medial aspect of the great toe. One patient developed chronic regional pain syndrome.**Conclusion:**Basal osteotomy is a reliable and effective method for correcting hallux valgus deformity. It not only corrects the hallux valgus angle, but also helps to restore the inter-metatarsal angle.

Abstract no.: 31424

DABIGATRAN VS ENOXAPARIN IN THROMBOPROPHYLAXIS IN MAJOR JOINT REPLACEMENTS

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Introduction: NICE guidelines (UK), recommended that Dabigatran can be used for prevention of DVT after joint replacements. Aim: Aim of our study was to find out the effect of dabigatran in preventing (DVT) in comparison with enoxaparin. Methods: This was a retrospective study analyzing a total of 102 patients who had joint replacements. A proforma was designed to include primary and secondary outcome measures and all data were obtained from patient' records. Discussion: Out of 102 patients who underwent joint replacements, 40 had enoxaparin and 62 dabigatran. Mean age was 66.6yrs for dabigatran and 71yrs for enoxaparin. 51.6% in dabigatran group and 55% in enoxaparin group were males. In dabigatran group, 54.8% had THR and 45.2% had TKR and for enoxaparin group, 45% had THR and 55% had TKR. 76% in dabigatran group and 75% in enoxaparin group had thromboprophylaxis started on post-operative day zero. No patients in either groups presented with DVT. In dabigatran group, 28 patients had oozing through wound post-operatively, while 2 patients in enoxaparin group had this. Mean drop in Hb in dabigatran group was 3.2g/dl and in enoxaparin group 2.6g/dl. Six patients in dabigatran group needed post-operative blood transfusion, but none in enoxaparin group. Mean hospital stay for dabigatran group was 4 days and for enoxaparin group was 3.95 days. Ten patients in dabigatran group were re-admitted for wound complications, but none in enoxaparin group. Conclusion: Dabigatran and enoxaparin were equally effective in preventing DVT, but there were more complications associated with dabigatran.

Abstract no.: 31425

BLOOD TRANSFUSION IN ELECTIVE PRIMARY HUMERAL AND TOTAL SHOULDER SURFACE REPLACEMENT

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Aim:Total shoulder arthroplasty is associated with considerable blood loss, often requiring blood transfusion. Studies on conventional primary stemmed total shoulder arthroplasty have shown transfusion rates of up to 38%. Recently, resurfacing shoulder arthroplasty has emerged as a surgical option for shoulder arthritis. The aim of our study was to evaluate the rate of transfusion in primary humeral and total shoulder surface replacement arthroplasties, taking into account any confounding factors. **Material and Methods:**A retrospective study, including 83 patients undergoing primary shoulder surface replacement surgery between 2005 and 2011, was conducted. Patients undergoing both primary humeral head (n = 20) and total shoulder resurfacing (n = 63) were included. The mean drop in haemoglobin levels and the need of transfusion were recorded for both groups. SPSS statistical software and ANOVA correlation test were used for statistical analysis. **Results:**Only one patient (1.2%) in the total shoulder resurfacing group required blood transfusion post-operatively. Estimated blood loss, duration of surgery and haemoglobin drop was statistically significant on comparison between two groups. Type of surgery was the only independent factor associated with haemoglobin drop. Age, gender, tranexamic acid, ASA grade, BMI and duration of surgery showed no correlation with haemoglobin drop. **Conclusions:**Surface replacement of the shoulder appears to be associated with minimal blood loss leading to a very low need for blood transfusion, if at all. This is a previously unreported benefit of surface replacement of the shoulder, in addition to other known advantages over stemmed implants.

Abstract no.: 31426

SINGLE PHOTON-EMISSION CT-CT (SPECT-CT) IN FOOT AND ANKLE

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Aim:Single photon-emission CT-CT (SPECT-CT) is a new imaging modality combining high detail CT with highly sensitive triple phase nuclear bone scanning. Little has been published about its diagnostic accuracy and usefulness in foot and ankle pathology. Aim of our study was to evaluate accuracy of SPECT-CT in diagnosis of foot and ankle pathologies. **Material and Methods:**A prospective study involving 50 patients was conducted between March 2010 and April 2011. SPECT-CT was requested in complex cases where definitive clinical diagnosis could not be attained after thorough clinical examination and plain radiography. Pathology as highlighted on SPECT-CT was taken as the definitive diagnosis and was treated accordingly. Patients were subsequently seen in the follow up clinic to evaluate the outcome of their treatment. **Results:**In 11 patients (22%), provisional clinical correlation matched with the findings of the SPECT-CT and no change in treatment was necessary. In 39 patients (78%) findings of SPECT-CT did not correlate exactly with clinical findings leading to a modified treatment plan. Sensitivity, specificity, positive predictive and negative predictive value of SPECT-CT in this series was 95.45%, 83.3%, 97.6% and 71.43% respectively. **Conclusions:**SPECT-CT is a useful investigation tool in foot and ankle pathologies, present study shows high diagnostic accuracy and we recommend its use in cases with diagnostic uncertainty.

Abstract no.: 31427

DIAGNOSTIC VALUE OF MRI SCANNING IN THORACIC OUTLET SYNDROME

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Aim:Thoracic outlet syndrome (TOS) is a clinical condition which is conceptually simple but difficult to diagnose. Thorough clinical examination and different diagnostic investigations are used to aid the diagnosis. Diagnosis of TOS remains largely clinical but Magnetic resonance Imaging (MRI) is increasingly useful in the diagnosis of TOS. We conducted a study to evaluate the diagnostic value of MRI in TOS. **Material and Methods:**The study group comprised 40 patients who underwent 42 TOS decompressions between 1997 and 2011. All these patients had a MRI of the cervical spine and brachial plexus as part of the pre-operative investigation. MRI findings were retrospectively compared with operative findings to evaluate the diagnostic value of the MRI. **Results:**Operative findings were identical to MRI findings in 17 episodes (40.4%). On 24 occasions MRI was reported to be normal but operative finding had various positive findings for TOS in 23 episodes. In two patients (4.7 %) MRI findings for TOS did not match the operative finding. Sensitivity, specificity, positive predictive value and negative predictive values of MRI for diagnosis of TOS in this series were 41%, 33.3%, 88.8% and 0.04% respectively. **Conclusions:**MRI has low sensitivity and specificity in the diagnosis of TOS and its results should be interpreted with caution. Diagnosis of TOS should be based on history, clinical examination and MRI findings rather than MRI finding alone.

Abstract no.: 31433

MODIFIED DIRECT LATERAL APPROACH FOR A THR

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A large number of surgical techniques and approaches have been described. The posterior approach is considered to be easy to perform and easy to train residents, however, increased rates of dislocation have been reported. The direct lateral approach diminishes risk of hip dislocation and the risk of injury to the sciatic nerve. However, there is an increased risk of limp. Author has described a modified lateral approach of Hardinge, which allows adequate access for orientation of the implant, has been described. Although this approach is more difficult than a posterior approach, and there is a learning curve, once mastered it definitely reduces the incidence of dislocation. In the Author's opinion, this approach should be used routinely for total hip arthroplasty for fractured neck of femur where the incidence of dislocation is unacceptably high using the posterior approach. Author's experience of this approach, in fracture neck of femur and in primary osteoarthritis is presented with incidence of early complications.

Abstract no.: 31435**TENSION BAND**

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KINGDOM)

Introduction: Planned physal growth arrest (epiphysiodesis) for the treatment of limb length discrepancy (LLD) in growing children is a well described treatment modality in the literature. We describe our experience of temporary epiphysiodesis using a tension band technique with the " 8-plate" in the treatment of LLD in growing children. Methods: This is a prospective study of 27 patients who were treated with 8-plate epiphysiodesis for limb length discrepancy with a mean follow up of 28 months. Results: 21 patients achieved correction with an LLD of less than 2 cm while 7 patients failed to respond to the treatment method. Perthes disease was the most common underlying pathology for the LLD. In those patients whom have corrected, the average correction length was 25.6 months with an average correction rate of 1.52 mm per month. Patients whom had both distal femur with an ipsilateral proximal tibia epiphysiodesis corrected nearly three times faster than those with isolated distal femur epiphysiodesis alone. Complications included one superficial infection and one deep infection following plate removal at the end of treatment. No long term complications reported. Conclusion: The 8-plate epiphysiodesis is an effective method of treating limb length discrepancy before physical closure with no long term complication reported. Satisfactory correction requires insertion at per predictions on growth charts. Reversibility adds the possibility of early removal if overcorrecting.

Abstract no.: 31437

COMPARISONS OF PS TYPE BETWEEN CR TYPE IMPLANTS IN IMAGE-FREE NAVIGATION ASSISTED TKA

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Introduction: In OrhoPilot navigation system (B-Braun Aesculap, Germany), we can measure Mechanical Axis Angle (MAA) which are values of lower limb characteristic angles (varus/valgus) given by angular position of the tibial mechanical axis within the femur frame of reference. The purpose of this study is to compare the MAA between PS type and CR type implants. Materials and Methods: Twenty three patients were enrolled in this prospective comparative study. All of the patients were medial osteoarthritis of knee. Fourteen patients (15knees) were underwent cemented TKA with Columbus PS assisted by the OrhoPilot navigation system (Group PS). Nine patients (9 knees) were underwent cemented TKA with e-motion CR (B-Braun Aesculap, Germany) (Group CR). In the operation, MAA were recorded at each 15 degrees from full extension to 135 degrees of knee flexion. Results: MAA in PS group were 1.61, 0.86, 0.00, -0.43, -0.36, -0.29, 0.11, -0.29, -0.64 and -1.00 degrees at full extension, 15, 30, 45, 60, 75, 90, 105, 120 and 135 degrees of knee flexion, respectively (+: varus, -: valgus). On the contrary, MAA in CR groups were -0.89, -0.89, -0.89, -0.67, -0.44, 0.11, 0.22, 0.13, 0.22 and -0.67 degrees at each 15 degrees of knee flexion, respectively. There was a significant difference only at full extension. Discussion and Conclusion: MAA can be recorded easily at any position during the operation. It is said that the coronal alignment is important in joint wear patterns and longevity. Utilizing this methods might leads to better clinical outcomes.

Abstract no.: 31439

COMPARISON OF CEMENTLESS BIPOLAR HEMIARTHROPLASTY FOR DISPLACED FEMORAL NECK FRACTURE AND UNSTABLE INTERTROCHANTERIC FRACTURE IN THE PATIENTS OVER 75 YEARS

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Purpose: The purpose is to compare the results of primary cementless bipolar hemiarthroplasty for displaced femur neck fractures and unstable intertrochanteric fractures in elderly patients over 75 years. **Materials and Methods:** We compared the results of cementless bipolar hemiarthroplasty for 80 displaced neck fractures (Group I) to 80 unstable intertrochanteric fracture treated with cementless bipolar hemiarthroplasty (Group II). Mean follow up period was 32.75 (24-120) months. Mean age was 82.7 and 83.4 years in group I and II, respectively. The clinical and radiological results were compared. We analyzed and divided the pre and postoperative ambulatory capability (A: can walk without support, B: can walk with support, C: unable to walk). **Results:** Mean operation time was 69.3 in group I and 77.5 minutes in group II, and mean blood loss and transfusion amount was 449.4mL and 443mL in group I and 467.1mL and 504mL in group II respectively. One dislocation was occurred in Group I. There was no infection and loosening in either group. Postoperative ambulatory capability was A=17, B=38, C=18 in group I and A=12, B=38, C=17 in group II (P=0.73). Expired patients before discharge were 1(3.8%) and 2(2.5%), respectively, and one-year mortality was 14(18%) and 16(20%) in group I and II, respectively (p=0.84). **Conclusion:** Cementless bipolar hemiarthroplasty for unstable intertrochanteric fractures in elderly patients showed comparable results to cementless bipolar hemiarthroplasty for femur neck fractures. Cementless bipolar hemiarthroplasty can be considered as a useful treatment method for unstable intertrochanteric fracture in the patients over 75 years.

Abstract no.: 31442

CEMENTLESS BIPOLAR HEMIARTHROPLASTY FOR THE HIP FRACTURES IN PATIENTS AGED OVER 90 YEARS

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Purpose : To evaluate the factors which influence on one-year mortality rate after cementless bipolar hemiarthroplasty in the elderly over 90 years of age with hip fractures and suggest the guideline. **Materials and Methods :** In this retrospective study, 42 patients (30 females and 12 males) treated by cementless bipolar hemiarthroplasty for hip fractures between April 1999 and April 2008 and followed up for more than one year were included and reviewed. We compared such variables as age, sex, BMD, ASA score, the type of fracture, the type of stem, operation time, the type of anesthesia, periods of ICU care, hospitalization periods, operative delay, and postoperative ambulatory capability between one-year mortality group and control group (alive over minimum 1-year), and investigated the risk factors related to one-year mortality. **Results :** One-year mortality rate was 31%. There were significant relationships between postoperative one-year mortality and ASA score, periods of ICU care, operative delay, and postoperative ambulatory capability. However, there were no relationships between one-year mortality and age, sex, BMD, the type of fracture, operation time, the type of anesthesia, and hospitalization periods. **Conclusion :** To lower the mortality rate in short term after surgery, thorough preoperative evaluation for comorbidity, reduction of the operation delay and periods of ICU care, and rapid postoperative rehabilitation are of paramount importance.

Abstract no.: 31443

OUTCOME OF CONSERVATIVE OPEN ACROMIOPLASTY IN CHRONIC IMPINGEMENT SYNDROME

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Introduction: Supra Spinatus Compression by Antero-inferior Acromion and Coracoacromial Ligament results painful overhead restriction. Leads to rotator cuff attrition. Commonly associated with curved/hooked acromion. Content: 50 patients underwent Conservative Open Acromioplasty (2010-2011) at HOSMAT, Bangalore. Period of follow-up - 2 years. Materials and Methods: Inclusions: Clinico-radiologically (MRI) established impingement syndrome with failed conservative treatment of at least 3 months; With or without ac joint arthritis; Small/medium rotator cuff tears of upto 3cms. Exclusions: Instability; SLAP tears; Arthritis; Fractures; Large rotator cuff tears>3cms. Procedure: Antero-inferior surface of the acromion shaved with protection of the rotator cuff. AC joint resected where required (1cm). Careful deltoid restoration. Results and Discussion: Results as per American Shoulder and Elbow Society scores. 70%(35) patients had excellent results. 20%(10) had good results and 6%(3) had fair results. 4%(2) patients had poor results. 43% had Type II acromion and 40% had Type III acromion. Dominant shoulder involved in 60% patients. 40% patients fell in the ages 50-55 years. The patients with fair results had poorly controlled diabetes. Two patients had poor results due to haematoma formation and RSD. Restoration of overhead activities achieved in 4-6 weeks. Two sportspersons were able to get back to normal overhead activities within 6 months. Note: Perfect deltoid restoration, Power saw to prevent acromion fracture, Cauterization of Coracoacromial ligament to prevent haematoma, Rotator cuff (multi-laminar) identification, Post-op Physiotherapy. Conclusion: Simple, inexpensive, valid alternative to arthroscopic Acromioplasty. Associated pathologies – Rotator Cuff tear, Acromio-clavicular arthritis addressed. Key Words: Conservative, Open, Acromioplasty, Impingement.

Abstract no.: 31448

CHONDROBLASTOMA IN A METATARSAL – ATYPICAL PRESENTATION AND NOVEL THERAPEUTIC APPROACH WITH FIBULAR GRAFTING

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Chondroblastoma is a rare tumour with predilection for long bones. We encountered a very rare case of benign chondroblastoma mimicking giant cell tumour of second metatarsal posing a diagnostic dilemma. A 20 year old male presented with painless swelling in left foot since 2 years. On examination, a 10x5cm non-tender bony swelling arising from second metatarsal with variable consistency was found. Radiographs showed an expansile lytic lesion involving shaft of second metatarsal with multiple septations within it. The whole of the second metatarsal was removed during excision biopsy of the tumour. Curettage was done for intermediate cuneiform to obtain tumour free margins and was subsequently treated with autologous fibular grafting to reconstruct the second metatarsal bone. Pink chondroid deposition, tumour cells with vacuolated cytoplasm, nuclear grooving and positive for S-100 stain, CD68 positive large multinucleated giant cells were seen scattered throughout suggestive of chondroblastoma. The fibular graft has incorporated and is holding well with no local recurrence at 27 months of follow up. Chondroblastoma, though rare should be kept as a diagnostic possibility in any benign bone tumour arising in foot. It can mimic a giant cell tumour. Autologous structural fibular grafting provides a good functional outcome in metatarsal tumour.

Abstract no.: 31449

SMALL WOUNDS WITH MAJOR COMPLICATIONS

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Introduction: Prosthetic joint infection (PJI) are a major complication after total joint arthroplasty. The most common source of these PJI's is a wound infection direct after implantation of the artificial joint, but also haematogenous infection is a common source of PJIs. Patients: three patients, all suffering from rheumatoid arthritis, presented at the emergency department with a wound on the foot or ankle and a swollen and painfull knee joint which was functioning well for a long period of time (6 months to 5 years). Results: all patients had several debridements of there infected total knee arthroplasty with local and systemic antibiotics. One patient developed a S.Aureus septicaemia with an endocarditis, he received an artificial heart valve but died one week after the operation. Another patient needed a two stage revision because we were not able to treat the infection of his knee joint. The last patient had 4 artificial joints (two knees and two elbows) one knee and one elbow became infected and were successfullly treated with local and systemic antibiotics. Conclusion: in these three patients the total knee arthroplasties were functioning well before they developed a small wound on the foot or ankle. These PJIs are nice examples of the different outcomes from a major complication after a small wound. Care should be taken especially for wounds around the foot and ankle in patient with a total joint arthroplasty, especially in patients with diabetes, rheumatoid arthritis or immune compromised patients.

Abstract no.: 31450

TOTAL HIP ARTHROPLASTY IN YOUNG PATIENTS WITH JUVENILE RHEUMATOID ARTHRITIS

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Introduction: Juvenile rheumatoid arthritis (JRA) is one of the most serious chronic diseases in children. The most effective operative treatment of hip osteoarthritis is now a total hip arthroplasty (THA). Objective: to implement the functional recovery and improve the quality of life of adolescents with severe hip osteoarthritis against JRA. Methods: The study is based on an analysis of 34 patients with lesions of the hip against the JRA, operated in orthopedic department of SCCH from 2008 to 2012. All patients on the JRA were receiving immunosuppressive and biological therapy in rheumatology department. On the background of this therapy succeeded in reducing disease activity, which enabled a THA. Patient's age was 13 - 18 years. During arthroplasty were used in excess of the small types of leg prosthesis adapted to the size of teenager's femoral canal. The clinical results were evaluated using the Harris Hip Score. Results: After completion of the rehabilitation of patients significantly increased range of motion in the hip joints. The Harris Hip Score increased from 52 ± 4 score before operation to 85 ± 5 score in 1 year after THA ($p < 0,001$), indicating that the effectiveness of the comprehensive treatment and significant improvements in quality of life. Long term examination of hip endoprosthesis in 95% showed positive results. Conclusions: Total hip arthroplasty for severe hip osteoarthritis is an effective method of surgical treatment allows to restore functional status of patients and increases the quality of their life.

Abstract no.: 31453

THE ACUTELY LOCKED KNEE: DOES IT WARRANT AN URGENT ARTHROSCOPY?

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Introduction: The aim of this paper is to explore the accepted practice of performing urgent arthroscopy on patients' presenting with an acutely locked knee, and to define the common causes of locking of the knee. Method: The theatre register from 2002-11 was used identify all patients who had undergone urgent knee arthroscopy on our trauma list. The patients' records were reviewed to confirm they had attended fracture clinic with an acutely locked knee and the operation note was used to determine the cause of their locked knee. In total 33 patients met the required criteria. Results: In 10 patients no discreet pathology was found. 8 patients were found to have bucket handle tears of the meniscus, 5 had a medial meniscal tear, 1 with a meniscal detachment, 5 had injuries to the anterior cruciate ligament, 4 had osteochondral defects, 4 had loose bodies and 3 had fractures of the tibial plateau. Conclusion: Our study suggests that there is probably no need to emergently intervene in patients' who present with an acutely locked knee. The majority of these patients' acute symptoms could have been expected to resolve with conservative management. A delay to arthroscopy also allows appropriate imaging to be arranged, which can avoid unnecessary surgery, guide prognosis and allow any specialist expertise and equipment to be arranged prior to arthroscopic treatment.

Abstract no.: 31454

PROPER MANagements FOR IATROGENIC RADIAL NERVE PALSY

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Introduction: Unlike primary radial nerve palsy, proper managements for secondary radial nerve palsy, or iatrogenic radial nerve palsy, are currently under debate. There is no consensus about whether early radial nerve exploration play is necessary or not. We retrospectively investigate the prognosis and proper treatment for secondary radial nerve palsy after operative treatment for humeral shaft fracture. Methods: A total 962 humeral shaft fractures were treated operatively in our institute from 2002- 2010. Of these cases, 52 (5.4%) patients developed secondary radial nerve palsy after the treatment. There was no recognized intra-operative injury to radial nerve, nor any image evidences of nerve insult after the operation. Results: Of the 52 patients, 21 were female and 32 were male. All fractures were located at the middle or distal third of humeral shaft, and all of our patients were treated with dynamic compression plates. Three of these patients had fracture nonunion and received repeat operation. Operative exploration of radial nerve was done only in 10 patients. All of our patients recovered from radial nerve palsy without squeal. The average time to the beginning of clinical recovery was 18 weeks (range, 5-32 weeks). Conclusion: Our study suggests secondary radial nerve palsy does not need early radial nerve exploration. A 18-week watchful period under conservative treatment is acceptable unless there are other surgical indications.

Abstract no.: 31456

BICONDYLAR HOFFA FRACTURE WITH PATELLAR DISLOCATION IN A YOUNG ADULT – A RARE CASE WITH A DIFFERENT MECHANISM OF INJURY

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A case of bicondylar Hoffa fracture with patellar dislocation in a young adult is presented. Hoffa fractures are coronally oriented shearing fractures of femoral condyles and are rare injuries. Among the reported cases of bicondylar Hoffa fractures, only two had associated extensor apparatus injury and none had frank patellar dislocation indicating an altered mechanism of injury in this case. We suggest a flexion- rotation mechanism of injury in this case. The fracture was treated by early open reduction and internal fixation and later by arthroscopic arthrolysis with satisfactory results. The altered mechanism of injury is presented along with surgical management and literature is reviewed.

Abstract no.: 31458

NEW MINIMALLY INVASIVE METHOD AND SELFDYNAMISABLE IMPLANT IN FEMORAL FRACTURES TREATMENT

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Purpose: Dynamisation is well recognized method which stimulates fracture union. Many doctors routinely remove one screw from interlocking nail, two months after primary operation to provide axial dynamisation. Dynamisation is happened in about 15-25%, according to the literature, but we still cannot predict which patient or fracture will need dynamisation. The aim of this study is to present one new selfdynamisable implant and method for internal fixation of different femoral fractures. Material and Method: Between 2000 to 2009, 952 patients with 979 fractures receiving selfdynamisable internal fixator developed by Mitkovic, for proximal, diaphyseal and distal femur fractures were included in the study. Results: The average operative time was 42 minutes (21-119), average fluoroscopy time was 12 seconds (5-93) while average blood loss of 90 milliliters (60 to 250 milliliters) when minimally invasive technique used. None of the patients developed complications during the intraoperative period. Healing time was 3.8 months (3-9). Healing was achieved in 99.1%. Superficial infection developed after 8 fixations (0.9%) while deep infection developed in 5 patients (0.5%). The screw breaking occurred 6-18 weeks in 2.5%. Cut out phenomenon happened in 26 cases. Spontaneous axial dynamisation was observed in 23.9%, 5 millimeters on average (2 to 12 millimeters). Conclusion: SIF is one effective method for the treatment of femoral fractures. This method particularly valuable for treatment of comminuted fractures with regard to minimally invasive surgery. Key Words: Femur, Fracture, Selfdynamisable Internal Fixator, Dynamisation, Minimally invasive surgery

Abstract no.: 31460

THE REVERSE SHOULDER ARTHROPLASTY FOR CUFF TEAR ARTHROPATHY: MID-TERM REVIEW OF A SINGLE SURGEON SERIES IN A DISTRICT GENERAL HOSPITAL

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Introduction: The reverse shoulder replacement is an accepted treatment option for patients with painful pseudoparalysis secondary to cuff tear arthropathy. We reviewed the mid-term clinical and radiological results of the reverse shoulder arthroplasty by a single surgeon, who was blinded to the review, at an independent hospital (DGH). Methods: Thirty-nine consecutive shoulder arthroplasties in 35 patients (mean age: 79 years) with a mean follow-up of 52 months (range 5-101) were included. The clinical and functional results were assessed using the abbreviated Constant score and the Oxford Shoulder score. Radiographs were obtained for assessing radiolucent lines and to assess scapular notching using the Nerot grading system. Results: The average pre-operative abbreviated Constant score was 18, which improved to 46 at the final review. The average Oxford Shoulder score improved from 33 preoperatively to 15. Periprosthetic heterotrophic ossification was noted in 42%. Based on the Nerot classification, asymptomatic scapular notching was noted in 68% of patients (80% grade 1 and 2, 20% grade 3 and 4). Two patients had post-traumatic glenoid component failure. One of these was revised to a CTA hemiarthroplasty. The other, in a very elderly patient was not symptomatic and therefore was not revised. One patient had a post-traumatic acromial fracture, which was treated conservatively. Conclusion: In our experience, in elderly patients, the reverse shoulder replacement provided good and comparable results in patients with rotator cuff tear arthropathy. A larger multicentric study of long-term results is necessary to allow meaningful conclusions to be drawn.

Abstract no.: 31466

**SUBTROCHANTERIC FEMORAL FRACTURES TREATED BY
SELFDYNAMISABLE INTERNAL FIXATOR**

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(SOUTH KOREA)

Introduction: Surgical treatment is preferred method for subtrochanteric femoral fractures and the variety of extramedullary and intramedullary implants continues to increase. Aim: The purpose of our study was to retrospectively evaluate the clinical and radiological results of subtrochanteric fractures treated with Selfdynamisable internal fixator. Materials and methods: From January 2000 to January 2009 we have treated 89 consecutive patients with subtrochanteric fractures. According to AO classification 28 (31.4%) fractures were type 32-A, 26 (29.2%) type 32-B and 35 (39.3%) fractures were type 32-C. The mean follow-up time was 32.3 months. Results: Implant failure was not observed and union was achieved in all patients. Deep infection occurred in three (3.4%) patient in the early postoperative period. Clinical and radiological union was achieved at a mean of 12 weeks. The varus malalignment less than 10° occurred in 7 (7.8%) patients at the end of follow-up. Sixty-nine patients were pain-free and twenty patients had mild pain and used medicine. Conclusion: The Selfdynamisable internal fixator has been proven to be successful for subtrochanteric fracture. It provides short operative time, low blood loss, spontaneous biaxial dynamisation, healing in the optimal time without secondary intervention and full weight bearing in elderly patients immediately after surgery.

Abstract no.: 31468

DIFFERENTIATED APPROACH TO TREATMENT OF SHOULDER PAIN SYNDROME

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Introduction: The most common cause of shoulder pain are rotator cuff lesions and pathology of the shoulder joint capsule. The basic nosologies are subacromial impingement syndrome and primary frozen shoulder syndrome. While subacromial impingement is a kind of mechanical disorder, its conservative treatment is often unsuccessful and needs an operation to be performed. Idiopathic adhesive capsulitis may be also refractory to conservative treatment due to the same reasons. Methods: 72 patients with impingement syndrome and 32 patients with primary adhesive capsulitis were treated with conservative therapy for 2 weeks, which included painkillers, physiotherapy and exercises program. Excellent and good results were obtained in 28 (39%) and 8 (25%) patients in both groups respectively. In cases of failure operative treatment was suggested. In subacromial impingement syndrome arthroscopic subacromial decompression was performed including acromioplasty and bursectomy. In severe cases coracoacromial ligament was dissected. In cases of primary frozen shoulder the manipulation under general anaesthesia was performed. After that a course of in-patient physical therapy for at least 2 weeks was prescribed. Results: In cases of subacromial impingement excellent and good the results were obtained in all (44) patients after operative treatment. In cases of frozen shoulder the manipulation under general anaesthesia led to good and excellent results in all (24) patients. Conclusion: In subacromial impingement operative treatment is preferable showing better results than conservative treatment alone. In frozen shoulder in cases of 2 weeks of unsuccessful physical therapy manipulation under general anaesthesia is indicated which improves dramatically the clinical outcome.

Abstract no.: 31469

USAGE OF SOFTWARE-BASED ORTHO-SUV FRAME AT FOOT COMPLEX DEFORMITY CORRECTION

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Aims: Correction of complicated foot deformity using software-based hexapods recently becoming popular. However there are some difficulties because of the narrow space that resulted in the collision of the struts. We report the assessment of several types of assemblies of software-based Ortho-SUV Frame (<http://ortho-suv.org>) for forefoot correction. The research objective was to develop bases of Ortho-SUV Frame technology for foot deformity correction. **Methods:** Six variants of Ortho-SUV Frame assemblies were investigated experimentally using plastic bone model. The method of the unified designation of external fixation was used for the description of frame configurations (<http://rniito.org/solomin/download/mundef.zip>). **Results:** In the optimal assembly, the plane of proximal module, to which the 1st, 3rd and 5th joints are fixed, was placed parallel to the tibial axis, and was placed dorsal site of the ankle. The plane of distal module, to which the 2nd, 4th and 6th joints are fixed, was placed orthogonally to the axis of the metatarsal bones: VI,12,120; VII(8-2)8-2; VII,10-4 _ calc.,10-4, calc.,8-2; calc.,6,90 _ talus,9-3 -SUV-m/tars.,10-4, m/tars.,8-2. This assembly enabled us to correct the biggest range of deformities: 50° of distal foot flexion, 40° of extension, 50° of each abduction/adduction and 45° of each supination/pronation. We applied this assembly to the twelve patients with complex multicomponent forefoot deformities, and could correct successfully. **Conclusion:** Optimal assembly of Ortho-SUV Frame enables us to correct wide range of foot deformities.

Abstract no.: 31475

“USE OF QUANTIFERON-TB GOLD IN-TUBE TEST TO MONITOR TREATMENT EFFICACY IN OSTEOARTICULAR TUBERCULOSIS.”

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Interferon- γ (IFN- γ) assays are new tests for tuberculosis (TB) infection, and T-cell response may be correlated with disease burden. However, it is unclear if IFN- γ assays can be used to monitor response to TB treatment. This study was meant to assess the potential use of QuantiFERON-TB Gold In-Tube (QFT-G) in monitoring response to anti-tuberculosis treatment. This prospective study involved 30 cases of osteoarticular tuberculosis with a mean age of 38.3 years (range 17-83). Following a clinico-radiological diagnosis, all patients were treated with standard anti tubercular treatment and with serial testing by QFT-G at baseline and after 2 and 6 months of treatment to measure the IFN- γ responses. At these time points, we compared the performance of QFT-G with clinical and radiological parameters of patients. At baseline, 100% patients were positive by QFT-G. At 2 months time, 28 (93%) patients were positive. Compared to baseline, 24 (80%) cases showed a decline whereas 6 (20%) showed persistent IFN- γ responses at 6 months. Changes in IFN- γ responses over time were inconsistent. The end of 6 months treatment was also accompanied by clinico-radiological resolution in all cases. IFN- γ assays can potentially be used to monitor the efficacy of anti-tuberculosis treatment as an alternative for therapeutic drug monitoring but our results do not show a clear correlation between antigen burden and T-cell responses. However, due to small sample size, studies with large number of patients might be of help to understand the kinetics of T-cell responses during TB treatment.

Abstract no.: 31477

**MANAGEMENT OF PERITROCHANTERIC FRACTURES IN
OSTEOPETROSIS: SERIES OF 5 CASES"**

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Background: Osteopetrosis is a metabolic disorder with reduced bone resorption giving rise to hard and brittle bones that fracture easily. Most of these fractures can be treated conservatively except few such as peritrochanteric fractures which are associated with high morbidity and mortality in conservatively treated patients. Though the prevalence of osteopetrosis is very low but as the population increases so the number of these fractures. Materials and Methods: We present five patients with a mean age of 38 years, treated for peritrochanteric fracture with various fixation modalities. DHS and DCS were used in 2 patients each while Proximal Femoral Locking Plate in 1. The pitfalls and possible circumventions encountered while performing internal fixation are outlined. Results: Fracture union was achieved in all the cases at a mean of 22 weeks. Delay in consolidation and long time taken for union can be explained by impaired bone remodelling in these cases. Conclusion: Management of peritrochanteric fractures with open reduction and internal fixation is difficult but possible. Preoperative planning keeping in mind the possible difficulty of working with extremely hard and brittle bone resulting in prolonged operative time is helpful in successful management of these difficult fractures.

Abstract no.: 31478

INDICATIONS FOR TRIPLE PELVIC OSTEOTOMY IN SEVERE CASES OF PERTHES DISEASE

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Hip subluxation appears already at early stages of Perthes disease's unfavorable course. The indicators that define the level of hip lateral cover are Wiberg angle and the acetabulum-head index. We performed 41 triple pelvic osteotomy on 40 patients (Operated Group) to improve the "coverage" of the hip. We supervised 20 children (Control Group) with unfavorable signs of disease, who were conservatively treated earlier in other hospitals. The groups are statistically comparable by key indicators. When disease was diagnosed and the treatment began, the Wiberg angle in Operated Group was on average $5,4 \pm 7,87^\circ$, in Control Group it was on average $17,1 \pm 7,67^\circ$. The acetabulum-head index in Operated Group was on average $67,8 \pm 9,78\%$, in Control Group – on average $78 \pm 10,31\%$. Based on the received results, we conclude, that already at early stages of Perthes disease's unfavorable course there is progressive reduction of "coverage" of a femoral head acetabulum. In the presented data average values of Wiberg angle in the first and the second group are less than 20° , average values of the acetabulum-head index – less than 80%. The indication for surgical treatment at unfavorable course of disease is the formation of lateral subluxation of the femoral head with a decrease of Wiberg angle below 20° and the acetabulum-head index below 80%.

Abstract no.: 31479

"ANEURYSMAL BONE CYST OF CUBOID IN ADULT: A RARE CASE REPORT"

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Aneurysmal bone cyst is a benign lesion of bone of unknown etiology, commonly affecting skeletally immature population. Involvement of the small bones of foot by aneurysmal bone cyst has been reported very uncommonly in the literature, with only two cases reported so far of involvement of cuboid. We present the case of a 30 year old female presenting with expansile lesion of cuboid, provisionally diagnosed as a case of giant cell tumor based upon the age and presence of giant cells in the FNAC. Diagnosis of aneurysmal bone cyst was confirmed by biopsy and patient managed with excision and calcaneometatarsal fusion with painless functional foot at 3yrs follow-up.

Abstract no.: 31480

LIFELINE EXPRESS; WORLD'S FIRST HOSPITAL ON TRAIN: OUR JOURNEY

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The Lifeline Express, the world's first hospital on a train, with two Operating Tables (manufactured by the Indian Railways' Integral Coach Factory in Tamilnadu State) continues one of its many journeys with us as the orthopaedic surgeons for polio surgeries on board to the rural poor this year. During our stay of 4 days this year a total of 33 surgeries; following a OPD screening of around 300 patients over 3 days were performed ranging from Steindler's release to Campbell's release at hip and shoulder arthrodesis for polio affliction of various severity. To date the Lifeline Express has completed 92 five-week, sponsored projects having medically served 450,000 persons in the remote, rural interiors of India where medical facilities are scarce – all given totally free of cost with the 'donated' services of Surgeons and medical personnel from all over India and abroad, together with a large number of volunteers. Behind all this there is a simple dream. A dream that wanted that the people should not, through neglect or ignorance, become disabled or crippled, and thus robbed of health, productivity and joy, and that disabled persons especially in rural India should have access to medical services wherever they be. It was our attempt to contribute a bit on our part to this great social effort.

Abstract no.: 31482

COMPARATIVE RESULTS OF RADIOLOGICAL OUTCOMES OF SEVERE CASES OF PERTHES DISEASE AT TRIPLE PELVIC OSTEOTOMY AND CONSERVATIVE TREATMENT

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To compare the radiological outcomes of severe cases of Perthes disease and to forecast the development of an arthrosis we have evaluated the results of treatment using Stulberg classification. This classification takes into account both the form of femur's head and the acetabulum form. The triple pelvic osteotomy's (TPO) effect on femur's head form and the acetabulum form was studied (23 patients, "Operated Patients Subgroup"); the operations were held at an early stage of the disease. The data was compared to the other group (20 people, "Control Group") with unfavorable signs of disease and who were treated earlier in other hospitals conservatively. The groups are statistically comparable by key indicators. The clinical outcome after the TPO is much better than after conservative treatment (according to Stulberg classification). In Operated Patients Subgroup the majority of joints (74 %) (Fisher's exact test $p=0,0005$) is in accordance with Class I and II. There were only 20% of regular joints in Control Group. In Operated Patients Subgroup there were 6 patients (26%) with the «aspherical congruency» treatment outcome. In the Control Group there were 13 of such joints (65%), which is more than in the first group (Fisher's exact test $p=0,0116$). There were no evident deformation with «aspherical incongruency» in the first group, and there were three cases of it (15%) in the second group. TPO makes a positive form-building impact on femur's proximal part.

Abstract no.: 31484

PRIMARY HYPERPARATHYROIDISM WITH PATHOLOGICAL FRACTURES: A MANAGEMENT GUIDELINE

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Background: Management of pathological fractures due to primary hyperparathyroidism in orthopaedic have always has been difficult due to inadequate literature. This has leaden to mismanagement of fracture in this disease. Objective: To provide specific guideline for treatment of fracture associated with primary hyperparathyroidism and to increase awareness of disease among people and medical practitioners. Methods: We have selected 13 consecutive patients of fracture from 2001 to 2009. All of them diagnosed as cases of pathological fracture secondary to PTPH. First surgery was carried out to remove adenoma from gland and bring patients to normal calcium metabolism. There after patients were evaluated clinically and radiologically for signs of union. Patient were divided in two groups first those requiring surgery for fracture management (7 cases) and second those treated by nonoperative methods (6cases). All patients were followed for a minimum 2 postoperative year. Results: patient who had undergone nonoperative treatment had good outcome compared to operative group. Two of fractures in group 1 went into nonunion out of operated 7 patients. Those of nonoperative group showed union in all cases. Although fractures united in malposition, but functionally fracture union was quite acceptable. One patient got deformity was advised corrective osteotomy. Conclusion: Results of study says that all patients with PHPT should be assessed clinically and radio logically after cure from primary disease. Surgery should be performed in patients with functionally unacceptable deformities. Nonoperative methods are better than operative methods in treating Fractures with PHPT. Key words: PTPH, Pathological, Union, Nonunion, Parathromone.

Abstract no.: 31486

DISTAL RADIUS TRIPLANAR FRACTURE

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Introduction : A triplanar fracture is so named because of the three planes traversed by the fracture line. These fractures are usually physeal fractures that result from injury during the final phase of maturation and cessation of growth. This fracture pattern has typically been described involving distal Tibia. We present a case of a triplanar fracture involving distal Radius. Case Report : A 15 years old boy presented with an acutely painful and swollen wrist following a fall from push bike. This was an isolated injury, closed and neurovascularly intact. Radiographs showed unusual fracture pattern of a comminuted intraarticular distal radius. CT scan confirmed that the fracture had occurred in three planes (triplanar). Fracture had a Salter Harris type three component through the radial styloid, type four component through dorsal scaphoid fossa and another type four fracture through lunate fossa to the dorsal metaphysis. The distal radioulnar joint and the radiocarpal joints were also involved however the overall displacement was less than two mm. This was treated conservatively in cast for a month. Result : Eight months since initial injury, there was no deformity, radioulnar length discrepancy or growth plate arrest. He scored excellent on Mayo wrist score and zero on Dash score suggesting no disability. Several authors have suggested open reduction internal fixation for Salter Harris type four fractures. Based on our experience, we would like to recommend that in absence of displacement, triplanar fractures of distal radius should be managed conservatively similar to normal one plane fractures.

Abstract no.: 31487

INTERSCALENE BLOCK ANAESTHESIA OR GENERAL ANAESTHESIA IN PATIENTS WITH PROXIMAL HUMERUS FRACTURE ?

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Introduction: A proximal humerus fracture is a common injury of the shoulder. The aim of this study is to compare the effects of two anaesthetic methods in patients with proximal humerus fracture in development of postoperative pain. **Methods:** 50 patients were included in this prospective, randomized study. They were randomized into two groups, ISBA group and GA group. Patients in ISBA group were anesthetized using interscalene block technique; whilst patients in GA group were anesthetized according to general anaesthesia protocol. The VAS score was assessed every two hours at rest and in motion. We measured time necessary to prepare anaesthesia in both groups, duration of operation, hemodynamic and respiratory stability, loss of blood during operation, use of analgesics postoperatively and patient satisfaction. **Results:** There was no statistically significant difference between groups regarding demographic characteristics and ASA status. ISBA group had statistically lower VAS score as well as lower analgesics use ($P < 0.05$). There were no statistically significant differences in intraoperative complications, although more hypotension was recorded in GA group. The loss of blood was higher in ISBA group, but this result bears no statistical significance. The time necessary to perform anaesthesia was significantly longer in ISBA group ($P < 0.05$). There is a statistically significant difference regarding patient satisfaction, to the advantage of ISBA ($P < 0.05$). **Conclusion:** ISBA is a better method of anaesthesia than GA in patients with proximal humerus fracture, it leads to better pain relief, lesser use of analgesics, without significant complications.

Abstract no.: 31491

CONVERSION TOTAL HIP REPLACEMENT

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Indication for conversion THR include loss of fixation, nonunion, malunion osteonecrosis & groin pain . Challenges include removal of screws and plugging of bone defects in failed neck osteosynthesis and distorted proximal femoral geometry and un-united trochanter, broken screws of the slide plate in failed inter-trochanteric fractures. Problems of conversion of a failed AustinMoore is difficulty removing ingrown bone in the stem. Post traumatic arthritis after acetabular fixation met with the hardware hindering with the reaming, inadequate bone stock or pelvic discontinuity. Fibular graft is difficult removal from femur for placement of prosthesis. Difficulty in performing THR in failed femoral osteotomy are distorted femoral osteotomy, and associated acetabular dysplasia . Conversion THR was performed in 72 patients .Thirty failed osteosynthesis of hip, failed hemiarthroplasty(20), acetabular fractures(12) , failed fibular grafting(6) for femoral head osteonecrosis, failed ankylosis or failed femoral osteotomy(4). Sixty eight were followed up for min. 3 yrs and av. follow-up was 6.5 years. Three patients died and 2 were lost to follow-up. Harris hip score improved from 54 preoperatively to 86 post operatively. fully porous coated cementless stem (12 patients),proximal porous coated stem (32 patients), cemented stem fixation was used in the rest. Cementless acetabular component (52 patients) and cemented cup was used in the rest. No deep infection, aseptic loosening, dislocations or heterotopic ossification. Two patients had superficial infection and three patients developed dvt. Survivorship analysis using component revision as end point at 5 years follow-up in 54 patients was 100% in our series.

Abstract no.: 31501

CARPAL TUNNEL SYNDROME REVEALING A MEDIAN NERVE FIBROLIPOMA

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INTRODUCTION: The carpal tunnel syndrome (CTS) is the most frequent nerve tunnel entrapment. It is often of idiopathic origin, but can be secondary to a rheumatic, hormonal disorder, traumatic or tumoral cause. **OBSERVATION:** We report the case of a 35 years old men whit intermittent paresthesia in the median nerve territory and loss of hand force, since 2 years. The clinical assessment objectified a soft tissue painless mass, to the level of the palmar lower third of forearm. Ultrasonography and MRI showed a well limited lipomatous mass of forearm and wrist. Electromyography objectified a CTS. Surgical exploration showed a mass developed in intraneural median. We proceeded to the mass resection. Histology objectified a nerve fibrolipoma. After one year follow up, the patient is asymptomatic without recurrence. **DISCUSSION:** Median nerve fibrolipoma corresponds to a lipomatous infiltration of the nerve. It appears in the young adult. It electively develops in the median nerve (85% of the cases) but can also affect the nerves ulnar or radial, the plexus brachial and lower limb. The congenital origin is currently the allowed assumption. Clinically, it is presented in the form of a mass soft issue mass, often asymptomatic, of slow growth, occupying the palm of the hand, the wrist since childhood. It can also appear by pains or paresthesias. Fibrolipoma is associated in 66% of the cases a macrodactyly. The median nerve fibrolipoma volume increase can lead to nervous disorders like CTS.

Abstract no.: 31502

DISTAL RADIUS FRACTURES : A COMPARATIVE STUDY EVALUATING TREATMENT BY RADIO-ULNAR TRANS-FIXATION VERSUS K-WIRE FIXATION / CAST IMMOBILIZATION BY MEASUREMENT OF RADIAL HEIGHT, RADIAL INCLINATION AND ULNAR VARIANCE.

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Fractures of distal radius are one of the commonest injuries of the musculoskeletal system. The fracture configurations can vary from simple to complex with varying degrees of comminution. The loss of dorsal cortex continuity frequently leads to collapse of bone in spite of fixation with k-wires / fixators. The traditional POP casting techniques have high associated morbidity of wasting, stiffness and loss of function. We treated 36 patients with a radio-ulnar transfixation technique using k-wires / hybrid systems and report on the success of this technique as compared to the traditional treatment methods. The problems of collapse and loss of radial height are negated, as is the potential of stiffness and muscle wasting. The treatment by this method has proved a statistically significant improvement ($p < 0.05$) in the outcome scores of patients sustaining these very common fractures as compared to other treatment options commonly in practice. The procedure does not involve any additional operating time, special equipment or additional expenses, and is just a modification of existing technique using the resources already available. We believe that this treatment option, when used judiciously and selectively in patients warranting it, will have better functional outcomes as compared to patients who are treated by K-Wire / POP cast technique.

Abstract no.: 31507

BONE REGENERATION ON STEROIDS: FROM BENCH TO BED

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Clinical management of delayed healing or non-union of long bone fractures and segmental bone defects poses a substantial orthopedic challenge. Surgical advances and bone tissue engineering are providing new avenues to stimulate bone growth in cases of bone loss and non-union. The Reamer-Irrigator-Aspirator (RIA) device allows surgeons to aspirate the medullary contents of long bones and utilize the progenitor-rich "flow through" fraction in autologous bone grafting. Dexamethasone (DEX) is a synthetic steroid that has been shown to be a powerful inducer of osteoblastic differentiation. The aim of this lecture is to present a novel, intraoperative, one-step procedure that utilizes the RIA system to recover autologous bone along with progenitor cells from bone marrow. The recovered materials are treated with a high concentration of DEX and then implanted into the fracture site. The lecture will follow complete development of the method, starting with initial in vitro experiments with human bone marrow derived-mesenchymal stem cells (hMSCs), all the way until the method was successfully applied in the treatment of difficult clinical cases of delayed bone healing and established non-unions. Preliminary clinical results will be presented as well. Bone regeneration is a hot topic in translational clinical orthopedics research with both basic physiology and therapeutic implications. The ultimate goal of this paper is to present this novel method as an excellent example of the basic science information being adequately used in clinical applications, and vice versa, to show how clinical needs and observations are recognized and exploited by basic scientists.

Abstract no.: 31512

LONG TERM RESULTS ON CERAMIC ON CERAMIC BEARING IN THR

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Introduction: Total hip replacement is now a standard in a treatment of advanced stages of hip arthritis, however, the bearing surface plays an important role in this type of surgery. Aim: To present long term results of THR with CoC bearing. Material and methods: In our Institution 188 THR, Mittelmeier type THR with CoC bearing were implanted in 150 patients. The mean age at the time of surgery was 61 years (19 to 72). The indication for THR was dysplastic coxarthrosis in 88 cases, AVN in 22, posttraumatic in 10 and idiopathic in remaining cases. The mean follow-up was 22 years (17 to 28 years). All patients had Mittelmeier type prosthesis (ceramic head 32 mm in diameter and full ceramic threaded cup). In all cases the antero-lateral approach was performed for THR. All patients were evaluated clinically and radiologically. For clinical evaluation the Merl d'Aubigne in Charnley modification classification was employed and for radiological results de Lee and Gruen classification. The WOMAC scale was also evaluated in every patient. Results: For a final FU (17-27 years after the primary procedure) 134 patients were available for further evaluation. There were 70% excellent and good results, 20% sufficient and 10 poor. The poor results were connected with ceramic cup damage during the car accident (3x), stem fracture (2x) and aseptic loosening. The patients satisfaction was very high, and aseptic loosening and a cup migration rare. Conclusions: In our opinion the CoC bearing is a very good solution for a young patients.

Abstract no.: 31518

SYNDESMOTIC FUSION FOR CHRONIC INFERIOR TIBIOFIBULAR JOINT INSTABILITY; A REPORT OF SIX CASES.

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Background: Chronic instability of the distal tibio-fibular syndesmosis can be a disabling problem. It is usually the result of previous syndesmotic injury which may or may not have had adequate initial management. We report the results of syndesmotic fusion in six patients that have undergone salvage surgery in our unit. Methods: We have retrospectively reviewed six patients, 4 male and 2 female, who previously underwent syndesmotic fusion for chronic inferior tibio-fibular joint instability. Assessment was made clinically including AOFAS scores, and radiologically at a range of 2 to 4.5 years follow-up). Results: All procedures resulted in a successful fusion and all patients reported a definite improvement in symptoms. However despite this, each of the patients had an element of chronic ankle pain. Conclusion: Syndesmotic fusion is a valuable salvage operation for chronic instability of the inferior tibio-fibular joint but patients should be counselled about the real risk of ongoing symptoms.

Abstract no.: 31523

**CLINICAL AND RADIOLOGICAL OUTCOME OF SCARF AND AKINS
OSTEOTOMY FOR HALLUX VALGUS**

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Scarf and akins osteotomy has been gaining popularity for the treatment of moderate to severe hallux valgus. We have looked at 60 patients who underwent scarf and akins osteotomies (73 operations) and carried out clinical and radiological assessment. There were 57 female and 3 male pts with average age of 60 years (range 14 – 80 yrs). 13 patients had simultaneous bilateral procedures. There was no infection. Two patients required early Re-do surgery due to loss of position of the metatarsal osteotomy. Clinical outcome was assessed with AFOS score and patient satisfaction questionnaire. Mean pre-op Hallux Valgus angle, intermetatarsal angle and DMAA were 31.4, 15, and 21.4 respectively. Post operatively these angles were 12, 8.2 and 6.4 respectively. We conclude that Scarf and Akins osteotomy provides satisfactory clinical and radiological results in the treatment of moderate to severe hallux valgus

Abstract no.: 31524

IS TIP APEX DISTANCE IMPORTANT IN INTRAMEDULLARY HIP SCREW FIXATION?

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Proximal Femoral fractures in elderly population are one of common causes of admission to hospital and are associated with significant morbidity and mortality. The incidence is 2 to 3 times higher in women. The risk of hip fracture increases with age, doubling each decade after the age of 50 years. Dynamic hip screw and plate fixation is still the gold standard fixation method for stable intertrochanteric fractures. However in unstable reverse oblique and subtrochanteric fractures it has been associated with complications. For these reasons there has been sustained interest in the use of intramedullary fixation for unstable proximal femoral fractures. Failure of fixation in sliding hip screw has been related to position of lag screw in the femoral head. We have looked at causes of failure in Intramedullary hip screw fixation of proximal femoral fractures and tried to find out the importance of Tip Apex distance in these implants. 42 pts underwent IMHS fixation for unstable reverse oblique proximal femoral fractures. We identified 4 screw cut outs. 3 of them had tip apex distance of more than 30mm. We conclude that Tip Apex distance in IMHS is as important as is in DHSs. One should be careful in positioning the lag screw. TA distance of <25mm has a low cutout rate.

Abstract no.: 31526

AN UNUSUAL PATTERN OF INJURIES: A CASE OF BILATERAL ELBOW DISLOCATION WITH ASSOCIATED RADIAL HEAD, DISTAL RADIUS AND SCAPHOID FRACTURES.

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Elbow dislocation is a common injury with the annual incidence in the United States being 6 to 8 cases per 100,000. However bilateral elbow dislocations are very rare. We report a very unusual case of bilateral elbow dislocation with simultaneous unilateral radial head, distal radius and scaphoid fractures. We have not found any such combination of injuries in the literature so far, hence the reason for reporting. A 33 year old lady was brought to hospital after having fallen from stairs. She had obvious bilateral elbow and left wrist deformities. Radiographs confirmed bilateral elbow dislocations, left distal radius fracture, left scaphoid fracture and right radial head fracture. All these injuries were treated non operatively. Elbow dislocations and left distal radius fracture were reduced under general anesthetic. Both elbows were protected in the cast for 2 weeks where as left wrist was protected in scaphoid cast for further 4 weeks. Gentle elbow mobilization was started at 2 weeks with the help of physiotherapist. She made very satisfactory recovery with almost full ROM at both elbows

Abstract no.: 31534

PREOPERATIVE MANAGEMENT USING 3D RECONSTRUCTED IMAGING FOR PRECISE CORRECTION WITH MALUNION AFTER TIBIAL FRACTURE

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Introduction Malunion after tibial fracture display the diverse symptoms, limping gait, pain and instability. For the deformity of tibia, precise correction osteotomy is necessary to acquire the good clinical outcome. We present precise correction osteotomy using the preoperative 3-dimensional (3D) planning using mirror image of his contralateral normal knee obtained from CT scan with 3D reconstruction software. **Methods** We performed the CT scan of both lower extremities to simulate operative planning using images processing software (Mimics, Materialise) for 3D design and modeling. Injured side image created from CT data overlaid on the mirror image of contralateral normal side manually. **Results** Case1:A 25-year-old man following a conservative therapy for proximal tibial epiphyseal injury presented complaining of increasing pain and genu recurvatum at his left knee. anterior opening wedge osteotomy were performed. 3 years follow-up, the patient could run without pain and obtained full range of motion. Case2:A 36-year-old man following open reduction and internal fixation of proximal tibial plateau fracture presented complaining of pain and instability genu at his knee. He had varus knee (FTA was 187degree) correction loss was 4.5mm of medial tibia plateau under this analysis. Tibial condyle vulgas osteotomy was performed. 1 year after surgery, instability and pain was diminished. **Conclusion** Plane X-ray is insufficient for preoperative planning to acquire precise bony correction. The computer-assisted template can indicate the optimum pattern and plane of corrective osteotomy by calculating the axis and amount of 3D deformity.

Abstract no.: 31535

**CLINICAL AND MECHANICAL COMPARISON OF NOVEL
BIOABSORBABLE PLATES WITH TITANIUM PLATES FOR
METACARPAL FRACTURES**

Akinori SAKAI, Toshihisa OSHIGE, Yukichi ZENKE, Kunitaka MENUKI,
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The previous bioabsorbable plates have had several issues with regard to clinical usage for fractures. The aims of this study were to demonstrate the clinical results of novel bioabsorbable plates made of hydroxyapatite/poly-L-lactide and titanium plates for metacarpal fractures and to compare mechanical properties of them in a fracture model. The subjects were 20 metacarpal diaphyseal fractures of 15 consecutive patients treated with bioabsorbable plates and 6 fractures of 5 patients previously treated with titanium plates. We compared the mechanical properties of bioabsorbable and titanium plates. Each plate was fixed on a polyether ether ketone rod, which was transversely cut at its midsection. There were no significant differences in 6-month postoperative clinical results including total range of active motion and % of the contralateral grip strength between patients receiving bioabsorbable and titanium plates. The bending strength and stiffness of one-third tubular bioabsorbable plate constructs were comparable with those of titanium plates for 1.5-mm screws, and those of semi-tubular bioabsorbable plates were comparable with those of titanium plates for 2.0-mm screws. The torsional strength of semi-tubular bioabsorbable plates (mean \pm standard deviation: 79.0 ± 7.9 N•cm) was significantly greater than that of titanium plates for 2.0-mm screws (56.7 ± 4.0 N•cm) ($p < 0.05$). In conclusions, the bending strength, stiffness, and torsional strength of novel bioabsorbable plate constructs were comparable with those for titanium plates. There were no significant differences in clinical results between these two types of plate.

Abstract no.: 31537

CURRENT SMOKERS SHOW DELAYED WOUND HEALING AFTER OPEN PALM TECHNIQUE FOR DUPUYTREN'S CONTRACTURE

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The aim of this study was to clarify the preoperative factors associated with operative results after an open palm technique in Dupuytren's contracture. The subjects were 79 fingers of 55 hands in 46 consecutive patients with Dupuytren's contracture who were treated with McCash's open palm technique in our hospital from 1980 to 2010. The cases with subcutaneous palmar fibrosis without finger joint contracture were excluded. The average age of the patients was 66.3 years (47-86). We investigated the preoperative factors associated with operative results after an open palm technique by logistic regression analysis. Operative results were evaluated by % improvement of contracture $\{(preoperative\ degree\ of\ extension\ loss - postoperative\ degree\ extension\ loss / preoperative\ degree\ of\ extension\ loss) \times 100\}$ at each contracted finger at 6 months after surgery and days needed to close open wound completely at each hand. The average of % improvement of contracture was 83.0%. The average of days needed to close open wound completely was 25.8 days. The preoperative factors associated with % improvement of contracture were involvement of PIP joint contracture and 3/4 grades of Myerding classification. The preoperative factor associated with days of wound healing was current smoking (29.8 days for smokers and 21.3 days for nonsmokers, $p < 0.01$). In conclusions, involvement of PIP joint contracture and 3/4 grades of Myerding classification are associated with insufficient improvement of joint contracture. Current smokers show delayed wound healing after open palm technique.

Abstract no.: 31541

RESULTS OF TREATMENT OF INFECTIOUS COMPLICATIONS AFTER IMPLANTATION OF ENDOPROSTHESIS OF DOMESTIC PRODUCTION

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Objective: to study the results of treatment of infectious complications after implantation of prosthesis of domestic production (CIS). Material and methods: we have treated 37 patients with infectious complications after hip replacement using domestic endoprosthesis from 2002 to 2009. Age of patients ranged from 20 to 65 years. 18 were males and 19 females. Pseudarthrosis of femoral neck was noted in 3 patients, dysplastic coxarthrosis in 7, post-traumatic coxarthrosis in 15, aseptic necrosis of femoral head in 12. These patients were implanted with the following types of prosthesis of domestic production: ESI-17 patients, Phoenix-1, Virabova-3, Sivash-9, the Moore-CITO-2, Mathi-CITO-3, Sfen-C-2. Early complications (within the first 2 weeks) after surgery occurred in 8 patients, later complications in 6, chronic complications in 23. Results and discussion: before hospitalization to Purulent Traumatology Department of RITO, many patients with instability of the acetabular and femoral components had been taken the courses of conservative therapy. After preoperative preparation and sanitation of infection nidus the implant removal and the creation of bearing neoarthrosis was done in 10 patients. Removal and installation of spacer prosthesis was done in 3 patients. Implant removal and the revision arthroplasty was realized in 3 patients after stopping the infection process, and sanitation of nidus with preservation of the implant was done in 21 patients. Long-term results were studied in 32 patients. 19 patients had satisfactory results, and 13 patients had unsatisfactory results. Conclusion: Thus, purulent-inflammatory complications after hip replacement lead to severe consequences and constitute one of the unsolved problems in traumatology and orthopedy.

Abstract no.: 31544

MUSCULOSKELETAL ULTRASOUND

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The use of in-office ultrasound, performed by an attending musculoskeletal physician allows for a more efficient implementation of the management plan. Advances in technology have facilitated the progressive development of Sonography. This includes the use of higher frequency transducers, color/power Doppler capability, extended field-of-view (FOV) function, tissue harmonics, and 3-D imaging .The use of musculoskeletal ultrasound has proved to be beneficial in the diagnosis and Interventional procedures of musculoskeletal disorders making its role in patient management is increasingly clear.

Abstract no.: 31546

THE PRACTICE OF PROPHYLACTIC ANTIBIOTICS IN OPERATIVE TREATMENT OF CLOSED FRACTURES: A MULTICENTER HOSPITAL-BASED PROSPECTIVE OBSERVATIONAL STUDY

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Background:The use of prophylactic antibiotics in orthopaedic surgery is effective in reducing surgical site infections (SSI) in open reduction and internal fixation of closed fractures and. Proper administration of prophylactic antibiotics can reduce the incidence of SSI. **Objectives:**To assess the current practice of prophylactic antibiotic regimens used in operative treatment of closed fractures, and to compare the local practice with the current recommendations published by the American Academy of Orthopaedic Surgeons (AAOS). **Materials and Methods:**This is a multicentre, descriptive, cross-sectional, hospital-based prospective study at three teaching hospitals in the state of Khartoum, Sudan in the period from May through June 2009. Patients from all ages of either sex, who were diagnosed as having closed fractures and planned to undergo operative treatment (Osteosynthesis) were enrolled in the study. Data were collected by means of questionnaire. **Results:** Of 123 patients included in the study, 68.3% were males and 31.7% females. The age ranged from 11 month to 95 years, with a mean age of 39.1 years. Duration of surgery ranged from 20 to 240 minutes, with mean duration of 91 minutes. Tourniquet was used in 18.7% patients. 78% of study group received preoperative antibiotics in accordance with recommendations of AAOS; in 15.4% the choice of antibiotic was discordant with recommendations, 89.4% patients received antibiotics postoperatively for duration longer than 24 hours, the interval between administration of antibiotics and time of skin incision was appropriate in 100% of patients in accordance with recommendations. **Conclusion:** Prophylactic antibiotics appeared to be widely practiced, though adherence to current recommendations for antibiotic prophylaxis is not optimal in these hospitals.

Abstract no.: 31549

THE CLINICAL EVALUATION OF CT-GUIDED NEEDLE BIOPSY IN THE DIAGNOSIS OF BONE AND SOFT TISSUE TUMORS

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Purpose: To clarify the diagnostic value of CT-guided needle biopsy in bone and soft tissue tumors, the results in our institute were reviewed. **Patients and Methods:** From 2007 to 2011, CT-guided needle biopsies of musculoskeletal tumors were performed on 39 patients (21 male and 18 female) with a mean age of 66 years (range, 35-84 years). There were 28 bone lesions and 11 soft tissue lesions (spine: 12, pelvis: 8, long bones: 5, rib and scapula: 3; soft tissues in trunk: 10, thigh: 1). If a biopsy provided a definitive and clinically useful diagnosis, it was classified as diagnostic, if it was concordant with the ultimate diagnosis; as accurate, and if it was diagnostic and accurate; as successful. **Results:** Thirty-one biopsies (79%) were diagnostic, 36 (92%) were accurate and 31 (79%) were considered as successful. Sixteen metastases, 10 hematological malignancies, 3 primary malignant soft tissue tumors and 2 benign lesions were accurately and successfully diagnosed with CT-guided needle biopsy. Five benign lesions were non-diagnostic with comments: insufficient materials of no malignancies. There were three false-negative malignancies (osteosarcoma, synovial sarcoma and chondrosarcoma) that needed additional open biopsies. **Discussion:** CT-guided biopsy was very useful, however with respect to the diagnostic value of malignancy, the limitation caused with the small samples and the heterogeneity in large tumors must be taken into account. If there is a discrepancy between the biopsy result and the imaging studies, additional clinical studies must be considered in order to perform adequate treatment.

Abstract no.: 31550

**OLD PAINFUL VERTEBRAL COMPRESSION FRACTURE:
CONSERVATIVE TREATMENT OR AUGMENTATION?**

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Objective: To evaluate the efficacy of kyphoplasty versus conservative treatment for patients with old PVCF (PVCF) of more than 6 months. Methods: From October 2007 to March 2011, 31 patients with PVCF of more than 6 months, 11 male and 20 female, with average age of 71.5yrs (62-85yrs) were enrolled. The average duration of fracture was 9.6 months (6 months to 2.5years). According to the symptom and economic factor, 17 patients received kyphoplasty as the group K, while 14 patients received conservative treatment as group C. The conservative treatment included braces and anti-osteoporosis drug therapy. Besides these, the patients in group K underwent kyphoplasty. Follow-up was from 3 months to 2 years, evaluated at pre-operative and post-operative 3 days, 3 months and 1year, Including Visual Analogue Scale (VAS), Roland-Morris Disability Questionnaire (RMDQ), European Quality of Life- 5 Dimensions scale (EQ-5D) and Timed Up and Go test (UGT). SPSS 13.0 was used to analyse. Results: No difference between group K and C in VAS, RMDQ, EQ-5D or UGT before treatment. There were significant advantages of group K in VAS, EQ-5D and UGT at 3 days and 3 months after treatment, and at 1 year, we found significant advantages of group K in EQ-5D and UGT, with no significant difference in VAS. However, there was no significant difference between two groups in RMDQ at each follow-up point. Conclusions: For old PVCF of more than 6 months, kyphoplasty showed benefit in short-term and one year as compared with conservative treatment.

Abstract no.: 31551

PROBLEM OF LATERAL WALL INSTABILITY IN SUBSET OF PATIENTS WITH UNSTABLE EXTRA CAPSULAR PROXIMAL FEMUR FRACTURES – AN INNOVATIVE REMEDY FOR PROBLEM

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Subset of patients which is not classified anywhere having additional latent or visible lateral-cortex instability with unstable A2-A3 proximal-femur-fractures creates problems⁷⁸⁹ Our experience and literature review reports^{4,5,6,7,8,9,10,11} problems with presently-available implants like Z-effect or reverse-Z-effect , cut through-etc. This brings forth the need to study problems with available implants-technique and evolve solutions using Finite-Element-Analysis. From CT-scan data of proximal-femur¹² of Indian-patients, solid-mesh models of Femur-bone made. Computerized-models of different Implants presently used for these fractures are made. Unstable-fracture-patterns with lateral-cortex-instability were made on this bone-model and assemblies were made and forces of different magnitude applied in different vectors x-y-z¹³. Configurations-observations are made focusing common-problems-displacement of neck-element and cut-out from head rotational-instability of element in neck, lateral-cortex instability and unpredictable z reverse-z collapse patterns We derived preliminary-observations with different-configurations of DHS-DHSTSP-PFN-Gamma-indigenous nail-buttruss-plate-barrels. On FEA we found new-assembly of indigenous-nail-slit-buttruss-plate- barrels as remedy supporting well lateral-cortex and providing platform for controlled-limited-collapse without cut through-z-reverse-z effect. We followed prospectively 28 cases A2-A3 of proximal femur fracture with additional lateral-cortex-instability of average age 61 years treated with new assembly. All the patients were regularly examined clinically-radiologically at immediate postoperative-6-12-24-36-52-wks focusing Intraoperative-complications like shattering of trochanter, placement of plate, early-late postoperative complications like too-much collapse-cut through of neck-intrarticular-protrusion of hip-pins , breakage of implant and clinical outcome in the form of union-patient satisfaction, except 1 patient died during follow-up. Results were reduced complications-acceptable anatomic-reduction-controlled collapse, no breakage of implant and union. This is our preliminary study; however RCT with large sample size is initiated.

Abstract no.: 31555

INTRA-OPERATIVE RELEASE OF THE EPINEURIUM IN SEVERE CARPAL TUNNEL SYNDROME

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Introduction: Severe carpal tunnel syndrome (CTS) form fibrous constriction at the entrapment site. Decompression at the carpal tunnel is usually performed without interventions for median nerve itself. Fibrous constriction may cause insufficient results after carpal tunnel release in case of severe CTS. To date, there are no reports concerning effects of release of fibrous constriction in severe CTS. We report effects of release of fibrous constriction by using intra-operative motor nerve conduction study. Methods: 10 patients (52-79 y old) diagnosed CTS with clinical symptoms and nerve conduction study. Pre-operative compound muscle action potential (CMAP) from the abductor pollicis brevis (APB) showed no response in all cases. Open carpal tunnel release was performed using a standard incision. Fibrous constriction was released by opening the epineurium. Intra-operatively, CMAP from the second lumbrical (SL) muscle were recorded before and after release of fibrous constriction. Clinical symptoms were prospectively examined. Results: 7 cases significantly increased the amplitude of SL-CMAP after release of fibrous constriction. 3 cases showed no response of intra-operative intervention. Clinical symptoms were significantly improved in all cases. Especially, 7 cases with higher amplitude of SL-CMAP obtained better results. Conclusion: Our results indicate that fibrous constriction should be released in sever CTS with no response of APB-CMAP. Release of fibrous constriction may produce better results, compared to only open carpal tunnel release.

Abstract no.: 31559

TOTAL HIP ARTHROPLASTY IN YOUNG PATIENTS WITH OSTEOARTHRITIS. KOZHEVNIKOV O. V., KRALINA S. E., GOROCHOV V.U. FEDERAL ESTABLISHMENT PRIOROV CENTRAL RESEARCH INSTITUTE OF TRAUMATOLOGY AND ORTHOPAEDICS, MOSCOW

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A variety of conditions may lead to arthritis of the hip during adolescence. Although uncommon, total hip arthroplasty may occasionally be necessary for treatment of end-stage disabling arthritis of the hip in the young. There is paucity of information documenting the outcome of total hip arthroplasty in adolescents. We report our experience with total hip arthroplasty in 20 patients aged 14 to 19 years. The results of 21 total hip arthroplasties performed in 20 patients between 2005 and 2011 were reviewed. There were 9 females and 11 males with a mean age of 16.5 years. The observation period averaged 4.5 years (range: 1,2 to 6,8). The underlying diagnosis was avascular necrosis (4 hips), sequelae of DDH (6 hips), sequelae of Perthes (4 hips), consequences of pathological dislocation of the hip (4 hips), post-traumatic arthritis (2 hip). Selection of implant patients is complicated by significant deformation of the proximal femur (due to destructive changes or corrective operations previously carried out) or severe dysplasia of the acetabulum. All patients underwent uncemented total hip arthroplasty. Installed implants coated with Hydroxyapatite plasma sprayed Titanium acetabular component and a tapered femoral stem proximally coated with hydroxyapatite and a pair of metal-on-polietillen. After surgery, showed a significant improvement in function and pain relief. The evaluation was conducted Harris Hip score. If the preoperative average score in group was 42 points, after the total hip art

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Abstract no.: 31561

10 YEARS EXPERIENCE OF SURGICAL TREATMENT OF ACETABULUM FRACTURES

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Objective: Explore the immediate and long-term results of surgical treatment of acetabular fractures, identify the causes of the failures. Materials and methods: During the period from 2000 to 2010 were performed 121 operations of internal osteosynthesis of displaced acetabular fractures using reconstructive plates. According to Letournel classification, there were 39 simple and 82 complex fractures. Results: In accordance with the criteria of Matta, anatomic reduction was achieved in 66.1% of cases, satisfactory in 26.5%, unsatisfactory in 7.4%. A direct correlation between reducing the pre-operation period and improvement of the quality of reposition was detected ($p < 0,05$). Complications: 12 cases of postoperative neuritis, 3 cases of regional vessels injury, 8 cases of intraarticular placed screw, 3 cases of superficial wound infection. Most complications have been observed after ilio-inguinal approach. To reduce the iatrogenic trauma in 6 patients we used combination of Stoppa and iliac approaches. Long-term results were studied in 107 cases, the observation period ranged from 1 to 10 years, mean follow-up 4 years. The score according to Merle d'Aubigné & Postel was 15.4 [14.9; 15.9]. Excellent results were obtained in 49.5% of cases, good in 24.3%, satisfactory in 6.5% and poor in 19.7% of cases. Aseptic necrosis of the femoral head has been identified in 10 patients during 18 months after surgery. 74% of the patients have returned to their work. Conclusion: The best results of the treatment of displaced acetabulum fractures can be obtained only by surgical repair of articular surfaces in terms of 3 weeks after injury.

Abstract no.: 31563

ILIZAROV APPARATUS FOR MANAGING SEVERE TYPES OF PERTHES'S DISEASE

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Introduction: A great number of authors doubt in the expediency of external fixation for treating Perthes's disease. Purpose: We present the results of a modified technique for managing severe types of Perthes's disease. Materials and methods: The technique was used in 16 children aged 5 to 9 years with hip joint osteochondropathy in the fragmentation stage. According to Catterall, there were seven cases of group III and 9 of group IV; according to Herring, group B/C were 5 cases and group C were 11. The external fixator was used in fixation mode for centering the femoral head in the acetabulum and joint decompression. The apparatus was applied for 80-90 days. Perforation of joint components with wires and injections of cell-tissue suspension, harvested from patient's bone marrow cavity, into subepiphyseal femoral neck parts were used for reparation stimulation. Results: Complete restoration of the epiphysis structure was seen not earlier than 1.5 years after apparatus removal in most cases. According to Stulberg, 4 joints were assessed as class I, 9 as class II, and 3 as class III at 2.5-3 years' follow-up. No bad outcomes were revealed. Conclusions: Short-term follow-ups showed that the centered in the acetabulum head, adequate joint unloading and local blood supply stimulation provided the conditions for restoration of the epiphysis structure and shape even by prolonged joint immobilization.

Abstract no.: 31567

THE MODIFIED GAP BALANCING TECHNIQUE IN TOTAL KNEE ARTHROPLASTY PRODUCES MORE SQUARE FLEXION GAP AND RANGE OF MOTION THAN THOSE OF THE MEASURED RESECTION TECHNIQUE.

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The recent research has documented that the incidence of femoral condylar lift-off is more frequently in total knee arthroplasty (TKA) performed using measured resection technique. The aim of this study is to compare the flexion gap and range of motion (ROM) after TKA performed using gap balancing technique with those using measured resection technique. Eighty seven cases of TKA were assigned to two groups; modified gap balancing group (Gap) and measured resection group (Measured). Forty seven cases were Gap group and forty cases were Measured group. The flexion gaps were calculated by Epicondylar View X-ray. Zero degree indicates the square gap. Minus degree indicates the internally rotated gap and plus degree indicates externally rotated gap. The cases with preoperative flexion contracture above 20 degree were excluded. The flexion gap were -0.16 ± 1.17 degree in Gap group and -0.39 ± 0.33 in Measured group. Gap group showed significantly more square than Measured group ($p < 0.01$). The preoperative ROM were 108 ± 2.61 degree in Gap group and 105 ± 2.67 degree in Measured group. There was no significant difference in preoperative ROM between Gap group and Measured group ($p = 0.7$). The postoperative ROM was 120 ± 1.39 degree in Gap group and 119 ± 1.26 degree in Measured group. ROM in Gap group is significantly more than that in Measured group ($p < 0.01$). These data indicated that the modified gap balancing technique produced more square flexion gap and ROM than those of the measured resection technique.

Abstract no.: 31568

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Abstract no.: 31570

PRE-OPERATIVE ASSESSMENT FOR ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION WITH PRESERVING REMNANT USING HAMSTRING GRAFT

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Introduction: The purpose of study is to find the appropriate timing and the type of rupture of anterior cruciate ligament (ACL) for ACL reconstruction with preserving remnant using hamstring graft. Methods: Total 200 ACL reconstruction were performed. One hundred cases were reconstructed with preserving remnant, the other 100 cases were reconstructed without remnant. ACL remnants were classified into 4 morphologic patterns; group 1: ACL scarring to the PCL, group 2: ACL healing to roof of the notch, group 3: Attenuated ACL remnant healed to the lateral wall more anterior and distal than its anatomic origin and group 4: resorption of the torn ACL. The period after injury of ACL was calculated for each operation (with or without remnant). In addition, the rate of ACL scarring group was investigated for each operation. Results: The period of after ACL rupture was significantly shorter for ACL reconstruction with preserving remnant than that without remnant (3.94 vs 15.95, $p=0.005$). In groups 2, most patients can be reconstructed with preserving remnant. (33% in group 1, 52% in group 2, 15% in group 3, 0% in group 4; $p < 0.01$). Conclusions: The period of after ACL rupture is important to operate ACL reconstruction with preserving remnant. The type of rupture of ACL also leads to be able to reconstruct ACL with preserving remnant.

Abstract no.: 31571

ORTHOPAEDICS AND THE ENVIRONMENT: SOCIO-ENVIRONMENTAL PRACTICES

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Background: The objective of these studies was to adapt orthopaedic establishments to the new Brazilian environmental laws while at the same time moving forward regarding the issues of preservation of nature, through adoption of new ecologically correct practices in relation to the X-ray sector, the plaster room and office reception minimal paper waste policy. Methods: The following list of ecologically correct practices for orthopaedic clinics and consultation offices were used: digital radiology, recycling old radiologic films, biodegradable plaster, CO₂ neutralization, minimal paper waste policy by using mobile messengers as Multimedia Message Service (MMS) and Short message service (SMS) social networking website, internet communication, digital prescription and a modern database system. Results: It was possible to contribute considerably towards preserving nature by adopting ecological correct practices. Conclusions: The more that hospitals, clinics and consultation offices include environmentally responsible practices in their work, the more they will be refining the services that they provide and improving attendance for patients, while at the same time taking care of the planet for this and future generation.

Abstract no.: 31573

DO RADIAL TEARS IN THE POSTERIOR HORN OF THE MEDIAL MENISCUS OCCUR TO OSTEOARTHRITIS?

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Introduction It is generally said that radial tears in the posterior horn of the medial meniscus may damage the hoop function of meniscus and there is the possibility of the progress of osteoarthritis. The aim of this study was to investigate whether the surgical meniscectomy of the posterior horn of medial meniscus cause knee arthritis for long term. **Methods** There were 25 knees 21 female patients, and the mean age was 55 years (range, 46 to 72). We performed partial meniscectomy arthroscopically in all patients. The average follow-up periods were about 12 years. Clinical findings were evaluated by Japanese Orthopaedic Society osteoarthritis assessment (JOA) score, and the radiographic assessment of osteoarthritis was used with Kellgren and Lawrence (KL) grade. At operation, grade 3 included 7 knees, grade2: 6knees, grade1: 7knees, grade 0: 5knee. **Results** The average JOA score were about 80 points at follow-up. The progress of osteoarthritis with one grade was recognized in 42 % patients. There was no case of the progress with more two grades. All patients did not need the secondary operation such as high tibial osteotomy, and total or hemi- knee arthroplasty. **Discussion** The meniscectomy of medial meniscus posterior horn might not make great progress of osteoarthritis. We should indicate the endoscopic partial menisectomy than unreasonable root repair not to lead degenerative change. The limitation was that the subject did not include the high activity persons as the sports player. There was some possibility that the activity might influence to OA progress.

Abstract no.: 31577

**TOTAL HIP ARTHROPLASTY USING THE FEMORAL COMPONENT
«SPIRON»**

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13 patients underwent primary hip arthroplasty with femoral component «Spiron» of «K implant» firm between 2006 and 2011. The mean age of patients was 31 years (range 17 - 46 years). There were 11 men and 2 women. Indications for use of «SPIRON»: grade III-IV aseptic necrosis of the femoral head, a relatively young age (less than 50 years), normal body mass index, good quality of bone of proximal femur, "intact" of the cervix and general anatomy of the trochanteric femoral bone. The implantation of the femoral component is carried out by screwing it into the formed channel of the femoral neck. Subsequently, if it is necessary to handle a revision surgery, the surgeon is able to replace the unstable «Spiron» to a standard uncemented femoral component, carrying a sort of primary arthroplasty ("a prosthesis before prosthesis"). The feature of the early postoperative period is a need to limit the axial load on the operated limb and the use of additional support when walking during 3 months after surgery. Results of surgical treatment were good with no complications in all patients and were estimated from 4 weeks to 4 years after surgery.

Abstract no.: 31579

**NO IMPROVEMENT IN THE SURGICAL TREATMENT OF BREAST
CANCER SPINAL METASTASIS IN THE LAST TWO DECADES**

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Introduction:We conducted one retrospective study of 103 surgical treated patients with spinal metastases originated from breast cancer. Breast cancer is one of the most common tumors that involve the spine. The aim of this study was to analysis the change of the survival rates for those patients during the last two decades. **Patients and Methods:**All the data were retrieved from the Aarhus Spinal Tumor Database. We included 103 patients with breast cancer spinal metastases underwent surgical treatment from 1992 to 2011. Those patients were divided into tow groups (group1: operation before 2002; group 2 operation after 2001). We use survival analysis and created the Kaplan-Meier curve. The Log-rang test was used to compare the survival outcomes. **Results:**In those 103 patients, 93 patients were died at the end of this study, 10 patients were alive. Forty-nigh patients underwent surgical treatment before 2002 were included into group 1. Their median survival time was 17.8 months. Groups 2 contained 54 patients, who have been surgically treated in the last decade with a median survival time of 21.5 months. The results from the Kaplan-Meier curve and Log-rank test showed that there is no significant difference between the two groups ($p= 0.18$). **Conclusion:**The survival rate of the surgically treated breast cancer spinal metastases patients was not improved during the last two decades. The preoperative prognosis methods, surgical treatments and postoperative treatments for the breast cancer spinal metastases should be developed further in order to increase the post-operative survival period.

Abstract no.: 31582

HYBRID FIXATION OF COMMINUTED DISTAL RADIUS FRACTURE - A FUNCTIONAL OUTCOME ANALYSIS.

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Introduction: Distal radius fractures are the most common fractures of upper limb in adults. We are presenting the outcome of 20 displaced comminuted intraarticular distal radius fracture treated by External fixator and plating (Hybrid fixation). Aim of the study: To evaluate functional outcome of patients of displaced comminuted intraarticular distal radius fracture treated with hybrid fixation. Material and Method: Eighty patients with comminuted distal radius fracture were treated by us between March 2009 and November 2010. Out of this, 20 patients matched our inclusion criteria and were enrolled for the study. All the patients were clinically and radiologically examined pre-operatively , at six weeks, three months, six months and at one year. A functional scoring was done using Demerit Point System of Gartland and Werley. Results: Of the 20 patients treated surgically, 8 patients had excellent results, 6 had good results, 4 had fair results and 2 had poor results. Two patients had pin tract infection and 1 patient had Reflex sympathetic dystrophy. Conclusion: Comminuted distal radius intraarticular fracture treated by hybrid fixation have predictable outcome and satisfactory to good results. Drawback of the study is the absence of a control group.

Abstract no.: 31589

**TREATMENT OF INTRA-ARTICULAR FRACTURES OF THE CALCANEUS
BY MINI-OPEN LATERAL APPROACH USING SCREWS FIXATION ONLY**

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Introduction: Several problems exists with the use of the extended lateral approach for treatment of intra-articular fracture of the calcaneus. Limited lateral approach allow good exposure of the subtalar joint allowing anatomical reduction and fixation with screws only under fluoroscopic guidance. Methods: 50 feet in 42 patients with average age of 32 years (range 13 to 61 year) were operated starting from May 2009. 8 patient were lost in the follow up. 42 patients were followed up for an average of 18 months (range 6 to 30months). All fractures were Sander's Type II-III. Anatomical joint reduction (under direct vision) and satisfactory overall alignment of calcaneal anatomy (height, length, width) were achieved in all patients. Results: Good results were achieved with an average AFAS score of 84.5 (range 40-100), improving individually with time. Minimal complications were detected in the form of superficial wound infection in two cases, sural nerve dysthaesia in one case and RSD in 10 cases. Conclusion: the limited lateral approach allows good exposure together with maintaining integrity of ankle ligaments and stability together with good wound healing, minimal soft tissue complications.

Abstract no.: 31594

OSTEOBLAST ADHESION ON TITANIUM USING CLEVER BIOCHEMICAL SCAFFOLDS

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INTRODUCTION: This project investigates the development of a chemical scaffold that can form a strong and durable bond with titanium alloy a commonly used implant material in orthopaedics. The scaffold will be coupled with a biologically active motif that encourages osteoblasts to interact with the surface. To achieve this, we hope to utilise exciting novel phosphonic acid chemistry and couple these molecules with the osteogenic peptide AC-100 (an active motif from the Matrix Extracellular Phosphoglycoprotein) to elicit a cellular response. **METHODS:** To investigate the potential for an immobilised biomolecule to influence osteoblast adhesion, AC-100 was coated onto glass coverslips and compared to adsorbed fibronectin and plain glass. Novel phosphonate compounds were synthesised: anthracenyl phosphonate (a fluorescent compound), aminobisphosphonic acid (with two phosphonic acid anchors) and tyrosine phosphonic acid (biocompatible); AC-100 was then coupled to the phosphonic acids for cell studies on titanium discs. **RESULTS:** Glass surfaces coated with AC-100 and fibronectin showed osteoblast adhesion and spreading significantly greater than the control (plain glass) surface ($p < 0.05$). Both tyrosine phosphonic acid and aminobisphosphonic acid were coupled with AC-100 and exhibited osteoblast adhesion and spreading on titanium. However, the control surfaces also exhibited osteoblast adhesion comparable to the AC-100 treated surfaces. **CONCLUSION:** We demonstrated that AC-100 provides a suitable environment for osteoblast adhesion both on glass and titanium surfaces. Aminobisphosphonic acid and the fluorescent anthracenyl phosphonate were successfully synthesised; anthracenyl phosphonate could be used for future characterisation studies of phosphonic acid on titanium.

Abstract no.: 31595

MIDFOOT OSTEOTOMY FOR CAVUS FEET- AN ANALYSIS OF 30 CASES

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A total of 30 patients included. All the patients were of the pediatric age group and had rigid cavus. 17 males and 13 females out of which 17 were of right foot and 13 of the foot. Maximum number of cases (6 patients) had cavus secondary to Charcot Marie Tooth disease. Evaluated preoperatively by history, examination, AP and weight bearing lateral radiographs and other investigations if required. Dorsolateral closing wedge midfoot osteotomy in all cases and 27 cases we used K-wire and 3 cases we used Ilizarov frame for fixation. Associated procedures for correction of other deformities were done at the same surgery. The follow up was done at 1st , 2nd, 3rd and 6th month and 6 monthly thereafter. The patients were assessed on clinical and radiological criteria including the Maryland Foot Score. 19 patients (63.33%) had final Hibb's angle of more than 150 degrees and 22 patients had final Meary's angle of less than 5 degrees. There was no complication in 20 patients. 3 patients had superficial pin tract infection and 3 had a cosmetic deformity in the form of a palpable step on the lateral border of the foot. Recurrence of the deformity was seen in 4 patients. There was no case of non-union of the osteotomy. 20 patients (67.76%) had a good to excellent result on the Maryland Foot Score while 10 patients had a fair to poor result. The mean score was 78 points

Abstract no.: 31597

REVIEW OF PHILOS PLATE FIXATION IN PROXIMAL HUMERUS FRACTURES

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Results of failed fixation of proximal humerus fractures can be devastating. Calcar screws have been suggested to provide mechanical support and prevent loss of reduction. We retrospectively reviewed postoperative radiographs of Philos plate fixation over a six year period. Inferomedial support (presence or absence of calcar screws), adequacy of reduction (by measuring the neck-shaft angle), and loss of reduction (by measuring the height between the humeral head and the proximal end of the plate) were assessed. Complications and further procedures were also noted. Follow-up was possible in 67 patients, mean age 88 (range 23-108) years. There were 41 two part fractures, 23 three part fractures and 3 four part fractures. Fifty five patients had calcar screws in situ (18 with 1 calcar screw, 37 with 2 calcar screws). Mean loss of reduction was 2mm (3mm for no calcar screws, 1mm for 1 calcar screw and 3mm for 2 calcar screws). Ten patients underwent further surgery for either screw perforation into the joint or plate failure. Mean neck-shaft angle was 131 degrees in patients who did not undergo a further procedure (no calcar screw 129, 1 calcar screw 132, 2 calcar screws 134) compared with 112 degrees in patients who underwent revision (no calcar screw 117, 1 calcar screw 120, 2 calcar screws 107). In our case series, restoration of an adequate neck-shaft angle was the most important determinant in fixation. If this was not achieved, despite adequate inferomedial support, screw perforation or plate failure occurred.

Abstract no.: 31599

REPLACEMENT ARTHROPLASTY IN COMPLEX TREATMENT OF METASTATIC BONE MALIGNANCY

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Introduction: metastatic skeleton tumors have a third place after metastatic injures of liver and lungs. The treatment of metastatic malignances is always complex. One of the complex method of treatment is surgical (organ saving and mutilating surgery). Replacement arthroplasty (endoprosthesis) is the organ saving surgery. Replacement arthroplasty in complex with other methods of treatment improves life quality of patients with metastatic bone malignances. Materials and methods: 22 patients with metastatic malignancies of long bones were made hip, knee, shoulder, elbow and ankle replacement with the help of individual oncological endoprosthesis. 15 patients were made hip replacement, 3 patients – elbow replacement, 2 patients – shoulder replacement, 1 patient – knee replacement, 1 patient - ankle replacement. Complex treatment included polychemotherapy, radiation therapy, surgery (replacement arthroplasty), hormonotherapy, immunotherapy, bisphosphonates, radionuclides. Devices of external skeletal fixation and courses of radiation therapy to 30 Gray on lesion focus in preoperational period and further replacement arthroplasty were used in cases of pathological fractures. Results: The function and support ability of the extremity were renewed in 20 operated patients (90,9%). Postoperative complications (aseptic endoprosthesis loosening) took place in 2 (9.1%) patients (observation median was 67 months). In case of aseptic endoprosthesis loosening revision replacement was made. Survival rate of three years was $41.16\pm 8.8\%$, of five years – $21.61\pm 8.6\%$. Life quality of 20 (90.9%) patients improved as a result of the treatment.

Abstract no.: 31605

DORR TYPE AND CORTICAL INDEX OF PROXIMAL FEMUR AS PREDICTORS OF PERI-OPERATIVE COMPLICATION DURING HEMIARTHROPLASTY

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INTRODUCTION: Intra-operative fracture during hemiarthroplasty has been associated with poorer Harris hip scores and poorer mobility. Dorr's original paper aimed to classify the morphology of the proximal femur to predict complications of total hip arthroplasty. No previous paper has looked at whether this translates into predictors of complication of hemiarthroplasty. **OBJECTIVES:** Measure the predictive value of Dorr type and cortical index in predicting intra-operative complications hemiarthroplasty. **METHODS:** We analysed 200 consecutive hemiarthroplasty operations undertaken in one institution. We recorded data on cortical index, Dorr proximal femur type and then subsequently the presence of intra-operative fracture of the proximal femur and any postoperative dislocation confirmed on radiographs. **RESULTS:** Cortical index correlated well with Dorr type decreasing with worsening Dorr type; Type A CI 1.10 (95th percentile 0.40-1.80), type B CI 0.80 (0.38-1.23) and type C 0.65 (0.17-1.12). There were no intra-operative fractures in the Dorr type A femurs, 8 in Dorr type B and 10 in the Dorr type C. Dorr type A vs. type B&C was statistically significant ($p=0.046$). Cortical index was significantly different between the fracture and non fracture groups; fracture group CI 0.59 ($n=18$, 95th percentile 0.23-0.96) and non-fracture group CI 0.81 ($n=154$, 95th percentile 0.22-1.37), $p=0.0003$ (Wilcoxon rank test). **CONCLUSION:** Dorr type B & C proximal femurs carry a greater risk of intra-operative fracture. However, whether or not complication rates are reduced by considering cemented implants for those with Dorr type B & C proximal femurs would need to be subjected to further (prospective) clinical study.

Abstract no.: 31611

A PROSPECTIVE STUDY OF HAMSTRING AUTOGRAFT VERSUS BONE PATELA TENDON BONE AUTOGRAFT FOR RECONSTRUCTION OF ANTERIOR CRUCIATE LIGAMENT-A COMPARATIVE STUDY OF 30 CASES

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introduction: in our study we are comparing the results of acl reconstruction using bone-patellar-bone and quadrupled stranded hamstring tendon grafts. materials and methods: thirty patients presenting with chief complaints of the knee instability were diagnosed clinically and confirmed by diagnostic arthroscopy or mri to have anterior cruciate ligament tear. anterior cruciate ligament tears that are more than 6 weeks old are included. fifteen patients were treated with anterior cruciate ligament reconstruction using autologous hamstring tendon and fifteen patients were treated with bone patellar tendon bone graft through arthroscopy assisted technique. all patients were reviewed and analyzed at the end of 1 year postoperatively. assessment includes preoperative, intraoperative findings and post operative subjective assessment scores and examination findings, pre and post operatively the lysholm score, tegner activity level, and international knee documentation committee evaluation system were used as scoring systems. results: comparisons of results within the same groups suggest statistically significant improvement of all international knee documentation committee, tegners and lysholm post operative scores than preoperative scores and there is statistically significant correlation between manual lachman test and stress laxometry findings. there is no statistically significant difference between scores of two groups (hamstring and bone patella tendon) suggesting both groups performed similarly in terms of post operative subjective satisfaction, activity levels and knee stability. the bone patella tendon bone group had comparatively more mechanical strength and more kneeling pain where as the hamstring tendon group had lower graft harvest site morbidity as demonstrated by less kneeling pain at 1 year, and slight extension lag.

Abstract no.: 31612

DOES VISCOSUPPLEMENTATION HAVE A ROLE FOLLOWING ARTHROSCOPIC DEBRIDEMENT IN OSTEOARTHRITIS?

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OBJECTIVES:To study the effectiveness of arthroscopic debridement followed by visco supplementation in selected patients with knee osteoarthritis by means of a prospective, randomized control study. **METHODS:** The study included 82 patients (mean age 55+/-5 years; range 40 to 70 years) who had knee osteoarthritis according to the Kellgren Lawrence grade I, II & III. At three weeks from arthroscopic treatment (partial meniscectomy and debridement), the patients were randomly assigned to single intra articular injection of Hylan G-F 20 (n=41). Evaluations were made preoperatively, at three weeks and three weeks after injections using a patient satisfaction questionnaire, visual analog scale (VAS), and the WOMAC (Western Ontario and McMaster Universities) osteoarthritis index. The results in two groups, viscosupplementation and no viscosupplementation group were compared. **RESULTS:**All patients had significant improvement following both arthroscopic treatment and visco supplementation. Following visco supplementation, patient satisfaction, WOMAC and VAS scores were significantly improved in comparison with no injection group. Use of concomitant medication was significantly reduced in the visco supplementation group. **CONCLUSION:** Our early results suggest that arthroscopic debridement combined with visco supplementation is an effective treatment option for selected patients with knee osteoarthritis.

Abstract no.: 31614

**MODIFIED SUBPECTORAL BICEPS TENODESIS – BONE BRIDGE
TECHNIQUE.**

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Tendonitis of the long head of the biceps brachii is a relatively common occurrence in patients with shoulder pain. Biceps tendon pathology like chronic degeneration, tears or subluxations may be encountered during rotator cuff surgery or in isolation. Several techniques have been described for tenodesis of the long head of the biceps tendon. We present our modified bone bridge technique of Mazzocca et al, for subpectoral biceps tenodesis. In this technique we perform biceps tenotomy arthroscopically then we make two holes on bicipital groove through subpectoral mini incision and stitch the tendon on itself via this tunnel. This technique has been applied in 8 patients, 6 months follow up has shown good results. Biomechanical and clinical studies have shown that the bone tunnel fixation is comparable, if not superior to other techniques regarding tensile strength, tendon to bone healing and postoperative outcomes.

Abstract no.: 31620

POTS AND CLOTS: THE HULL EXPERIENCE

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Introduction The National Institute for Health and Clinical Excellence (NICE) guidelines (CG92) recommends use of venous thromboprophylaxis (VTE) in patients with reduced mobility similarly; the British Trauma Society recommends VTE prophylaxis in trauma patients. In Hull and East Yorkshire NHS trust (HEY) following the death of a 34 year old patient from a pulmonary embolus resulting from ankle immobilisation after an injury as well as several episodes of venous thromboembolism, outpatient thromboprophylaxis was commenced in patients who required ankle or lower limb immobilisation. Material and methods At HEY in 2010/2011 financial year there was 12,700 new patients seen in the trauma clinic. Hence, it is a challenge to set up a VTE prophylaxis service particularly as the General Practitioners would not do the follow-up and blood tests necessary for these patients. This presentation will describe the process of setting up the VTE service, which we believe to be the first on this scale in an outpatient basis. The presentation will cover the following issues: Business case, workforce requirements, real costing, patient selection and consent for either subcutaneous dalteparin or off licence oral dabigatran, patient pathway, electronic patient database and patient satisfaction survey. Outcomes The service has been running since May 2010 for all patients prior to that a pilot was undertaken for several months. Data collection has started from May and will be discussed.

Abstract no.: 31622

10 YEAR FOLLOW UP OF A PROSPECTIVE RANDOMIZED STUDY OF CEMENTLESS TOTAL HIP REPLACEMENT VERSUS HIP RESURFACING IN YOUNG ADULTS UNDER THE AGE OF 55

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This study evaluates the functional outcome in the medium and long-term of hip resurfacing in comparison with cementless hip replacement in patients under the age of 55. Eighty patients were enrolled between 1999 and 2002. 24 were randomised (11 hip resurfacing, 13 total hip replacement), 18 refused hip resurfacing and chose cementless total hip replacement with a 32mm bearing, 38 insisted on re-surfacing. All patients were reviewed at a minimum follow-up of 8 years (mean 10.1 years). Patients were assessed clinically and radiographically at one year, five years, eight years and ten years. Outcome measures included EQ5, SF 36, Oxford, Harris hip, UCLA and UCH scores. No difference was seen in the Oxford, Harris hip score or in the quality of life scores between the two groups. The UCH functional hip score, however, showed significantly higher function scores in hip resurfacing compared with hip replacement patients; this was maintained at one year, five years and eight to ten years. All patients showed a decline in activities and UCLA score. In spite of a similar pre-operatively aspirations, a higher proportion of hip resurfacing patients were running and involved in sport and heavy manual work after five years. In this cohort there have been no failures in metal-on-metal articulation and there was one dislocation in the total hip group. Activity measures in this cohort suggest an advantage in hip resurfacing over hip replacement. In this patient group we have not seen the dramatic problems reported elsewhere with hip resurfacing.

Abstract no.: 31624

SUCCESSFUL RETURN TO HIGH LEVEL SPORTS FOLLOWING EARLY SURGICAL REPAIR OF COMPLETE SLEEVE AVULSIONS OF THE ADDUCTOR COMPLEX IN COMBINATION WITH THE RECTUS ABDOMINIS AND PECTINEUS: A RARE INJURY

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Introduction: Adduction injuries are commonly seen in sport. Complete adductor avulsions have been described and can typically be managed non-operatively or operatively. A rarer variant of this injury is the complete avulsion of the adductor complex as well as the pectineus and rectus abdominis amounting to a complete sleeve avulsion from the pubis. This is a severe injury that is increasingly recognised due to improved imaging and lower diagnostic threshold. 12 athletes were referred following acute injuries. Methods: The purpose of this study was to prospectively review the outcome of a consecutive series of active athletes with complex avulsion injuries from the pubis managed surgically. 12 athletes were seen within XX weeks of injury and clinical suspicion was confirmed by MRI scan. Results: One patient sustained a superficial wound and transient complaints of local numbness. Transient complaints of local numbness in this series but all twelve sportsmen returned to high level sport (five elite) at an average of thirteen weeks (10-21 weeks). Conclusion: Awareness of the possibility of this complex injury is important and there should be a low threshold for investigation. In elite athletes operative intervention is associated with good clinical outcomes and successful return to sport.

Abstract no.: 31627

PIGMENTED VILLONODULAR SYNOVITIS OF THE ELBOW – RARE CASE SCENARIO

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Introduction: Pigmented villonodular synovitis is an uncommon problem that presents a major challenge to health care providers because of its complex natural history, unclear etiology and poor response to therapy. PVNS is a member of a family of benign proliferative lesions of the Synovium of the joint, bursa, and tendon sheath. It most commonly affects the knee in 80% of cases. Involvement of the elbow is rare and only twenty one cases of Villonodular synovitis of elbow have been reported so far. History: presenting a 28 year old female complaining of pain over the left elbow since 2 years following an accidental trivial trauma that was diagnosed as Pigmented Villonodular Synovitis of left elbow. Clinical diagnosis, radiological features, MRI findings, biopsy results were suggestive of PVNS. Patient was treated with analgesics and physiotherapy. Conclusion: The clinical findings & radiological of PVNS are uncharacteristic and misleading. So awareness of its early diagnosis and prompt treatment including patient counseling plays an important role in the management of PVNS.

Abstract no.: 31629

CLINICAL OUTCOMES WITH CERAMIC ON CERAMIC TOTAL HIP ARTHROPLASTY (THA)

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Introduction: Ceramic on ceramic articulation surfaces are used in primary THA for younger patients for reasons of superior in vitro tribological properties. However, fracture of ceramic and squeaking have been reported as causes for concern. We report a prospective study involving 953 patients who underwent THA with BioloX delta ceramic on ceramic (CoC) bearing surfaces between 2006 and 2010. Methods: All patients receiving primary cementless Exceed ABT acetabular cup with CoC bearing were prospectively reviewed with outcomes scored preoperatively and postoperatively at 1,2,3 and 5 years. Outcome scores included functional assessment using Oxford Hip Score (OHS), WOMAC and Harris Hip Score. Adverse outcomes included revision surgery for any cause, dislocation, ceramic fracture and incidence of audible hip noise (squeaking). Results: The preoperative OHS, WOMAC (Pain), WOMAC (Function), HHS (subjective) and HHS (Objective) scores were 16,12,17,38 and 7 respectively. At 1 year, post op (n=953), 3 years post op (n=418) and 5 years follow up (n=48), improvement in scores were seen. 2 patients (0.2%) reporting long term squeaking of their hips and ceramic liner fracture were seen in 3 (0.3%) additional patients. Ceramic fragment was seen in 2 post operative radiographs. 11 dislocations and 3 deep prosthetic infections were noted amongst the study group. Conclusion: Improvement in hip function was seen in patients receiving cementless acetabular cup with BioloX Delta ceramic bearing experienced. Exceed ABT cups with a BioloX Delta ceramic bearing exhibited low rate of bearing specific complications including fracture and squeaking.

Abstract no.: 31630

ACHILLES TENDINOPATHY: GETTING A BETTER PICTURE WITH ULTRASOUND SCANNING

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Introduction: Achilles tendinopathy is extremely common with an incidence up to 10% in certain groups. Achilles tendinopathy is normally caused by overuse which can result in a range of radiological changes. This study reviews the range of pathology demonstrated with ultrasound imaging of the tendoachilles of patients presenting to a dedicated heel pain clinic. Methodology: Retrospective analysis of ultrasound imaging of the Achilles tendon in patients presenting to a dedicated heel pain clinic over a 2-year period. Review of current literature on use of radiological imaging in Achilles tendinopathy. Results: Total of 176 patients. 212 Achilles tendons (TA) were scanned. 108 feet (50.9%) had pathology in the Achilles tendon. 23 patients (13.1%) had bilateral pathology. 70 feet (64.8%) of the 108 with TA pathology had main body pathology only. Within this group 80% (56) had neovascularity, 2.9% (2) had calcification, 2.9% (2) had cystic degeneration and 2.9% (2) had tears. 23 feet (21.3%) had insertional and main body pathology. 15 feet (13.9%) had insertional pathology only. In this group 60% (9) had calcification, 46.7% (7) had neovascularity and 33.3% (5) had associated bursitis. Based on the scans, 42 patients (23.9%) had a course of prolotherapy, 5 (2.8%) had ESWT and 1 was scheduled for theatre. Conclusion: There is a variety of pathological presentation in Achilles tendinopathy. Ultrasound as a first line imaging tool is relatively inexpensive, quick, permits dynamic assessment and is proving very useful in delineating pathology and guiding therapy in symptomatic patients.

Abstract no.: 31633

**VARIOUS UTILITIES OF A NOVEL FIXATOR CUM
DISTRACTOR/COMPRESSOR**

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Introduction: We have innovated a T-shaped fixator-cum-distractor/compressor in our orthopaedics workshop. This apparatus has been utilised for the principle of "Distraction osteogenesis". Method: The apparatus consists of three portions. One is T-shaped end piece; the other is straight end piece and a central turn-buckle. The apparatus can be used as distractor as well as compressor as per need. It has been utilised for: limb lengthening by epiphyseal plate distraction i.e. chondrodiastasis; and by callotasis (callous distraction); for high tibial osteotomy (HTO), gradual open wedge type for O.A. knee; for correction of bony deformities around knee joint, for arthrodesis of knee and ankle. It has been utilised in more 250 patients. Results: The apparatus is quite useful and effective in majority of the cases for the purpose of distraction, stabilization of osteotomy; and for compression in cases of arthrodesis. Discussion: The apparatus is very cost-effective (cost only 7\$) and very easy to apply and can be well utilised even in peripheral hospitals. For HTO, limb lengthening and deformity correction it has served as good distractor and for arthrodesis a good compressor. Its simplicity makes it a versatile tool.

Abstract no.: 31635

CLINICAL EXPERIENCE OF USE OF A NEWLY DESIGNED SHOULDER HEMIPROSTHESIS

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Introduction:A shoulder hemiprosthesis suitable in Indian Scenario was fabricated and the newly designed shoulder hemiarthroplasty was used in clinical practice whose midterm clinical results are being reported in a series of patients .**Materials and Methods:** I , The new prosthesis was fabricated of 315L AISI (American Iron & Steel Institute) steel with Govt. of India, Patent No.212115. The components of this shoulder hemiprosthesis are head, stem, lateral and medial offset II, **PATIENTS** this series 51 patients were selected for study of which 45 had 3 or 4 part fracture /fracture dislocations of the shoulder joint , three cases of GCT with pathological fracture of proximal humerus and three head split fractures. **The Surgical Technique :** This newly designed shoulder hemiprosthesis was used for replacement hemiarthroplasty with cement fixation in 46 and uncemented in five patients. **Results :** 51 patients treated by Mukherjee's SHA from August 2001 to July 2008 with a mean F.U. of 5.6 years. Forty patients regained painless stable satisfactory range of shoulder motions. The final evaluation of this series were observed - in UCLA shoulder scoring system 29.69 out of 35, which was good , as per Constant & Murley system the score 53.86 out of 100 and in Neer shoulder score 81.38 out of 100 which was satisfactory. **Discussion :**, this newly designed shoulder hemiprosthesis may be considered as a viable option for replacement in fracture / fracture – dislocation / pathologies of proximal humerus for the patients.

Abstract no.: 31643

DYSPLASIA OF THE FEMORAL CONDYLES IS A COFACTOR IN THE DEVELOPMENT OF OSTEOCHONDRITIS DISSECANS OF THE KNEE

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INTRODUCTION: The role of different factors in the development of Osteochondritis Dissecans (OCD) have been discussed: microtrauma, ischemia, lack of ossification, genetic cause, inflammatory origin etc. But the etiology of OCD is still unknown. **METHODS:** standard anteroposterior X-ray films of 20 patients with OD of the knee joint and X-ray films of 31 healthy people (control group) were analyzed to carry out the association between dysplasia of the knee joint and development of OCD. Certain of the roentgenometric indexes (cartilage space index, medial and lateral joint space angle, medial and lateral femoral condyle angle, intercondylar angle, medial and lateral intercondylar eminence angle, intermediate angle, intercondylar index) were measured. **RESULTS:** The patient's group average age was 20+2 years. (control group - 21+2.5 years). All patients had stage 3 to 4 OCD of the knee joint. Medial femoral condyle was affected in all cases. Roentgenometric evaluation has shown what the medial joint space angle value was ($p<0.05$) higher in the control group. The medial and lateral femoral condyle angle value, the intercondylar index value was significantly ($p<0.01$) higher in the control group. The intercondylar angle value was significantly ($p<0.01$) higher in the patient's group comparing with the control. **CONCLUSION:** patients with OCD of the knee have significant differences of the femoral metaepiphysis shape comparing with the healthy people. So, dysplasia of the femoral condyles can be a cofactor in the development of OCD of the knee.

Abstract no.: 31647

**ELECTRONIC VACCUM ASSISTED CLOSURE IN OPEN WOUNDS-A
REVIEW OF 29 CASES**

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A review of 29 cases of crushed soft tissue wounds and open fractures are presented. After surgical toilet and debrima of wound EVAC system was applied over the open wound and sealed with vacuum cap with the help of op-site. For first 24 hrs it was preferred to put system on continuous vacuum mode with negative pressure of 110 mmHg and then for next three days it was kept on Intermittent vaccum mode with a time pulse of 5 mts and pressure of 110 mmHg .The pulse time is altered as required. The first change of foam dressing was done after 96 hrs, but decision to change the foam dressing is done depending on amount of fluid collection in container, i.e if it is more than 100 ml. it should be changed earlier. This system works on the fact that vacuum created reduces edema in tissue and also stimulates the growth of new granulation tissue and foam gives a good bed for its growth. This system provides no contamination of wound to exterior atmosphere so chances of less secondary infection. There is faster healing of wound with good quality granulation tissue. Presence of gross infection is a contraindication to use this system

Abstract no.: 31650

EVALUATION OF THE PATELLAR HEIGHT AFTER OPEN WEDGE VALGUS HIGH TIBIAL OSTEOTOMY USING THREE DIFFERENT MEASUREMENT METHODS

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The purpose of this retrospective study was to evaluate the patellar height after open wedge valgus high tibial osteotomy HTO and three different measurement methods used for this. We retrospectively studied thirty randomly selected patients who underwent an open wedge valgus HTO from January 2006 to December 2010. The patellar height was measured both preoperatively and postoperatively (with a minimum follow-up period of one year), on the lateral X-ray view of the knee in 30 degrees of flexion for all the patients. Three different measurement methods were used: Insall-Salvati Index (ISI), Blackburne-Peel Index (BPI) and Caton-Deschamps Index (CDI). There was a statistically significant decrease ($p < 0.05$) in the mean preoperative values of ISI (1.03 ± 0.12), BPI (0.82 ± 0.11) and CDI (0.91 ± 0.1) as compared to ISI (0.94 ± 0.13), BPI (0.74 ± 0.09) and CDI (0.85 ± 0.11), at the latest postoperative evaluation. The procentual reduction in the mean ISI, BPI and CDI was of 8.75%, 9.77% and 6.63% respectively. A decrease in the patellar height as measured by ISI can only be determined by patellar tendon shortening, but it is not influenced by the bony anatomy modification. The BPI can be altered by the changes in the posterior tibial slope, frequently encountered after open wedge valgus HTO. Open wedge valgus HTO determines a reduction in the height of the patella. Yet, it is difficult to find the ideal measurement method of the patellar height, but the CDI seems to lack the major disadvantages of the the ISI and the BPI and may represent the most accurate technique.

Abstract no.: 31651

NEW APPROACH IN CASE OF GLOBAL WRIST POSTTRAUMATIC OSTEOARTHRITIS: USE OF PYROCARBONE INTERPOSITION IMPLANT (AMANDYS®, TORNIER BIOPROFILE): PRELIMINARY RESULTS OF A SERIES OF 11 PATIENTS AT MEAN FOLLOW-UP OF 11 MONTHS

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Introduction: In case of global posttraumatic wrist osteoarthritis, nowadays there are mainly two options: panarthrodesis or total wrist prosthesis. Both options are binding. The aim of this study is to evaluate a new alternative treatment by free pyrocarbone interposition implant. Materials: Retrospective monocentric study of 11 patients 7 male, 5 female, medium age 55 years, 5 manual workers, 6 retired. Etiology : 4 failures of first row carpectomy and 1 of partial arthrodesis, 1 postinfectious panarthrititis, 4 SNAC wrist type 4 and 1 siliconitis. Methods: Dorsal approach with adapted carpal resection, then pyrocarbone implant preserving wrist ligaments. Results: All patients were examined at the last follow-up. Eight of 11 patients were satisfied, pain improvement in 9 cases. The mobility were flexion 38° (5-60°), extension 34° (20-60°), grip strength 8,3kg (0-22), mean PRWE 38,35 (3-91) and mean QuickDASH 43 (14-91). There was 3 complications: 2 implant dislocations (1 asymptomatic) and 2 revisions for panarthrodesis for resistant major pain (1 implant dislocation before), no bone resorption. Discussion: This study shows good results for pain and mobility. All bad results were after first row carpectomy. It seems to be an alternative of arthrodesis and total wrist prosthesis but for us it isn't recommended for manual worker and/or failure of first row carpectomy. Conclusion: It's an easy way to treat difficult wrist: good results for pain preserving mobility but with a loose of strength and possibility to convert in case of failure. More patients and follow-up are necessary.

Abstract no.: 31652

MANAGEMENT OF INTRA-ARTICULAR CALCANEAL FRACTURES WITH ILIZAROV

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Introduction: ORIF in calcaneal fractures is associated with an unacceptably high complication rate. Prolonged periods of non weight bearing after ORIF may contribute to soft tissue pain and dystrophy. Hence closed treatment techniques using minimally invasive reduction and application of ring external fixators have gained popularity due to lower complication rate and reduced risk of late soft tissue pain and dystrophy. We have managed 9 such patients with articular reduction and stabilization with ilizarov external fixator. Material and methods: Patients with displaced intraarticular calcaneal fractures in the period of 2006-8 were subjected to Xrays- AP and lateral views and CT scan of ankle. 9 patients with Sander's type 2-4 fractures were included in the study and were treated with articular reduction and application of ilizarov external fixator. All patients were advised early weight bearing and ambulation. The frame was removed after 10-12 weeks. The patients underwent detailed radiological and clinical assessment in the follow up. Results: 6 patients were followed for a mean period of 20 months. The mean AOFAS Score was 85.5. Mean post-operative and contralateral foot values were 20.5° and 25.1° for Bohler's angle; 53.8mm and 59.6 mm for Achilles Tendon Fulcrum Length and 107.1mm and 103.2mm for Heel Height respectively. There was one case of superficial infection that subsided with dressings and one patient with intraarticular screw penetration requiring removal. Conclusion: The current treatment option of managing calcaneal fractures with ilizarov external fixator is a safe treatment alternative to ORIF with fewer complications and equivalent or better results.

Abstract no.: 31660

SURGICAL TREATMENT OF THE PATELLOFEMORAL JOINT'S INSTABILITY

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We reviewed 46 operations performed to 40 patients (24 girls and 16 boys, 20 left and 24 right knees, middle age – 15,8 years old, range 5-25 years) with acute or chronic patellar instability. 19 operations – arthroscopic lateral release, other 27 operations were performed with arthrotomy (in 8 cases – arthroscopic release with open duplication of medial portion of knee joint extensors (in 3 cases – by original methodic), in 19 cases – traditional operations with plasty of soft tissues). At the stage of preoperative planning we took into account electromyographic data: disbalance between m. vastus lateralis and m. vastus medialis and between knee flexors/extensors more than 40 % was indication to combined operation – arthroscopic release with medial duplication. The long-term postoperative results (from 1 month till 20 years) were available at 31 patients (15 from them underwent open operation, and 16 – arthroscopic). Results of open operations: 6 – excellent, 7 – good, 2 – satisfactory (knee pain most of the time, symptoms altered, further surgical treatment required in some instances). Results of arthroscopic operations: 14 – excellent, 2 – good. Thus, on the basis of ours experience of arthroscopic treatment of patients with patellar instability and literature data, considering advantages of arthroscopic operations in comparison with open interventions, it is possible to conclude, that differential use of modern mini-invasive techniques allows to raise efficiency of treatment and to lower risk of complications.

Abstract no.: 31661

TREATMENT OF SCAFOID NON UNION WITH VASCULARISED BONE GRAFT – CASE STUDY

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A thirty-five year old patient presents with an old scafoid fracture treated with cast immobilization for 12 weeks which progressed to a symptomatic non union with cystic changes of the distal pole of the bone. Plain X-Ray and computerized tomography diagnosed chronic type C. The non union was treated with vascularised bone graft using the Kawai and Yamamoto technique. A volar zigzag incision was made over the scaphoid tuberosity and the distal radius to expose the site of nonunion. The sclerotic bone ends were freshened with a curette. After identification of the pronator quadratus a block of bone graft 15 mm long at its insertion on the distal radius was developed. The scaphoid fracture was reduced and the grafted bone inserted snugly into the site of nonunion. The proximal and distal scaphoid segments and the graft were fixed using a canulated Herbert screw. A sort arm thumb spica cast was applied. a sort arm thumb spica cast was applied. The imobilization was discontinued after 10 weeks and a program on rehabilitation was begun in a fist orthotic device.. The patient was at monthly intervals with radiographic examination. At three months there was no local tenderness and radiographic evidence of union was apparent. The patient was evaluated preoperatively using the Mayo Wrist Score reaching 55 points and postoperatively 75 points out of 100. The surgical result was good. The vascularised bone graft is a reliable and reproducible technique for the treatment of scafoid non-unions which can lead to good results.

Abstract no.: 31662

**AN IRREDUCIBLE VARIANT OF INTERTROCHANTERIC FRACTURE:
TECHNIQUE FOR OPEN REDUCTION**

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Introduction: Acceptable closed reduction is possible for most intertrochanteric fractures. Said et al described an irreducible variant where the shaft fragment includes the lesser trochanter and there is a long spike on the head neck fragment. They described a three step technique for open reduction using the regular operating table and according to them reduction would be difficult or impossible if a fracture table was used. Methods: A 30-year-old male presented to the emergency after having been involved in a high velocity motor vehicle accident. His primary survey was normal. On secondary survey, he had trochanteric tenderness on his right side and on careful palpation; the proximal shaft produced a swelling in front of the hip. Radiographs revealed a trochanteric fracture with the lesser trochanter attached on the shaft fragment. A CT scan was obtained to better delineate the fracture. The CT scan showed the typical pattern with an overridden shaft fragment and a long spike on the head neck fragment. Results: The patient was operated using a fracture table and after having difficulty in reducing the sunken femoral neck, a Scankz screw was inserted into the neck and the proximal fragment pulled into place under image intensifier guidance. The fracture was fixed using dynamic hip screw and it united uneventfully. The operative management of this case is discussed in detail and compared to the one described previously by Said et al.

Abstract no.: 31663

THE APPLICATION OF PLASMA RICH IN GROWTH FACTORS FOR KNEE OSTEOARTHRITIS IMPROVED THE QUALITY OF LIFE AND FUNCIONAL COMPARED WITH CONVENCIONAL TREATMENT WITH VISSCOSUPPLEMENTATION.

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Osteoarthritis of the knee has a high prevalence that increases with rising life expectancy worldwide. The prevalence of knee osteoarthritis in Spain is between 1.5 and 15.9% of the population above age 55. The aim of this study is to assess the effectiveness of treatment with PRGF compared with hyaluronic acid in patients with osteoarthritis. There will be an intervention study, prospective, longitudinal, randomized, single blind masked to compare the effectiveness of 2 different therapeutic strategies. We make two groups of 48 patients. Analyze the results of the WOMAC scales, Lequesne and SF-36, three and six months of study. After the first 3 months of study are seen as both treatments improve outcome in WOMAC and Lequesne scales statistically, showing a statistically significant improvement in patients treated with PRGF. Discussion: Although these preliminary results of 3 months follow-up, we hope to present the same improvement throughout the study. The PRGF may be a new therapeutic option for the treatment of degenerative cartilage lesions and soft tissue. Experimental studies show increased cartilage regeneration with increased endogenous production of hyaluronic acid with lower production of metalloproteases, all these effects can slow the natural history of osteoarthritis, so the application of growth factors may be an option valid therapeutic treatment of osteoarthritis

Abstract no.: 31666

**RECURRENT DESMOID TUMOR IN THE BUTTOCK AND CONCURRENT
IPSI LATERAL KNEE SYNOVIAL GIANT CELL TUMOR**

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Extra-abdominal desmoid tumor is an uncommon fibrous tissue tumor. It originates from the musculoaponeurotic structures throughout the body. Although it rarely metastasizes, but still has an aggressive local spreading potential, and an alarming recurrence rate. A positive surgical margin is a significant risk factor. Multiple etiologies have been suggested including traumatic post-surgery, genetic with mutation in APC gene, and hormonal. We report a recurrent desmoid tumor affecting the right buttock in a 28-year-old lady, who was gravida3para2+1. The primary surgery was conducted 3.5 years before the current presentation, when the histopathological investigation confirmed the diagnosis of the previously biopsied lesion of desmoid tumor. Wide local resection of a concurrent ipsilateral knee synovial giant cell tumor was carried out 1 month after the primary buttock surgery. A current magnetic resonance imaging showed a recurrent infiltrative mass in the right gluteus maximus muscle, and no recurrence of the right knee tumor. Consequently, we performed complete excision of the diseased gluteus maximus muscle, believing radical excision of those nasty lesions is a cornerstone in the management process. Macro- and microscopic examinations determined the aggressive fibromatosis pathology with wide safe margins. Postoperative colonoscopy posted no traumatic bowel event and no associated familial adenomatosis coli. Soft tissue giant cell tumor and desmoid tumor affect the same age group, and concomitant occurrence of both entities could be co-related.

Abstract no.: 31667

INTRAMEDULLARY FIXATION OF DIAPHYSEAL CLAVICLE FRACTURES USING THE ROCKWOOD CLAVICLE PIN: REVIEW OF 86 CASES

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Aim: This study reports the safety, efficacy and functional and patient centred outcomes of the largest published series of patients treated with the Rockwood intramedullary clavicle pin (DePuy, Warsaw, IN) to date. **Methods:** A retrospective review of case notes, radiographs and follow-up by questionnaire was conducted. 86 patients were operated upon, 70 for acute fractures (group A) and 16 for non-union (group B). **Results:** Rate of non-union was 2.9% in group A and 0% in group B. Mean Disability of the Arm, Shoulder and Hand (DASH) scores were 5.9 for group A and 8.7 for group B. Satisfaction was rated as good or excellent in 96.8% of cases and all patients would have the procedure again. Correction of shortening was statistically significant in group A ($p=0.001$). Pin prominence was the predominant complication in both groups and all patients underwent a second procedure for metalwork removal. **Discussion:** Our results demonstrate similar DASH scores and rate of union to those seen in the literature for plate fixation. Posterior pin prominence was a common complication early in the series, however its incidence decreased with operative experience. **Conclusion:** Intramedullary fixation of displaced clavicle fractures may be as effective as plate fixation in achieving union. Although removal of metalwork is required in all cases of pinning compared to 53% of clavicle plates, removal of a pin is less invasive. The complication of pin prominence should be balanced against the cosmetic advantage of a smaller scar and avoidance of the risks of drilling through the clavicle.

Abstract no.: 31672

IS A 6-WEEK FOLLOW UP APPOINTMENT AFTER KNEE ARTHROSCOPY PREFERABLE?

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We assessed whether it would be safe to wait until 6 weeks to follow up patients after knee arthroscopy. We looked retrospectively at 2 groups of a total of 143 patients operated by the same surgeon. In the first group the patients had a follow up appointment within 3 weeks and the second group at least 6 weeks after their operation. Of the 143 patients 1 died and 12 did not attend their follow-up appointment. None of those 12 patients was referred back. Of the 130 remaining patients, 29 were in the first group of patients that was followed up between 2 to 3 weeks and 101 patients were in the second group that was followed up between 6 to 8 weeks. All 130 patients were discharged on the same day of their operation and none were re-admitted or attended the A&E department before their follow-up appointment. 34% (10 patients) from the first group and 64% (57 patients) from the second group were discharged at their first appointment. From the 19 patients of the first group and the 54 patients of the second group, who were given a second appointment, only 2 and 19 patients respectively, proceeded to have further surgical intervention. Our results indicate that is safe to wait 6 weeks after knee arthroscopy before the first outpatient follow up. Moreover, the proportion of patients that can be discharged at their first postoperative appointment is significantly higher at 6 weeks follow up compared to 2 weeks.

Abstract no.: 31674

A NEW TECHNIQUE OF ENDOPROSTHETIC REPLACEMENT FOR OSTEOSARCOMA OF PROXIMAL FEMUR WITH INTRA-ARTICULAR EXTENSION.

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Osteosarcoma is the most common primary malignant tumour of bone and commonly involved sites are the distal femur, proximal tibia, and humerus. Osteosarcoma of proximal femur usually arises at the metaphysis and articular cartilage acts as a relative barrier to tumour spread, with extension into the hip joint being extremely rare. A previously fit and well sixteen-year-old male presented with a 2 month history of right hip pain and a limp. Plain radiographs and Magnetic resonance imaging (MRI) showed an expansile lesion in the right femoral neck, extending 16cm distally from the proximal femoral articular surface through the intertrochanteric region into the upper right femoral shaft. There was also clear evidence of intra-articular extension into the acetabulum. Endoprosthetic replacement following resection is a good treatment option for proximal femoral tumours due to the low complication rate and achievement of good postoperative function. However, treatment of a proximal femoral lesion with intra-articular involvement by prosthetic reconstruction is challenging. We report a patient who presented with osteosarcoma of the proximal femur extending into the hip joint and describe the technique of en-bloc extra-articular resection of the acetabulum and proximal femur with reconstruction using a custom made prosthesis. We conclude that extra-articular resection and endoprosthetic reconstruction using a coned hemi-pelvic implant with fluted stem and a modular femoral implant is a useful treatment option in the management of a proximal femoral lesion involving the hip-joint.

Abstract no.: 31679

TREATMENT OF LONG BONE FRACTURES WITH ELASTIC INTRAMEDULLARY NAILS PREVENTS FURTHER DEFORMITIES IN PATIENTS WITH OSTEOGENESIS IMPERFECTA

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INTRODUCTION: Patients with OI are prone to frequent fractures and deformities. Treatment of these fractures is a challenge for the surgeon because the synthesis should guarantee no failure and prevent further deformities. **OBJECTIVES:** non elongating elastic nails should be a treatment of choice not only for fracture fixation but also for prevention of deformities **METHODS:** 7 children from 1-13 year old (mean age 6 year old) with OI are studied. Several fractures of long bones of the patients were treated conservatively and surgically with TENS intramedullary. Periodically X rays in two views were studied for fractures healing and deformities **RESULTS:** 7 children (6 girls and 1 boy) sustained 25 fractures of long bone (18 femoral fractures, 3 humeral fractures, 2 forearm fractures and one tibia fracture). 17 fractures (10 femur, 3 humerus, 2 forearm and 1 tibia fractures) were treated conservatively with spica cast immobilization. 8 femoral fractures were treated surgically with elastic intramedullary nails. The fractures healed in a mean time of 4-8 weeks. 10 fractures (40%) healed with hyperplastic callus. Deformity of the limbs treated conservatively are seen in 14 (85%) fractures (bowing of the femur and humerus) with mean angle of 35 degree (range 25-60) and in children treated surgically with elastic intramedullary nails deformity was seen in 2(25%) fractures with mean angle of 20 degree (range 10- 30) **CONCLUSION:** Elastic intramedullary nails are a treatment of choice due to their easy application and low complication. Their use can prevent also further deformities.

Abstract no.: 31680

AN AUDIT OF TORUS FRACTURE TREATMENT AT A DISTRICT GENERAL HOSPITAL

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Introduction: Torus (buckle) fractures of the distal radius in children are a common injury. Previous evidence has suggested that there is no difference in outcome in patients treated with plaster or a futura-type splint, and that no further follow-up is required. We conducted an audit of the treatment of these fractures in our hospital. The standard used was an initial fracture clinic appointment followed by three weeks in a splint with no further follow-up. This standard has been demonstrated in previous literature. Methods: Paediatric forearm fractures referred to the fracture clinic over a one year period were selected. The x-rays for each patient were examined to exclude all other fracture types. Clinic letters for the twenty-eight included patients were obtained and the treatments recorded. Clinic and material costs were obtained from the hospital finance department. Results: Only 3 patients (10.7%) were treated according to the standard. The majority were treated with plaster for between three and five weeks and had up to two additional follow-up appointments and further radiological imaging. There were no complications. If all patients had been treated according to the protocol, a saving of £2560 (not including x-ray costs) would have been made and valuable clinic time would be saved. Conclusion: Treating patients according to the standard would result in a saving of 37% and free up resources. The money saved in our hospital is modest but can be multiplied in units treating higher numbers of patients.

Abstract no.: 31688

8 CM ULNAR BONE DEFECT - 4 YEARS FOLLOW-UP

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Introduction: Bone defects in the forearm are always a challenge for orthopaedic treatment. Type of treatment is dependable of location, length of bone defect, local soft tissue conditions and expertise of the surgeon. The several options are bone lengthening, vascularised or non vascularised autogenous bone graft, allograft and bone transposition. Methods: male, 71 years, car accident, with open fracture type IIIb, with ulnar bone lost in the proximal and middle third with 8 cm. Results: First approach with surgical debridement, fracture stabilization with external fixator and free skin graft for soft tissue cover. Second approach, the bone defect was filled in with non vascularised autogenous peroneal graft and autogenous cancellous iliac graft and fixed with a LCP plate. At one year, a local infection occurred and a local debridement and implant removal was done. Four years later, the graft is well incorporated and tolerated without any other local complication. Hazardous, the patient developed elbow osteoarthritis with ankylosis at 90 degrees and lost of wrist extension because absence of the extensors muscle-tendinous units. Discussion: So large forearm bone defect is rarely described in the literature. Therefore treatment algorithm is not defined and put the surgical decision on the surgeon hands. In this case, with 8 cm bone defect, open IIIb fracture, in an elderly patient, amputation would be an option. Unless, autogenous bone graft for fulfill the ulnar defect was considered a valid option because it allowed to preserve the distal upper limb and maintain a partial functional hand.

Abstract no.: 31700

TUBERCULOUS SYNOVITIS OF INDEX FLEXOR TENDONS : A CASE REPORT

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Introduction : Tuberculous infection of the hand is rare with few cases reported in literature. We present a case of tuberculous tenosynovitis of index flexor tendon. **Case report :** A 38-year-old man. Farmer presented with a painless swelling of 6 months duration over right index. Finger flexion was significantly reduced to about 50% of total range of motion of the metacarpophalangeal, proximal and distal interphalangeal joints. On radiographs, there were no signs of degenerative arthritis or any other signs of osteoarthralgous or ligamentous pathology. Ultrasound showed bulging of soft tissue surrounding the flexor tendons consistent with flexor tendon synovitis. Flexor tendon synovial sheath was covered with granulation tissue. Complete synovectomy with extensive debridement of surrounding granulation tissue was performed. Histopathological examination, revealed epithelioid granuloma. The patient received anti-tuberculous chemotherapy for 9 months. **Discussion :** Tuberculous tenosynovitis was first described by Acrel . The disease starts as a slow growing insidious swelling along the involved tendon. Systemic disease does not necessarily accompany infections of the hand. Characteristic imaging features include synovial thickening with relatively little synovial sheath fluid. According to the literature, extensive surgical debridement along with full course of anti-tuberculous chemotherapy, including streptomycin for the first month is recommended. Isolated medical or surgical treatment alone significantly increase the risk of recurrence. **Conclusion :** Although tuberculosis is an uncommon cause of tenosynovitis, particularly in the hand, it should be in the differential diagnosis of chronic tenosynovitis, especially in countries where tuberculosis is prevalent.

Abstract no.: 31701

TORUS FRACTURES OF DISTAL RADIUS – SAFE MANAGEMENT WITH FUTURA SPLINT

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Torus (Buckle) fractures of distal radius form a major workload of any fracture clinic. They are usually stable and don't displace. Recent evidence shows these fractures can be safely treated in futura splint. In UK, many hospitals are still treating these patients with plaster. Bringing back these patients to fracture clinic for plaster removal means more workload /places more financial burden. Our study is a completed audit cycle where we successfully implemented treatment with futura splint. Over 6 months, 25 torus fractures were treated in A/E back slab. Age range was 3-12 years. Most common MOI was fall on outstretched hand. All cases had presented to A/E within 24 hours. 5 received futura splint at fracture clinic. 21 cases received full plaster. They were seen back in clinic in 3 weeks for plaster removal. After this audit was presented, we started treating these fractures with futura splint. Reauditing 6 months later revealed that of 31 cases, 28 received futura splint. 2 were treated with plaster on parent's insistence. The remaining one was treated in plaster due to incorrect size. There were no complications reported with futura splint. By definition, torus fractures are stable. The major problem with these fractures lies in the correct diagnosis. We have treated this fracture successfully with futura splint. Recent papers have shown that each futura splint treatment saves nearly 53£ compared to plaster treatment. Implementing this treatment has reduced plaster related problems. We hope this audit will help in changing practice in other hospitals

Abstract no.: 31711

DOES DISLOCATION RATE INCREASE WITH POSTERIOR APPROACH HEMIARTHROPLASTY?

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Introduction: Hemiarthroplasty for fracture neck of femur is generally done from anterolateral/Hardinge's Approach. In our institution some surgeons carry it out from posterior approach. AIM: To audit our practice and measure our dislocation rates to standard anterolateral approach. Methods: We did a retrospective analysis of 100 consecutive case series on these hemiarthroplasties (Anterolateral & Posterior Approach, 50:50) to establish if dislocation rate is higher than the traditional anterolateral approach. As we are the only acute hospital on a small island with static population of 90,000 individuals, so we are certain that we have logged every single dislocation. We reviewed our last few years cases with Dislocation requiring reduction in A&E or any further surgical intervention as our Final Outcome Measure. Results: Our dislocation rate is negligible and certainly not more than the anterolateral approach reported in literature. Conclusion: Posterior Approach Hemiarthroplasty for fracture neck of femur DOES NOT increase dislocation rate in this subset of patients.

Abstract no.: 31718

PATELLAR MRI TRACKING STUDIES AS AN INVESTIGATION FOR ANTERIOR KNEE PAIN

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Introduction: Anterior knee pain is one of the most common musculoskeletal complaints amongst all age groups. Mal-tracking of the patella during active flexion and extension is thought to be one of the underlying pathologic processes. Therefore, kinematic magnetic resonance imaging (MRI) has recently been used to provide dynamic visualization of the patella and investigate this condition. Objectives: Evaluate the usefulness of patellar MRI tracking studies and influence on treatment. Methods: We conducted a retrospective study of 50 patients in which there was clinical suspicion of patellar mal-tracking who underwent MRI studies. We looked into patient age, gender, presenting symptoms, clinical diagnosis, treatment and need for arthroscopy. Results: Median age was 36.4. Sample size consisted of 27 males and 23 females. Imaging confirmed mal-tracking in 26% (8 females and 5 males). Ten of these patients had mechanical signs alongside the pain. Five of them underwent arthroscopic procedures followed by physiotherapy, while 8 were treated with physiotherapy only. Three of the patients in which the MRI studies did not confirm mal-tracking had knee arthroscopies which confirmed mal-tracking. Conclusion: Patellar MRI tracking studies are useful in the presence of mechanical symptoms. In the absence of mechanical findings these images did not alter the treatment and would not constitute a cost or time effective investigation. However, in the presence of strong clinical suspicion, patients should be treated on clinical basis.

Abstract no.: 31723

THE OUTCOME OF PROLOTHERAPY USE IN MEDIAL COLLATERAL LIGAMENT INJURIES OF THE KNEE: THE FINDINGS OF ONE ENGLISH PREMIER LEAGUE TEAM

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Introduction: Knee injuries are common in footballers. Medial Collateral Ligament injuries make up a significant proportion of these injuries in professional players. We present a consecutive series of MCL injuries with regard to type, treatment and return to play with an emphasis on the use of sclerosant therapy. Method: Data was collected for all MCL injuries suffered by professional players between 2009 and 2011 at an English Premier League club. Grade of injury, treatment received and outcome (return to competitive play) were recorded. Players received a magnetic resonance scan, reported by a consultant sports medicine radiologist. Results: 12 MCL injuries occurred over the course of this study, 34% of all knee injuries. 50% of these were grade II injuries (partial rupture) and 50% grade I injuries (sprains), no grade III injuries (complete rupture) were observed. 17% of injuries were a recurrence from previous sprains. All grade II injuries received prolotherapy, all grade I injuries were treated conservatively. Players treated with sclerosant injections without complication, had a mean time of return to play of 33 days. Players with grade I injuries had a mean time of 20.5 days to return to play. One grade II injury suffered further injury during rehabilitation, returning to play after 211 days. Conclusion: Our study suggests players who received prolotherapy returned to play quicker than players treated without when comparing our data with previously published papers. We also believe prolotherapy to have a low complication rate in the treatment of grade II MCL injuries.

Abstract no.: 31724

EPIDEMIOLOGY AND TREATMENT OF KNEE INJURIES IN ELITE PROFESSIONAL FOOTBALLERS: THE FINDINGS OF ONE ENGLISH PREMIER LEAGUE TEAM

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The aims of this study were to establish the frequency and variation of knee injuries within one English Premier League football club, and report on treatment regimen for the main injury types. Methods: Data was collected prospectively for knee injuries between 2009 and 2011. Injuries that prevented players from competing in the next competitive game were included. Demographics were recorded along with factors influencing injury, including playing surface, pitch condition, ability to continue playing, mechanism of injury and type of footwear. Injury type, time taken to return to play, and treatment was recorded. Results: 35 injuries occurred. Commonest injury was to the medial collateral ligament (MCL) in 34%. Patella tendon injuries were seen in 29%, other injuries included meniscus tears, ACL ruptures, and osteochondral defects. All grade II MCL injuries received sclerosant injections. 40% of patella tendon injuries received plasma-rich protein (PRP) injections, and 30% underwent surgery. Mean recovery time following MCL and patella tendon injuries was 44 days and 77 days respectively. 60% of injuries were sustained during training sessions and 40% were suffered during competitive games. 26% were recurring injuries, recurrent meniscus and patella tendon injuries took twice as long to recover compared to initial injury. Conclusions: Our findings suggest MCL and patella tendon injuries are the commonest knee injuries amongst professional footballers, and meniscus tears and ligament ruptures are relatively rare. Injuries occurred frequently during training. A high proportion of injuries received prolotherapy or PRP injection therapy. The study suggests recurrent injuries can prolong recovery two-fold.

Abstract no.: 31725

COST EFFECTIVENESS OF PHARMACOLOGIC THROMBOPROPHYLAXIS AFTER KNEE REPLACEMENT SURGERY: AN AUDIT

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Introduction: Recently there has been a drive towards a cost effective health service. Several strategies have been suggested to achieve this, these include increased awareness of cost effective prescribing. Through our work in a joint arthroplasty unit we have noted over prescription of pharmacological thromboprophylaxis in knee replacement patients compared to the relevant NICE guidelines. Objectives: Quantify the extent of over prescription and estimate the cost reduction achievable by adhering to guidelines. Methods: A clinical audit was performed retrospectively on 60 knee replacement patients recently operated by different surgeons in our department. Audit standard "CG92 Venous thromboembolism - reducing the risk: NICE guideline 16 February 2010". Results: A sample size of 60 knee replacements was identified. The sample audited was 54 (5 patients discharged on warfarin, 1 patient deceased). The medications used in the sample audited were Low Molecular Weight Heparin (Clexane) in 22 patients and Rivaroxaban in 32 patients. 100% of the sample size audited was over prescribed with these medications. The number of over prescribed days ranged from 3 to 10. Average number of over prescribed days: 5.05 (Clexane: 4.59, Rivaroxaban: 5.44). Potential cost reduction by adhering to standards for the sample size audited was estimated to be £1182. Conclusion: We conclude that a significant cost reduction could be achieved nationwide by introducing methods to ensure accurate prescription of thromboprophylaxis following joint arthroplasty. This decreases costs to the local health authorities and also eliminates the periods of unnecessary patient exposure to these medications which undoubtedly carry side effects.

Abstract no.: 31727

MODIFIED ARTHRORISIS FOR MANAGEMENT OF FLEXIBLE PES PLANUS

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Although pes plano valgus is one of the commonest problems which face orthopedic surgeons in our clinical practice; yet its treatment and the kind of surgery if indicated are still a very difficult and debatable decision. The purpose of this study is to report the results of 6 months —3 years follow up of 26 patients who had Modified Arthroriesis operation for correction of severe pes plano valgus. The study was conducted in Saudi German Hospital, Jeddah, KSA

Abstract no.: 31729

MAJOR UPPER LIMB REPLANTATION

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Background; Major upper extremity amputations are those at or proximal to the level of the wrist. It is a rigorous race against time, and a challenging task for surgeons. Patients and methods; Between 2000 and 2007, twelve major upper limb replantations were performed for complete amputations at or above the level of the wrist in eleven males and one female. Incomplete amputations or transmetacarpal amputations were not included in this study. Average age of all patients was 25.6 years (range 7 to 40 years). The average ischemic time was 4.3 hours. Follow up for successful cases averaged 3.5 years (range 10 months to seven years) after surgery. Results; All patients stated that they benefited from replantation. None wished for a secondary amputation irrespective of the functional outcome. Range of finger motion was excellent in three cases, good in four cases and limited in the remaining cases. Pinch and grip strengths averaged 40% of the contralateral hand. Five secondary procedures were required; one free functioning gracilis transfer, one pedicle latissimus transfer, one tendon transfer and two tenolysis. According to Tamai scoring system, the functional outcome was excellent or good in six cases, fair in one, and poor in three cases. Conclusion; The present series demonstrates that major upper limb replantation , when performed in selected patients, yields acceptable functional results.

Abstract no.: 31730

METASTATIC NEUROBLASTOMA MIMICKING SEPTIC ARTHRITIS: THE IMPORTANCE OF MRI EVEN AFTER ARTHROTOMY: A CASE REPORT

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We present the case of a 4-year old boy that presented to the emergency department of a district general hospital with an inability to weight-bear through his right leg. Plain radiographs of the leg were normal and a diagnosing of transient synovitis was made and he was discharged. He represented 2 weeks later, with an increasing inability to bear-weight through the same leg. He was now irritable, hobbling and complaining of generalised pain throughout the hip and mid-thigh region. His inflammatory markers were moderately elevated and during the 24-hour observation period he spiked a temperature. A diagnosis of septic arthritis of the hip was made with a differential of osteomyelitis of the proximal femur. Arthrotomy of the hip revealed a normal joint and a working diagnosis of osteomyelitis was made. The patient improved clinically and was sent to a tertiary centre for MRI under GA. The MRI along with further radiological, haematological and biochemical investigation confirmed Stage 4 Neuroblastoma. Like most paediatric malignancies, presenting symptoms can be varied and non-specific. Neuroblastoma can present as a query irritable hip, septic joint or osteomyelitis. Clinician should have a high index of suspicion when presented with a child with sub-acute musculoskeletal complaints with no history of trauma and unremarkable haematological investigations. Were possible a MRI of the affected region should be considered before or after emergency management, even if it requires the transfer of the patient to a tertiary centre, before accepting a formal diagnosis.

Abstract no.: 31733

**EARLY VERSUS LATE BRACHIAL PLEXUS RECONSTRUCTION IN
BRACHIAL PLEXUS BIRTH PALSY**

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Introduction; Timing of surgical intervention for obstetric brachial plexus palsy is still a degradable issue for most microsurgeons. This study aims at elucidating the results of surgical intervention before and after the age of one year. Materials and methods; From January 1998 to September 2010, 100 patients suffering from brachial plexus birth palsy were treated by surgical reconstruction of brachial plexus. Patients were evaluated for functional recovery by Toronto scale. Follow up period was 1-8 years. Results; Functional results were compared as regards the age, type of reconstruction (neurolysis vs grafting vs neurotization). Conclusion; The earlier the surgical intervention, the better results, however this was not statistically significant until the age of one year.

Abstract no.: 31736

IMPACT OF THE PONSETI METHOD ON PRIMARY SURGERY FOR CLUBFOOT IN A SINGLE PEDIATRIC ORTHOPAEDIC FACILITY

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The Ponseti method has been adopted worldwide by many orthopaedic centers as the standard primary treatment of clubfoot (CF) patients. In our pediatric orthopaedic facility, the Ponseti method was introduced in 2005. We sought to investigate the impact of the systematic implementation of the Ponseti method as standard treatment for CF deformity on primary soft tissue release surgery (postero-medial release – PMR), in our facility. We reviewed the total number of surgeries, total number of admissions of patients with the diagnosis of “clubfoot” and the number of PMRs per year, in a period of 10 years, from 2000 to 2009. Absolute and relative frequencies are reported, we performed a rate adjustment with a probabilistic approach. Two 5-years periods were considered: 2000 to 2004 and 2005 to 2009; before and after the introduction of the Ponseti method. Proportions were analyzed with a binomial test. In the revised period 31,671 operations were performed (14,965 in period 1 and 16,706 in period 2). 3,887 patients were admitted to surgery with the diagnosis of CF (1,448 in period 1 and 2,439 in period 2), of which 1,082 underwent a PMR. In the first period, 870 PMRs were performed (5.8% of all operations), compared to 212 PMRs in the second period (1.27% of all operations), ($p < 0.001$). This represents a 78.17% decrease in the performance of PMRs.

Abstract no.: 31737

THE RELIABILITY OF THE ACETABULAR INDEX

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The radiographic evaluation of Congenital Dysplasia of the Hip (CDH) has been a standard instrument for diagnosis and outcome. The Acetabular Index (AI) is probably the single more used measure performed in X rays of patients with CDH. Albeit diagnostic ultrasound has become the preferred method for evaluation of patients. Its use is recommended for patients under six months of age. Plain X rays are still widely used in the evaluation of CDH. We designed a prospective study with a sample size estimation to appraise the reliability of the AI. A sample size was determined with the available information of a reliability of 0.7, a width of the confidence interval of 0.12, 3 observers and a probability of a type I error of 0.05; yielding to 186 subjects (IAs that were measured from X-ray films from pediatric patients from 2 months to 7 years, 7 months). We included 198 IAs, measured in an independent (blind) manner by three pediatric orthopaedic surgeons with at least 10 years of practice. Reliability resulted in: ICC2 (A,1) = 0.572 (95%CI: 0.467 – 0.662, $p < 0.001$), ICC2 (C,1) = 0.607 (95%CI: 0.532 – 0.676, $p < 0.001$). Albeit widely used for the assessment of X-ray films in patients with CDH, we found that the AI is not a reliable measurement. Subjectivity plays an important role in choosing the correct landmarks to set the lines that will form the angle, specially in operated patients or with severe dysplasia.

Abstract no.: 31738

LENGTHENING SCARF OSTEOTOMY TO TREAT FOURTH TOE BRACHYMETATASIA.

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Brachymetatarsia commonly affects young and adolescent females and may cause psychological embarrassment. A 17-year-old girl presented with left fourth metatarsal shortening causing significant physiological distress. She underwent lengthening scarf osteotomy with two 1 cm bone grafts, held with omnitech® screws. A lengthening z plasty of the extensor tendon and skin were also performed. At 6 weeks the patient was fully weight bearing and at 5 months follow up, the patient was wearing open sandals. A technique of lengthening scarf osteotomy is described for congenital brachymetatarsia. This method allowed one stage lengthening through a single incision with graft incorporation at 6 weeks.

Abstract no.: 31739

COST-EFFECTIVENESS ANALYSIS OF THE PONSETI METHOD COMPARED TO THE POSTERO-MEDIAL RELEASE FOR THE TREATMENT OF CLUBFOOT

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The purpose of this study was to perform a cost-effectiveness analysis of the Ponseti method compared to the Postero Medial Release (PMR) in patients with CF. A probabilistic table of assumptions with clinical outcomes and costs (US Dollars) was created. Based on this information, and with cost information, a decision tree was created. An algorithm with probabilities and costs was then produced. We considered 1000 cases in each branch of the decision tree, originating from an initial decision node. Two types of sensitivity analysis were performed. 1. One way deterministic, presented in a tornado diagram and 2. Probabilistic, with a 1000 sample Monte Carlo simulation. The cost-effectiveness ratio of the Ponseti method was \$1,004.54 per corrected foot, that of the PMR was \$2,515.38. The Incremental Cost-Effectiveness Ratio (ICER) was (\$5,291.39), the ICER per unit was (\$7.87). These results together with sensitivity analysis showed the PMR as a dominated strategy. Conclusion. CF is the most frequent musculoskeletal congenital deformity. The net-benefit graph demonstrates that the Ponseti method is 70% optimal, while the PMR is only 30%. It has been significant to analyze the costs of treatment for a condition with such big an impact. It is advisable to adopt the most cost-effective strategy: the Ponseti method. The Ponseti method is Cost-Effective for the treatment of clubfoot.

Abstract no.: 31743

HOW DOES QUALITY OF LIFE CORRELATES WITH FUNCTION IN PATIENTS WITH ORTHOPAEDIC PATHOLOGY?

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Purpose: To evaluate the correlation between function, measured with the Pediatric and Adolescent Outcomes Instruments (PODCI) and Quality of Life (QoL), measured with the Short Form 36 (SF36), in a population of patients with orthopaedic pathology: Methods. We present a prospective study with a sample of 99 consecutive cases of pediatric and adolescent patients between 10 and 21 years, from 7 different clinics of our pediatric orthopaedic hospital. Two instruments were administered: PODCI and SF36 to patients and their parents. Test for normality were carried out for quantitative variables (Kolmogorov-Smirnov), resulting in non-parametric distributions. Spearman correlation coefficients were calculated, considering function (PODCI) as the independent variable, the coefficient of determination was computed. The correlation coefficients of patients and their parents were compared with a Fisher transformation. A linear regression model was developed to predict SF36 values after PODCI score. A two-tailed p-value of <0.05 was considered significant. Results: Correlation coefficient between PODCI and SF36 was 0.489 (p<0.001, CD=0.223), in their parents of 0.396 (p<0.001, CD=0.219). There was no a significant difference between patients and parents (p=0.396). Linear regression equation: SF36 =0.588(PODCI)+25.599 (p<0.001). Conclusion: There is a moderate correlation between QoL and Function in patients between 10 and 21 years old with orthopaedic pathology. Function of patients (measured by PODCI) explains the 21.9% of the score obtained to measure QoL (SF36). Significance: Quality of Life (measured with SF36 is positively correlated with function (measured with PODCI).

Abstract no.: 31745

DO WE NEED ABDUCTION PILLOW FOR HIP HEMIARTHROPLASTY? A PROSPECTIVE RANDOMIZED STUDY.

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Introduction. The use of abduction pillow in hip replacement has been advocated to minimize risk of postoperative hip dislocation. However, their use has been argued to be any benefit. There is no evidence for their use in hip fracture patient but is in practice due to patient's factors such as confusion and possibly increased range of motion at the hip as there is no baseline arthritis. **Objective.** Our aim is to observe the incidence of hip dislocation after bipolar hip hemiarthroplasty over 1 year postoperative period. We also analyse whether cognitive function and baseline mobility influence the risk of dislocation. **Patients and Methods.** Study duration was over 1 year. All patients had their cognitive function assessed using Abbreviated Mental test score . Their pre-fracture mobility was obtained through history taking. Randomisation was performed through a closed envelope system. Abduction pillow group had abduction pillow for 10 days post operatively. Other post operative protocol were standardized. **Results.** Mean Abbreviated mental test (AMT) score was 6. 32% of patients were independent and 48% were limited to 1 stick prior to fracture. 3 patients had postoperative dislocation. No patients had dislocation while using the pillow. **Summary.** We did not observe any increase in the incidence of dislocation with or without the use of abduction pillow. We also did not observe any increased incidences of hip dislocation in patients with low AMT score or independently mobile prior to fracture.

Abstract no.: 31746

APPREHENSION AND RELOCATION TESTS IN THE EVALUATION OF ANTERIOR SHOULDER INSTABILITY

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Background: There are a number of studies describing various tests for shoulder instability. There are few studies assessing the validity of these tests in diagnosing anterior shoulder instability. Purpose: To assess the validity of the apprehension and relocation tests as predictors of anterior shoulder instability. Study Design: Retrospective review of prospectively collected data. Methods: Forty patients with a clear diagnosis of one of the following shoulder disorders were evaluated by three independent, blinded examiners (traumatic anterior instability (24), rotator cuff tendinosis (7), glenohumeral osteoarthritis (5), or multidirectional instability (4) for apprehension and relocation tests for the diagnosis of shoulder instability. Statistical analysis was performed to calculate sensitivity, specificity, positive predictive value and negative predictive values of individual tests. Analysis is also done to assess the significance of pain and apprehension in validating apprehension n test. Results: Apprehension test had a sensitivity of 73, Specificity, PPV and NPV were 70%, 88 and 46.66% respectively. Relocation test had sensitivity, specificity, PPV and NPV of 66%, 70%, 86.9% and 41.1%. Conclusions and Clinical Relevance: The results of this study suggest that both apprehension and relocation tests have fairly good sensitivity and specificity. They play an integra part in shoulder examination and in the diagnosis of shoulder instability. Keywords: shoulder instability; apprehension tests; relocation test

Abstract no.: 31748

ARE PARENTS GOOD PROXIES FOR THEIR SONS IN THE EVALUATION OF FUNCTION AND QUALITY OF LIFE?

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We sought to assess the value of parents as their son's proxies for four clinical instruments that evaluate function (The Pediatric and Adolescent Outcomes Instruments, PODCI) and Quality of Life (Short Form 36, SF36) and millimetric analog visual scale (mAVS) of overall function; and a dichotomic question (Q) regarding Quality of Life (Do you have a good quality of life despite your orthopaedic condition?). This is a prospective study in which we included a consecutive sample of 99 pediatric and adolescent patients between 10 and 21 years, from 7 different clinics of our hospital. Four instruments were applied independently to patients and their parents: PODCI, SF36, mAVS and a Q. We carried out Spearman's correlations, considering the patient's score as the independent variable. Intraclass Correlation Coefficients for agreement were calculated: ICC2(A,1). Agreement of the Q was analyzed with Kappa, and Phi coefficient. A two-tailed p-value of 0.05 was considered significant. Results: 1. PODCI. Correlation coefficient (CC)=0.566 (p<0.001), determination coefficient (DC)=0.462. ICC2(A,1)=0.671 (p<0.001). 2. SF36. CC=0.328 (p=0.001), DC=0.127. ICC2(A,1)=0.353 (p<0.001). 3. mAVS. CC=0.324 (p=0.001), DC=0.113. ICC2(A,1)=0.326 (p=0.001). 4. Kappa for the Q=-0.038, phi=-0.068 (p=0.501). PODCI demonstrated a moderate agreement between patients and their parents, SF36 and mAVS fair; we observed a poor concordance for the DC. A validated instrument such as the SF36 can overcome bias found in the DC. The value of parents as proxies for their son's function and quality of life, although is not perfect, can be useful when the patient cannot respond by himself.

Abstract no.: 31749

SURGICAL TREATMENT OF SYMPTOMATIC SACRAL PERINEURAL CYST AT S2 AND S3~CASE REPORT~

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Introduction: Most of sacral perineural cysts remain asymptomatic and do not need treatment. Surgery for symptomatic sacral perineural cysts remains an issue of discussion. We present here a case of perineural cysts with persistent radiculopathy with surgical treatment. Case presentation: A 66-year-old man presented with right scrotum discomfort due to S2 and S3 radiculopathy caused by a sacral perineural cyst. Symptoms at initial presentation included lumbosacral pain, hypesthesia below S3 dermatome, genital pain, but not urinary dysfunction. MRI revealed sacral perineural cysts and excluded other pathologies. Micro-communication between the thecal sac and the cysts was shown by delayed contrast filling of the cysts on postmyelographic CT. Sacral laminoplasty at S2 and S3 in conjunction with cyst fenestration was performed. Microsurgical fenestration achieved free CSF communication between the thecal sac and cysts. No surgical complications were observed. The paresthesia of scrotum improved after surgery. Result: Sacral laminoplasty and microscopic cystic fenestration is a feasible approach in the operative treatment of this difficult, and often controversial, spinal pathology.

Abstract no.: 31750

PERCUTANEOUS K-WIRE BUTTRESS TECHNIQUE FOR DISPLACED RADIAL NECK FRACTURE

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Introduction: Radial neck fractures are uncommon injuries in adults and more often found in children where they account for 5-8.5% of elbow injuries. It is generally agreed that an angulation of less than 30 degrees is acceptable, however anything greater than this should be improved in an attempt to restore normal anatomy and maximize the range of movement. Methods and results: We describe our management of a radial neck fracture in a young lady, which was significantly angulated resulting in a restriction of movements. Attempts at a closed reduction failed and hence we proceeded with percutaneous reduction and buttressing with a K-wire. Post-operatively the patient regained a full range of movements with normal elbow function. Conclusion: We outline our surgical technique, which has not been previously described. We suggest that it is a safe and easy option in cases of failed closed reduction and should be considered prior to proceeding with an open reduction.

Abstract no.: 31751

SALTER AND PEMBERTON OSTEOTOMIES: DIFFERENCE IN PERIOPERATIVE VARIABLES AND REVISION RATE

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The purpose of our study was to compare some perioperative variables and revision rate in patients with congenital dysplasia of the hip (CDH), treated with Salter or Pemberton osteotomies. We analyzed prospectively a cohort of 400 patients with CDH, treated with Salter or Pemberton osteotomies (plus open reduction), (mean follow-up 61 months). We explored the differences between the two groups in terms of surgical time, intraoperative blood-loss, length-of-stay (LOS) and revision rate of the pelvic osteotomy. Patients were stratified according to diaphysectomy during the operation. Due to non-parametric distributions, results are reported in median (min – max). A Mann's Whitney-U test for independent samples was performed. Odds ratios were used to measure the strength of association between categorical variables, hypotheses were tested with a Chi-square. A two-sided p-value of <0.05 was considered significant. There was a difference of 15 minutes (14.3%) between surgical time: Salter osteotomies required 105min (50 – 230) compared to 120min (55–285) of Pemberton procedures (p=0.012). We found a difference of 30mL (60%) in blood-loss: Salter 50mL (8–350), Pemberton 80mL (10–370) (p=<0.001). LOS was similar in both groups, 2 days (1–11) for Salter and 2 days (2–21) for Pemberton (p=0.874). There was no difference between the rate of revision in either group, OR=1.51 (p=0.214, IC95%:0.59–10.63). Pemberton osteotomy is more challenging to perform than a Salter osteotomy. We found differences between these two procedures concerning surgical time: Pemberton more lengthy. Blood-loss was higher in Pemberton. LOS and revision rate was similar in both groups.

Abstract no.: 31752

**CONGENITAL ABSENCE OF SUPERFICIAL POSTERIOR
COMPARTMENT CALF MUSCLES.**

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Although various congenital abnormalities have been described, congenital absence of calf musculature is extremely rare with only one report on the complete absence of calf musculature (ref Flynn). We are the first to describe a case of congenital absence of the muscles of the superficial posterior compartment of the calf presenting in infancy. Although we do not expect it to cause any functional problems for the child, we suggest that these cases should be monitored as they develop and parents can be reassured that no immediate treatment is required.

Abstract no.: 31754

A UNIQUE CASE OF A POST-TRAUMATIC ACCESSORY NAIL.

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I report a case of a post-traumatic accessory nail. This is the first documented case of a traumatic accessory nail arising from the eponychial fold. The abnormal pattern of nail growth following this type of injury should be borne in mind. Patients should be advised and warned accordingly of the possible symptomatic and cosmetic implications of such seemingly trivial injuries.

Abstract no.: 31755

OPEN REDUCTION WITH INTERNAL FIXATION OF UNSTABLE INJURIES OF PELVIC RING

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In the structure of pelvic ring injury the relative weight of unstable injuries of pelvis reaches 50,25%. The purpose is to make a careful study of the results of patient's surgical treatment with the unstable pelvic injuries. 24 patients with unstable pelvic ring injuries were surgically treated from January 2007 to December 2011. There were 17 men and 7 women. The age of patients ranged from 17 to 52 years. All patients received their damage in the result of high-energy trauma. In this paper, we used the AO-Tile classification. The injuries of the type B were in 18 cases and type C were in 6 cases. Isolated injuries of pelvis were observed in 5 (20.8%) cases, complex ones – in 19 (79.2%) cases. The estimation of the treatment's outcomes according to S.A.Majeed were done in 12 months after surgery. The long-term results of the treatment were studied in 24 cases. Excellent results were obtained in 21 patients, good in 3 ones. 2 (8.3%) patients had the purulence of postoperative wound. In one case the abscess was subsided without removal of metal, in another case the metalwork was removed in 3 months. The open reduction with internal fixation creates the optimal conditions for recovery of pelvis function. The long-term results of the osteosynthesis of unstable injuries of pelvic ring show the full restoration of skeleton function of the pelvic ring.

Abstract no.: 31756

SURGICAL CORRECTION FOR SUPINATION LOSS FOLLOWING MALUNITED RADIAL FRACTURES

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Forearm rotation is created by articulation between the ulna and radius, and their accurate alignment is essential for normal motion. We evaluated fourteen patients who had restricted supination as a major impairment associated with a malunited radial fracture. Fourteen patients who had restricted supination as a major impairment associated with a malunited radius fracture, involving the distal radius in 10 patients and the radial shaft in 4 patients. All patients underwent an opening wedge corrective osteotomy, bone grafting, and volar plate fixation. Clinical results were assessed based on range of motion, visual analogue scale for pain, grip power, and a Modified Mayo Wrist Score. Radiological evaluation included measurements of angular deformity on the sagittal plane and ulnar variance. The mean supination increased from 24° preoperatively to 71° postoperatively. The dorsiflexion range, grip power, and pain score improved significantly after the operation. According to the Modified Mayo Wrist Scoring System, the mean score improved from 58.6 points to 83.9 points, with the results rated as excellent in four patients, good in seven, and fair in three. Radiological measurements showed that the degree of volarly flexed angle decreased from a mean of 9.0° to -2.5° after the corrective osteotomy. This study demonstrated that a malunited, volarly angulated distal radius or radial shaft fractures, even it appears mild, can induce functional impairment due to limited range of supination. Loss of supination associated with a malunited radius can be restored successfully by an corrective osteotomy.

Abstract no.: 31757

SURGICAL TREATMENT OF IDIOPATHIC SCOLIOSIS WITH ENDOCORRECTORS IN CHILDREN AND TEENAGERS

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Introduction: in the scientific literature is an ongoing dispute about terms, indications and methods of surgical treatment of scoliotic deformities. A matter of disputes are indications for using the plate and rod endocorrectors. Objective: to define indications for surgical treatment of progressive form of scoliosis. Methods: the research is based on surgical treatment of 350 patients with idiopathic scoliosis. Analyzed material is data of results of surgical correction of scoliosis in children and teenagers aged 10-18 years using two-plate endocorrector Medilar (Russia) in 130 patients, and in 220 patients correction of scoliotic spinal deformities was done using the rod endocorrectors such as Moss Miami (DePuy) , ChM (Poland), Medtronic. Results: it is possible to use two-plate endocorrector Medilar and rod endocorrectors with postoperative correction of scoliosis 67,2-64,8% in scoliosis of grade 3. In case of scoliosis of grade 4 and rude scoliotic deformities (more than 90°) it is reasonable to use two-rod distraction endocorrector by method of McCarthy. The outcome of postoperative correction by two-plate endocorrector reduces from scoliosis of 60° to 58,5-43,1%. Conclusion: two-plate endocorrector Medilar gives an opportunity to handle an operation in scoliosis low than 60° in children and adolescents without additional correction because it has its own constructive feature, which is free movement of plates in the support block setting, and not restraining the spine growth after correction of scoliosis. Two-rod endocorrector system by method of McCarthy is the most reliable option of distraction system of rod endocorrector in patients with incomplete spinal growth in scoliosis more than 60°.

Abstract no.: 31758

**RECOMBINANT HUMAN BONE MORPHOGENETIC PROTEIN-2
CONJUGATED PHOTO-RESPONSIVE HYDROGEL PROMOTED
OSTEOGENESIS OF RABBIT'S LIGAMENTUM FLAVUM CELLS IN A
NUDE MICE MODEL**

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Introduction: We use nude mice mode to demonstrate osteogenesis of rabbit's ligamentum flavum (rLF) cells with a recombinant human bone morphogenetic protein (rhBMP-2) tether photo-responsive hydrogel. Method: The rabbit's ligamentum flavum (rLF) tissue was harvested from New Zealand White Rabbit. Two 1×10⁶ cells/construct groups were prepared, included rLF cells encapsulated in no BMP-2 (Control group) and in PEG-tethered 250 ng/ml rhBMP-2 (PEG-BMP2 group) by photopolymerization with 365 nm UV light. The constructs incubated in a bioreactor under 15 rpm for 14 days before implantation. Two same constructs were implanted into a nude mouse. After for 12 weeks, the nude mice were sacrificed. The bone formation of constructs was determined by x-ray radiation. Alkaline phosphatase (ALP) activity, DNA content and histology assay of constructs will be evaluated for the indication of osteogenesis. Results: The completely constructs of PEG-BMP2 with increased in opacity was observed by x-ray, but smaller size of control group revealed that significant bone formation in PEG-BMP2 group. The proliferation of rLF cells in PEG-BMP2 was lower than in the control group. ALP activity of rLF cells in PEG-BMP2 group increased was higher than those in control group. It presented that rLF cells expressed higher osteogenesis in nude mice but not proliferation. Alizarin red and von Kossa staining revealed higher calcification in PEG-BMP2 group. Therefore, the rabbit's ligamentum flavum cells in PEG-BMP2 group revealed good osteogenesis. Rabbit could be a good model for bone regeneration of spinal fusion by rLF cells combined with BMP-2 conjugated photo-responsive hydrogel.

Abstract no.: 31761

POSTOPERATIVE COMPLICATIONS IN TREATMENT OF SCOLIOSIS WITH ENDOCORRECTORS

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Introduction. Complications after operative correction of scoliosis in children and adolescents reduce the results of treatment. The analysis of postoperative complications has been done in surgical treatment of scoliosis with endocorrectors. Methods. The work is based on the results of examination and surgical treatment of 354 patients with idiopathic scoliosis between 10 to 18 years. The analyzed material is data of results of surgical correction of scoliosis with two-plate endocorrectors Medilar (Russia) in 134 patients and correction of scoliotic spinal deformities with rod endocorrectors in 220 patients: Moss-Miami (DePuy) - 40 patients, ShM (Poland) - 90 patients, Medtronic - 90 patients. Results. 8 (5,9%) patients managed by two-plate endocorrectors developed fistulas of postoperative wounds. 10 (7,5%) patients managed by plate endocorrectors developed inconsistency of the upper and lower bearing blocks. 12 (5,5%) patients managed by rod endocorrector developed migration of hooks. Fracture of the rods occurred in 11 (35,5%) patients managed by distraction option of rod endocorrectors in terms of 1-1,5 years after correction of scoliosis with connecting rods on one side of the concave arc of scoliosis. Neurological complications occurred in 3 (2,2%) patients managed by plate endocorrector and in 5 (2,3%) patients managed by rod endocorrector. Conclusion. The combination of hook grabs to arch of vertebra and screws, fixed to the body of the vertebra, forms strong support block. Fractures of the rods were not observed in the distraction system of rod endocorrector with the use of two-rod distraction system by method of McCarthy.

Abstract no.: 31762

THE FATE OF BONE MARROW MESENCHYMAL STEM CELLS FOLLOWING AUTOLOGOUS TRANSPLANTATION INTO A RABBIT OSTEONECROSIS MODEL

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The purpose of this study was to track mesenchymal stem cells (MSCs) labeled with internalizing quantum dots (i-QDs), following autologous transplantation into a rabbit osteonecrosis model. QDs were conjugated to a unique internalizing antibody raised against mortalin, a stress chaperone of the heat shock protein 70 family, which is upregulated and expressed on the surface of dividing cells. For labeling, i-QDs were added to culture medium followed by incubation for 24 h. The osteonecrosis model was established with an adapted method by Ogawa et al. The bilateral fourth tarsal bones of rabbits were excised, necrotized by freezing in liquid nitrogen followed by thawing, and then holes were drilled into three cortical surface facets. Necrotized bones were subcutaneously implanted into bilateral pouches on the backs of rabbits, and 3–5×10⁵ i-QD-labeled MSCs were slowly injected into one of the three drilled holes. At 12 weeks after transplantation, reparative tissues were evaluated macroscopically, histologically and fluoroscopically. Necrotic bones did not maintain their original shape and were red and soft with collapsed morphology. Histology showed that osteoblastic surface areas, which were stained for alkaline phosphatase (ALP), were marginal not only at the drilled hole, but also at a deeper level of the bone. Fluoroscopic evaluation showed that some i-QD-labeled MSCs were co-localized with ALP. Additionally, in these areas, calcein staining showed mineralization. Therefore, these results suggest that some i-QD-labeled MSCs were directly differentiated into osteoblasts, and did not inhibit and indeed contributed to bone regeneration.

Abstract no.: 31765

ZONA CONOIDEA OF THE ELBOW: ANOTHER ARTICULATION BETWEEN THE RADIAL HEAD AND LATERAL TROCHLEAR OF THE ELBOW

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The zona conoidea is the surface area of the lateral trochlear ridge in comparative anatomy study. The purpose of this study is to reintroduce this term "zona conoidea" to the discussion of the human elbow and to find its clinical implication related to osteoarthritis of the elbow. The upper extremities of 12 cadavers were prepared. With the forearm in the neutral, at pronation and supination, the distance between the bevel of the radial head and zona conoidea was inspected. Twelve healthy volunteers had CT scan. The distance between the zona conoidea and the bevelled rim of the radial head was measured at neutral, pronation and supination. In the anatomic specimens, early osteoarthritic changes were identified in the posteromedial bevelled rim of the radial head, and the corresponding zona conoidea at supination. Measurement in the CT study showed at full supination, the distance between the radial head bevel and the zona conoidea was minimum. This study suggests that the significant contact between the radial head bevel and the zona conoidea in supination is associated with the initiation of osteoarthritis of the elbow in this area

Abstract no.: 31767

ONE-POLE ENDOPROSTHESIS IN ELDERLY PATIENTS WITH FEMORAL NECK FRACTURES

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Objective: To report results after one-pole endoprosthesis in elderly patients with femoral neck fractures. Materials and methods: 38 patients were treated with a mean age of 78 years (range 60-90 years) at Department of Hip Replacement of the RITO of the RK from 2010 to 2011. We have carried out 40 one-pole endoprosthesis. 2 patients underwent operation on both sides. In 19 cases we used hemyprosthesis (Yaroslavl). Bipolar prosthesis was used in 7 cases. In 14 cases we used modular one-pole prosthesis "MATI". All interventions were carried out through external collateral approach. Results and discussion: The instability of the prosthesis stem occurred in 2 cases, therefore in both cases the surgery was performed after a long time after injury. And these patients had developments of osteoporosis. The results were estimated as following: 50% excellent, 35% good, 10% satisfactory , 5% unsatisfactory. Conclusions: Use of one-pole endoprosthesis enables to activate this age group of patients at 1-2 days thereby preventing serious complications (pulmonary embolism, pneumonia, pressure sores).

Abstract no.: 31768

DEVELOPMENT OF A SIMPLE PREDICTION METHOD FOR UPPER EXTREMITY FUNCTIONAL RECOVERY IN PATIENTS WITH CERVICAL SPINAL CORD INJURY

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Prediction of future disability is mandatory to provide effective rehabilitation. But prediction for spinal cord injury (SCI) is quite problematic. The purpose of this study was to identify important predictive factors regarding SCI and to develop a simple prediction model on recovery of upper extremity function among patients with cervical SCI. Study participants were consecutive acute cervical SCI patients, admitted to our hospital from January 2004 to December 2010. We enrolled following predictive factors and outcome indicator from our medical records retrospectively. The selected prognostic factors were patient's age and American Spinal Cord Injury Association motor scores of upper extremity. As the outcome indicator, we evaluated following representative upper extremity related activities, namely eating, grooming, dressing upper body, and toileting. The patients that attained functional independence in all of these upper extremity related activities are classified as good recovery group. To compare impact of these predictive factors, we measured area under the receiver operating characteristic (ROC) curve. The participants were 81 patients, their mean age was 59.7. Of these, 33 patients had good functional recovery at discharge. Motor score of T1 had the highest impact on the functional outcome, yielding the area under the ROC curve of 0.891. The best cutoff point derived from the ROC curve was motor score 2. The sensitivity and the specificity were 0.939 and 0.771. This result suggests that the presence of voluntary movement of fingers in acute phase is the most important to predict recovery of upper extremity function in patients with SCI.

Abstract no.: 31770

REVIEW OF SPONDYLODISCITIS PRESENTED TO A TERTIARY UNIT IN THE WEST MIDLANDS

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Introduction: Spondylodiscitis is a combination of discitis and spondylitis. It is relatively uncommon in developed nations. However, this disease can lead to severe disability and even death if left untreated. Antibiotics are the mainstay of treatment but cases with neurological compromise need surgical decompression and stabilisation. Our unit conducted a review as it is noted spondylodiscitis is becoming more common. Patients and Methods: A retrospective study of spondylodiscitis presented to our unit over the last three years is conducted. Medical records and charts are reviewed, with a focus on disease presentation, risk factors, causative organisms and when surgery becomes necessary. Results: 61 cases are identified, average age 62. Lumbar vertebrae is the most affected region (36%), 15% showed multi-level involvement. Back pain presented in all cases. 75% have at least 1 risk factor. Micro-organisms isolated were Staphylococcus aureus (24.6%), coagulase negative staphylococci (9.8%), methicillin resistant S. Aureus (6.6%), Escherichia coli (6.6%) and mycobacterium tuberculosis (3.3%) . No organism was found in 16.4%. 31% of cases required surgical intervention due to neurological deficit or vertebral collapse. 69% were managed conservatively The average inpatient stay was 50 days. CRP decreased as symptoms improve. There is no mortality in this series. Conclusions: We noted a higher than usual presentation of spondylodiscitis in vulnerable patients in our region, often presented late. Once established, patients often require long hospital stay to control disease and regain mobility, even when outpatient anti-biotic therapy is available. A multidisciplinary team approach would be beneficial for the recovery process.

Abstract no.: 31771

DISTAL FEMORAL HYPOPLASIA VARIES WITH ALIGNMENT IN LATERAL COMPARTMENT OSTEOARTHRITIS(OA) OF KNEES

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Introduction: This study investigates whether. **Methods:** The axial alignments were evaluated by the mechanical axis angle(MAA) which was formed by femoral mechanical axis and by tibial mechanical axis in radiographs of the entire lower limb. The difference between transepicondylar axis and posterior condylar line(TE-PC) in MRI axial image was used for measurement of lateral femoral hypoplasia. Among 137 knees with lateral OA, 55 knees with varus alignment (group A) were compared with 82 knees with valgus alignment(group B). Valgus knees were divided into subgroups: 44 knees with MAA 1°-5°(group B1); 20 knees with 6°-10°(group B2); 18 knees with >10°(group B3). TE-PC was compared by groups. **Results:** The mean TE-PC of group A was 8.19°±2.11; group B1, 7.82°±1.87; group B2, 8.24°±1.68; group B3, 8.67°±2.35; overall group B was 8.11°±1.95. The statistical difference between group A and B was not shown (p=0.829) and statistical significance between TE-PC and MAA by groups, also(group A,P=0.617; group B1,P=0.817; group B2,P=0.417; group B3,P=0.721, Pearson's correlation coefficient). The abnormal hypoplasia which had TE-PC more than 11° was shown in 22.2% of group B3, but in 7.2% of group A, 6.8% of group B1 and 5% of group B2. **Conclusion:** The overall TE-PC presenting distal femoral hypoplasia in lateral OA was not affected by alignment, but in subgroup analysis, the abnormal hypoplasia was often shown in valgus knees with MAA>10°. In these cases, more attention should be paid on femoral component rotation during total knee arthroplasty.

Abstract no.: 31775

RELATIONSHIP BETWEEN THE FEMORAL COMPONENT SIZING AND THE POSTOPERATIVE KNEE FLEXION IN POSTERIOR STABILIZED TOTAL KNEE ARTHROPLASTY.

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Introduction : In case of using anterior referencing femoral sizing guide in total knee arthroplasty (TKA), the volume of bone resection from the posterior femoral condyle depends on the size of components. We hypothesized that improved postoperative knee flexion would result from the larger flexion gap. We examined whether the use of the smaller components would contribute to the improved knee flexion. **Patients and Methods :** We performed primary TKAs in 108 knees using Nexgen, LPS-flex. They were divided into two groups: 72 knees using the smaller femoral components than anteroposterior dimensions of the distal femora (Group I), and 36 knees using the larger components (Group II). Patients were then evaluated using the Knee Society Clinical Score and the epicondylar-view radiography postoperatively. **Results :** The Knee Society Clinical Score and the knee flexion angles were 94.1 ± 8.8 , $127.4 \pm 14.9^\circ$ in Group I and 91.1 ± 13.5 , $127.4 \pm 14.6^\circ$ in Group II respectively. Flexion gap and varus-valgus angle on the epicondylar-view were 16.0 ± 3.2 mm, $1.7 \pm 3.4^\circ$ in Group I and 14.3 ± 1.6 mm, $0.7 \pm 2.1^\circ$ in Group II, respectively. **Discussion :** By sacrificing the posterior cruciate ligament selectively opens the flexion gap more than the extension gap. Also the use of the smaller femoral components in PS TKA moreover opens flexion gap. In this study, the use of the smaller components did not contribute to improved knee flexion. On the contrary, it was suspected to have caused the flexion instabilities instead. Such instability could be a potential risk for post-cum mechanism failures. Therefore the smaller femoral components should not be used in PS-TKAs.

Abstract no.: 31777

SURGICAL OPTIONS IN PERI-PROSTHETIC FRACTURES

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Purpose: The peri-prosthetic fractures are a not often encountered type of pathology, where the main problem is the indication for surgery. The most important thing is the choice of the best therapeutic option in order to get a solid fixation of the fracture and in the end to allow an early patient's mobilisation. **Materials and method:** At the Orthopedics and Traumatology Department from Bucharest Emergency University Hospital, between 2007 and 2011, 21 cases of peri-prosthetic fractures have been treated. For all cases was used the International Vancouver clasification. In 16 cases was preferred the osteosynthesis saving the femoral stem as its stability was not affected. In 5 cases has been performed the stem revision as this was unstable due to the fracture. In 2 cases was revised the acetabular component also, as the PE insert was presenting severe wear. The patients were aged from 58 to 84 years old and sex ratio M/F = 7/14. The osteosynthesis was performed using Dall-Miles plates, conventional plates, with braided cables or wire cerclage. In 5 cases were used long stems, uncemented with or without distal locking. **Results:** Postoperatively the bone healing was efficient regarding the stability. The patients' mobilization was early in most of the cases, except the very old patients with associated comorbidities and limited biological resources. **Conclusions:** An appropriate surgical indication, adapted on each type of peri implant fracture, leads to a good result, with early mobilization and to the best consolidation of the fracture.

Abstract no.: 31778

**MODIFIED POSTERIOR APPROACH TO BIPOLAR
HEMIARTHROPLASTY : THE PIRIFORMIS AND OBTURATOR
INTERNUS WERE PRESERVED**

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Introduction: We modified the posterior approach by preserving a portion of capsule and external rotator muscles. Other capsule and external rotator were detached ,and they were reattached at the greater trochanter with the use of No. 5 Ethibond suture after the implantation of femoral components. The purpose of this study is to evaluate the early results of this surgical approach. Materials and methods : Between September 2009 and November 2011, we performed consecutive 172 bipolar hemiarthroplasties for femoral neck fractures. Among them, 159(160hips) patients met the criteria that minimum followup term should be more than 2 months. Patients were divided into two groups depending on which surgical approach was used : (1) The piriformis, superior gemelli, and obturator internus were preserved. And the inferior gemelli , obturator externus were detached, and they were reattached (N=63).; (2) The piriformis were preserved. Other external rotator were detached ,and they were reattached(N=97). Clinical data that were obtained for the two groups of patients included age, gender, height, weight, operative time , blood loss , implant size , malpositioning of the femoral stem, and complications. Malpositioning of the femoral stem was considered to be present when the longitudinal axis of the stem was tilted in more than 3° relative to the diaphyseal axis of the femur. Results: There were no difference in clinical data between two groups. Conclusion: We found no differences between them. However, the rate of hip dislocation after 2 months was improved by the obturator internus preservation group(1.6vs3.1%).

Abstract no.: 31781

SURGICAL PROCEDURE “IN SITU PREPARATION

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Background: When soft-tissue sarcoma is excised, the surgical margin according to the histological grading is important. When soft-tissue sarcomas occur near neurovascular structures, only preoperative images cannot always reveal the accurate relationship between the tumor and these structures. Previously, the surgical method, namely “In Situ Preparation”, was introduced in 2002. This method enables the preparation of neurovascular bundles and the intraoperative evaluation of the surgical margin without contamination by tumor cells and then additional procedures, including alcohol soaking, and distilled water soaking of the preserved neurovascular bundle can also be performed to preserve the continuity of vessels. Method: Between January 2006 and February 2012, ISP was applied to 9 patients (5 women and 4 men) with soft tissue sarcomas of limbs in close proximity to major neurovascular structures.. The average age is 60.5 years old (from 35 to 78 years old) and average follow up period is 319 days. The pathological diagnosis confirmed myxoid liposarcoma in 2, pleomorphic liposarcoma in 5, myxoinflammatory fibroblastic sarcoma in 1, and phosphaturic mesenchymal tumor in 1. The tumors occurred in thigh in 5, lower extremities in 1, upper extremities in 1, and forearms in 2. Result: Complete local controls were achieved in all patients at last follow-up. Oncological outcomes were DOD in 5 patients, and CDF in 4. No complications, including nerve palsy, embolism, and infection were observed, Conclusion: ISP enabled intraoperative evaluation of the surgical margin without contamination, and preserved limb functions without unnecessary sacrifice.

Abstract no.: 31782

INTRODUCTION OF TOTAL KNEE REPLACEMENT IN A DEVELOPING NATION, KENYA THE FIRST 10 YEARS

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Total Knee replacement as a routine procedure was introduced in Kenya in 1998. At the 2 hospitals Kenyatta National Hospital and Kikuyu mission hospital at which this was begun, the arthroplasties were followed prospectively from the start. This study concerns the 10-year results from a country with no previous experience in Knee replacement. The outcome as concerns revision in the two hospitals is compared. **METHODS:**We compared the revision rate for the first 117 primary knees Arthroplasties inserted at Kenyatta National Hospital and that for the first 125 Primary Knee arthroplasties inserted at Kikuyu Mission Hospital. Only patients with osteoarthritis were included, and the endpoint was Revision. **RESULTS:**We found that patients operated at the two hospitals had a similar risk of revision. Loss to follow up and lack of National registry were a limitation to the study making it difficult to compare the findings with elsewhere. **Conclusion.**The low and comparable revision rates of Total knee replacements justify the widespread introduction of joint replacement in the developing world. We believe that the findings will stimulate surgeons in Kenya and elsewhere to develop and keep registries to assist in analyzing their successes and failures for the purpose of improving their results.

Abstract no.: 31783

UNCEMENTED TOTAL HIP ARTHROPLASTY AFTER ACETABULAR FRACTURE

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Introduction: In this study we assessed the results of uncemented total hip arthroplasty in patients with posttraumatic arthritis after acetabular fractures. Material and method: Between 2000-2010, we performed 52 cementless total hip arthroplasties (Secur-Fit/Omnifit, Stryker) for cases of posttraumatic osteoarthritis after acetabular fracture. Acetabular fractures were treated conservatively in 18 cases and with open reduction and internal fixation in 34 cases. There was a mean of 47 months between the acetabular fracture and total arthroplasty (16-68 months), mean age of the patients at the time of arthroplasty being 48 years (29-65), with an average follow-up of 7.5 years (3.2-9 years). Results: 5 patients were lost to follow-up. We had 4 cases (7%) of aseptic loosening of the cup, needing revision of the acetabular component – the rest of the cases were stable at the last follow-up. Mean Harris Hip Score improved from 47 points preoperatively to 96 points at the last follow-up, with good or excellent result in 46 patients (88.4%). There was no difference between the open-reduction and closed-treatment groups, and there were no dislocations or deep infections. Due to scarring from a previous procedure, retained hardware, heterotopic bone, residual osseous deformity and deficiency, these procedures were more complex than routine total hip arthroplasty, thus both operative time and blood loss were greater. Conclusions: Total hip arthroplasty in patients with posttraumatic arthritis is a complex operation that requires careful clinical and radiologic planning, but can offer good and excellent results.

Abstract no.: 31792

RELATIONSHIP BETWEEN BONE MINERAL DENSITY, SOMATIC BODY FAT AND MUSCLE RATIOS OF THE UPPER LIMB IN SHOULDER PAIN PATIENTS

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As for omalgia, muscle force decreases in the affected side of the upper limb and a change occurs in body composition distribution is suspected in the upper limb. Body composition distribution can be measured using dual energy X-ray absorptiometry (DEXA). We measured BMD, percentages of fat and muscle mass of upper limb to investigate the relationship with shoulder pain. 102 patients with unilateral shoulder pain over 3 months (62.5 years) were shoulder pain group (painful group). The control group consisted of 237 patients without shoulder pain (59.8 years). These factors were measured using QDR-4500. Mean values of bone mineral density were 0.57 g/cm² on the affected side and 0.59 g/cm² on the non-affected side in the painful group. Mean in the control group were 0.57 g/cm² on the left side and 0.58 g/cm² on the right side. There was no significant difference between the shoulder with and without pain, affected and non-affected side. Mean percentages of upper limb fat were 40.1 % on the affected side and 35.7 % on the non-affected side in the painful group. In the control group, mean were 39.2 % on the left side and 37.5 % on the right side. Mean of muscle mass of upper limb were 1548.5 gram on the affected side and 1723.5 gram on the non-affected side in the painful group. There was significant difference between affected and non-affected side. Muscle mass of upper limb was significant difference between affected and non-affected side.

Abstract no.: 31793

CORRECTING OSTEOTOMY AS A TREATMENT METHOD OF KNEE JOINT OSTEOARTHRITIS

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Knee joint osteoarthritis is in up to 87,3 % cases followed by lower limb axis varus deformity, which can be treated with valgus osteotomy of tibia and femur. High valgus osteotomy of tibia is a method of choice in medial knee joint osteoarthritis at early stage. In Department of Joint Pathology we performed 124 correction osteotomies in patients with gonarthrosis since 2003. In all cases we performed high tibial valgus osteotomy. In 69 cases osteotomy was complemented by knee joint arthrotomy and debridement. Over the course of past century, osteotomy technique was developed and perfected. Level and type of osteotomy, indications and contraindications were determined for most diseases. Unsolved problem is osteosynthesis technique to be chosen after osteotomy. Main requirements are simplicity, availability, minimal tissue injury and rigid fixation. One of the difficulties of osteotomy is that it is complicated to establish exact degree range for deformity correction, which is why during surgery a degree misjudgement can be made. In 42 cases we used a self-engineered plate with angular screw stability and a spreader in osteotomy zone that selected and maintained correction angle. Analysis of immediate and long-term results has proved the advantage of use of our plates with angular stability. Advantages include rigid fixation, absence of such complications as plate migration and fragment redisplacement, which allows a surgeon to improve considerably results of treatment of knee joint osteoarthritis overall. As a result, we recommend and encourage a wide use of our plate in operative treatment of knee joint osteoarthritis.

Abstract no.: 31798

REHABILITATION OF PATIENTS WITH DISLOCATIONS AND FRACTURE-DISLOCATIONS OF ACROMIAL EXTREMITY OF CLAVICLE

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Introduction: Rehabilitation of patients with dislocations and fracture-dislocations of acromial extremity of the clavicle is one of the most pressing problems in modern traumatology and orthopedy. Objective: To improve the results of surgical treatment of patients with dislocations and fracture-dislocations of acromial extremity of clavicle. Materials and Methods: We have observed 150 patients at departments of Research Institute of TO in Astana, Kazakhstan from 2002 to 2011. There were 127 men and 23 women. Complete dislocation of acromial end of clavicle was noted in 110 patients, partial dislocation in 7, fracture-dislocation in 33. Home accident traumas were noted in 44.0% of cases, street trauma in 34.4%. 18.0% of patients sustained injury in road accidents, and 3.6% of patients had the work-related injuries. New device for external fixation of clavicle have been used in 65 patients of main group. TSIHA apparatus was used in 37 patients of 85 patients of control group, nail and wire in 48 patients. Results: Long-term results of surgical treatment (terms 1-8 years) were assessed in 136 patients. Good and satisfactory results of surgical treatment were observed in 51 patients of main group. Unsatisfactory results were observed in 5 patients. The outcome of surgical treatment rated as "good" and "satisfactory" in 62 patients and "unsatisfactory" in 18 patients of control group. Conclusions: Thus, the best results were obtained using the new device developed in the clinic according to our comparative analysis of surgical treatment of dislocations and fracture-dislocations of acromial extremity of clavicle.

Abstract no.: 31799

PROXIMAL HAMSTRING AVULSION IN ATHLETES: A COMPARISON OF CLINICAL OUTCOMES FOLLOWING OPERATIVE INTERVENTION IN ATHLETES PRESENTING WITHIN 6 WEEKS, 6 MONTHS AND MORE THAN 6 MONTHS FOLLOW INJURY.

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Avulsion of the hamstring origin is well documented in water-skiing, rugby, sprinting and hurdling and is increasingly seen in football, dancing, judo and bull-riding. The purpose of the study was to compare the outcomes of surgical intervention within 6 weeks of injury, 6 months post-injury and more than 6 months post-injury. This was a prospective review of case series from a tertiary referral centre. 112 athletes presenting with complete proximal hamstring tendon tears were confirmed on MRI. 63 were high-level athletes. All patients were surgically explored and repair of the torn tendons undertaken with the aim of returning to pre-injury activities and sport. All patients underwent an individualised rehabilitation protocol. All patients were followed up until return to sport. 108 patients returned to sport at an average of 16 weeks (range 12-32). Return to full sport was on average 6 weeks faster for early versus late repairs and was 10 weeks faster than for late reconstructions. There were 2 partial re-ruptures in those with delayed presentations - both those athletes retired from competitive sport but were recreationally active. 2 others recovered well but did not want to go back to their previous activity level. 12 athletes were delayed by sciatic nerve symptoms (2 early, 5 late, 5 very late) that required injection therapy and in two cases further exploration and nerve release/mobilisation. Surgical intervention is associated with good clinical outcomes and return to sport however delay in diagnosis can lead to prolonged morbidity and the increased likelihood of complications.

Abstract no.: 31800

CHANGES IN ELECTRICAL IMPEDANCE BY OSTEOCLAST MORPHOLOGY

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Introduction: Osteoporosis and rheumatoid arthritis (RA) are caused by regulation of osteoclast activity, which is essential in the treatment of bone disease. Osteoclasts are known to be multinucleate giant cells differentiated from monocyte macrophage lineage assembling together. Recently real-time cell analysis system (RTCA) was developed for cell morphology and cell adhesion in vitro. However, there were few reports in real-time changing in osteoclast morphology. In this study, we captured the changing in osteoclast morphology with RTCA at real-time. Material and Method: We have taken bone marrow cell from femur and tibia bone of 5-8 weeks old ddy male mice. RTCA was that the more cells area were attached on the electrodes in E-plate, the larger the increased in electrode impedance. Measuring impedance can visualize attitude of the cell (which is increasing or decreasing of the cell number and morphologic change), quantitatively. We cultured bone marrow cells (1.0 or 1.5 x 10⁵ cells/well) in E-plate include the medium which had 15% serum, 25ng/ml MCSF and 100ng/ml RANKL. Media were changed on every 2 days until 8 days. Result and Conclusion: Cell Index (CI) increased in around 3 days and became maximum values in 6 days. We confirmed matured osteoclast morphology in same condition by light microscope. This study suggested that the CI and the cell fusion were closed association. We established the method of osteoclast differentiation by RTCA in real-time. Therefore RTCA will be useful for osteoclast studies, such as investigating of target drugs for Osteoporosis and RA.

Abstract no.: 31802

INDEPENDENT EFFECT OF SURGICAL DELAY ON LONG-TERM MORTALITY IN OLDER PATIENTS WITH HIP FRACTURE: SYSTEMATIC REVIEW AND META-ANALYSIS OF LONGITUDINAL STUDIES

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Although an increased risk for death after hip fracture is well established, data regarding the association between surgical delay and long-term mortality are unclear. This might reflect intrinsic study limitations, such as small sample size, or less than optimal statistical methods, such as failure to perform time-to-event analyses while adjusting for potential confounders. The databases of MEDLINE and EMBASE (up to January 31, 2012) were searched without language restrictions for longitudinal studies in which a Cox proportional hazards model was used to determine the effect of surgical delay on long-term (one-year) all-cause mortality while adjusting for age, sex, and comorbidity. Data on 32,383 participants with one to 16 years of follow-up were extracted from 9 clinical cohorts and 2 population-based databases in the United States, Europe, Israel, Taiwan, and Brazil. In age-, sex-, and comorbidity-adjusted DerSimonian and Laird random-effect model meta-analyses, the pooled relative hazard for all-cause mortality after hip fracture was 1.10 (95% confidence interval [CI], 0.99-1.23; P=0.089) for a delay of 25 to 48 hours; 1.12 (95% CI, 1.01-1.24; P=0.039) for a delay of 49 to 72 hours; 1.12 (95% CI, 1.04-1.20; P=0.003) for a delay of 73 to 96 hours; and 1.25 (95% CI, 1.07-1.47; P=0.004) for a delay of more than 96 hours. Trim-and-fill analyses provided no evidence of publication bias. Thus, in older patients with hip fracture, surgical delay of more than 48 hours is significantly and independently associated with increased long-term mortality even after adjusting for age, sex, and comorbid conditions.

Abstract no.: 31804

SURGICAL TREATMENT OF CONGENITAL CLUBFOOT IN CHILDREN AND ADOLESCENTS

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Problems of congenital clubfoot treatment in children remain relevant in juvenile orthopedics due to high frequency, tendency for relapses (11-36%) and functional deterioration of the limb. Our goal was to introduce a new method of congenital clubfoot surgical treatment that prevents relapses. During 2003-2012, 41 patient with congenital clubfoot was treated in Juvenile Pathology Department, aged 5 to 15 years, with various degrees of severity. The method included Achilles "Z"-plasty with correcting osteotomy of mid- and hindfoot bones (lateral cuneiform, calcaneus, partially navicular and cuboid) and arched metal bracket fixation in reduced position. One-stage technique was applied in patients with severe forms of disease with severe adduction, supination, equinus deformities, relapses after conservative and operative treatment. At rehabilitation phase, complex physiotherapy, orthotic shoes and splint immobilization was applied. After treatment, 10 patients (24%) had excellent, 23 (56%) – good, 8 (20%) – satisfactory results. Unsatisfactory results and relapses were absent. Best results were obtained in patients treated previously with serial plaster casting. Thus, our method of surgical treatment is indicated for children after 5 years of age previously unsuccessfully treated either conservatively or operatively. Introduced method gave positive results in severe forms of the disease, as well as in relapses after other treatment methods.

Abstract no.: 31805

WIRELESS ARTHROSCOPY DEVICE (WAD). INVENTED BY DR. GUILLEN

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INTRODUCTION. Today, most of all surgeries are being performed through endoscopies and arthroscopies(USA 1.5 million cases, Europe 400K). We think in 2012, number of cases using these technique will reach around 70% of all surgeries. Wireless arthroscopy device (WAD) simplifies the arthroscopic technique. It is only necessary to have: one conventional lens; one power capsule, and a miniature videocamara with a computer. Researchers at CEMTRO clinic have been developing prototypes for over 4-5 years. MATERIAL AND METHOD: WAD consists of four components: normal computer; wireless camera; normal arthroscopy lens and power capsule to perform the new WAD technique on joints. This is similar to a conventional arthroscopy. There are several advantages: no disinfection buckets for cold light wires are needed, decrease in number of infected cases ; all components are lightweight; very little waiting time between operations,self-sufficient systems and finally(battery life 4-10 hours, depending on laptop and power capsule), lower costs. CONCLUSION: WAD innovation performs the arthroscopy anywhere, it is easily carried, decreases infected cases, it is cheap, doesn't need an electric cabling installation and the images which are been supplied by WAD can be save and sent.

Abstract no.: 31810

INDUCED PLURIPOTENT STEM CELL-BASED TISSUE ENGINEERED NERVE CONDUITS FOR PERIPHERAL NERVE REPAIR

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Introduction: In spite of the extensive research using induced pluripotent stem (iPS) cells, the therapeutic potential of iPS cells in the treatment of peripheral nerve injury is largely unknown. In this study, we repaired peripheral nerve gaps in mice using tissue-engineered bioabsorbable nerve conduits coated with iPS cell-derived neurospheres. **Methods:** The nerve conduit was composed of an outer layer of a poly L-lactide mesh and an inner layer of a porous sponge composed of 50% L-lactide and 50% ϵ -caprolactone. The secondary neurospheres derived from mouse iPS cells were suspended in each conduit and cultured in the conduit in three-dimensional (3D) culture for 14 days. We then implanted them in the mouse sciatic nerve gaps (5 mm) (iPS group). The nerve conduit alone was implanted in the control group. Motor and sensory function recovery was assessed by walking-track analysis and the hot water behavior test respectively. At 12 weeks, nerve regeneration was evaluated by histological analysis. **Results:** After 4, 8 and 12 weeks, motor and sensory functional recovery in mice were significantly better in the iPS group. At 12 weeks, histological analysis indicated axonal regeneration in the nerve conduits of both groups. However, the iPS group showed significantly more vigorous axonal regeneration. **Conclusions:** The bioabsorbable nerve conduits created by 3D-culture of iPS cell-derived neurospheres promoted regeneration of peripheral nerves and functional recovery in vivo. The combination of iPS cell technology and bioabsorbable nerve conduits shows potential as a future tool for the treatment of peripheral nerve defects.

Abstract no.: 31814

TYPE OF FRACTURE AND LONG-TERM MORTALITY IN OLDER PATIENTS WITH HIP FRACTURE: SYSTEMATIC REVIEW AND META-ANALYSIS OF LONGITUDINAL STUDIES

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The effect of type of fracture on mortality in older patients is controversial. Discrepancies may be due confounding or failure to perform time-to-event analyses. We performed an electronic search of MEDLINE and EMBASE for English and non-English articles up to February 2012. We selected only longitudinal studies assessing all-cause mortality in patients aged 65 years or older during a follow-up period of at least one year after hip fracture, and using a Cox proportional hazards model to determine the effect of type of fracture on mortality while simultaneously adjusting for age, sex, and comorbidity. We found 12 studies that included 53,910 individuals with one to 11 years of follow-up. In an age-, sex-, and comorbidity-adjusted DerSimonian and Laird random-effect model meta-analysis, an intertrochanteric type of fracture was associated with an increased risk of death: the overall pooled hazard ratio was 1.15 with a 95% confidence interval of 1.06-1.26 (P=0.001). Heterogeneity was moderate, statistically significant (I-squared statistic 49%, P=0.028), and mainly related to non-overlapping 95% confidence intervals of individual studies. The funnel plot was asymmetric, suggesting the absence of or inability to find 3 studies with smaller risk estimates. According to the trim-and-fill method, the imputed overall pooled hazard ratio was 1.13, with a 95% confidence interval of 1.03-1.24 (P=0.008). Overall, our findings provide evidence that all-cause mortality in older patients is higher after intertrochanteric than after femoral neck fracture. Therefore, type of fracture should always be included as a potential confounder in any analysis of all-cause mortality after hip fracture.

Abstract no.: 31816

EPINEPHRINE ACCELERATES OSTEOBLASTIC DIFFERENTIATION BY ENHANCING BONE MORPHOGENETIC PROTEIN SIGNALING THROUGH A CAMP/PROTEIN KINASE A SIGNALING PATHWAY

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Topical effects of a catecholamine on bone morphogenetic protein (BMP)-induced ectopic bone formation were investigated in both in vivo and in vitro experimental systems. Epinephrine enhanced bone induction by BMP-2. Thus, the mass of ossicles ectopically induced by BMP-2 (5 μ g) was increased by the addition of a low dose (10, 20, 40, or 80 μ g) of epinephrine into a biodegradable BMP-2 carrier, in a dose-dependent manner. To investigate the mechanism by which epinephrine enhances BMP activity, in vitro experiments were carried out using osteogenic cells. The expression level of alkaline phosphatase (ALP) in cells, a marker of osteoblastic differentiation, was consistently elevated by BMP-2 (50 ng/ml) and was further elevated by the addition of epinephrine (10⁻⁸ M). The epinephrine-enhanced ALP elevation was specifically abolished by an antagonist to β 2-adrenergic receptors (Butoxamine) and by a protein kinase A inhibitor (H89). Furthermore, BMP-induced mRNA expression of ALP and osteocalcin (marker proteins of osteoblastic differentiation) and of Osterix (a transcription factor essential for terminal differentiation to osteoblasts) in ST2 cells was significantly enhanced by the addition of epinephrine. In luciferase expression assays using the promoter sequence of the Id1 gene (an immediate early response gene to BMP), luciferase activity was elevated by BMP-2 treatment and this activity was further enhanced by the addition of epinephrine. Epinephrine-enhanced luciferase activity was abolished by mutation of the cAMP-response element (CRE) sequence in the Id1 promoter, indicating that CRE-binding transcription proteins induced by epinephrine addition may act as enhancers of Smad-mediated BMP signaling.

Abstract no.: 31817

PATIENT SPECIFIC REHABILITATION, A MULTIDISCIPLINARY APPROACH AFTER TOTAL KNEE ARTHROPLASTY

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Purpose: To investigate whether a patient specific rehabilitation program will have comparable, or better results in equation to the Joint Care rehabilitation program after total knee arthroplasty if it becomes to safety, efficiency, function and satisfaction of patients and multidisciplinary team. **Methods:** This prospective pilot study, observed 100 consecutive patients who had been operated with patient specific positioning instruments for total knee arthroplasty (TKA). These patients were enrolled into a post operative rehabilitation program, in which multidisciplinary Rapid Recovery program (RR) was compared with the Joint Care program (JC). Direct post operative early mobilization, length of stay, pain, anxiety and nausea were measured until discharge. Patient satisfactory was measured six weeks after surgery. **Results:** Currently we are working on the data analysis, this will be complete during March 2012. The first results show successful results in advatage of the RR. Patients can mobilize earlier without pain and nausea. Even the first results show that patients are not anxious to mobilize soon after surgery. Previous results from other studies have shown, that patients who have followed RR, will be discharged from hospital earlier. Our results show that patients can be dismissed earlier on a safe and efficient way on basis of discharge criteria. **Conclusion:** Given our initial results and corroborating literature, Rapid Recovery is a progressive and efficient method for patients who are operated for total knee arthroplasty, to rehabilitate in a secure environment due a save protocol.

Abstract no.: 31822

TANTALUM METAL ACETABULAR REVISIONS: 6 YEARS RESULTS

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Introduction. Good mid-term results have been published about tantalum metal (TM) cups both in primary and revision hip arthroplasties. We report in average of 6 (range 5-7) years results of 85 consecutive patients whose acetabular component was revised with TM acetabular cup in 2004-2006. Results. The mean age of the patients at the time of revision was 71 (54-92) years, and the mean time from primary operation to revision was 10 (1-23) years. Acetabular bone defects were classified according to the Paprosky classification (I = 20, IIa = 6, IIb = 21, II c = 30, IIIa = 5, IIIb = 3). Morsellized bone allograft was used to fill bone defects in 39 cases. To secure cup fixation additional screws were used in 59 cups. In 17 operations also the femoral component was revised. The clinical outcome of the patients was satisfactory. Ten patients died during the follow-up. Two patients required revision due to deep infection and the other required implant removal. Eleven patients dislocated their THA due to poor soft tissue quality or lack of compliance. Two of these were re-revised with constrained liner. Except the one infected TM-cup, no radiological osteolysis nor aseptic loosening was detected around TM-cups at the follow-up. Conclusion. Trabecular metal is promising material in acetabular revisions.

Abstract no.: 31825

MECHANICAL CONSIDERATION OF NEW MOBILE BEARING PS TYPE KNEE PROSTHESIS

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Objective; We developed new mobile bearing PS type knee prosthesis. This prosthesis has been designed for low contact stresses . The aim of this study is to investigate the contact stress of polyethylene insert which is occurred in knee flexion. Materials and Methods; A three-dimensional,finite element model was created and calculated contact area and Von Mises stress volumes. Maximum joint loads and knee flexion angle were determined through the consideration for three activities of daily life ; stair ascent(60°), chair rise(90°), kneel rise(135°) Results ; At 60°knee flexion, contact stresses concentrated to contact area of the femoral compornent and it was 18.7 MPa. At 90° knee flexion, contact stresses concentrated to contact area of femoral compornent and the post, and those were 17.8 MPa and 20.0 MPa. At 135° knee flexion, contact stresses concentrated to contact area of femoral compornent and post, each values were the same as 20.0 MPa . Discussion; Stresses on polyethylene insert increased with rise of flexion angle, however those Von Mises stresses were under plastic deformation. It is suspected that the polyethylene insert of our prosthesis could be stand daily activities. Conclusion; This study suggest that designs of our prosthesis decreased contact stresses between femoral compornent and polyethylene insert.

Abstract no.: 31827

THE VALIDITY OF URINE DIPSTICK TESTING IN THE SCREENING AND DIAGNOSIS OF URINARY TRACT INFECTION IN PRE-OPERATIVE ELECTIVE ORTHOPAEDIC PATIENTS

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Introduction: Arthroplasty surgery is common and successful, unless complicated by deep infection. This is detrimental for the patient as well as the hospital. At our hospital we routinely use bedside urine dipstick testing pre-operatively to rule out a urinary tract infection. The validity of this test can apparently be variable when we looked at the initial bedside result compared with the final culture result. Our objective was to explore the accuracy of the urine dipstick test when performed prior to elective orthopaedic surgery. Method: Retrospective data collection was performed including urine dipstick and eventual culture results over 16 months. 'Mixed growth' or 'No significant growth' culture results were considered negative. There no exclusions. Results: An increasing positive culture result was noted with increasing levels of leucocytes. The presence of nitrites had a good positive predictive value (PPV) of 89.8% but a negative predictive value (NPV) of 45%. Stratifying the leucocyte count against nitrites only marginally improves the performance of the test; the NPV of a patient with a negative nitrite and WCC<10 is 98% but the PPV of a sample with positive nitrite and WCC>500 is only 64%. Conclusion: Our results show the commonly used bedside urine dipstick test has a good negative predictive value but poor positive predictive value, when compared to the 'gold standard' i.e. the culture result. We would recommend earlier testing to allow culture results to be available before contemplating cancelling a scheduled operation.

Abstract no.: 31835

HALOVEST IMMOBILIZATION - A SIMPLE SOLUTION FOR DIFFICULT CERVICAL SPINE PATHOLOGIES.

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We present our experience of treating 14 cases of cervical spine involvement with use of halovest immobilization. There were 8 patients of traumatic infliction and 6 cases of tuberculosis with different parts of cervical spine-upper, middle and lower involved. All the patients had either no neurological deficit or neurological deficit showing recovery. The age of patients varied from 20 years to 46 years. Only those patients who had a good respiratory reserve were taken up for this type of immobilization. Patients were initially given in-bed Crutch field tong traction immobilization for a varying period of 7 days to 3 weeks and were then followed up by halovest application. The immobilization was continued for an average of 10 to 14 weeks. All the patients had satisfactory recovery. The complications include pin track infection, loosening of the pins, accidental slippage of the halovest and non compliance. Halovest immobilization is a satisfactory method in the armamentarium of Orthopaedic Surgeons in the case of cervical diseases where surgery is not indicated/not consented to/dangerous. The pre-requisite include good respiratory function and patients' willingness to use it.

Abstract no.: 31841

AVASCULAR NECROSIS FOLLOWING INTERNAL FIXATION USING A DYNAMIC HIP SCREW

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Avascular necrosis (AVN) is a major consideration in the treatment of intra-capsular hip fractures. Published data is scarce on the incidence of AVN after dynamic hip screw (DHS) fixation for basi-cervical and extra-capsular fractures. All patients who had undergone DHS fixation between January 2007 and December 2010 were assessed. Preoperative radiographs were classified using the AO/OTA classification. The presence of AVN (Ficat and Arlet staging) and further procedures were evaluated on postoperative radiographs. Mechanisms of injury and risk factors for AVN were obtained from medical & electronic notes review. Over 4 years, 492 patients underwent DHS fixation. At follow-up 11 patients (2.2%) had developed AVN. Mean age was 79 years (range, 63-99 years). Two patients had a 31-A1.1 fracture, three 31-A1.2, one 31-A1.3, one 31-A2.1, two 31-A2.2, one 31-B2.1 and one 31-B2.2. Mean time from surgery to first plain radiographic evidence of AVN was 627 days (range, 196-1291 days). Five patients were treated with a total hip replacement, 5 were treated conservatively and 1 had the DHS plate removed but no further procedure due to medical co-morbidities. Four patients had additional identifiable risk factors for AVN. We demonstrate a small but significant risk for developing AVN DHS fixation. This is higher than limited published reports. The rate of AVN may be underestimated (previous evidence suggesting 0.8%). We suggest this risk should be included when obtaining consent, particularly for those with predisposing risk factors. A diagnosis of AVN should be considered in all patients presenting with hip pain following DHS fixation.

Abstract no.: 31842

DO PATIENT REPORTED OUTCOME MEASURES (PROMS) REFLECT PHYSICAL FUNCTION IN PATIENTS AWAITING HIP ARTHROPLASTY?

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Aim: To assess the relationship between objective physical function (timed up and go (TUG), 30 sec sit to stand (ST), 6 minute walk test (6MWT), stair climb performance (SCP), and gait speed (GS)) and patient reported outcome measures (PROMs; Oxford hip score (OHS), and Western Ontario and McMaster University Osteoarthritis personal function subscale (WOMAC pF)) in patients scheduled for total hip arthroplasty (THA). **Methods:** 50 patients were prospectively recruited. TUG, ST, 6MWT, SCP, GS was assessed, as were PROMS - OHS and WOMAC pF. Correlation and regression was used to investigate which objective measures predicted variance in reported hip symptoms. **Results:** Average age of the cohort was (mean±SE) 67.8±9.4 years in males (n=21) and 64.2±10.2 years in females (n=29). Mean scores for objective function were TUG 12.73±8.30s, ST 8.50±4.42, 6MWT 248.8±112.3m, SCP 16.38±9.38s and GS 0.73±0.28s. Mean OHS was 37.5±7.9, with mean WOMAC pF 47.6±20.3. OHS correlates significantly with TUG (r=0.327, p=0.022), ST (r=-0.345, p=0.015) and SCP (r=0.330, p=0.022). In regression analysis SCP predicts 10.9% of the variance in the OHS (F=5.614, r² 0.109, p=0.022) whilst ST predicts 20.6% of variance in WOMAC pF (F= 11.921, r²=0.206, p=0.001). None of the other objective measures proved predictive in this model. **Conclusions:** The OHS and WOMAC pF subscale show significant correlation with objective measures of physical function in this population. This suggests that these PROMS reflect measured physical function as well as subjectively perceived pain and disability. The WOMAC pF seems more responsive than the OHS to measured physical function.

Abstract no.: 31843

MEDULLA TIBIA – INSIDE OUT

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Introduction: Tibia is the main weight bearing bone in the human leg. Traumatic and pathologic fractures of the tibia are common entities for which standard intramedullary fixation methods are a routine procedure. The use of intramedullary fixation methods in the tibia are limited by the anatomical characteristics of this bone. The aim of this study was to evaluate some important characteristics of the tibial medullary canal with a future prospect of designing an Indian nail based on morphometric analysis of Indian cadaveric tibias. Method : Fifty human cadaveric tibias were included in this study and were evaluated with both anatomical (Saw, Measuring scale, Ink)and radiological tools(Radiographs, Spiral CT Scan). Result : Mean (\pm SD) length of tibias was 33.71(\pm 2.35 cm). Nine of the 50 tibias had an extremely narrow medullary canal. The axial lateral rotation observed ranged from 14° to 73°, with a mean (\pm SD) of 31.29 (\pm 17.71°). Considerable interesting variations in the diameter, shape and axial rotation of the medullary canals were observed on the axial CT scans. Conclusion : Extreme narrowing of the medullary canal, axial lateral rotation, angle of proximal medullary canal are the anatomical characteristics most likely to cause difficulties when using intermedullary fixation in the tibia.

Abstract no.: 31844

EVALUATION THE RESULTS OF ARTHROSCOPY OF THE KNEE-26 YEARS EXPERIENCES

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This study evaluated the results of patients treated with arthroscopy of the knee, to diagnostic and therapy the sports injuries of the knee. Methods: Retrospective study evaluated 2082 arthroscopies at the same number of patients with sports injuries of the knee, through period of 26 years (1985-2011), with the ranking from (18 to 62) (average age was 27,2). We divide the patients in two groups: group one-acute injuries (1015 patients), group two-chronic injuries. We compare the results of arthroscopies with clinical and MRI investigations. Conclusion: From the results of the study, we conclude that arthroscopy is a procedure with minimum morbidity and complications, the less surgical trauma lead to a good functional results.

Abstract no.: 31846

OCCUPATIONAL NERVE INJURIES DUE TO METALLIC FOREIGN BODIES

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We have managed 18 cases of industrial workers who sustained on site nerve injuries of upper extremity during the course of employment. Most of the injuries occurred in workers working in steel fabrication industry. All the patients were in the age group of 18 to 50 years and all patients were males, working on hand operated machines. The Median nerve was most commonly involved (16 cases). Other nerves which were involved were Ulnar, Posterior interosseous nerve, radial & digital nerve in the order of their occurrence. Six patients had more than one nerve involvement. Two patients had associated vascular injuries also. 10 patients had past history of foreign body injuries working in the same industry. All the patients underwent removal of foreign body and end to end epineural repair along with repair of other structures. In both patients, who had vascular injuries, vascular repair was not done since they had well developed collaterals. Most common region involved was forearm followed by upper arm and hand. Most patients who had forearm injuries had wound of entry on flexor aspect, whereas patients who had injuries in upper arm had wound of entry on medial aspect. The recovery was directly proportional to the period between date of injury and surgery.

Abstract no.: 31847

FUNCTIONAL OUTCOME AND COMPLICATIONS FOLLOWING ACL RECONSTRUCTION IN THE ADOLESCENT PATIENT

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Introduction: Tears of the anterior cruciate ligament (ACL), in the skeletally immature patient are becoming increasingly prevalent. Non-reconstructive treatment often leads to poor results, especially concerning sports activity. Our study assessed the functional outcome in our adolescent patient group following primary ACL reconstruction and aimed to evaluate their pre and post-operative sporting activity. Methods: This was a review of prospectively collected data of patients aged 18 years or younger at the time of surgery, presenting to the senior authors' knee clinic for an ACL reconstruction between 2001 and 2009, with a minimum of 2 years follow-up. Functional outcomes were measured using the KOOS score. Results: 30 patients met the inclusion criteria, with males dominating the population. 4 patients were excluded due to missing data. 18 patients were skeletally mature (SM) and the remaining 8 were skeletally immature (SI). The mean age of the study group was 14.7 years at the time of injury and 15.8 years at the time of surgery. Sport was the major mechanism of injury, causative in 81%. SI patients scored higher in all aspects of the KOOS score at 2+ years, when compared to the SM group. Also a greater percentage of SI patients returned to their pre-operative sporting activity level or better. SM patients appeared to have increased postoperative complications including pain, ipsilateral and contralateral ACL rupture and wound infection. Conclusion: SI patients appear to have greater functional benefit at 2+ years with a lower rate of complications, following ACL reconstruction as compared to SM patients.

Abstract no.: 31848

EVALUATION OF RELATIONSHIP BETWEEN THE POSITION OF BONE TUNNEL AND KNEE STABILITY IN THE ANATOMIC ACL RECONSTRUCTION

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The purpose of this study was to evaluate relationship between the position of bone tunnel by antero-posterior (A-P) view, lateral view and intercondylar view of X-ray and the knee stability in the anatomic ACL reconstruction. Forty-two patients with anatomic ACL reconstruction were carried out in this study at least 1 year follow-up after operation. The tunnel angle of the femur and tibia in A-P view and lateral view was measured between the axis of the bone tunnel of both antero-medial bundle (AMB) and postero-lateral bundle (PLB) and the long axis of the femur and tibia. The roof tunnel angle (RTA) in intercondylar view was measured between perpendicular of the center of the intercondylar notch and the center of the femoral tunnel opening to the joint. Anterior knee stability was evaluated using CA4000. We classified the patients into 2 groups. Group A: patients with side to side difference (SSD) by CA4000 from -1mm to 2mm. Group B: patients with SSD under -1mm or above 2mm. Twenty-five patients were in the Group A. The mean AMB-RTA was 39° and PLB-RTA was 84°. Seventeen patients were in Group B. The mean AMB-RTA was 37° and PLB-RTA was 81°. The mean angle of AMB-RTA and PLB-RTA in the Group A were smaller than the angle of the Group B ($P=0.15$, $P=0.10$). From these results, there was a possibility that the lower bone tunnels of femur could be achieved better knee stability in the anatomic ACL reconstruction.

Abstract no.: 31849

TREATMENT STRATAGE OF PELVIC FRACTURE BY HIGH ENERGY TRAUMA IN OUR HOSPITAL.

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Purpose: We use intermittent pneumatic compression device for all patients by high energy trauma with not leg injury. We report examines the DVT incidence of patients with pelvic fracture and its progress in prevention strategies. Method: We researched 27 patients (23 males and 12 females average age was 57), except 8 patients of CPA, who were taken to our emergency and critical care center from 2010 to 2011. Under AO classification of pelvic fracture, type A is 10 patients, type B is 9 patients and type C is 4 patients. ISS score is 4-41(average was 19).D-dimer score was 24-240(average was 104). DVT occurred 3 patients ,2 patients had DVT in soleus vein and 1 patient had it in femoral vein. They stayed in hospital for 11-47 days (average 24 days) and stayed in hospital ICU for 14-90days (average 30 days). In our hospital ,DVT occurred 11% of all patients with pelvic fracture and PE did not. Conclusion: intermittent pneumatic compression device, didn't valid for all cases so prefer to do anticoagulant therapy by drugs for severe multiple trauma.

Abstract no.: 31851

TRIPLE PELVIC OSTEOTOMY IN TREATMENT DISPLASTIC COXARTHROSIS IN ADULTS

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We performed triple pelvic osteotomy(TPO) in 67 patients (81 hips) from 1998 to 2006. The mean age was 30,2 (18 – 55) years. 59 patients were female, 8 were male. 11 patients had radiographic evidence of preosteoarthritis, 33 – 1 stage and 37 – 2 stage osteoarthritis. The mean duration of follow-up was 80 (45 – 129) months. Clinical follow-up was performed by Tschauner et al.(1992 r.). The center-edge angle, angle of vertical inclination of the acetabulum (angle of Sharp), the degree of bone coverage of the femoral head by acetabulum were measured on radiographs made preoperatively and postoperatively. Clinical evaluation of the results at the time of the latest follow-up was: excellent - 22 (27%),good - 28 (34%),satisfactory - 20 (25%),unsatisfactory - 11 (13%). The mean center-edge angle improved from 6,7 (-10 – 25) degrees preoperatively to 41,5 (10 – 80) degrees. The mean angle of Sharp improved from 49,3 (40 – 60) to 30 (10 - 43) degrees. The mean degree of a coverage of the femoral head increased from 0,6 (0,3 – 0,83) preoperatively to 0,99 (0,6 – 1,3). Fifteen hips had radiographic evidence of progression of osteoarthritis. 6 patients (7 hips) underwent total hip arthroplasty in the mean term 73 months. The long-term outcome of TPO was satisfactory for a hip with pre- or early-stage osteoarthritis, secondary to acetabular dysplasia. Timely realization of triple pelvic osteotomy eliminates the hip replacement or delay it.

Abstract no.: 31853

SHORT STEMS AT HIP JOINT ARTHROPLASTY. CAN WE AVOID STRESS-SHIELDING SYNDROME? PROF. FILIPENKO V.A., PIDGAISKA O.A., MESENTSEV V.A.

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Introduction. Stress-shielding syndrome can affect the stability of prosthesis. It can occur in response to an altered mechanical environment following a hip replacement. Periprosthetic bone remodeling secondary to stress-shielding syndrome may contribute to different negative consequences. So the question is...Is it possible to avoid stress-shielding by development of new stem design. **Material and methods.** Material of investigation was 30 patients. Total hip replacement was performed with short stems. Average age: 48,2 years old. We estimated: durability, thigh pain, stress-shielding syndrome. Estimation of stem fitting was made according to the shape of femoral canal by Noble and Dorr classifications. **Methods:** clinical, roentgenological, finite element method, densitometry. Selection of stem design was made due to computer program which allowed to calculate the area of contact between bone and stem surface. Follow-up period was 4-6 years. **Results.** In 22 (73,3%) cases there were – stable fixation. Stem selection was made according to the shape of femoral canal, area of contact between stem surface and bone tissue was –in average 68,83 %. In all cases we observed bone compacting in the areas of tight contact between surfaces which corresponded to the 2 and 5 Gruen zones. In 8 (26,7%) cases signs of stress-shielding were observed. Finite element method allowed us to analyze strain distribution in femur with short stem inserted into different types of femoral canal. **Conclusion.** In all cases of stress-shielding appeared in stovepipe shape of femoral canal. Such strain distribution was confirmed by finite element method results and densitometry examination.

Abstract no.: 31856

THE EFFECT OF DOUBLE PREPPING ON THE INCIDENCE OF INFECTION FOLLOWING PRIMARY TOTAL HIP AND KNEE ARTHROPLASTY IN A DISTRICT GENERAL HOSPITAL

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Aim: The aim was to determine the incidence of infection after double prepping patients who underwent total hip and knee arthroplasties. **Background:** Periprosthetic joint infection is a devastating complication of total joint arthroplasty. Epidemiologic studies using Nationwide Inpatient Sample suggest both the incidence and prevalence of periprosthetic joint replacement surgery are increasing over time. **MATERIAL AND METHODS:** We retrospectively reviewed data from 360 consecutive patients who underwent primary total hip replacement (THR) (175joints) and total knee replacement (TKR) (185 joints) arthroplastie performed under the care of single consultant between February 2008 and December 2010. The mean age of patients reviewed was 60years(range 45-78years). The mean follow up time was 31months (range 14 – 48 months). One dose of antibiotic was given at induction and two more were given post operatively according to local guidelines of the hospital. All patients were double prepped with Povidone Iodine. (clean prepped in the anesthetist room and sterile prepped in the theater). All operations were performed in laminar flow, sterile hoods and body exhaust system. **RESULTS:** Periprosthetic infections developed in 4 patients (1.1%). Three patients (75%) developed periprosthetic infection within the first year (9, 30 and 41days and 387days). Debridement surgery was performed in three cases and revision surgery in one case. **CONCLUSION:** Double prepping is a good practice to reduce the rate of periprosthetic infections when combined with laminar flow theatres and intravenous antibiotics.

Abstract no.: 31857

TRENDS IN ORTHOPAEDICS ON THE INTERNET OVER THE LAST 10 YEARS

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INTRODUCTION: The Internet is a vast source of information used by patients and medical professionals. There are medically specialised search engines, which filter through webpages and only return pages that have been approved as being able to provide reliable and accurate information relevant to what the user searches. We aimed to assess whether the quantity of orthopaedic related information has increased over the last 10 years and whether there was any difference between using a generic and a medically specialised search engine. **METHODS:** Orthopaedic keywords were entered into 6 search engines, 3 generic and 3 specialised to medicine. The number of webpages was recorded for each keyword for each search engine. These findings were compared to previous studies published in the literature. The keywords selected for this study matched those in previous studies in order to achieve a comparison. **Results** Overall a comparison demonstrated a statistically significant increase in the number of webpages (hits) over the last 10 years. The most impressive finding was one search engine having an increase of nearly 300,000% for one keyword ($p < 0.001$). Generic search engines showed an increasing trend with the number of hits over this time whereas the specialised search engines demonstrated a decline in the number of hits. **CONCLUSION:** Orthopaedic information on the Internet has greatly increased over the last decade. Specialist search engines offer a selective number of results when compared to generic search engines. This may help the orthopaedic professional filter information from the ever-increasing information on the Internet.

Abstract no.: 31859

MID-TERM ANALYSIS OF FEMORAL MODULAR UNCEMENTED REVISION STEM: SURVIVORSHIP, RADIOLOGICAL AND CLINICAL OUTCOMES

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Introduction: Uncemented restoration modular revision stems are based on the principle of diaphyseal fixation of implants along with different proximal bodies to enhance proximal load transfer. Methods and Materials: This single surgeon series includes mid-term follow up of ninety hip revisions performed between 2005 and 2010 for loosening, recurrent dislocation and peri-prosthetic fracture. The average follow up of patients was 3.2 years. The mean age of the patient at the time of surgery was 71.4 years. Pre operative femoral defects were classified according to the system described by Pak et al (1993). Migration of the stem, subsidence and cortical indices (midshaft and apical) were calculated according to previously described methods. Kaplan-Meier analysis was performed to measure the survivorship of the revision stem. Results: A negative correlation was found between the initial apical cortical thickness and the change in mid shaft cortical index. Between immediate post op and latest review - a significant decrease was seen in the midshaft cortical index (MSCI) and a significant increase was seen in the apical cortical index (ApCI). Mean subsidence of the prosthesis was 2.23 mm. No mechanical failures of the stem were seen. Kaplan-Meier survival analysis showed a survivorship of 98.9% at 5 years with aseptic loosening as end point. Conclusion: Significant apical loading with cortical thickening of the femur along with proximal stress shielding was noted in the patients. Minimal subsidence of the femoral prosthesis was seen. This study shows good clinical outcome and survivorship of the modular femoral revision prosthesis.

Abstract no.: 31860

SAFETY ZONES DURING BONE MARROW ASPIRATION FROM THE ILIAC CREST

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The benefits of mesenchymal stem cells harvest with bone marrow aspiration from iliac crest have increased. This percutaneous technique decreases morbidity as compared with standard bone graft. However risks exist due to anatomy of the pelvis. Our interest was piqued by major hematoma arriving after bone marrow aspiration in 5 patients; Methods: We examined 20 pelvis CT scan of mature adults (40 iliac crests). Structure was at risk if accessible to the tip of a trocar introduced in the iliac crest on the 3D reconstruction. Parameters: the shortest distances from the posterior superior iliac spine to the sciatic notch and gluteal vessels (PN); from the anterior superior iliac spine to the iliac artery (AI), the anterior-posterior length of the sciatic notch (SN); the length of the iliac crest (IC). Lines that divided the iliac crest in six equal sectors were used to form sextants (sector 1ant; sector 6 post) and select safe directions; Results: Men had higher maximum limits (PN: men 28.7–62.7 mm vs. women 28.0–51.0 mm; SN: 9–25.3 mm vs. 7.7–22.7 mm; AI : 65.4 vs 64 mm; IC: 23mm vs 26 mm). When trocars were placed at least 10 mm longer than needed, 20% of the trocars were at risks. A constant relationship ($p < 0.05$) was found to exist between specific iliac sextants and specific intrapelvic structures (iliac artery and vein; sciatic nerve and gluteal vessel); Conclusion: We found that a sextant system at the iliac crest can demarcate safe zones for trocar placement.

Abstract no.: 31866

DELAYED GROWTH ARREST FOLLOWING PHYSEAL INJURY

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There is little current consensus about the length of followup required after physeal injury. We present 3 children whose physeal arrest occurred 5-11 years after injury. All involved the distal femur or proximal tibia, and all required osteotomy for correction. Two resulted from a lawnmower injury to the distal femur, but the arrest in one case involved the proximal tibia. One followed physeal staling for genu valgum at age 4. We conclude that high energy injuries or stapling at an early age contribute to a higher risk of delayed growth arrest, and warrant infrequent but regular followup until skeletal maturity, much like followup for delayed growth arrest of the lateral proximal femoral physis after early treatment for DDH.

Abstract no.: 31868

INTRA-ARTICULAR AND EXTRA-ARTICULAR DISTAL FEMORAL FRACTURES : ANTEGRADE FEMUR INTERLOCKING NAIL WITH POLLAR SCREWS AS A TREATMENT MADALITY

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INTRODUCTION :With the increase in high velocity vehicular accidents, the incidence of complex distal femoral fractures encountered has dramatically increased. A total of 30 patients with type A and type C1 distal femoral fractures as per the OTA classification were studied for an average of 18.8 months in a retrospective study. **MATERIAL AND METHOD:** Total patients were 30 .Male: Female- 20:10.Average age- 48.7 years (range 20-70 years).7 patients had open fractures and 23 had closed fractures .Average period of study- 18.8 months (range,11 months-30 months). Type of study- Retrospective. Intramedullary nail with multiple , multiplanar , multilevel distal locking screws with or without pollar screws was used. **RESULTS:** Assessment was done, Clinically according to the Knee Rating Scale of the Hospital Of Special Surgery and Radiologically. All fractures united. 3 patients lost to follow-up . The mean range of knee flexion was 105.6 ° (range 90°-120°). time of healing ranged from 10 to 18 weeks(mean 13.1 weeks). The duration of non weight bearing was 4 to 10 weeks(mean 7 weeks)All the patients had full quadriceps function and no patient had ligamentous instability. No patient had varus/valgus angulation > 5 deg. One patient developed superficial infection.**CONCLUSION:** Antegrade intramedullary nailing is a excellent modality for distal femur fixation.when IM nail is used-nail should have Multiplaner fixation,Multilevel ,Multiple screws must be used.Intraarticular reduction and fixation is first.Good rehab will give good outcome.

Abstract no.: 31869

**COMPLEX LIMB SALVAGE OR EARLY OR LATE AMPUTATION?
CLINICAL OUTCOMES FOR GUSTILO IIIB LOWER EXTREMITY
FRACTURES**

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Introduction: Severe lower extremity injuries present patients and clinicians with the difficult decision of whether to pursue amputation or limb salvage. Methods: Twenty-four patients with Gustilo type IIIB lower extremity fracture treated at our level I trauma center between 2009 and 2011 were categorized based on their definitive treatment: group I, limb salvage; group II, early amputation (<12 weeks post injury); and group III, late amputation(>12 weeks post injury). Data on the injury, treatment, and complications were extracted from medical records and compared across the groups. Results: Eighteen (75%) of the total 24 fractures were treated definitively with limb salvage, 3 (13%) with early amputation, and 3 (13%) with late amputation. The median Injury Severity Score (ISS) was 22.3 (9–48) and the median Mangled Extremity Severity Score (MESS) 5.8 (3–10). Group II patients were more likely to have a high ISS (mean 31.4) and MESS (7.6) compared with group I (ISS: 19.5, MESS: 5.2) and group III (ISS: 20.4, MESS: 6.6) patients. Group III patients had the highest mean number of revision surgeries (6.4 times) and rate of deep infection (100%) compared with group I (4.2 times, 37%) and group II (1.8 times, 0%) patients. Median length of hospital stay was longer in group III (246.5 days) than in group I (189.4 days) patients. Conclusions: Potential complications and length of hospitalization associated with each treatment arm should be considered when deciding between amputation and salvage.

Abstract no.: 31870

INCIDENCE AND OUTCOME OF OPEN TIBIA FRACTURES TREATED WITH INTERNAL AND EXTERNAL STABILIZATION DEVICES

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Introduction: The purpose of this study was to determine whether different forms of stabilization for open tibia fractures can be performed without influencing outcome. Although the traditional management of these injuries is external fixation, a trend towards definitive stabilization techniques has evolved in the current literature. Methods: All open fractures of the tibia presenting to our urban Level I trauma centre during a ten-year period were reviewed. 28 patients were initially treated at the above institution within six hours of injury, 5 patients were excluded. All patients underwent emergent wound irrigation, debridement and antibiotic therapy. Fracture immobilization was left to the discretion of the attending trauma surgeon. Study population consisted of 6 (1.68%) GI, 4 (1.12%) GII and 13 (3.64%) GIII fractures. Results: Initially fracture management was performed with external fixation (EF) in 11 cases (2.53%), intramedullary nailing (IM) in 3 cases (0.69%), plating (PL) in 6 cases (1.38%), amputation in 1 case (0.23%), cast in 1 case (0.23%) and without treatment in 1 case (0.23%) because of imminent exitus. Three (0.69%) fractures were complicated by infection, 2 (0.46%) had implant failure and 4 (0.92%) developed delayed or non union. Conclusion: Using external fixation in acute fracture treatment for open tibia fractures is a safe and effective surgical technique. Based on our results, there is no disadvantage compared to internal stabilization methods when evaluating outcome parameters.

Abstract no.: 31873

ANATOMICALLY PERCUTANEOUS WIRING REDUCTION IN MINIMALLY INVASIVE PLATE OSTEOSYNTHESIS

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Purpose: To report a method of anatomical reduction and its maintenance by percutaneous wiring reduction in minimally invasive plate osteosynthesis for spiral or oblique fractures of distal tibial shafts. **Materials and Methods:** Twenty-one patients who were diagnosed with spiral or oblique fractures of the distal tibial shaft from August 2007 to June 2010 and who were able to undergo percutaneous wiring reduction in minimally invasive plate osteosynthesis were included in this study. The mean age was 50.4 (24–96) years, and the mean follow-up period was 22.6 (12–46) months. We investigated the time until bone union was achieved, degree of angulation angle, and complications. For postoperative evaluation, the Olerud and Molander score for daily living was evaluated. **Results:** The mean varus/valgus angulation after bone union on an anteroposterior radiograph was 1.01° (0° – 2.0°), and the mean anterior/posterior angulation on a lateral radiograph was 1.60° (0° – 4.3°). The mean Olerud and Molander ankle score was 92.9 (65–100) points. **Conclusion:** By percutaneous wiring reduction for spiral or oblique fractures of the distal tibial shaft, anatomical reduction is easily achieved. Reduction could be maintained by wire alone so that the plate could be easily fixed without additional manual reduction.

Abstract no.: 31887

CLINICAL OUTCOMES OF MINODRONIC ACID HYDRATE IN PATIENTS WITH OSTEOPOROSIS RESPONDING POORLY TO TREATMENT

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Introduction: Some patients with osteoporosis cannot have a sufficient increase in their BMD by administration of bisphosphonates (BPs) and SERMs. The aim of this study was to examine the efficacy after switching from BPs or SERMs to minodronic acid hydrate (MIN) in these patients. Methods: Out of 181 patients with osteoporosis treated with BPs or SERMs for more than a year, 56 had increase rates of BMD of less than 3%. Of these 56, 33 (17 alendronate, 10 risedronate, 6 raloxifene) who could switch to MIN were included in this study. Efficacy after switching from the previously prescribed drugs to MIN was evaluated using BMD, TRACP-5b, P1NP, VAS, and abdominal scores. BMD was measured at the time of switching to MIN and at 6 months after switching, and TRACP-5b, P1NP, VAS, and abdominal scores were measured at the time of switching to MIN and at 1 month and 6 months after switching. Results: BMD after switching to MIN increased in 17 (61%) out of 28 patients, but it showed no significant difference. 14 (74%) out of 19 patients with decreased BMD despite treatment with BPs or SERMs, however, had an increase in their BMD, with a significant difference. At 1 month after switching to MIN, TRACP-5b was significantly reduced, and backache was significantly improved. The abdominal symptoms showed no change or improvement. Six months after switching to MIN, P1NP were significantly reduced. Conclusion: MIN is effective in patients having no sufficient increase in BMD by administration of BPs or SERMs.

Abstract no.: 31888

EARLY EXPERIENCE OF VOLAR LOCKING PLATES IN INDIA

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Distal radius intraarticular fracture with volar tilt is a complex fracture problem with limited solutions and volar plating is the recommended option. But it is not without complications. Double column volar plate has been introduced in India recently and we explore the outcome of first few patients. 10 patients (1:2 male: female ratio) were presented with intraarticular fracture with volar tilt of the fracture component. They had fall on flexed hand as the mechanism of injury , one patient had a road traffic accident and involved in an auto accident where forcefully flexed wrist hit the rod. They were all treated with double column volar locking plate , with the fixation along the watershed line .The outcome measure was calculated using Gartland & Werley score of wrist at six weeks and 1year interval. Meticulous attention was paid to the recommended operating technique. The wrist score in six weeks were in 'good' range . One patient had poor healing of the wound , which was treated conservatively with dressing . There were no other recorded complications like attrition rupture of tendon . One year follow up provided excellent score for wrist fixation. Though a new surgical technique is involved and learning curve is bound to be steep but first few operations were successfully done due to meticulous attention to technique. The operating technique need to be stressed to be proper in wrist fracture management

Abstract no.: 31895

THE NOVEL METHOD OF L5-S1 ANTERIOR FUSION WITH A TITANIUM MESH CAGE FOR HIGH-GRADE SPONDYLOLISTHESIS

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Introduction: High-grade spondylolisthesis (Meyerding III–V) is usually treated by surgery. Recent literature shows that in situ fusion is better than reduction of the slip and fusion in high-grade spondylolisthesis. Furthermore, the outcome is improved if circumferential fusion is performed in severe spondylolisthesis. One of the standard methods is pedicle screw fixation combined with anterior L5-S1 fusion using structural bone graft. Using a fibula strut graft is an effective technique but is associated with harvest site morbidity and graft fractures. Methods, results: Two patients with symptomatic spondylolisthesis (Meyerding IV) underwent pedicle screw fixation with partial reduction and then anterior extraperitoneal L5-S1 fusion with titanium mesh cage, filled with cancellous bone graft. Mesh cage was inserted at L5-S1 level in the same way as strut graft. Follow-up was 26 months. In both cases circumferential fusion was achieved. Clinical results have been excellent with significant pain reduction and improved function. Both patients have been satisfied with their results. Conclusions: Using of titanium mesh cage instead of allo- or autograft have some advantages: it avoids the complications associated with autologous cortical fibular strut graft and also are useful to promote interbody fusion, as the hollowness in the mesh cage can be filled with cancellous bone graft that helps in better fusion. It also avoids fracture risks associated with strut grafting.

Abstract no.: 31897

ALGORITHM OF THE CHOICE OF THE AUDITING ARTHROPLASTY OF THE FEMORAL COMPONENT OF THE ENDOPROSTHESIS

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Research objective. Research objective. Improvement of results of performance of auditing operations at patients with aseptic instability of femoral components of an endoprosthesis of a hip joint. Materials and methods. From 2001 for 2009 was executed 263 operations to 212 patients on replacement of femoral component cement and cementless fixation. In the work we used classification of defects of a hip on Paprosky. Male patients - 59 (27,83 %), female – 133 (72,17 %). The average age of 64 (21-84) years. Bone allografts were used in 17 cases with large defects. Results. Long term results was study at 132 patients for a mean follow-up of 8,5 (1-16) years.. The Harris Hip score improved from an average 42,16 (22,6-58,6) preoperatively to 77,57 (29,8 to 100) points after a mean follow-up of 8,5 (1-16) years. In 68 (51,52 %) cases are received excellent and good results. The average age of 64 (21-84) years. Bone allografts were used in 17 cases with large defects. Conclusions. At 1 type of defects it is possible to apply same implants as well as at primary THA. At 2 type of defects it is possible to apply legs as well as at primary prosthetics, but it is necessary to carry out a plasty of defects of a hip. At 3 type of defects it is necessary to apply long modular stem. 4 type of defects in our practice didn't meet. However as the choice variant a long modular stem can be applied at any type of defects.

Abstract no.: 31898

COMPARISON OF CLINICAL AND RADIOLOGICAL RESULTS IN MINIMALLY INVASIVE PLATE OSTEOSYNTHESIS FOR DISTAL TIBIAL FRACTURES – CONVENTIONAL VERSUS ANATOMICALLY PERCUTANEOUS WIRING REDUCTION TECHNIQUE –

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Background: To report the results of comparing the clinical and radiological results of conventional minimally invasive internal fixation and the new anatomical percutaneous wire reduction method for distal tibia fracture. **Materials and Methods:** Patients were followed up for at least 1 year after performance of MIPO using a periarticular locking plate for distal tibia fracture: 27 patients were in group 1, who underwent conventional treatment from May 2004 to December 2005, and 17 patients were in group 2, who underwent anatomical percutaneous wire reduction from August 2007 to February 2010. Mean patient age was 55.9 years in group 1 and 50.0 years in group 2. Mean follow-up was 21.0 months in group 1 and 20.0 months in group 2. We investigated the period until bone union was achieved, the degree of angulation angle, and complications. For postoperative evaluation, the Olerud–Molander score in daily living was calculated. **Results:** Anatomically percutaneous wire reduction was significantly superior with regard to operation time, AP angle, and varus/valgus angle. The Olerud–Molander score was not statistically significant. **Conclusion:** Anatomical percutaneous wire reduction can achieve anatomical reduction more easily, and the plate could be simply fixed without additional manual reduction and maintenance, it shows less angulation deformity and shorter operation time than MIPO.

Abstract no.: 31899

OPTIMISING OUTCOME AND DEFINING PROTOCOL FOR PERCUTANEOUS PINNING OF PROXIMAL HUMERUS FRACTURES: STUDY OF 50 CASES.

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Introduction: Proximal humeral fractures have been variously managed. Percutaneous pinning has been tried in the past with suboptimal results. There is no defined protocol for optimizing outcome. Aim: To define treatment protocol for accurate reduction and sturdy fixation of proximal humeral fractures. Methods: 50 patients of proximal humeral fractures managed by closed reduction and percutaneous pinning were followed for an average 18months (6-30months). Optimal closed reduction was achieved by traction, rotation and translation of distal fragment, joystick reduction of proximal fragment and greater tuberosity brought down. Optimal fixation was achieved using threaded Kwires of 2.5mm thickness, adequate subchondral purchase of 2cranially directed pins, medial cortical purchase of 1caudally directed pin and greater tuberosity pinning. Adequacy of reduction after the fixation was checked with C-arm with shoulder in various rotations. Proximal origin pins were removed at 3weeks and the distal origin pins at 6weeks. Shoulder isometric exercises started from day1, pendulum exercises from 3weeks. ROM exercises from 6weeks. Outcome assessed using American Shoulder and Elbow Surgeons Score. Result: Good reduction to within 5mm was achieved and maintained in 48patients on final followup. The average ASES score was 87.8. Varus collapse of 20degrees seen in 2patients. Pin tract infection was seen in 11patients, 9 healed with dressing/antibiotics and 2 required pin removal. Pin loosening was seen in 5patients on followup . Conclusion: Closed reduction and percutaneous pinning of proximal humeral fractures can give a good outcome. Defined steps helps achieving optimal outcome. Key words: Proximal humeral fracture, percutaneous pinning, closed reduction.

Abstract no.: 31900

POST-OPERATIVE ANALGESIA IN MAJOR PAEDIATRIC ORTHOPAEDIC SURGERY: EPIDURAL OR NURSE-/PATIENT-CONTROLLED ANALGESIA +/- CAUDAL INJECTION?

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Background: Adequate pain control following paediatric orthopaedic surgery is of utmost importance for patient morbidity, comfort and mobilisation. Epidural and nurse- or patient-controlled analgesia plus caudal injection (NCA/PCA & CI) have similar efficacy for pain relief, yet complication rates can vary, impacting upon time to mobilisation and discharge from hospital. This study aimed to establish outcomes for different post-operative analgesia methods in major paediatric orthopaedic operations, with respect to complications, mobilisation and discharge times. Methods: Retrospective review of notes of paediatric patients from age 6 years having pelvic or femoral osteotomies. Types of operation, complications, pain scores and times until mobilisation and discharge were recorded and compared. Results: 38 patients (mean age 13 years) had femoral and/or pelvic osteotomies for indications including Perthes' Disease and Developmental Hip Dysplasia. 29 had epidurals, 8 had NCA/PCA & CI, and 1 had oral analgesia only. Complications were higher in those having epidurals. A significant percentage of those having epidurals rated their pain score as poor (34% vs. 0% for NCA/PCA & CI). In addition, those receiving a NCA/PCA & CI had a shorter median time before mobilising from their beds and leaving hospital compared to those with an epidural. Conclusion: Our data suggest that following major paediatric orthopaedic surgery, post-operative NCA/PCA & CI gives fewer complications and more optimal analgesic control than epidurals. These patients were able to mobilise from their beds and leave hospital sooner than those having epidurals. We would advocate paediatric patients having NCA/PCA & CI following major surgery.

Abstract no.: 31905

ROLE OF THE MECHANICAL AXIS OF LOWER LIMB AND BODY WEIGHT IN THE HORIZONTAL TEAR AND ROOT LIGAMENT TEAR OF THE POSTERIOR HORN OF THE MEDIAL MENISCUS

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Purpose : To compare and analyze about relationship between horizontal tear and root ligament tear of posterior horn of medial meniscus(PHMM) and degree of varus of axis of lower limb and body weight. Materials and Methods: Of 129 patients who overwent surgical treatment as diagnosed medial meniscus tear from May 2006 to December 2009, 19 cases(group 1), who overwent partial meniscectomy as confirmed to solely horizontal tear of the PHMM, and 27 cases(group 2), who overwent subtotal meniscectomy as confirmed to solely root ligament tear of the PHMM, were chosen for retrospective study. We took a picture of orthoroentography for every case of prior to arthroscopic surgery and measured varus angle. Also, we checked body mass index(BMI) of two groups. The difference of varus angle and BMI between two groups were statistically verified using the Levene's test, paired t-test. Results : Group 1 showed mean value of varus angle of 2.30 ± 0.54 , and BMI of 25.32 ± 3.23 . Group 2 showed mean value of varus angle of 5.64 ± 0.54 , and BMI of 25.67 ± 3.12 . The degree of varus of group 2 was statistically significantly higher than group 1($p=0.002$). Comparison between BMI of two groups showed no statistical significance($p=0.053$). Conclusion : Authors have found out through a comparative study of sole horizontal tear and root ligament tear of the PHMM and, that sole root ligament tear of the PHMM is more relative to genu varum than sole horizontal tear of the PHMM. However, body weight was statistically irrelevant to the occurrence of two lesions.

Abstract no.: 31908

DISTAL FEMORAL REPLACEMENTS FOR PERI-PROSTHETIC FRACTURE AROUND TOTAL KNEE ARTHROPLASTY

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Introduction Total knee arthroplasty (TKA) is a common orthopaedic operation in the UK and periprosthetic fracture has been increasing in incidence. There are several different strategies for management of these injuries. One under-reported practice is to perform distal femoral replacement, previously utilised as tumour prostheses, in cases with poor bone stock. **Materials & Methods** The department's electronic database was searched for all patients undergoing revision TKA. From these, all patients having distal femoral replacement using the Stryker Global Modular Replacement System (GMRS) implant for a periprosthetic fracture were filtered. These patients' notes were retrospectively analysed to examine patient demographics, surgical factors and post-operative complications. Oxford Knee Scores and SF-36 lifestyle scores were performed. **Results** From 2007, 11 patients (mean age 82, range 61-90 years) received distal femoral replacement for periprosthetic fracture of a TKA. Follow up was a mean of 81 months (range 10-181 months). One patient died from causes unrelated to their operation. Of the rest, all implants survived without the need for revision. 3 patients made un-eventful recoveries. Complications included the need for blood transfusion (2), superficial infection (2) and one case of foot drop. Mean Oxford Knee Score was 21.6 (range 5-32). **Conclusions** Distal femoral replacement for patients with periprosthetic fracture around an existing TKA has been performed in our department with few complications and acceptable functional outcomes for our patients. However, it is a technically challenging operation and should be reserved as a salvage procedure for patients with poor bone stock and low demands.

Abstract no.: 31909

OSTEOSYNTHESIS WITH CANNULATED SCREWS AND FIBULA IN FRACTURE NECK OF FEMUR IN ELDERLY PATIENTS

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The objective of the study was to document union rate and associated complications with cannulated screws and free fibular graft in fracture neck of femur (NOF) in the elderly age group in which mostly hemiarthroplasty is the recommended method of management. 33 patients were included in this study, age range 55 -70 yrs , with Garden type II, III & IV staging . Duration of fractures was less than three weeks old, Posterior comminution was present in 20(60%) cases. Closed reduction was done with Whitman technique in 82% cases and Leadbetter technique in 18% cases. Fibular graft was harvested by Henry's standard posterolateral approach. Static quadriceps drill exercises and non weight bearing walk were started 2-4 days after the operation. Clinico-radiological follow up of all the patients was done initially every 6 weeks till the radiological union and thereafter every 3 months. Patients were allowed full weight bearing only after satisfactory radiological evidence of union of the fracture. Check x-rays were done on each follow up and were evaluated for the evidence of bony union, avascular necrosis, varus collapse, position of the graft and screws and incorporation of the graft .Clinically the patients were evaluated for pain in the hip and donor site/ankle, walking capacity, range of motion, functional capacity and other complications related to donor site. Final results were evaluated on the basis of Harris Hip scoring system and were found to be excellent in 05(15%) ,good in 15(46%) , fair in 7(21%) and poor in 6(18%) .

Abstract no.: 31911

ANATOMICAL DOUBLE BUNDLE ACL RECONSTRUCTION: TECHNICAL ADVANTAGES OF SIX STRAND HAMSTRING GRAFT WITH LONG TERM RESULTS

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Introduction : In double bundle (DB) ACLR, the doubled gracilis (G) tendon used for PL bundle is usually thin (less than 5 mm diameter) . This leads to a loose and weak graft in the tunnel as the tunnel diameter is minimum 5 mm for Endobutton and this may lead to failure of DB reconstruction. So we prospectively evaluated clinical results of six strand DB ACLR in Indian patients.**Method:** 42 patients were operated with DB ACLR using 6 strand hamstring graft. If the doubled G diameter was found less than 5 mm, and the ST length was more than 30 cm, we proceed with 6 strand method. 6 strand technique conceptualized as follows- half of the ST and G doubled on themselves making a 4 strand graft for AM bundle and rest half of the ST doubled on itself making a 2 strand graft for PL bundle. **Results :**The average PL bundle graft diameter was 6.2 mm and that of AM bundle graft diameter was 7.7 mm when compared to average doubled gracilis diameter was 4.8 mm and doubled ST diameter was 6.5 mm intraoperatively. All patients significant improvement in subjective IKDC 2000 score and Lysholm's score between preoperative and last follow up ($p < 0.005$). **Discussion:** With the same harvested graft we were able to increase the diameter of both AM and PL graft by more than or equal to 1 mm. We strongly recommend six strand technique in patients when harvested doubled G diameter is less than 5 mm.

Abstract no.: 31913

INTRA-ARTICULAR CALCANEAL FRACTURES MINIMAL IMPLANTS

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Open anatomical reduction, rigid internal fixation and early mobilization is the basic principle for all intra-articular fractures and this also holds true for Calcaneum but because of its anatomical situation, the results are quite controversial and full of complications in particular wound dehiscence, sepsis and adhesions. The purpose of this study was to avert these complications by fixing the fractures minimally by screws and no buttressing plate was used, with the idea that even after ORIF, POP had to be given and moreover the patients were not allowed to bear weight till radiological union. By adopting this protocol in our series, we could reduce these complications minimally. Between Jan 1995 –Jan 2002, 35 cases of Intra-articular calcaneal fractures were treated by extensile lateral approach with open reduction and minimal internal fixation by using different types of screws. POP was given for 6 weeks and then gradually the patients were encouraged to mobilize talar and sub-talar joints. All patients were followed up for 1-3 years, till they returned to their jobs. 81% of the patients (laborers) returned to their original jobs within 6-8 months while sedentary workers returned to their jobs within 3 weeks to 2 months. Sepsis was seen in one case with loss of reduction and wound dehiscence only in two cases. Ideal treatment of Displaced Calcaneal Intra-articular fractures remained controversial, but can be successfully treated by sticking to the basic principles of surgery with minimal implants and all inherited complications can then be averted.

Abstract no.: 31920

SURGICAL MANAGEMENT OF RESISTANT & NEGLECTED IDIOPATHIC CONGENITAL TALIPES EQUINO VARUS DEFORMITY – A COMPARATIVE STUDY OF COMPLETE SUBTALAR RELEASE & JOSHI'S EXTERNAL STABILIZATION SYSTEM (JESS FIXATOR)

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The treatment of resistant and neglected clubfoot is still a challenge. Extensive open surgeries may lead to postoperative scarring and various complications. Gradual distraction using external fixators for treatment of these cases was described by many workers in the last decade. Our study was a randomized controlled prospective study. Cases of resistant and neglected idiopathic congenital equinovarus feet were divided into two groups. Group I with 25 feet were treated by Joshi's external stabilization system (JESS Fixator) and equal numbers of feet were operated by complete subtalar release described by Simons' in Group II. We assessed the clinical and radiological correction achieved by both procedures and compared their results. The age group in our study was 1-2 years with a mean of 15.8 months. Bilateral foot deformity was found in 18 patients. The minimum follow up was 13 months. We used clinical, functional and radiological parameters used by Simons and Magone on a 100 points scale to assess the results. We found no statistically significant difference in the clinical outcome between the groups. Radiological outcome of changes in lateral talocalcaneal angle was found to be statistically significant in between two groups. There was no statistically significant difference in the functional outcome in between the groups and when means score between the groups was compared (85.16 v/s 85.60) it was also not statistically significant. In conclusion we found that JESS fixator is a good alternative to Simon's procedure and can avoid the wound complications and surgical scar associated with latter.

Abstract no.: 31925

EFFECTIVENESS OF NON-VASCULARIZED AUTOGENOUS LONG FIBULAR STRUT GRAFT IN SPINAL SURGERY: CASE SERIES AND REVIEW OF THE LITERATURES

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The seven cases of spinal defect after spinal resection were replaced with anterior non-vascularized autogenous long fibular strut graft. These were three kyphoscoliosis at thoracolumbar level, one kyphosis at cervical level, one tuberculous spondylitis and two spinal tumors. The average length of these strut grafts in these cases was 20 cm. Two cases of spinal tumors were augmented with posterior fusion and pedicle screw plate system in order to achieve immediate stability and subsequent stability following the period of post operative radiotherapy which might retard graft revascularization. A case of cervical kyphosis was also augmented with anterior cervical plate system to enhance the stability. Healing of the graft was evidenced within 6 months after surgery. Stress fracture of the graft was observed in two cases, one of which correlated with curve progression. However, no clinical deterioration or the need of surgical revision was observed. In general, the length of non-vascularized strut graft has been suggested not to exceed 7 cm. as it associates with more postoperative graft complications, and lower union rate. However, no non-union was observed in our case series even with the use of up to 20 cm. strut graft. Patients with stress fracture of the graft still had good clinical outcomes. In conclusion, through our long-term observation, the length of the non-vascularized autogenous fibular strut graft up to 20 cm. can result in clinical union within 6 months.

Abstract no.: 31926

THE TREATMENT OF INFECTED NONUNION OF FEMUR VIA ANTIBIOTIC CEMENT-COATED INTERLOCKING NAIL.

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The patients with infected femoral nonunion are not ideal candidates for external fixation with a traditional two-stage treatment. The purpose of this article is to present our experience in the treatment of infection in conjunction with nonunited femoral fracture using an intramedullary antibiotic cement-coated nails. Retrospectively were studied nine patients who had treated in our clinic between 2008 and 2010. There were 5 female and 4 male with an average age of 34.7 years (range 27 to 69) with posttraumatic infected nonunion of femur. In eight cases, treatment involved the proximal part of femur and in one case the distal part. Methicillin-resistant *Staphylococcus aureus* was identified in all patients. For fracture fixation and local antibiotic delivery had been used hand-fashioned antibiotic PMMA-coated intramedullary locked nails. One dose of gentamycin-fixed polymethylmethacrylate + vancomycin 2.0 was applied for cement mantle. The antegrade nailing with closed reduction and reaming was performed in 8, retrograde in 1 case. The average follow-up time was 2.1 years Mean time to full weight bearing comprised 5.0 ± 1.4 months. In 6 cases control of infection and union was achieved and 3 patients had a bony union with intermittent wound discharge. All patients returned to their daily activity. Using of coated implants is allowed to get a high concentration in the local area without systemic side effects in combination with fracture stabilization. This technique showed satisfactory results in our short series of patients.

Abstract no.: 31931

COMBINED UNICONDYLAR KNEE ARTHROPLASTY AND HIGH TIBIAL OSTEOTOMY FOR ISOLATED MEDIAL COMPARTMENTAL KNEE ARTHRITIS WITH JUXTA-ARTICULAR CORONAL DEFORMITY

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Unicondylar knee arthroplasty (UKA) is an effective treatment for isolated unicompartimental knee osteoarthritis (OA). Correct mechanical alignment is crucial to prevent overloading of implant or unaffected knee compartments. Medial knee OA with juxta-articular coronal deformity may not be addressed by UKA alone. We present a technique of combined medial UKA and high tibial osteotomy (HTO). On full leg radiographs two patients revealed marked varus mechanical femoral tibial angle (mFTA) with decreased medial proximal tibial angle (MPTA) of 82° each (hypervarus group). Two patients had neutral mFTA with increased MPTA of 96° and 92° (hypovarus group). Surgery involved initial UKA with varus/valgus tibial cut anticipating HTO needed to correct for abnormal MPTA. HTO was performed more distally to maintain adequate bony bridging between HTO and UKA. Patients had routine UKA aftercare except for partial weight bearing for 6 weeks. There were no complications. All osteotomies healed uneventfully. Hypervarus patients required 5° medial opening wedge HTO, hypovarus patients 5° medial closing HTO. Postoperatively, hypervarus patients revealed corrected mFTA (3.5° and 5°varus) and MPTA (89° and 87°), as did hypovarus patients (mFTA 3.9° and 3.3°varus; MPTA 87° and 89°). All patients revealed good to excellent outcome ROM improved from preoperative 117.5±21(100-140)° to 131.3±6(125-140)° flexion with full extension at mean 8.5 (range 3-16) months postop. We presented a surgical technique of combined medial UKA and HTO to treat medial knee OA with juxta-articular coronal deformity. This technique may expand indications for UKA after further evaluation with larger patient series and longer follow-up.

Abstract no.: 31932

NEGLECTED RUPTURES OF THE PATELLAR TENDON: 18 CASES

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Introduction: The neglected rupture of the patellar tendon is rare. The goal of this work is to bring back the results of 18 cases. Methodology: Retrospective study of 18 cases of rupture neglected of the patellar tendon dealt surgically with 2000 to 2011. Results: 11hommes and 7 women, the average age was 33 years (21-52 years). The etiologies were dominated by the diseases of system (eight cases) and the accidents of the public highway (five cases). The average time of consultation was 45 days with the extreme going from 32 days to three months. Surgical exploration had specified that the rupture was total in 14 cases and partial in 4 cases, it sat on the level under patellar in ten cases. The treatment is resolutely surgical. The repair of the lesions were made using the scrap of reversal aponevrotic of the quadriceps in 14 cases, and by plasty using the tendon of semitendinosus muscle in four cases. In all the cases, a setting at rest of the tendon by metal framing was carried out. The remote results were appreciated by criteria clinical and radiological according to score of Kelly and they were good in 14 cases and bad for four cases. Discussion: We conclude that the neglected rupture of the patellar tendon is the prerogative of the young adult, generally active and that the techniques of the surgical, surgical treatment provide good functional recovery, that depend on the age of the lesion.

Abstract no.: 31934

EARLY REHABILITATION AND COMFORTABLE POLY TRAUMA BY FIXAS TREATMENT

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Question: Could one provide a full stability of the bone sequence, the full flexion and more comfort at poly trauma, heavy war injuries, big bone defects, and deformity corrections (even at the heaviest cases)? Since 1985, compression-distraction method was successfully used in Cantonal Hospital in Zenica. First six years we only used Ilizarov fixator, and last twenty years we are using our own fixator FixAS. This work will show advantages of FixAS apparatus at large deformation corrections, simultaneous lengthening by external or internal transport, and deformation correction, heavy war injuries, non union, big bone defects after tumor resection, lengthening and other. Advantages are especially important for solving hip and femur problems, and knee deformation corrections. Our method provides full comfort during treatment, as well as easy rehabilitation – until full scope of joint movement. This way, extremity is saved even in heaviest cases, unlike other methods (bone grafting, free flap), which were more expensive and often ended by an amputation. This fully satisfies the principle minimum metal, maximum stability and comfort. Answer: Yes, indeed, it can be achieved – by using FixAS universal fixator!

Abstract no.: 31935

IMPLANT FAILURE IN A DISTAL RADIUS LOW-PROFILE PLATE: A RARE

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Introduction:Volar plate fixation for a distal radius fracture is a commonly performed surgery. However, there is paucity in literature describing an implant failure at this site.

Discussion:We describe a rare case of fracture of a lowprofile Ellis T plate. We discuss in detail the biomechanical factors associated with such a rare implant failure situation.

Conclusion:We also highlight the importance of surgical technique to avoid implant failure when faced with such a scenario.

Abstract no.: 31937

36 HOURS FOR HIP FRACTURES: EVIDENCE BASED GUIDELINE OR UNREALISTIC TARGET?

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Introduction: The 2011 National Hip Fracture Database Report has shown our institute has the fewest number of patients meeting the 36-hour target to theatre in the UK (9%), but well above the national average for preoperative orthogeriatric review (42.5%) at 76%. We believe our timely medical input results in physiological normalization prior to surgery. We reviewed our postoperative results to determine if our patients had significantly different morbidity and mortality in comparison to UK figures. Method: We reviewed 152 patients between September 2009 and 2010. Patients were prospectively identified and their information was added to our hip fracture database. Using auditing software we reviewed patient outcomes and compared them to national averages using National Hip Fracture Database figures. Results: Of the patients identified 13% met the 36-hour target. The average time to theatre for the group was 89 hours. 83% of the group had a pre-operative orthogeriatric review. The main reasons for surgical delay were a lack space on a theatre list (61.2%) and patients being medically unfit for surgery (16.4%). The average length of acute hospital stay was 16.4 days matching the national average while 30-Day mortality at 7.9% was (0.5%) lower than NHFD figures. Conclusion: We continue to try and expedite surgery for this patient group, accepting that delay is mostly related to limited theatre access. However the evidence base for the 36-hour target is quoted as “low quality” or “very low quality”. Our data shows no significant increase in morbidity or mortality compared to national average figures.

Abstract no.: 31938

THE EFFICACY TWO-STAGE REPLACEMENT IN PERIPROSTHETIC JOINT INFECTION

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The efficacy two-stage replacement in periprosthetic joint infection. The study included retrospective assessment of two-stage exchange for periprosthetic joint infection after total hip replacement. 38 patients underwent removal of the prosthesis from January 2009 to January 2011. Spacer was not used. Patients were followed-up for one year. Infection was observed at 30.9 months (1-156) after arthroplasty. Antibiotic therapy had continued for 26.9 days. Most often we used vancomycin 31.6%, ciprofloxacin 15.8%, cefazolin 10.5%. Second stage was carried out 15.5 months (2-48) after removal, intraoperative culture was positive in 23.1% of cases. Antibiotic therapy had continued during 12.8 days, 10.4% during one day. 50% of patients received vancomycin. Recurrence of infection was observed in 7.9% (3) of patients within first 3 months. Clinical efficacy of two-stage exchange without the use of a spacer was 92.1%. Good results can be explained by meticulous debridement, removal of biofilms and the adequate antibiotic therapy.

Abstract no.: 31939

EARLY RESULTS OF A NEW TECHNIQUE OF PERCUTANEOUS ACHILLES TENOTOMY FOR IDIOPATHIC CLUBFOOT– THE POSTERIOR TO ANTERIOR CONTROLLED (PAC) TECHNIQUE

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Introduction: Percutaneous Achilles tenotomy is an integral part of the Ponseti technique. Though considered as a simple procedure, many authors have reported serious neurovascular complications that include iatrogenic injury to the lesser saphenous vein, the posterior tibial neurovascular bundle, the sural artery and pseudoaneurysm formation. The authors describe the results of their new tenotomy technique, the 'Posterior to Anterior Controlled' (PAC) technique in an attempt to eliminate such complications. Methods: Prospective study. Infants < 1 year of age with idiopathic clubfoot were taken up for the Ponseti technique of correction. Tenotomy was performed by the 'PAC' technique under local anaesthesia if passive dorsiflexion was found to be < 15 degrees. Outcome measures included completeness of the tenotomy (by ultrasonography), improvement in the equinus angle and occurrence of neurovascular complications. Results: 40 clubfeet in 22 patients underwent 'PAC' tenotomy. The mean age was 3.5 months. The tenotomy was found to be complete in all cases. The equinus angle improved by an average of 78.5 degrees (range 70-95 degrees), which was statistically significant ($p < 0.05$, students t test). Mild soakage of the cast with blood was noted in 21 (52.5%) cases. No neurovascular complication was noted. The average follow-up was 12.2 months (range 9 - 18 months). Conclusion: The 'PAC' tenotomy virtually eliminates the possibility of neurovascular damage, maintains the percutaneous nature of the procedure, is easy to learn and can be performed even by relatively inexperienced surgeons safely and effectively as an office procedure under local anaesthesia.

Abstract no.: 31942

PULLOUT FAILURE STRENGTH OF THE POSTERIOR HORN OF THE MEDIAL MENISCUS WITH ROOT LIGAMENT TEAR: A BIOMECHANICAL STUDY

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Purpose: To evaluate validity of reparability of posterior horn of medial meniscus (PHMM) with root ligament tear by measuring real pullout failure strength of simple vertical suture of arthroscopic subtotal meniscectomized PHMM. Materials and Methods: From November 2009 to May 2010, 9 specimens of PHMM were obtained from arthroscopic subtotal meniscectomy as a treatment of root ligament rupture of the PHMM. Simple vertical suture using a 0 Ethibond was performed at 7mm medial point from torn root ligament of PHMM and baseball suture using two 0 Ethibonds were done on resected medial margin. Afterwards, specimen was kept in frozen state at -70°C . The degree of degeneration, extrusion, and medial displacement of medial meniscus (MM) were evaluated through MRI. Kellgren-Lawrence (K-L) classification was measured in standing plain radiography, and mechanical alignment was measured using orthoroentgenography. In arthroscopy, torn morphologies were classified into ligament proper type or meniscoligamentous junctional type, and associated injuries were checked if present. Results: The mean pullout failure strength of PHMM was $71.613 \pm 23.181\text{N}$ (range 41.434 to 107.731 N). Degeneration of PHMM in MRI showed statistically significant correlation with pullout failure strength and K-L classification. Pullout failure strength showed correlation with mechanical alignment and K-L classification ($P < .05$). Conclusion: The measurement of pullout failure strength of PHMM with root ligament tear showed a result of repairable degree. The degenerative degree of PHMM showed significant correlation with pullout failure strength, and pullout failure strength was confirmed to be correlated with degeneration degree of PHMM, mechanical alignment, and K-L classification.

Abstract no.: 31944

PATIENT PERCEPTIONS OF NAVIGATION AND ROBOTICS IN ORTHOPAEDIC SURGERY: A PATIENT SURVEY

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Introduction Technology in Orthopaedic surgery has expanded in the past 20 years. Although patients are aware of benefits of conventional arthroplasty, little is known on patients' knowledge of the prevalence, benefits or drawbacks of surgery involving navigation or robotic systems. Methods In an outpatient arthroplasty clinic, 100 consecutive patients were approached and given questionnaires to assess their knowledge of Navigation/Robotics in Orthopaedic surgery. Results 98 patients volunteered to participate in the survey, mean age 56.2 years. 40% of patients thought more than 30% of NHS Orthopaedic operations involved navigation or robotics; 80% believed this was the same level or less than the private sector. A third believed most of an operation could be performed independently by a robotic/navigation system. Perceived benefits of navigation/robotic surgery were more accurate surgery(47%) and quicker surgery (50%). 69% believed navigation/robotics was more expensive and 20% believed it held no benefit against conventional surgery, with only 9% believing it led to longer surgery. Almost 50% would not mind some of their operation being performed with use of robotics/navigation, with a significantly greater proportion of these coming from patients aged under 50 years. Conclusions Few patients were familiar with navigation/robotics, yet there was strong consensus that it was quicker and more accurate than conventional surgery. Many patients appear to believe navigation and robotics is largely the preserve of the private sector. This study demonstrates public knowledge of navigation/robotics is limited. We must inform patients of their relative merits and drawbacks prior to more widespread implementation.

Abstract no.: 31945

THE OUTCOME OF PERCUTANEOUS REPAIR OF ACUTE ACHILLES TENDON RUPTURE FOLLOWED BY EARLY WEIGHT BEARING AND AN ACCELERATED REHABILITATION PROGRAMME.

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Introduction:The management of acute Achilles Tendon (AT) rupture still controversial. The advent of minimally invasive techniques is thought to allow faster rehabilitation. We report the outcome of patients with acute AT ruptures that have undergone percutaneous repair followed by an accelerated rehabilitation programme with early weight-bearing. **Methods:**A single centre, prospective cohort study was undertaken. Twenty patients (13 men, 7 women; mean age: 40.11 years) with an acute AT rupture were enrolled and followed-up for a minimum of 9 months. All operations were performed under local anaesthesia, using a modified percutaneous technique, within 2 weeks of injury. Patients had an equines cast for only 2 weeks then allowed to weight bear through a walker boot with 3 heel wedges, which were removed sequentially over a 6-week period. A standardized physiotherapy programme was started at week 6 and continued until 6 months. **Results:**There were no re-ruptures in the study group. The mean 3- and 6-month ATRS was 57.15 and 85.07 respectively. This improvement was statistically significant ($p < 0.001$). There were no cases of sural nerve injury. One superficial wound infection was identified and treated with oral antibiotics. All patients were able to fully weight bear on the operated leg by the eighth post-operative week, without the walker boot. At the 6 month follow-up, the average satisfaction rate with the procedure and the rehabilitation programme was 85%. **Conclusion:** The results of this study demonstrate that minimally invasive repair of acute AT ruptures, combined with an accelerated rehabilitation programme provides a safe and reproducible treatment option.

Abstract no.: 31947

BICONDYLAR HOFFA FRACTURE: A POSSIBLE MECHANISM OF INJURY AND CLASSIFICATION

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Coronal shear fracture of the distal femur (Hoffa fracture) is an unusual injury. It usually involves the lateral femoral condyle. Bicondylar Hoffa fracture, involving both the femoral condyles is extremely rare. Most cases of bicondylar Hoffa fracture have two fracture lines and the two condyles are separated. We describe a case of conjoint bicondylar Hoffa fracture where both the condyles were joined by a bridge of intact bone. Plain radiographs were inadequate to define the pattern of injury. Computer tomography scans demonstrated the exact fracture configuration and were invaluable in the surgical planning. The patient was treated with ORIF using cannulated cancellous screws via Swashbuckler (modified anterior) approach. At the final follow-up at 18 months the patient had excellent functional outcome. We feel that a bicondylar Hoffa fracture occurs when the flexed knee is subjected to a posterior and upward directed force without any varus or valgus component and that the proximity of the fracture line depends upon the degree of knee flexion at the time of impact. Dua et al classified Hoffa fracture into four types: Type 1- Isolated Hoffa fracture (medial or lateral), Type 2 : Bicondylar Hoffa fracture and Type 3 and 4 Isolated Hoffas fracture with supracondylar or intercondylar distal femoral fractures. We feel that type 2 should be subclassified into: Type 2a- Conjoint bicondylar Hoffa fracture where the two condyles are joined by a bride of intact bone: Type 2b-Non conjoint bicondylar Hoffa fracture where the two condyles are separate from each other.

Abstract no.: 31949

OPEN REDUCTION AND PLATE-SCREW FIXATION OF SPIRAL-MEDIAL BUTTERFLY FRACTURES (AO-12-B1) IN DISTAL DIAPHYSIS OF HUMERUS

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The aim of the study was to investigate the results of treatment of spiral –medial butterfly fractures in distal diaphysis of humerus. Methods: Between 2010-2011 years, seven patients were referred to us spiral –medial butterfly fractures in distal diaphysis of humerus. All fractures results from traffic accident. All fractures were displaced and medial butterfly was separated. All of them were treated with open reduction and plate-screw fixation using lateral incision. Long medial butterfly fragment was pulled with screws through plate holes. Passive elbow motion was started immediately postoperative third day. Results: All fractures were healed 3 months after surgery completely. No patients had delayed union or nonunion. A patient had temporary radial nerve palsy which is resolved 3 months after surgery. No patient had limitation of shoulder motion. Two patients had minimal elbow extension (less than 10°). Conclusion: Spiral-medial butterfly fractures are very rare and conservative treatment pretty difficult due to angulations and separation between bone fragments. We concluded that these fractures can be treated using lateral plate fixation pulling medial butterfly with screws through plate hole

Abstract no.: 31951

ELECTROCUTION: AN UNUSUAL PRESENTATION OF A LISFRANC INJURY

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Introduction: We describe the unusual presentation of a Lisfranc injury in a diabetic patient caused by electrocution. **History:** A 58 year old lady presented to the Emergency Department with an acutely painful and swollen right foot. She had received an electric shock to her right midfoot whilst walking over a manhole cover. Clinical assessment at the time suggested an isolated, minor right foot injury and the patient was discharged with advice. The patient re-presented two weeks later with persistent right foot symptoms and was unable to weight-bear. She had a history of type 2 Diabetes Mellitus with a mild peripheral sensory neuropathy. She denied any other previous lower limb abnormalities or trauma. Clinical examination showed the right foot to be deformed, tender and swollen. Bilateral radiographs of the feet showed evidence of a Lisfranc injury in the electrocuted foot. A CT scan confirmed the diagnosis, revealing a homolateral fracture dislocation in the Lisfranc joint with medial dislocation of the medial cuneiform, and plantar subluxation of the Choparts joint with avulsion fractures of the talar side of the talar-navicular joint and the cuboid side of the cuboid-cuneiform joint. **Treatment:** Operative management of the injury was undertaken. Open reduction was performed using two dorsal incisions and internal fixation was achieved. **Conclusion:** Injuries to the Lisfranc joint are often mistaken for simple foot sprains and can be associated with significant disability. These injuries may present in unusual circumstances and a high index of suspicion is essential for early diagnosis and successful management, especially in diabetic patients

Abstract no.: 31957

MODULAR PROXIMAL FEMORAL REPLACEMENT IN SALVAGE HIP SURGERY FOR NON-NEOPLASTIC CONDITIONS

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Background: Addressing severe proximal femoral bone loss in revision hip surgery is a challenging reconstructive problem. The use of modular proximal femoral megaprotheses is one of many available options to address this. Patients and Methods: This is a retrospective review of 15 patients who had undergone limb salvage at our institution using a modular proximal femoral replacement. There were 8 males and 7 females with a mean age of 67 years (34 to 85) and a mean follow-up of 60 months (1 to 99). Indications included re-implantation for deep infection in nine patients, aseptic loosening in three, periprosthetic fracture in two and painful excision arthroplasty in one. Results: Mean Harris hip score increased from 28 (13 to 49) pre-operatively to 69 (39 to 85) at final follow-up (paired t-test, $p < 0.0001$) and mean Toronto Extremity Salvage score increased from 26% (14 to 40) to 71% (35 to 82) (paired t-test, $p < 0.0001$). Prosthesis survival with revision as the endpoint was 87% at 5 years. There were two dislocations (14%) and there was failure to eradicate deep infection in two. Conclusion: Modular proximal femoral replacement provided good function and versatility with an acceptable complication rate for patients with severe proximal femoral bone loss with or without infection.

Abstract no.: 31958

THE EPIDEMIOLOGY OF INJURIES SUSTAINED BY ELITE UK ATHLETES

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Introduction: As London prepares to host both the 2012 Olympics and 2017 World Athletics Championships, athletes representing the United Kingdom will increase their training intensity. The effectiveness of preventative training to prevent injuries is well recognised. A current lack of data on injuries sustained by track and field athletes representing the United Kingdom is a barrier to such preventative measures. This retrospective epidemiology study analyses all injuries sustained by elite athletes recorded by governing body UK Athletics since 2004. Results: 756 discrete injuries were identified in 91 athletes over a period of 7 years divided as follows: Tendon injuries 34.4%, muscular injuries 25.8%, joint injuries 14.3%, ligament injuries 5.8% and fractures 5.1%. Discussion: Invariably, athletes predominantly injure the body parts they use in their chosen track and field event. The most common site of injury amongst runners was ankle/heel, accounting for 22% of sprinters' injuries and 24% for middle-distance runners. Hurdle events created a higher percentage of knee injuries than their flat-sprint counterparts over 100m/110mH - 16% vs 12%, but not 400m: 15% vs 9% with hurdles. Surprisingly, javelin throwers were also more likely to injure their ankles and heels followed by their feet, rather than their shoulders. This may reflect a conscious emphasis on effective shoulder warm-up and stretching exercises and / or neglect of other body areas. Prevention is the best cure for all maladies. Athletic injuries are no exception. This data provides information specific to UK athletes thereby guiding preventative training measures and pre-emptive rehabilitation awareness.

Abstract no.: 31961

PREOPERATIVE TEMPLATING IN TOTAL KNEE ARTHROPLASTY (TKA) USING ELECTROMAGNETIC (EM) COMPUTER NAVIGATION

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Introduction:In joint replacement surgery, meticulous preoperative planning allows the surgeon to perform the procedure precisely, avoid potential intra operative complications, and achieve good surgical results.**Methods:**A retrospective review of the preoperative radiographs, templates, plans and operative reports of 30 consecutive primary total knee replacements using Nexgen EM computer assisted navigation was performed. There were 13 males and 17 females, average age was 70 years.Four measurements were taken: femoral anteroposterior and lateral view, tibial anteroposterior and lateral view. Correlation between preoperatively templated size findings and intraoperative computer assisted size findings was performed. **Results:** For the femoral component size, the templated size measuring from lateral intercondylar view had the highest accuracy of 83.3 % (25/30 knees) and for the femoral AP view was 70 % (21/30 knees) . For the tibial components, the highest prediction of the final component size was measured from tibia AP view with the accuracy of 80 % (24/30) and for the lateral tibial view; it was 56.6 % (17/30).**Discussion and Conclusion:** By using the percentage of the degree of agreement, the lateral intercondylar view of femur and AP view of the tibia gave the best agreement for the femoral component (83.3%) and tibial component (80%) respectively.Both values indicate high levels of agreement above chance.Preoperative templating may optimize surgical time and facilitate the identification of specific cases that require special implants.

Abstract no.: 31962

NON UNION OF DIAPHYSIAL HUMERAL FRACTURES

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Background: Humeral shaft fractures represent 2-7% of all fractures ,it mostly heal by conservative treatment methods, frequently few fractures fail to unite : several fixation modalities have been used with types of bone graft .Aim: This retrospective and prospective study is to analyze the local and environmental factors of fifty eight patients having non union of diaphysial humeral fractures and the results of treatment by open reduction and internal fixation by plate and screws and autogenous bone graft application .Results: Fifty three patients had good results in clinical and radiological union of their humeri, in five patients the bone fail to unite ,graft resorbed with or without plate failure .Conclusion: We concluded that sever injuries with soft tissue damage is a major cause of nonunion and fixation by plate and screws with autogenous bone graft is a good method of treatment when other options are not available .

Abstract no.: 31964

CUSTOM CEMENTLESS TOTAL HIP ARTHROPLASTY IN PATIENTS WITH LEGG-CALVE´-PERTHES DISEASE

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INTRODUCTION: Legg-Calve´-Perthes disease is characterized by osteonecrosis of the femoral head during childhood. In addition to the young age of the patient and the presence of multiplanar deformities, total hip replacement is often complicated by previous surgical procedures performed during childhood that may make total hip arthroplasty more difficult particularly femoral osteotomies which can alter the normal proximal femoral osteology making femoral replacement more challenging **OBJECTIVES:** The aim of this study was to review the results of total hip replacement in young patients with Legg-Calve´-Perthes disease with an average follow-up of ten years. We determined survivorship, function, radiographic findings, and complications associated with a cementless custom- made femoral components used in THAs for patients with Legg-Calve´-Perthes disease. **METHODS:** We retrospectively reviewed all 14 patients who had 15 primary THAs using a custom-made cementless femoral component for advanced OA secondary to Legg-Calve´-Perthes between 1996 and 2003. **RESULTS:** The survivorship rates of the femoral and acetabular components were 100% and 79%, respectively, at a mean of 10.1 years (range, 5–15 years). Revision arthroplasty was performed in three hips (21%). where the acetabular component was revised . The mean HHS improved from 41 (range, 27–57) pre- operatively to 80 (range, 51–94) at the time of last followup. **CONCLUSION:** The results of our study allow us to recommend custom-made cementless prostheses for the treatment of osteoarthritis of the hip secondary to Legg- Calve´-Perthes disease in the presence of previous surgery and proximal femoral deformity.

Abstract no.: 31965

**SURGICAL TREATMENT OF CONGENITAL COXA VARA ACCOMPANIED
WITH SHORTENED FEMUR IN
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Introduction: They used double osteotomy at the level of the great trochanter and one corticotomy below the minor trochanter. They displaced the great trochanter outwards and down, so making simultaneously a lengthening of femur no more than 2 cm. at maximum. This method was used in 24 children. **Material and Methods:** The material for analysis was taken from 2000 to 2010. The subject of an analysis had only congenital varus deformity on upper end of a femur with a great trochanter highly placed and femur shortened. These cases were followed up for 10 years. **Results:** We achieved good results with this surgical treatment, in the way that the centricity of the hip joint was not changed, the great trochanter was also placed on the regular place of femur so the muscles level was prolonged and finally the short femur was lengthened, too. So, the biomechanical properties were improved, as walking without limping in 19 children. **Discussion:** This surgical solution might be useful in treatment of congenital coxa vara with regular centricity of the hip joint, great trochanter high placed and femur shortened. Besides, we think so that had not been day by day used valgus osteotomy because of the occurrence and producing of excentricity as consequence to the hip joint. **Conclusions:** Congenital coxa vara is not so rare disorder in orthopedic practice. On the other hand, this deformity is accompanied with femur shortened and inequality of the legs. We think that this surgical solution described above could be very useful in orthopedic surgery because we obtained good results in children.

Abstract no.: 31966

CAN A MODIFIED QUADRICEPS RELEASE RESULTS IN GREATER RANGE OF MOTION IN A STIFF ARTHRITIC KNEE

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Introduction: Results of arthroplasty are generally suboptimal in stiff arthritic knee in terms of postoperative range of motion. Preoperative stiffness of the knee is attributed to various causes including osteophytes, capsule contracture, patella baja, intra articular adhesions and most importantly hypothesised in our study, the quadriceps contracture. Studies are already being done whether the quadriceps contracture release can have the long term affect on postoperative range of motion and function. Aims and Objectives: To evaluate the clinical results of total knee arthroplasty in stiff knee. Methods: A 3 year follow up study of 100 stiff knees in 100 patients. Results: The mean arc of motion improved from 80 degrees preoperatively to 110 degrees postoperatively and KS knee score and function score of 39.58 and 39.9 improved to 81.55 and 58.15 respectively. Conclusion : Modified quadriceps release by minisubvastus approach has significantly increased the range of motion in a stiff knee.

Abstract no.: 31967

SINGLE BUNDLE RECONSTRUCTION OF ANTERIOR CRUCIATE LIGAMENT (ACL) IN PATIENTS OVER 50 YEARS AND OLDER.

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The aim of this study was to assess stability and functional outcome in middle-aged group of patients with ACL reconstruction. Methods: We reviewed stability and functional outcome in 40 patients aged over 50 years and older as part of our long term follow up assessment. Knee stability was compared between the operated and non-operated leg with KT 1000 arthrometer. For functional assessment IKDC, Tegner-Lysholm and SF 12 scores were collected simultaneously. Results: The mean follow up period 3.8 years (2.4-6 years) and the mean age of the patients and the control groups were 54.7 years and 29.4 years respectively. The mean IKDC, Tegner-Lysholm and SF 12 functional score were 86.1 and 87.5 and 55.7/49.5 (PCS/MCS) respectively. 11 patients (27.5%) had grade I changes on post-operative radiographs in accordance with IKDC guidelines. KT 1000 test showed no statistically significant difference between the mean values comparing the operated knee to the non-operated one (p.0.85) on unpaired t test. Conclusion: Our results showed that ACL reconstruction surgery is beneficial in patients with high activity level irrespective of their age.

Abstract no.: 31970

ACCURACY OF PRE-OPERATIVE DIGITAL TEMPLATING IN PRIMARY TOTAL HIP ARTHROPLASTY.

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The aim of this study is to evaluate the accuracy to predict component size and to detect leg length pre-operatively with Traumacad™ templating software (Brainlab, Germany) in primary total hip arthroplasty. Methods: A single surgeon series of 110 consecutive primary total hip arthroplasties were templated pre-operatively using magnification-calibrated radiographs. There were 83 women and 27 men with a mean age of 68 years (range: 55–78 years). All operations were performed using the Synergy™ (Smith & Nephew, Memphis, TN, US) femoral system and Reflection™ (Smith & Nephew, Memphis, TN, US) acetabular system with posterior approach as standard. Results: Exact component size was predicted in >75% of cases (within 1 size in >95% and within 2 sizes in 100%). Restoration of leg-length intra-operatively was highly reproducible and accurate, achieving a postoperative difference less than 5 mm in 91% of cases. Conclusion: Our results demonstrated that Traumacad™ is very reliable and accurate in the pre-operative digital templating of primary total hip arthroplasty.

Abstract no.: 31973

COMPLEX UPPER LIMB POLYTRAUMA: A CASE REPORT

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Upper limb injuries are common presenting complaints in A&E departments. Multifocal fractures within a single limb are frequently encountered. Ipsilateral radius with scaphoid fractures are rare and mostly involve the distal radius. The remainder tend to involve fractures of the radial head. Review of the literature available reveals only two described proximal radial shaft fractures in association with scaphoid fractures in adults. Here we report such a case with a concomitant open DRUJ disruption and radial head dislocation. The patient, a 31 year-old man, lost control of his motorcycle whilst intoxicated, colliding with an oncoming vehicle at unknown speed. The patient was assessed according to ATLS protocol and was found to be haemodynamically stable. Secondary survey revealed an open DRUJ disruption with a protruding ulna. X-rays in A&E resus revealed a DRUJ disruption, proximal radial fracture and a dislocated radial head. His other injuries included stable fractures of C7 & T5, sternum, first ribs bilaterally, several lower left ribs and the right scapula, plus bilateral pneumothoraces. Primary treatment of forearm injuries consisted of wound debridement under anaesthetic, plus temporary K-wire fixation of the DRUJ. During fluoroscopic screening of the wrist a fracture of the scaphoid was noted. The patient returned to theatre the next day for plating of the proximal radius and Acutrak™ screw fixation of his scaphoid. We highlight the importance of thorough systematic assessment and imaging of injuries at the time of presentation.

Abstract no.: 31982

PONSETI CLUBFOOT TREATMENT

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Introduction: Ponseti clubfoot treatment has gained popularity over the last decade. The infant is likely to undergo an Achilles tenotomy as part of their treatment. It is well recognised amongst practitioners performing this procedure that there is usually a satisfying give with the tenotomy but in a minority there is a slow gradual release. To the authors knowledge we are not aware of any studies looking at ease of tenotomy to predict problems. Method: We reviewed the medical records of 69 infants who had visited the Ponseti Clinic and underwent tendo Achillis tenotomy (20 female, 49 male). Results: The number of pre-tenotomy casts averaged at 3.6 (min 2 – max 11). There were a total of 104 tenotomies (right 20, left 14, bilateral 35). 27 had a gradual release of which 26 required longer treatments in cast or re-tenotomies (4). 4 patients had bilateral tenotomies of which one side was a good release and the other was gradual. In all of these patients the side with a gradual release required longer in cast post-tenotomy. Conclusions: Our study shows that patients with a gradual release are more likely to stay in a cast for longer post-tenotomy or require re-tenotomy. We recommend that these patients are reviewed more closely to ensure they do not run into any problems. We also recommend an ultrasound scan three weeks post tenotomy

Abstract no.: 31984

RESECTION ARTHROPLASTY COMBINED WITH THE OPENING WEDGE OSTEOTOMY OF THE FIRST METATARSAL BASE AREA IN TREATMENT OF HALLUX VALGUS

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Objects: To establish the effectiveness of Keller's arthroplasty combined with the opening wedge osteotomy of the first metatarsal base area (RAKO) on the plantar distribution of load during standing; to establish load duration and its mean value during each stance phase of the gait cycle; to establish patients' content with the performed surgery. Methods: Patients, aged 65-75, suffering from severe hallux valgus were divided into two groups of 40. The first group was treated with Keller's resection arthroplasty(RAK). The second group was treated with Keller's arthroplasty combined with the opening wedge osteotomy of the first metatarsal base area. The patients were assessed before the surgery and a year after the surgery. The clinical assessment was carried out with AO-FAS scoring system. HV angle, first intermetatarsal angle (1IM), first metatarsal inclination angle, the extent of the proximal phalange resection, the angle between the first and fifth metatarsals, and the extent of the pseudoegsostosis resection, were all measured roentgenologically. Distribution of the plantar pressure over the standard regions was measured with dynamic pedobarography. Conclusion: We significantly corrected the deformity of the hallux and the forefoot by employing the RAKO method. Dynamic pedobarography helped us prove statistically significant distribution changes concerning the extent and duration of the foot load during standing and the stance phase of the gait cycle. The results show function improvement the anterior part of the foot. Furthermore, patients' clinical score after the surgical procedure with the RAKO method was substantially improved.

Abstract no.: 31986

A REVIEW OF ORTHOPAEDIC CLASSIFICATIONS; ARE THEY JUSTIFIED IN THEIR USE?

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INTRODUCTION: Classification systems are used throughout Trauma and Orthopaedics (T&O) for communication, planning treatment options, predicting outcomes and research purposes. The majority of T&O knowledge and published literature is based upon such systems. We wanted to investigate the basis for the classification culture in our specialty by reviewing Orthopaedic classifications and the literature to assess whether the classifications had been independently validated. **METHODS:** 185 published classification systems within T&O were selected. The original publication for each classification system was reviewed to assess whether any validation process had been performed. Each paper was reviewed to see if any intra-observer or inter-observer error was reported. A PubMed search was then conducted for each classification system to assess whether any independent validation had been performed. Any measurement of validation and error was recorded. **RESULTS:** Four classifications (2.1%) had a validation process described in the classification's initial paper. 54 (29.1%) of the classifications had a related study that independently assessed the classification for validity but only 10 (18.5%) demonstrated either an intra-observer or inter-observer error that is described as excellent (kappa score >0.8). Only 2 classification systems of the 54 (3.7%) were shown to have both intra-observer and inter-observer errors as excellent. **CONCLUSION:** Few classification systems in T&O have never been independently validated and assessed for intra-observer and inter-observer error. Of those that have, only 2 are excellent. This questions the use of classification systems within T&O and queries the use of classification systems in the literature as part of evidence based medicine.

Abstract no.: 31988

AEROIONIC DIAGNOSTIC OF THE COMPARTMENT SYNDROME

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Blood supply disturbance of extremities with ischemical contractures was first described by Richard Folkman (1869). On the analogy with already made deep investigation of digestive and respiratory systems we have developed Aeroionic diagnostic method for musculoskeletal system. Compartment syndrom was chosen as the main object of investigation (local hypertensive ischemic syndrome). This method of investigation was used in 147 patients with acute compartment syndrome and 10 voluntaries without traumatic or vascular pathology. Pathologies led to compartment syndrome were as follows: fractures – 112, crush-syndrom – 5, burns – 15, frostbites– 15. With the help of Aeroionic diagnostic method we determine the presence of catabolic and anabolic reactions due to domination of different ions (O₂, CO₂, nitrates, ammonia, endogenous spirit). Increased levels of nitrates, ammonia, endogenous spirit are the characteristic signs for catabolic changes or presence of necrosis. All received aeroionic data showed direct correlation with clinical and laboratory signs. But Aeroionic method of diagnostics have some advantages, compared to monitoring of intrafascial pressure, percutaneous detection of pO₂ and pCO₂, pH, arteriography, this method is noninvasive; compared to other noninvasive methods – Doppler monitoring, laser Doppler, fluorescent coloring and impedance Aeroionic diagnostic method is more comfortable and informative.

Abstract no.: 31989

RESULTS OF ARTHROSCOPIC ADHESIOLYSIS IN THE ARTHROFIBROSIS OF THE KNEE

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Purpose : To research the prognostic factors that affect result of arthroscopic knee adhesiolysis and postoperative results in knee arthrofibrosis. **Materials and Methods :** 68 patients that underwent arthroscopic knee adhesiolysis, among patients who were diagnosed knee arthrofibrosis after fracture, soft tissue injury, and ligament injury on knee from June 2003 to June 2009, were chosen for study. The predisposing factor of knee arthrofibrosis, age, and duration of fibrosis were compared and analyzed along with knee range of motion before surgery, on the 2nd postoperative week, and on final follow up. **Results :** Preoperative extension (flexion contracture) was 16.0 degrees (11-60) and flexion was 77.6 degrees (26-108) on average. On the 2nd postoperative week, extension was 10.5 degrees (0-35) and maximum flexion was 102.3 degrees (43-135) on average. On the final follow up, extension was 8.2 degrees (0-20) and flexion was 118.4 degrees (60-135). The average increase of range of motion on the final follow up for 61 cases (89.7%) was 48.6 degrees (preoperative: 67.6 degrees, final follow up: 116.2 degrees) on average. **Conclusion :** According to operation finding and the results of which, all cases had a lesion of intraarticular fibrous adhesion that is related to knee arthrofibrosis on arthroscopic exam, and the arthroscopic treatment showed diverse degree of effect by their degree of accompanied lesion. Additionally, if the primary cause of arthrofibrosis was fibrous adhesion of knee joint due to around knee fracture, ligament injury and infection, arthroscopic adhesiolysis was primarily performed and satisfactory results were obtained.

Abstract no.: 31992

SHOULDER GIRDLE INJURIES IN MOUNTAIN BIKE ACCIDENTS

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Introduction: Mountain and Road bike accidents are particularly common with the increased popularity of the sport. We reviewed the attendances in our emergency department over a 4-year period looking at cycling injuries to detect the level and grade of these injuries and their outcomes. Method: Royal Blackburn Hospital caters for a population of 521,100. A search through the Hospital information system showed an average of 335 attendances per year (n = 1340) over the last four years due to biking related injuries. An average of 236 patients per year (n=944) had sustained a fracture of the upper or lower limb. We present a series of severe shoulder girdle injuries following mountain bike accidents in this cohort, to highlight the serious level of injury sustained in this sport. We searched medline and EMBASE databases over the last 10 years using the keywords, mountain, biking and fracture. This yielded 2 review articles, 5 cohort studies, 1 case-control study, 1 cross sectional survey, 2 case studies and 1 observational study. We compared our series with the literature. Conclusion: Major scapular injuries with destruction or disruption of the four bar linkage of the shoulder girdle are very common following mountain accidents. Clavicular fractures are the commonest upper limb injury. It is easy to miss a disruption to the four bar linkage associated with a clavicular injury. This paper highlights the severity of the injuries sustained in mountain bike accidents of the upper limb and requirement of adequate protection in this exhilarating sport.

Abstract no.: 31995

ACCURACY OF THE INTRA-MEDULLARY FEMORAL JIG IN TOTAL KNEE REPLACEMENT AND THE CORRELATION BETWEEN POST-OPERATIVE RADIOGRAPHIC ANGLES AND EARLY CLINICAL OUTCOME

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Introduction: Although costly, computer navigation is suggested to be the most accurate guide to recreating the mechanical axis in Total Knee Replacement (TKR). We assessed the accuracy of the non-computer guided traditional intra-medullary femoral jig and correlated these findings with the patient's early post-operative outcome in terms of Oxford Knee Score (OKS). Methods: Forty-Two patients underwent TKR using an intra-medullary femoral jig set to 5° valgus. Femoral component alignment, angle between the intra-medullary axis and the femoral component (IMFA); tibial component alignment, tibia axis of the component (TA); and the mechanical axis were measured on long leg radiographs post-operatively. OKS was obtained on the day of the surgery, at six weeks post-operatively and again at six months. Pearson correlation co-efficient (r) was used to quantify any correlation between the measured axes and the change in OKS. Results: Mean IMFA was 5.5° (SD +/- 1.02°). Overall the mean mechanical axis was 1.1° (SD +/- 3.37°). Mean pre-op OKS (41) improved at six weeks post-op by 26.8% and at six months by 40.3%. There was weak correlation found between the post-op mechanical axis and percentage improvement in OKS at six weeks (r= 0.332) or at 6 months (r= 0.133). There was poor correlation between intra-medullary femoral axis and OKS at 6 weeks (r= 0.141) and at 6 months (r= 0.085). Conclusions: The use of an intra-medullary jig accurately restores the mechanical axis to an acceptable range. This questions the need for computer navigation, particularly within the current economic climate.

Abstract no.: 31997

VALIDATING A PATIENT CENTERED SCORE WITH OBJECTIVE FUNCTIONAL ASSESSMENT

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Introduction: Function following knee arthroplasty can be measured in many ways. We were concerned that the Oxford Knee Score (OKS), while easy to use, is insufficiently sensitive to reflect patient's functional aspirations at higher levels of performance. Methods: In an ethically approved study, we tested 39 post-op knee arthroplasty patients on an instrumented treadmill, measuring their gait characteristics (stride length, cadence, top speed normalized for leg length) at their preferred and top walking speed (TWS). Patients were also scored using the OKS and a self reported aspirational score (AS), which allowed patients to report the difference between their current and their desired ability level. Non-parametric tests were used to correlate the scores. Results: Thirty-nine patients were included (18 males and 21 females). Top normalized walking speed following knee arthroplasty ranged from 0.17 to 0.27, with median 0.22. The mean OKS was high with a relatively small standard deviation (42.3,4.1) and a weak correlation with walking speed that failed to reach significance. The AS had a comparatively larger standard deviation (86.4,25.3). Interestingly, its stronger correlation with walking speed did reach significance, Kendall's Tau-b: (0.277, p=0.022). Discussion: Top walking speed, corrected for leg length, is a linear measure, which can be obtained from any treadmill. Interestingly as a functional variable, it does not correlate well with the OKS, but does correlate with a score reflecting patient's aspirations. This small study suggests that metrics designed to distinguish between higher levels of function may be useful in assessing effectiveness of surgical procedures.

Abstract no.: 32002

DOES THE ADDITION OF SUB ACROMIAL DECOMPRESSION BENEFIT NON DIABETIC ADHESIVE CAPSULITIS PATIENTS UNDERGOING CAPSULAR RELEASE?

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To study the medium term difference in functional outcomes for non-diabetic patients with adhesive capsulitis of the shoulder who underwent an arthroscopic subacromial decompression (ASAD) and capsular release compared to those who only had an arthroscopic capsular release. Hypothesis: Patients who had ASAD with capsular release would have better medium term functional outcome compared with patients who have isolated capsular releases. Study design and Methods: The pre-operative and one year post-operative Oxford shoulder scores of the two cohorts of patients who underwent the procedures over a one year period under the care of the same surgical team was collected and analysed prospectively. Results Pre-operative and one year post-operative Oxford shoulder scores were available for 16 patients in the ASAD with capsular release group and 13 in the capsular release group. There was no statistically significant difference between the two cohorts either in their demographic data or their pre-operative Oxford shoulder scores. The average improvement in the Oxford shoulder score one year after the index intervention was 13.88 (Range -7 to 36) for the ASAD with capsular release group and 13.92 (Range -1 to 32) for the capsular release group. One patient in each group showed deterioration after the intervention. The difference in outcomes as measured with the Oxford shoulder score was not statistically significant between the two groups with a p value of 0.99. Conclusion: The addition of an ASAD to a standard arthroscopic capsular release may not provide any additional functional benefits in non-diabetic patients with adhesive capsulitis.

Abstract no.: 32007

SELECTIVE FEMORAL NAVIGATION FOR TOTAL KNEE ARTHROPLASTY IN ASIAN PATIENTS A PROSPECTIVE 3 YEAR STUDY OF 100 KNEES

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It is well established that tibio-femoral computer navigation can improve the coronal alignment following a TKA. However, traditional tibio-femoral navigation adds to surgical time and has the potential risk of a fracture through the pin site. We utilised Articular Surface Mounted (ASM) computer navigation to aid only the distal femoral cut during a Total Knee Arthroplasty in a non-selected consecutive cohort of 100 knees. We have prospectively evaluated these patients clinically and radiographically. The Knee Society scores improved from a mean of 41 (range 28-48) to a mean of 88 (range 76- 94) at an average follow up of 3 years. We were able to achieve the target post-op alignment in 90% of our knees. We believed that the center of the femoral head is an elusive landmark as it is not directly palpable. The centre of the ankle can be determined by palpating the medial and the lateral malleoli. And as tibia is subcutaneous we believed an extra medullary jig would be accurate .Hence we decided to navigate only the distal femoral cut and to take the tibial cut by using an extra medullary tibial jig. We hypothesised that using only selective femoral Navigation would be as accurate as using Tibio femoral traditional navigation. This Selective femoral navigation can be a useful and a practical tool during Total Knee Arthroplasty.

Abstract no.: 32010

ACL RECONSTRUCTION IN PATIENTS OVER THE AGE OF 35

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Aim: Anterior cruciate ligament (ACL) reconstruction in older, non sporting professionals can be perceived as unnecessary. However, many of these individuals are still very active and find such injuries debilitating. **Methods:** 30 patients (25 male and 5 female) were all treated with an autologous anterior cruciate ligament reconstruction using hamstrings. One patient was lost to follow up. The mean age was 41.9 (36-59). All operations were performed by or under the supervision of the same orthopaedic consultant. They all underwent routine post ACL reconstruction physiotherapy. All patients had pre operative Lysholm and Tegner activity scores. **Results:** Follow up ranged from 8 to 60 months. There were no significant post operative complications and all patients adhered to the post operative rehabilitation program. All patients had a statistically significant improvement in their Lysholm scores ($p < 0.05$) and returned to pre injury Tegner scores. All but one patient was satisfied with their recovery and return to sporting activities. The only dissatisfied patient also had an improved in his scores, however was still unable to return to his desired sporting activities. **Conclusion:** ACL reconstruction in athletic patients over the age of 35 can have good results. They are a motivated group of individuals who adhere to post operative instructions and can successfully return to pre injury levels of activity.

Abstract no.: 32012

AVN HIP IN YOUNG ADULTS(STAGE 3&4) –10 YR FOLLOW UP OF PATIENTS TREATED WITH MODIFIED BIPOLAR HIP ARTHROPLASTY

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The choice of treatment modality for Ficat Stage 3 AVN of femoral head is still a subject of controversy, the main options being Total Hip Arthroplasty, Surface replacement and Bipolar Hip Arthroplasty. The current study evaluated 48 males with AVN of femoral head who were treated with modified Bipolar Hip Arthroplasty wherein acetabulum was gently reamed till it became smooth and concentric to accommodate tight fitting outer acetabular cup. The mean age of the patients was 42 years. 38 patients were diagnosed to have idiopathic AVN, 6 patients had alcohol as the contributory factor, while 4 patients were post surgery for fracture neck of femur. All patients were operated upon & evaluated by the author of this study. The average Harris hip score was 39 before surgery and improved to 89 at the time of final follow up. There was no incidence of protrusion or dislocation. Groin pain was seen in only 5% of cases, which was mild and did not lead to any restriction of activity. Subsidence of less than 5mm of femoral component was seen in 4 cases that was not associated with any symptoms. The overall patient satisfaction rate was 90%. Thus, for the treatment of AVN Ficat Stage 3&4 of femoral head in young adults, the author recommends the use of Bipolar Hip Arthroplasty with reamed tight fitting acetabular cup where motion takes place in inner bearing only and it functions as THA. Subchondral bone of acetabulum is saved which would make revision less difficult in future

Abstract no.: 32015

COMPLICATIONS OF MEDIAL PATELLOFEMORAL LIGAMENT RECONSTRUCTION FOR RECURRENT PATELLAR DISLOCATION- A SYSTEMATIC REVIEW

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CHARALAMBOUS

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Purpose: The aim of this review is to highlight the commonly occurring complications and assessment of the quality of evidence available for MPFL reconstruction procedure. **Methods:** A thorough literature search was undertaken using terms 'medial patellofemoral' and 'patella dislocation' in various databases such as AMED, CINAHL, EMBASE, Medline and pubmed. The inclusion criteria were MPFL reconstruction carried out using only hamstring tendons implanted using dual patellar tunnels technique. Studies using either transpatellar tunnels or patellar sockets were included. **Results:** A total of seven studies with 228 subjects met the inclusion criteria. All the studies were level IV evidence showing therapeutic case series outcomes. Kujala scoring method was the most common outcome measure reported in all the studies. A complication rate of 17.10% (39 out of 228) was observed. Most common complication was knee stiffness constituting 28.2% of all the complications. Other complications were continued patellar instability (20.5%), patellar re dislocation (10.2%), patellar re subluxation (7.6%), patellar fracture (7.6%), pain at femoral screw insertion site (7.6%), persistent knee pain (5.12%), incorrect placement of patellar tunnels (5.12%), hypoesthesia, neuroma and deep infection in 1 case each (2.56%). A re operation rate of 7.4% (17 out of 228) was also noted. **Conclusion:** High quality evidence is lacking for MPFL reconstruction. Previous systematic reviews on this subject included heterogeneous operative techniques. The presented review attempts to present outcomes and complications of MPFL reconstruction using robust and uniform inclusion criteria based on a single operative technique providing valuable and valid information.

Abstract no.: 32016

CLOSED IRREDUCIBLE PLANTAR DISLOCATION OF THE METATARSOPHALANGEAL JOINTS: REPORT OF TWO CASES

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Introduction: Plantar dislocation of metatarsophalangeal (MTP) joint is an extremely rare hyperflexion injury of forefoot. Only a few cases have been reported. Methods: Case 1. A 30-year-old male sustained injury to his right foot in a motor vehicle accident. Radiographs and CT scan revealed plantar dislocation of the first MTP joint. Closed reduction was unsuccessful. At time of open reduction, the intersesamoid ligament and volar plate had to be released. Case 2. A 45-year-old male sustained injury to his right foot after having been involved in a motor vehicle accident. The radiographs and CT revealed plantar dislocation of the 3rd MTP joint. Closed reduction was unsuccessful. Open reduction was performed, the volar plate and the lumbrical tendon were found to be preventing the reduction. Results: In both the cases, joints were reduced and fixed with K wires. The K wires were removed after 6 weeks, and both patients had a good outcome after one year. Surgical management of this rare type of injury is discussed in detail.

Abstract no.: 32021

SERUM CARTILAGE OLIGOMERIC MATRIX PROTEIN ESTIMATION: A QUANTITATIVE DIAGNOSTIC TOOL TO ASSESS EFFICACY OF ONGOING TREATMENT IN KNEE OSTEOARTHRITIS

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Introduction: Osteoarthritis is commonest form of arthritis, a leading cause of disability in older adults. Apart from various treatment options present there is no definite quantitative diagnostic technique to assess the effect of ongoing treatment. Aim of present study is to estimate and compare serum levels of Cartilage Oligomeric Matrix Protein for assessing efficacy of ongoing treatment and disease prognosis in patients having knee osteoarthritis. **Methods:** A prospective randomized control trial was conducted within a period of 18 months, recruiting 148 cases. Serum COMP level was estimated by ELISA kit. The value of COMP obtained was compared with WOMAC score and KL grading scale. Cases were then divided into mild, moderate and severe grade and prescribed medications. Follow up was done after every four weeks. **Results:** In most of the cases screened, serum COMP levels corresponded to the severity of disease. During follow ups, serum COMP levels responded with a generalized decreasing trend in most of the treatment subgroups. However in the subgroup provided with intermittent pharmacotherapy, serum COMP level showed a rising trend after 6 months of stopping the pharmacotherapy. **Conclusion(s):** A directly proportional relation between the severity of disease and serum COMP levels was observed. The estimated serum COMP level followed a decreasing trend with most of the treatment modalities, which corresponded to the functional improvement, symptomatic relief and gradually increasing WOMAC score in the cases. Hence estimation of serum COMP levels is reliable therapeutic indicator to assess efficacy of ongoing treatment and disease progression in knee osteoarthritis.

Abstract no.: 32022

THE EFFICACY OF PRE-FABRICATED BRACE FOR TREATMENT OF HUMERAL SHAFT FRACTURES.

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Purpose: The aim of our study is to evaluate the efficacy of an off the shelf (pre-fabricated) humeral bracing system in providing sufficient stability to fracture union. **Methods:** A retrospective review of humeral shaft fractures treated with pre-fabricated humeral bracing system (Promedics Orthopaedic Limited) was undertaken. Data was collected from clinical, radiological and orthotic logbook records. Fractures were classified according to AO classification. Periprosthetic and pathological fractures were excluded. Total 20 patients (20 humerii) met the inclusion criteria. Both male: female and right: left ratio came out to be 1:1. Mean age of the patients was 56.8 years (16- 89). There were 3 each AO type B and C while 15 AO type A fractures. Mean time interval from the fracture to brace application was 10.2 days. Clinical and radiological union was achieved in 15 humerii (75%). Non union was observed in 5 cases (25%). Extra large and small braces were used in four cases each. Medium size brace was used in seven cases while large size was used in five cases. One patient developed radial nerve palsy due to the trauma sustained during fracture. It recovered over a period of observation in brace. Two patients developed restriction of shoulder movements while one patient developed restriction of both shoulder and elbow movements. All of them recovered over a period of physiotherapy delivered after the fracture union was achieved. **Conclusion:** A pre- fabricated (off –the-shelf) bracing system is a efficacious modality of treatment for humeral shaft fractures.

Abstract no.: 32031

DELIVERY OF RHOA SIRNA TO THE CONTUSED SPINAL CORD VIA LUMBAR PUNCTURE REDUCES ALLODYNIA IN RAT

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RhoA is a key regulator of the actin cytoskeleton that is upregulated after spinal cord injury (SCI) and has been identified as a therapeutic target for subacute treatment of SCI in humans. We explored the feasibility of developing siRNA therapeutics targeting RhoA for SCI treatment. Acute intraspinal injections of naked chemically stabilized and in vitro-validated RhoA siRNA at the time of rat SCI reduced RhoA protein levels and improved hindlimb walking behavior over a 6 week period. To explore a less invasive route to treat SCI, Lumbar injection of RhoA siRNA at one day after SCI reduced RhoA mRNA and protein levels 3 days after injection. Although siRhoA treatment did not yield significant improvement in locomotion, interestingly, tactile hypersensitivity did not increase with the RhoA siRNA treatment and was significantly diminished by comparison to controls at weeks 8. Histological analysis at 8 weeks showed significant improvement with RhoA siRNA by comparison to control siRNA in white matter sparing within 4 mm surrounding the contusion epicenter in the spinal cord. RhoA siRNA treatment also resulted in less accumulation of ED1+ macrophages/microglia, increased PKC γ immunoreactivity in the corticospinal tract rostral to the injury site, and increased serotonergic fiber immunostaining caudal to the injury site. The ability of RhoA siRNA to preserve white matter and promote serotonergic axonal regrowth caudal to the injury site may be likely to suppress allodynia. The accompanying reduction in allodynia suggests that this approach to inhibit RhoA action may be advantageous for clinical development to treat SCI.

Abstract no.: 32032

REDUCING SAME DAY CANCELLATIONS DUE TO PATIENT RELATED FACTORS IN ELECTIVE ORTHOPAEDIC SURGERY

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Cancellation on the day of surgery is a challenging problem. Apart from wastage and under utilization of resources, it can be a cause of significant distress and inconvenience to the patients. Reasons of cancellation could be hospital related or patient related. A dual phase audit was conducted to examine the cancellation during elective orthopaedic list. During the first phase, a retrospective review was undertaken to calculate the rate of same day cancellations due to patient related factors over a 5 months period. Eleven patients out of 113 (9.7%) were cancelled due to reasons such as patient not attending, exacerbation of unrelated medical illness, undisclosed metal allergy, clinical symptoms settled and therefore surgery no longer required or patients not willing to wait long enough on the day of surgery. In the second phase, a dedicated member of the medical team or administrative staff phoned the patients the week prior to the scheduled day of surgery to confirm that would be attending for their surgery, to assess any change in their medical circumstances, and to determine metal allergy. The exercise of phoning the patients led to a drop in cancellations due to patient related factors down to 5.4% and prevented 5 /37 (13.5%) cancellations on the day of surgery. Our study highlights the importance of communication that can significantly reduce same day cancellation due to patient related factors during elective orthopaedic theatre list. Metal allergy emerges as a prominent factor various healthcare professional need to be aware of.

Abstract no.: 32033

BASAL OSTEOTOMY FOR HALLUX VALGUS, WITH DISTAL SOFT TISSUE CORRECTION

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Introduction: Trends in hallux valgus surgery continue to evolve. Basal metatarsal osteotomy theoretically provides the greatest correction, but is under-represented in the literature. This paper reports our early experience with a plate-fixed, opening- wedge basal osteotomy , combined with a new form of distal soft tissue correction (in preference to Akin phalangeal osteotomy). Materials and Methods: Thirty-three patients are reported here. The basal metatarsal osteotomy is fixed with the 'Low Profile' Arthrex titanium plate. Functional outcome was assessed using the Manchester-Oxford foot and ankle score (MOXF). Radiographically the intermetatarsal angle was evaluated pre-operatively and at least 6 months postoperatively. Patients' satisfaction and complication rates were recorded. Results: 87% (29 of 33) reported high satisfaction with the functional and cosmetic outcome. The opening basal wedge osteotomy slightly lengthens the first ray and as result none of our patients developed transfer metatarsalgia. Radiologically hallux valgus angle (HVA) and inter-metatarsal angle (IMA) were measured on pre- and post-operative weight bearing radiographs. The radiological correction seen was very striking. The mean correction of the IMA was 14 degrees; mean HVA correction was 25 degrees. Complications: One osteotomy was too distal, leading to a non-union, which required revision and bone grafting. Discussion: This operation is a combined proximal /distal, bone /soft tissue procedure. It can obtain correction of almost any degree of hallux valgus. The slight first- ray lengthening is an advantage, as it neutralizes potential second ray problems. However, this is a very early result and long-term outcomes are as yet unknown.

Abstract no.: 32034

DIAGNOSTICS AND TREATMENT OF ADDUCTOR RECTUS SYMPHYSIS SYNDROME OF SPORTSMEN

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Introduction: Injuries connected with chronic overloads make 30-50% in structure of general sport trauma. The frequency and localization of tendinopathies directly depend on the sport activity. The ARS syndrome (tendon tendinopathy mm. adductor longus et/or brevis, m. gracilis, distal part m. rectus abdominis, and also front part m. adductor magnus in places of their attachment to the pubic bone and/or ischial bone) makes 60% of cases of all groin trauma of sportsmen and is the most common for football players. Methods: Clinical, MRI, SPL, spectroscopy, pathomorphology Results: We have the results of treatment of 256 patients with ARS syndrome. They prove that the efficiency of the treatment directly depends on the correct and time diagnosis. To make a correct diagnosis it's very important to do accurate differential diagnosis with other diseases especially with hernia of a sportsman, ilioinguinal nerve neuropathy, damage to the articular lip of the hip etc. It's possible to achieve the correct differential diagnosis using sonographic study as well as the new method of MRI study with color mapping. The choice of treatment for the patients with ARS syndrome was based directly on the stage of disease. We identify 4 stages of disease which showed pathophysiological and structural changes which were taking place in the injured zone. It should be noted that 94% of our cured patients fully restored in shape and only 6% of cases had relapses which were mostly connected with the failure to comply with rehabilitation program.

Abstract no.: 32037

EVALUATION OF HIP JOINT DEVELOPMENT IN CHILDREN, TREATED BY NON-OPERATIVE METHODS FOR TYPE IIB DEVELOPMENTAL HIP JOINT DYSPLASIA

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The aim of the study was to analyze the results of treatment of sonographically diagnosed type IIb of DDH and an identification of residual hip dysplasia during the clinical and radiological examination. Methods: Retrospective study included data of 49 children (59 type IIb and 39 type I hips, according to Graf's classification). All children were treated in adduction braces. At the last follow up, the mean age was 9.1 years (4 to 15). Several radiological parameters were measured on the last radiograms. Persistent dysplasia was diagnosed if 2 or more of the measured parameters were outside their normal range. Results: According to clinical classification of McKay in Barrett's modification, all the type I and type IIb hips presented with very good results. A comparison of the measured radiological parameters and of the radiological results, according to Severin, did not show any statistical differences between type I and IIb hips at the last follow up. In 12, out of the 49 primary dysplastic hips, two or more radiological parameters were beyond their normal range. In the group of 12 abnormal hips, 8 hip sonograms were normal at the end of treatment, while no normal sonograms were obtained in the other 4 cases. None of the primarily normal hips revealed abnormal (2 or more) parameters on the last radiogram. Conclusions: Some children with type IIb dysplasia, may demonstrate persistent hip dysplasia on radiograms in long FU, thus suggesting that some of these children should be monitored up till skeletal maturity.

Abstract no.: 32038

KINEMATIC ANALYSIS OF THE SHOULDER OF PATIENTS WITH A REVERSE PROSTHESIS DURING A HAIR COMBING TASK

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Introduction: Restrictions in range of motion (RoM) differ widely between patients with a reverse shoulder prosthesis. The aim of this study was to investigate how these differences relate to performance of activities of daily living (ADL). Methods: Upper extremity motions of patients with a reverse prosthesis during active RoM tasks and ADL were recorded with an electromagnetic tracking device. Thoracohumeral, glenohumeral and scapular joint angles were derived. The patient group was divided into two groups: able to perform a hair combing task ('Able', N = 19, 21 shoulders, 5 revisions, age: 58-85y, time since surgery: 4-49 months) and unable ('Less-able', N = 13, 14 shoulders, 11 revisions, age: 58-85y, time since surgery: 7-63 months). Results: Thoracohumeral RoM was smaller in Less-able than in Able (forward flexion: 68 vs. 105°, P<0.001; abduction: 65 vs. 103°, P<0.001; external rotation: 5 vs. 26°, P=0.002). This pattern was also found in glenohumeral RoM. No differences were found in the relative contributions of glenohumeral elevation to thoracohumeral elevation (forward flexion: 70 vs. 71%, P=0.882; abduction: 64 vs. 68%, P=0.404 in Less-Able vs. Able, respectively). Scapular protraction was higher in the Less-Able than in the Able group (forward flexion: 48 vs. 34°, P=0.004; abduction: 48 vs. 33°, P=0.003). Conclusion: Patients with a reverse prosthesis unable to perform an overhead ADL had relatively little active thoracohumeral and glenohumeral RoM in elevation and external rotation, compared to patients able to perform the task. Additional scapular protraction might be a compensation mechanism for the lack in RoM.

Abstract no.: 32039

BONE DEFECT IN REVISION KNEE ARTHROPLASTY

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AIM: To investigate the need of bone defect reconstruction in our patients with modular revision knee arthroplasties. MATERIALS AND METHODS: In a period from 2008 to 2011, we have implanted 21 revision modular knee endoprotheses type Sigma (DePuy). Male 17, female 4, age 68 (range 54-79. In 2 patients the femoral component was loosened (one patient had endoprothesis breakage), in 4 patients both components were loosened, and in 15 patients only the tibial component was instable. We have used uncemented tibial stems in all patients and femoral component stems in 17 patients. In 16 patients (76,2%) bone defect reconstruction was done using metal augments. The tibial component was augmented with plane blocks in 11 patients (52, 38%) and in 2 patients (9, 5%), special sleeve was used on the tibial component. In 3 patients (14, 3%) augmentation was done on the femoral and the tibial component. There was no need for additional bone grafting. RESULTS: The average follow-up of our patients was 22, 1 month (range 6-44). There was endoprothesis luxation in the first postoperative week in one patient after a fall, and we managed the knee surgically. All of our patients were full weight bearing at first 6 weeks and the wounds have healed normally. We haven't noted any septic or aseptic endoprothesis loosening so far. CONCLUSIONS: With contemporary modular revision knee endoprotheses it is possible to compensate bone tissue defects, even without bone transplant usage, with the prerequisite of early loosening detection and early knee arthroplasty procedure.

Abstract no.: 32040

OBLIQUE SHORTENING OSTEOTOMY OF LESSER METATARSALS: A NEW TECHNIQUE

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Introduction : Second ray problems are common, especially chronic MTP joint dislocation, and intractable metatarsalgia caused by a relatively long second ray. We believe most of these cases need a shortening osteotomy and we describe a new technique. This can allow considerable shortening, and is entirely extra-articular. Although very simple, this osteotomy appears not to have been described previously. Patients: We retrospectively reviewed 19 patients who underwent this type of osteotomy between 2006 and 2008. Mean age at operation was 62 years (43-78). The indications for the operation were either MTP joint dislocation, or metatarsalgia caused by a relatively long metatarsal. Functional outcome was evaluated using the Manchester-Oxford foot and ankle score (MOXF), which is a validated outcome measure, patient satisfaction and complication rates were also recorded. All patients had AP and lateral weight bearing radiographs. Results: At an average follow up of 20 months (5 -42) the mean MOXF score was 17 (SD16). Radiographically all patients showed sound bone union. The majority of patients (16 of 19) reported that they are either 'better' or 'much better' following surgery, in terms of pain, function and quality of life. No patient developed transfer or recurrent metatarsalgia. No significant MTP joint stiffness was seen, and none of our patients developed osteonecrosis of the metatarsal head. Conclusion: Our new technique allows a planned, controlled shortening of the metatarsal with a stable fixation. The 'long oblique' osteotomy heals well, and is extra-articular.

Abstract no.: 32042

EPITHELIOID SARCOMA OF THE FOREARM - A CASE REPORT

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Epithelioid sarcoma (ES), a malignant tumour involving the subcutaneous tissue, fascia or tendon sheaths of the extremities are often misdiagnosed as benign granulomatous lesions. We report the case of a 23 year old lady with epithelioid sarcoma of the right distal forearm who was initially managed with marginal excision of the tumour followed by radio and chemotherapy. At first recurrence a wide excision was done which had to be followed by an above elbow amputation for a subsequent recurrence. The tumour usually occurs in young adults and involves the hand and forearm. It presents as a slow growing single nodule which later can spread along tendon sheaths to become multinodular and ulcerate. 50% of the cases can metastasize mainly via lymphatics. The lesion is characterised by epithelioid and spindle cells. Most cases of ES stain positive for epithelial membrane antigen, cytokeratin and CD 34. Aggressive nature of this lesion has led to recommendation for early wide or radical resection. The addition of adjuvant therapy to wide or radical resection appears to be beneficial. The incidence of recurrence is reported to be as high as 85% following only a marginal resection. At the first evidence of recurrence a wide or radical procedure or even an amputation must be performed because of the tendency of the lesion to metastasize. Surgeons must keep in mind that epithelioid sarcoma is a slow growing but malignant tumour warranting aggressive treatment and is often initially characterised by clinical and histological features that appear benign.

Abstract no.: 32043

PERFORMANCE TESTS OF LOWER EXTREMITY IN PATIENTS WITH DEGENERATIVE LUMBAR SPINAL DISORDERS

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Background: Recently, various performance tests were reported for evaluation of motor function of lower extremity in cervical myelopathy patients. The purpose of this study was to clarify the responsiveness of the performance tests of lower extremity in degenerative lumbar spinal disorders. Materials and Methods: Subjects were 107 consecutive patients (male:69, female 38, most age group:60s) who had undergone decompression surgery for degenerative lumbar spinal disorders. 10 seconds step test, foot tapping test, and triangle step test were performed before and one year after surgery. Japanese Orthopaedic Association-Back Pain Evaluation Questionnaire (JOA-BPEQ) was used for evaluation of QOL at the same time. The improvement of each test was examined by paired T test. A correlation coefficient between each test and the score of JOA-BPEQ was calculated. A p value less than 0.05 was considered significant. Results: The score of preoperative foot tapping test was 16.2 \pm 5.3, 10 seconds step test was 14.2 \pm 4.2, and triangle step test was 21.9 \pm 5.6. One year after surgery, the score of foot tapping test was 21.8 \pm 6.6, ten seconds step test was 16.0 \pm 3.5, and triangle step test was 23.4 \pm 6.0. The score of each performance tests significantly improved one year after surgery (p<0.05). There were no significant correlation between performance tests and JOA-BPEQ. Discussion: The results in this study showed that foot tapping test, triangle step test, and 10 seconds step test were useful to evaluate lower extremity function in degenerative lumbar spinal disorders before and after surgery. These performance tests could evaluate different aspects compared with JOA-BPEQ.

Abstract no.: 32045

COXA VARA: TOTAL HIP ARTHROPLASTY IN ADULTS AND JUVENILES

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Introduction: Incorrect, inappropriate or inopportune treatment of congenital or acquired forms of coxa vara result in progressive hip destruction with permanent pains, severe biomechanics impairment due to leg shortening and equinus foot deformity. The most reasonable treatment method in this case is the total hip arthroplasty. Materials and methods: In the University clinic since 1994 we have monitored 58 patients (13 male and 45 female) of ages 16-77 years (mean age 46 years). Among them there were 17 cases of congenital coxa vara, hip dysplasia - 23 cases, post-traumatic - 18 cases. In all patients we revealed severe coxarthrosis and performed total hip arthroplasty; from 1994 to 2003 we used domestic endoprosthesis "ESI", and since 2004 we have used "Biomet" implants (42), "Zimmer" (5) and "Smith and Nephew" (3). While using Biomet implants we used acetabular retaining ring; in 33 cases we applied press-fit acetabular cup insertion with 3 screws. In 5 cases we applied Biomet M2A-Magnum. During the surgery we tried to restore the femoral neck length. Only in one case we faced severe femoral epiphysis hypoplasia and applied a lesser stem size. Almost every surgery was accompanied by transcutaneous dissection of the adductor tendons which helped to correct the leg deformity. Results: The 3-5 years follow-up in patients with coxa vara undergone total hip arthroplasty revealed excellent anatomic and functional results. Harris hip score ranked 96-98. The most significant improvement of locomotive function was observed in the juveniles, who stopped using additional support in 6 months.

Abstract no.: 32046

PROXIMAL FEMORAL PRIMARY BONE LYMPHOMA – A CASE REPORT

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INTRODUCTION: Primary Bone Lymphoma is a rare malignant condition that accounts for less than 5% of all primary bone tumours and most of them are of non-Hodgkin type. The femur is one of the most affected site - 25% of all cases. **CASE REPPORT:** A 24 years old man was admitted in our Clinic in December 2009 with a 5 months history of pain and swelling of the left thigh, at the moment of presentation being unable of walking. Physical examination revealed a tumour of the proximal left femur, with tegumentar vascular drawing. No superficial lymph nodes were palpated. A plain radiograph of the left femur showed a pathologic fracture of the left femur in the meta-diaphysis, on the base of a pre-existing tumour, periosteal reaction being also described, with minimum cortical destruction. Biopsy was undertaken with the anatomo-histological result of primary diffuse large B-cell lymphoma. Computed tomography of the thorax and pelvis did not reveal any enlarged lymph nodes. Whole body Tc99m scintigraphy revealed no other skeletal lesions. After 6 cures of chemotherapy (CHOP) and admission on rituximab, no radiation, we decided a radical surgery treatment – proximal femoral “en bloc” resection and tumoral prosthesis reconstruction. Oncologic and orthopaedic 6 months follow-up is encouraging a long term good evolution, with hope of healing at 5 years. **DISCUSSIONS:** Treatment of PBL is controversial and there is no consensus with regard to radiation therapy. Therefore recognition of PBL among other differential diagnosis lesions (granulocytic sarcoma, plasmacytoma or carcinoma metastasis) is important.

Abstract no.: 32048

A RETROSPECTIVE STUDY TO COMPARE THE USE OF TOPICAL INTRA-ARTICULAR GRANULES OF GELATINE AND THROMBIN TO OUR STANDARD OF CARE TO MINIMISE BLOOD LOSS AND TRANSFUSION IN TOTAL KNEE ARTHROPLASTY

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Purpose: Blood related events are a major concern in total knee arthroplasty (TKA) adding up to the complications rate and overall cost, with 20-70% of patients needing 1-3 units of blood. We conducted a retrospective study to compare intraoperative and postoperative bleeding after TKA using granules of gelatine and thrombin versus our standard of care procedure. **Method:** One hundred and four consecutive patients underwent TKA between January 2009 and May 2011. Sixty-two patients received topical intraarticular granules of gelatine and thrombin and 42 received the standard of care procedure. Primary end point was to evaluate the postoperative need of transfusion and total blood loss. Secondary end points were postoperative haemoglobin (Hb) levels and safety profile. The criteria for blood transfusion were Hb levels less than 80 g/dL. Statistical analysis was made using the Pearson Chi-squared tests and Student t-test. P-values less than 0.05 were considered statistically significant. **Results:** Intraoperative bleeding (ml) was significantly less in the experimental group compared to the control group (227.8 and 349.1, respectively (p<0.05)) with less blood transfusion in the postoperative period (16.7% and 47.4%, respectively). Units transfused per patient decreased from 1.02 to 0.46 in the control group and experimental group respectively. Hb levels were lower in the control group at post operative day #1 and #2 (p<0.05). No major complications to the product were observed. **Conclusions:** The use of topical intraarticular granules of gelatine and thrombin in TKA provide a better control of total blood loss and significantly decreased the need for blood transfusion.

Abstract no.: 32049

TREATMENT OF COMPLEX HUMERAL SHAFT FRACTURE WITH RETROGRADE INTRAMEDULLARY K-WIRES.

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Introduction:the purpose of this study is to demonstrate the efficacy of the percutaneous retrograde intramedullary elastic k-wires (PRIEK) in treating complex humeral shaft fracture, avoiding the inconvenient of other procedures of treatment. Methods: 15 men and 7 female, aged between 20 and 77 years, have had 22 complex humeral shaft fractures, classified (AO): 9B1,5B2,4C1,4c3 followed over 1 year. They have been stabilized after closed alignment, with multiple retrograde intramedullary flexible k-wires (2 to 6 pins,2.0 to 2.5mm diameter), which were introduced through a hole at the lateral epicondyle. In 5 cases with distal fracture additional medial epicondyle approach was used. Results: All the fractures healed in a mean delay of 13 weeks, 4 cases have a delayed union (11%), no case of nonunion or infection. 1 (3%)patient has limited elbow range of motion, due to pin irritation. Radiologic control showed 7 cases of humeral misalignment (4valgus,3varus and 1 recurvatum) with no functional impact. No iatrogenic nerve injury. Conclusions: PRIEK constitutes an alternative treatment for complex humeral fracture. It avoids the non union, infection and nerve palsy occurring in the rigid internal fixation. It also prevents the severe malunion and shortening observed with the conservative treatment. This procedure provides good stability, as internal fixation, and facilitates early range of motion. The triangular form with additional medial approach is a good solution in distal fractures, it provides stability and avoids excessive valgus deformity.

Abstract no.: 32051

EARLY OUTCOME OF THE PRESERVATION UNI-COMPARTMENTAL KNEE REPLACEMENT

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Introduction: Unicompartmental knee arthroplasty has been increasingly used in the treatment of isolated medial or lateral osteoarthritis of the knee. Objectives: To evaluate the early results of the Preservation uni-compartmental knee replacement for uni-compartmental knee arthrosis. Methods and Materias: During the period between 2002 and 2003 18 patients underwent Preservation medial compartmental uni-knee arthroplasty . All patients completed the pre and postoperative Oxford knee score (OKS) and had anteroposterior and lateral standing radiograph. Clinical assessment of alignment, stability and range of motion was carried out by an independent assessor. Revision or decision to revise was considered as failure. Complications were recorded. Results: 18 patients met the inclusion criteria with minimum follow up of 4 years. Mean age at operation was 59 (39-76). One patient was revised to total knee arthroplasty at one year because of severe pain. The mean pre-operative OKS was 14(SD 9) which increased to a mean of 41 (SD 15) postoperatively (p value = 0.013). The mean range of active knee flexion was 118 degrees (SD 12). All patients had normal coronal alignment with the exception of one patient with 5 degrees valgus deformity. Only 2 patients reported the use of one stick on ambulation. Rest of the cohort reported unaided walking. Radiographically all patients showed normal alignment with no evidence of loosening. Conclusion: Our study confirms satisfactory early results for the Preservation uni-compartment knee arthroplasty and this bone preserving procedure should be considered in isolated uni-compartmental knee arthritis.

Abstract no.: 32053

DISTAL HUMERAL TYPE C FRACTURES: 234 CASES.

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Introduction: Distal humeral type C AO fractures are difficult to manage surgically. The goal is to bring back the results of surgical treatment of 234 cases. Material and methods: Among 411 distal humeral fractures, 234 cases were of type C (56, 9%), 38, 6 years on average, male prevalence in 73%. According to the AO classification we found 97 C1 type, 65 C2 type, and 72 C3 type. We found 18 nervous lesions (10 radial and 8 ulnar) and one brachial artery lesion. The surgical approach was posterior with 163 olecranon intra-articular osteotomy, 37 extra-articular osteotomy, 15 paratricipital approach, and 19 transtricipital approach. The ulnar nerve was transposed in 102 cases. ORIF was ensured by 2 plates 1/3 of tube in 22 cases, Lecestre plate and 1/3 of tube in 44 cases, screwing and Lecestre plate in 104 cases, screwing and plate 1/3 of tube in 35 cases, screwing alone in 13 cases, external fixation in 4 cases. Only one prosthesis was performed. Results: The complications were dominated by the stiffness, malunion, hardware breakage and the sepsis. With the 2 years 3 months average follow up, according to the Mayo Clinic score, 58,5% of the results are excellent and good. Discussion: The chevron transolecranon osteotomy approach allows a good visualization of the distal humeral fracture, and provides a good reduction and stability of the osteotomy. Osteosynthesis by two parallel locking plates allows a high mechanical stability allowing early rehabilitation. The prosthesis is indicated for the osteoporotic old people.

Abstract no.: 32054

SPINDLE CELL HEMANGIOMA OF FEMUR - A CASE REPORT

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Spindle cell hemangioma (SCH) was first described by Weiss SW and Enzinger FM in 1986 as a low grade angiosarcoma resembling cavernous hemangioma and Kaposi sarcoma. Its an uncommon vascular tumour typically appearing as solitary or multiple cutaneous and subcutaneous nodules in the dermis or subcutis of middle aged adults. The occurrence of SCH in bones is extremely rare and is reported only thrice. In one case the radius and ulna and in another the medial malleolus was involved and both cases were reported to be local spread from the overlying skin and subcutaneous tissue. The third case involved the frontal bone. We describe here a 53 year old male with spindle cell hemangioma involving the distal femur and adjoining vastus intermedius and lateralis muscles with normal overlying skin and subcutaneous tissues. It is important to avoid misdiagnosis as these lesions are considered to be benign or as non-neoplastic reactive vascular proliferations. Histologically the lesion is characterized by cavernous vascular proliferations lined by flattened endothelial cells alternating with cellular areas consisting of spindled cells composed of endothelial cells, pericytes and fibroblasts. It generally lacks significant nuclear atypia and show no or low mitotic activity. Single or small multiple lesions shows excellent prognosis after wide surgical excision. However there is a high incidence of recurrence which may develop even many years after the initial excision. Proper histopathological and immunohistochemical examination of vascular bone tumours is needed to avoid misdiagnosis of a benign tumour like SCH as a more aggressive one.

Abstract no.: 32055

ENDOSCOPIC TREATMENT OF THE EXTERNAL SNAPPING HIP SYNDROME - NEW SURGICAL TECHNIQUE

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Objective: To present a new endoscopic technique in the treatment of external snapping hip. **Methods:** In this prospective consecutive study we present two patients with longstanding hip pain and snapping and failure of extensive conservative treatment. The diagnosis was clinical in all cases and anteroposterior pelvis radiographs and magnetic resonance imaging were taken to evaluate the hip joint. Endoscopic release of the iliotibial band was performed with the patient in the lateral decubitus position using 2 portals, the superior and inferior trochanteric. After establishing the portals, we resected the subcutaneous tissue with radiofrequency (RF) probes and a shaver, and then identified the iliotibial band. We created one longitudinal and three perpendicular cuts in the band with a hooked RF probe. Snapping was tested at different times during the operation as a guide to adequate release of the iliotibial band. **Results:** At an average 2-year follow-up, our two patients had no complications and there were no signs of snapping or pain in the hip. **Conclusion:** We present an endoscopic technique for the treatment of external snapping hip. It is a minimally invasive procedure with little discomfort for the patient. There is no need for extensive postoperative physical rehabilitation and patients can be discharged home on the first postoperative day. Our results are comparable to those reported for open procedures, although longer follow-up and larger series of patients are necessary in making some definitive conclusions.

Abstract no.: 32060

S53P4 (BONALIVE®) BIOACTIVE GLASS USED AS BONE GRAFT SUBSTITUTE IN ACETABULAR REVISION SURGERY – PRELIMINARY RESULTS

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Aim: To study S53P4 bioactive glass as a bone graft substitute for filling acetabular osseous defects in revision hip arthroplasty. **Method:** The study included 12 patients on whom revision THR was performed between July 2010 and January 2011, using an acetabular reinforcement device and morselized bone grafts and S53P4 bioactive glass (BoneAlive® – 1.5-3 mm in diameter, 50:50 ratio with morselized bone) to treat the defect, with the implantation of a cemented acetabular component. Mean age at the time of revision was 64 years (49-72), with 9 female and 3 male patients. Patients return for clinical and radiological evaluation at 3, 6 and 12 months postoperatively. Radiographs are assessed for graft incorporation, radiolucent lines, component migration and hardware failure. Mean follow up was 8 months. **Results:** Acetabular defects were Paprosky type-II in 4 hips (33.3%) and type-III in 8 hips (66.6%). We observed bony incorporation in 10 cases (presence of clearly seen trabeculae crossing the graft-host junction). The filled defect appeared dense on X-rays, but glass granules were still observed at 6 months postoperatively. 2 cases (16.6%) showed signs of progressive radiolucency at the bone-cement interface, indicating component migration. There was no case of hardware failure. **Conclusion:** The use of a mixture of morselized bone graft and bone substitute (bioactive glass) for filling large acetabular defects in revision arthroplasty of the hip shows good results on the short term. Bone substitutes will be especially important on the long term, due to the reduced availability of auto- and allografts.

Abstract no.: 32062

ADVANCED NAILING TECHNIQUES FOR SUBTROCHANTERIC FEMORAL FRACTURES

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Introduction: Subtrochanteric femoral fractures in the elderly population are regarded as challenging, for many surgeons. They are also increasing in frequency, partly due to the use of bisphosphonate therapy. Aim: to provide an update on the most successful techniques used to fix subtrochanteric femoral fractures with an intramedullary nail. Method: A retrospective observational study of 50 consecutive subtrochanteric femoral fractures was performed using data from our institution. The radiographs were examined for alignment and fracture union. Complications were also recorded for nail migration, lag screw cut-out and nail failure. Conclusion: A successful outcome can be predicted when certain techniques are employed. Pre-operative splinting, guidewire manipulation and posterior cortical reaming play a crucial role.

Abstract no.: 32065

A COMPARISON OF SHOULDER FUNCTIONAL OUTCOME IN PATIENTS 60 YEARS AND OVER UNDERGOING AN ARTHROSCOPIC ROTATOR CUFF REPAIR AGAINST PATIENTS UNDER 60 YEARS

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Purpose: The aim of this case series was to assess the functional outcome in patients 60 years and over treated with an arthroscopic repair for large rotator cuff tears, compared to those less than 60 years old. **Method:** We compared forty-six patients who were 60 years or older (range age: 60 - 81) with a control group of thirty-four patients who were younger than 60 years (range age: 44 - 59). Both groups were similarly matched in sex distributions and underwent the same arthroscopic rotator cuff repair technique and post-operative rehabilitation regime. Using the Constant Shoulder Score (CSS) all patients had their shoulder function evaluated. Pre-operatively and post-operatively their range of movement was assessed subjectively and objectively using the CSS. **Results:** The mean percentage increase in Constant Shoulder Score in the 60 and older group was 91%. The mean percentage increase in Constant Shoulder Score in the control group was 76%. Five patients in the 60 and older group had a reduction in their range of movement. The range follow up for these patients was six to twenty four months. **Conclusion:** In our experience patients over 60 years, who undergo an arthroscopic rotator cuff repair, can achieve a functional outcome comparable to those of younger patients.

Abstract no.: 32066

OUR SHORT TERM EXPERIENCE WITH THE USE OF S53P4 (BONALIVE®) BIOACTIVE GLASS AS A BONE GRAFT SUBSTITUTE IN THE TREATMENT OF BENIGN BONE TUMORS

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Objective: To analyse the results of using S53P4 as a bone graft substitute in a series of patients treated for benign bone tumors. Methods: We included 11 patients in our study between June 2010 and February 2011 (6 male, 5 female patients, mean age 24.8 – range 19 - 52): 6 cases of simple bone cyst, 2 cases of osteoid osteoma, 2 cases of non-ossifying fibroma and 1 case of osteoclastoma. Treatment consisted of thorough curettage and filling the defect with bioactive glass. Size of the bone defect varied from 3.5 mm x 2 mm x 1.5 mm to 7.5 mm x 4 mm x 3.5 mm. Patients were evaluated clinically and radiologically at 1, 3 and 6 months after surgery. Results: Wound healing was appropriate, with no allergic reactions or complications. We found good results on clinical evaluation and radiological evaluation showed signs of graft osteo-integration and incorporation of the synthetic bone substitute in all cases. On radiologic examination, at 1 month postoperatively the interface between the bone substitute and host bone became blurred, at 3 months new bone formation could be detected, with gradual absorption of the glass granules and merging with the host bone. At 6 months postoperatively most granules were absorbed and signs of bone remodelling were visible. During the follow-up period, no tumor recurrences were noted. Conclusions: Our preliminary results have shown that bioactive glass (S53P4) can be successfully used as a bone substitute material in all of the presented pathological conditions.

Abstract no.: 32069

EXTERNAL ROTATION HUMERAL OSTEOTOMY FOR BRACHIAL PLEXUS PALSY

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Background:Gleno Humeral internal contracture is a common sequel of obstetrical brachial plexus injury;soft tissue surgery or rotational osteotomy of the humeras are currently accepted methods of treatment to improve the overall function of the limb directly or indirectly . Patients & Methods:42 patients with shoulder contracture internally ,25 males 17 females,were treated by derotational osteotomy of the humeras with fixation mostly by plate and screws ,two patients had humeral lengthening one fixed by external fixture ,one by plate and screws .Results:All the patients had satisfactory results in lateral rotation gain of the arm directly with improvement in elbow extension and shoulder abduction indirectly after three years follow up .infection ,fixation failure are the significant noted complications occurred in three patients .Conclusion: External derotational humeral osteotomy for obstetrical brachial plexus injury is a useful method of treatment providing a solution for this disability

Abstract no.: 32071

PATIENT SPECIFIC CUTTING GUIDES FOR DISTAL FEMORAL OSTEOTOMIES: A LOW COST METHOD OF PRODUCING ACCURATE RESULTS

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Introduction: Distal femoral osteotomy is a procedure, which requires considerable surgical skill and 3-dimensional awareness. When the same knee also requires an arthroplasty, this is a particularly challenging undertaking to be done at the same time. Robot assisted surgery can help, but requires equipment which is not available in every hospital. The health and cost implications of performing the surgery sub-optimally are considerable. One must consider all technical options available which may reduce the risk of requiring revision surgery. Methods: We describe a technique of 3D planning, producing and using patient specific cutting guides to successfully perform a femoral osteotomy and guide the extent of distraction required. We also demonstrate how successful implantation of a unicompartamental knee arthroplasty can be safely undertaken at the same sitting. Results: We present the pre- and post-operative functional results obtained from a gait analysis laboratory and encouraging early radiographic follow up of a patient having undergone such a procedure. Conclusions: This is a relatively low cost, patient specific technique to potentially improving the accuracy of this technically demanding procedure.

Abstract no.: 32072

CALCIUM PHOSPHATE SCAFFOLDS FOR FRACTURE REPAIR IN TRAUMA SURGERY

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Material and method: For a period of 30 months, 24 patients with 25 closed fractures were operated and followed up. There were 8 women and 16 men at an average age of 42. In each case the bone defect was a result of acute fracture - 4 humeral fractures /AO/OTA 11-C.1- 2, 11-C.2 - 2/, 18 tibial fractures / Schatzker II –13, Schatzker III – 2, Schatzker V- 2, Schatzker VI-1/ and 3 calcaneus fracture. The loss of substance was mainly cancellous. In all cases the defect /between 5 and 10cc/ was filled with a synthetic bone substitute - beta tricalcium phosphate or hydroxyapatite .Osteosynthesis was performed in 25 cases. Results:The follow up period was between 6 and 30 months. The criteria of Irwin et al. for radiological assessment of graft incorporation were used for assessment of the osteointegration process. Bone healing was achieved in 24 patients. Excellent osteointegration /gr.III/and subsequent bone regeneration was assessed between the 5th and the 14th postoperative month. Resorption of the substitutes and the bone regeneration process were defined as two simultaneously going processes with equal speed. No case of fibrous encapsulation of the substitute or heterotopic ossification due to its migration in the soft tissues was observed. Conclusion: The bone graft substitutes in our series are an appropriate choice for cancellous defects in fracture treatment. They are biocompatible, osteoconductive, osteointegrative and bioactive but not osteoinductive. Their use decreases the operative time, blood loss and the potential complications from the donor site.

Abstract no.: 32073

USE OF THE IPHONE FOR RADIOGRAPHIC EVALUATION OF HALLUX VALGUS

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Objective: The purpose of this study was to compare the measurements made with the help of smartphone accelerometer and computerized measurements as a reference in 32 hallux valgus patients. **Materials and methods:** Two observers had measured HVA, IMA and DMAA of previously taken 32 AP foot radiographs in 32 patients with symptomatic hallux valgus on computer screen with the aid of iPhone. Digital angular measurements on computer were set as reference standard for analysis and comparison. The difference between computerized measurements and all iPhone measurements, and difference between first and second iPhone measurements for each observer were calculated. We further tested inter and intraobserver reliability of smartphone measurement method. **Results:** The variability of all measurements was similar for the iPhone and the computer assisted techniques. The concordance between iPhone and computer assisted angular measurements was excellent for the HVA, IMA and DMMA. The maximum mean difference between the two techniques was 1.25 ± 1.02 degrees for HVA, 0.92 ± 0.92 degrees for IMA and 1.10 ± 0.82 degrees for DMAA. The interobserver reliability was excellent for HVA, IMA and DMAA. The maximum mean difference between observers was 1.31 ± 0.89 degrees for HVA, 0.90 ± 0.92 degrees for IMA, and 0.78 ± 0.87 degrees for DMAA. The intraobserver reliability was excellent for HVA, IMA and DMAA. **Conclusions:** We conclude that iPhone Hallux Angles software and built in accelerometer technology can be used in diagnosing and deciding treatment choices of hallux valgus effectively in clinical practice. Clinicians may prefer this alternative method in busy outpatient clinics, and even for research purposes.

Abstract no.: 32079

AVULSION FRACTURES AROUND THE PELVIS: CASE REPORT AND REVIEW OF THE LITERATURE

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Avulsion fractures of the pelvic apophyses and spines are well documented. They are a result of repetitive strain injuries or sudden, forceful eccentric or concentric contractions of muscle groups in the leg. We present the clinical and radiological features, and management of a fourteen-year-old boy who presented to our hospital with an avulsion fracture of the Anterior Inferior Iliac Spine. The literature on the subject along with the management of the condition are reviewed and presented. The peak incidence of pelvic avulsion fractures is in the second decade. This is linked to the appearance of the apophysis and closure of the physis. During the adolescent period, the physis is at its weakest. Some have concluded that the physis is more easily damaged by powerful muscular contraction compared with repetitive strain. Treatment options range from conservative to surgical methods with the latter being reserved for persistent symptoms such as continued pain at a significant time point after the acute event due to bony or fibrous non-union. Surgical intervention involves removal of non-unified fragments and reports have revealed symptom resolution with this technique. Conservative management is the mainstay of treatment with excellent results using a graded physiotherapy programme in acute injuries. Avulsions of the ischial tuberosity often lead to chronic pain and therefore injuries of this nature are more likely to require surgery for symptom relief. It is an interesting diagnosis and one that should not be missed in adolescents with a classical history and examination findings.

Abstract no.: 32083

UTILIZATION OF A SINGLE, POST-OPERATIVE DRAIN IN UNILATERAL TOTAL KNEE REPLACEMENT SURGERY: A RANDOMIZED, PROSPECTIVE STUDY

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Via a single surgeon practice, fellowship-trained in total joint replacement surgery, a prospective randomized, controlled trial in 240 patients was conducted to compare the postoperative use of a single wound drain with the use of no drains in patients who underwent unilateral primary total knee replacement surgery. Perioperative blood loss, range of motion, wound healing, need for blood transfusions as well as complications such as deep vein thrombosis, wound infection and need for blood transfusions were compared between the two patient populations. The patients, who underwent surgery between December 2006 and October 2007, were randomly divided into 2 groups of 120 each -- with group α , treated without a drain, and group β , treated with a drain. The between-group difference in total blood loss was insignificant: $629 \pm 225\text{mL}$ in group α and $641 \pm 217\text{mL}$ in group β . There were no statistically significant differences found between groups regarding the need for blood transfusions, wound infection, range of motion findings or incidence of deep vein thrombosis. It was concluded that there is no advantage to the use of a single wound drain in unilateral total knee replacement surgery.

Abstract no.: 32084

**SCAPHOLUNATE ARTHRODESIS USING INTERNAL LOCKING PLATE:
A RESTROSPECTIVE STUDY IN 9 PATIENTS.**

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Management of chronic scapholunate instability without osteoarthritis remains controversial. Untreated static scapholunate dissociation will result in arthritis. In order to recreate a scaphoLunate linkage, several reconstructive options have been proposed in the last 20 years. Partial wrist arthrodeses should be considered part of the therapeutic armamentarium and encompass various procedures. Concerning scapholunate arthrodesis there is a high risk of nonunion (average 50%) contributing to the poor reputation of the procedure. There are many ways to achieve a scapholunate arthrodesis and surgical techniques have evolved. A new technique is described using a dorsal locking plate with corticocancellous bone graft harvested from the distal end of the radius in order to unify definitely scaphoid to lunate. The wrist is immobilized for 4 week then physiotherapy is started with a short-arm cast as protection until healing, generally two months. We reexamined 9 patients with an average follow-up of 28 months. At longest average follow-up, patients reported a decrease in symptoms of pain and clunking as well as improvement of functional status. Only 2 fusions have been confirmed with CT-scan. However nonunion does not automatically indicate a poor result : healing tissue between scaphoid and lunate interposition provides mechanical properties. The results of this technique are encouraging but must be examined with precaution due to the small number of patients and the short follow-up to date.

Abstract no.: 32086

FACTORS AFFECTING OPERATIVE TIME AND RESIDUAL EXCESS CEMENT FOR TOTAL KNEE ARTHROPLASTY

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Aim: To evaluate factors associated with prolonged operative time and residual excess cement during and after primary total knee arthroplasty (TKA) in a single centre. **Introduction:** TKA performed under prolonged tourniquet time can be associated neurological and systemic cardiovascular and respiratory. Previous papers have demonstrated increased operative time increasing BMI, pre-operative deformity, male sex and inexperienced surgeon. The removal of excess cement around the implant components is recommended to reduce micro-particulate debris. **Method:** We retrospectively evaluated 250 consecutive Press Fit Condylar (PFC sigma) primary TKAs by operation length and compared for patient sex, age, operating surgeon grade and excess cement post-operatively. Excess cement was evaluated in 10 areas on post-operative radiographs and its amount graded. **Results:** Mean operation time was 85.6 minutes with no difference between patient sexes. Consultants performed shorter operations when compared with specialist registrar grades (84.4mins vs. 96.3, $p=0.012$). There was an inverse correlation between patient age and operation time ($r= -0.130$, $p=0.0024$). Most frequent sites of excess cement were the posterior (30.4%) and lateral tibia (32.8%) with the posterior femur being the least frequent (3.2%). There was no difference between frequency and amount of excess cement when comparing surgeon grade or the sexes. There was strong correlation between both sites of excess cement and amount of excess cement with increasing operation time ($r=0.177$ $p=0.0002$, $r=0.196$ $p=0.00005$ respectively). **Conclusions:** Older patients are more likely to receive a shorter operation. Increasing operations length increases the chance of having residual excess cement post-operatively.

Abstract no.: 32089

FUNCTIONAL AND RADIOLOGICAL OUTCOME OF UNSTABLE FRACTURES OF DISTAL RADIUS: ORIF WITH VOLAR LOCKING PLATES VERSUS EXTERNAL FIXATOR

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Distal radius fractures account for one sixth of all fractures seen in emergency room. The goal of treatment has always been to restore the anatomy of the radius i.e. length, tilt, inclination and joint congruity. This study was designed with the aim to determine the appropriate surgical treatment out of volar locking plating and external fixation for unstable distal radius fractures. Fifty two patients with unstable distal radius fractures were randomized to be treated with locked volar plate (n=26) or an external fixator (n=26). The fractures were classified according to AO/OTA classification. Functional and radiological assessment was done at 3 months, 6 months and 1 year. The final outcome was evaluated on the basis of Demerit point system of Saito. Forty seven patients completed the final follow up, 22 in external fixator and 25 in plating group. The average range of motion and grip strength were significantly better in plating group as compared to external fixation group at 3 and 6 months, but the difference diminished and was insignificant at 1 year. Volar tilt and radial length were significantly better in the former, which also required less therapy visits. One patient developed loss of reduction subsequently leading to malunion in the plating group, as against 3 in external fixation group. Three patients had pin tract infections and 1 had prolonged finger stiffness in external fixation group. Our data indicates that as compared to external fixator, volar locking plate allows earlier return to activity with good functional and radiological outcome.

Abstract no.: 32092

MR IMAGING AFTER OPERATIONS OF THE MENISCI

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We investigated about results of post-operative MRI for meniscal tear. Materials and Methods; There were 36 patients (40 knees, 42menisci) that underwent arthroscopic surgery for meniscal tear. These patients were mean 25.5-year-old (10–64), and their average follow-up periods were 16.4 months (12–38). 30 menisci were operated by meniscectomy, 7 menisci were operated by meniscal repair, and 5 menisci were operated by rasping of tear portion. We researched the causes of these MR images such as intra-meniscal abnormal high intensity (IMH), radial displacement of meniscus (RD), and low intensity of subchondral bone (SBL), and also evaluated the relation between the clinical results and MR images. The clinical results was used the Lysholm score. Results; Thirty menisci had IMH, Eighteen menisci had RD, and nineteen menisci had SBL. Seven patients of RD accompanied with SBL. These MR images were shown to be most apparent in patients over forty-year-old, with discoid menisci, or in high competitive athletes. These Lysholm scores ranged from 65 to 100 points. The patients of poor clinical result had meniscectomy with moderate or severe osteoarthritis in patients more than 50-year-old, with meniscectomy of bilateral discoid menisci, or with anterior knee pain and muscle weakness after meniscectomy with ACL insufficiency. All poor cases showed all abnormalities (IMH, RD, and SBL) on the MR images. Conclusion; The patients with articular cartilage disease, meniscectomy of bilateral discoid menisci, or continuous pain and muscle weakness for knee instability, had poor clinical results and tended to show simultaneous abnormalities on MR image.

Abstract no.: 32093

FRACTURED CEPHALO-MEDULLARY NAILS : A CONSECUTIVE CASE SERIES

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Introduction: Implant fracture is traditionally considered an uncommon complication causing significant revision challenges. We present a case series of cephalo-medullary nail fractures performed for extra-capsular proximal femoral fractures over a six-year period. Methods: All cephalo-medullary nails inserted for fracture of the proximal femur were identified between January 2005 and August 2011. Relevant history was retrieved including; mechanism of injury, predisposing factors, revision surgery, and outcome. Radiographs were classified according to AO/OTA, fracture reduction and Tip-Apex distance measured. We considered revision surgery and final outcomes. Results: In a cohort of 373 cephalo-medullary nails, 10 patients had nail fracture (2.7%), occurring in 7 inter-trochanteric and 3 sub-trochanteric fractures. All cases occurred at the level of the lag screw. Nine failures were atraumatic. Five patients were revised to cephalo-medullary nail fixation, three to total hip arthroplasty and one to locking-plate DHS. Two of those revised to cephalo-medullary nail failed again, with subsequent revision to a locking plate. Mean Tip-Apex distance for primary fixation: 22mm (range: 12.1-32.8mm). Mean time to failure of initial implant: 309 days (range: 67-913). Three were fixed in significant varus; one pathological fracture had significant bone loss not strengthened with cement. Discussion: The small but very significant implant fracture rate emphasises the major forces that implants have to withstand in the peri-trochanteric region. All patients who had fractured cephalo-medullary nail demonstrated a complex fracture pattern, likely to increase load on the device. Revision to a further IM device has a significant risk of re-revision and should be undertaken with caution.

Abstract no.: 32095

ANALYSIS OF VALGUS ANGLE FOLLOWING COMPUTER ASSISTED TOTAL KNEE ARTHROPLASTY - A RADIOGRAPHIC STUDY

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INTRODUCTION :Proper limb alignment, soft-tissue balance, and component fixation are the cornerstone for a successful outcome in knee arthroplasty surgery. The achievement of proper alignment in the coronal plane is important in maximizing the long-term success of this procedure. During surgery, ideal alignment is achieved with properly oriented bone cuts, made in conjunction with appropriate soft-tissue releases. Various studies have shown that mechanical axis is not restored with fixed angle resection, however this still remains the most commonly used technique for restoring mechanical axis.The purpose of this retrospective radiographic review is to analyse the variability in the valgus angle following computer assisted TKA .**MATERIALS AND METHODS**:25 patients who underwent computer assisted TKA were involved in the study. A total of 40 knees were analysed using post operative CT scanogram. The valgus angles were measured in all the knees in which the femoral component was aligned 90 deg(+ or- 3deg)with the mechanical axis in the coronal plane.**RESULTS** :The average angle formed by the femoral component with the mechanical axis was 91.6(87.1- 93) and the average valgus angle calculated was 6.170 (3.1 – 7.64).**CONCLUSION** :The conclusion of our study is that although variability exist in the valgus angle , most of the angle in our study lie within the range of 50 – 70 that is commonly used in jig based TKA. **KEY WORDS** :- total knee arthroplasty,computer assisted surgery, mechanical axis, valgus resection angle

Abstract no.: 32100

PATIENT-MATCHED INSTRUMENTS VERSUS STANDARD INSTRUMENTATION IN TOTAL KNEE ARTHROPLASTY. A PROSPECTIVE RANDOMIZED STUDY.

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Optimal positioning of implants and restoration of neutral mechanical axis are two primary surgical goals in total knee arthroplasty (TKA). Despite modern instruments and improved surgical techniques, malalignment remains an important cause of early failure after TKA. The aim of this prospective randomized study was to compare the value of a new patient-matched instrument system (PMI) (Signature™; Biomet, Inc, Warsaw, Indiana) to that of standard TKA surgical instrumentation (STD) in terms of coronal mechanical alignment, time of operation and blood loss. Thirty-eight patients waiting for primary TKA were enrolled and randomized into two groups (18 PMI and 18 STD). Magnetic resonance imaging was performed in all patients in the PMI group, and specific instruments for the femur and tibia were designed preoperatively. All patients were operated on using the standard medial parapatellar approach with no use of tourniquet. Mechanical axis, time for the operation and blood loss were evaluated. Patients in both groups had comparable age, body mass index (BMI), preoperative mechanical axis, Knee Society Score (KSS) and level of haemoglobin. Postoperative results showed that the PMI group fell significantly closer to neutral mechanical axis (STD: 2.7 ± 1.7 , PMI: 1.7 ± 0.9 ; $p=0.013$) with no outliers and a reduced time for the operation. There was no difference in the evaluation blood loss. The use of PMI promises better correction of coronal leg alignment and decreased operation time compared to the standard instruments. Additional research is underway to confirm these preliminary results and to discover potential benefits and functional improvements in the long-term outcome.

Abstract no.: 32103

EARLY RESULTS OF BONE LOSS MANAGEMENT USING TRABECULAR METAL REVISION SHELLS

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We investigated the early results of trabecular metal components in 28 acetabular revisions associated with bone loss. 15 male and 13 female patients with mean age at revision 71 years which were made between March 2009 and March 2011. Acetabular defects were classified according to Paprosky classification. We precisely interviewed all patients, inspected all patients roentgenograms and measured Harris hip scores (HHS) and WOMAC scores pre- and postoperatively. Most common reason for revision was acetabular component loosening with or without severe osteolysis or malposition of the socket (89,3%). At an average 1.7 years of follow-up, 3 patients obtain n. Peroneus paresis at operation, 1 patient had luxation of acetabular part and needed surgical intervention. Clinically the average HHS improved from 39,17 preoperatively to 70,11. At all patients there was significant improvement according WOMAC questionnaires. Trabecular metal acetabular components appears to be effectively used at failed acetabular parts of total hip prosthesis with or without substantial pelvic bone loss and provide reliable and reproducible short-term results. Highly porous trabecular metal (TM; Zimmer, Inc, Warsaw, Ind) components appear suitable tools in reconstruction of deficient acetabuli in acetabular revision arthroplasty [2,3,4]. Authors report of 2-6 years of follow-up with encouraging results and their prevailing opinion is that this material solve many problems with implant fixation.

Abstract no.: 32104

**SPONTANEOUS QUADRICEPS TENDON RUPTURE IN A PATIENT WITH
LARGE GOUTY INFILTRATE**

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A 43-year-old gentleman with a history of gout presented with symptoms of a right quadriceps tendon rupture without any history of trauma. He had suffered with only one episode of gout two years previously that had affected his left great toe and which had resolved with analgesia. The patient had no other significant medical history. On questioning he reported suprapatella pain while at rest seven days previously and had then been unable to fully weight-bare on his right leg with difficulty lifting his leg while straightened. On examination the gentleman was tender over the distal anterior thigh and suprapatella region with a palpable effusion but no gap between patella and quadriceps. He had mild wasting of the quadriceps muscle bulk compared to the left and his straight leg raise was limited to 20°. His uric acid level was raised but all other bloods were normal. Ultrasound scan and MRI Knee showed a rupture of the central portion of the right quadriceps tendon with avulsion from the superior margin of the patella. This gentleman was listed for tendon repair with Mitek anchor-suture. During open exploration of the knee a thick white exudate was seen in the knee joint covering the surrounding tendons, which tested positive for uric acid. It is hypothesized that the uric acid deposits reduce the tensile strength of the quadriceps tendon leading to rupture. It is important to be aware of gout as a cause of spontaneous quadriceps tendon rupture.

Abstract no.: 32108

NATIONAL JOINT REGISTRY – IS THE DATA CAPTURE IN OUR DISTRICT GENERAL HOSPITAL ON PAR WITH THE NATIONAL AVERAGE?

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Background: The National Joint Registry (NJR) contains data from over 1.1 million hip, knee and ankle replacements and is largest database of its type in the world. It remains a powerful tool for enhancing patient care in relation to both implant performance and best clinical practise but relies on and accurate completion of NJR forms and submission to the registry. Aim: To analyse completion rate of NJR forms within our trust and compare data collected to the national average. Methods: We performed a retrospective review for 100 consecutive patients who had hip or knee joint replacements between April 1st 2011 and August 30th 2011. Results: 100% of patients had given consent (National mean 88.6%). NJR forms had been completed in 88%. Of these, some forms were incomplete specifically relating to BMI (91% completion rate), approach (94% completion rate), chemical thromboprophylaxis (92% completion) and mechanical thromboprophylaxis (86%). Conclusion: The type of procedures and approaches employed in our centre are comparable to data collected by the NJR report. There is potential for improvement in data capture. As the scope of NJR widens (in relation to ambitious plans to collaborate data worldwide) it remains important at a trust level to ensure compliance with data collection. This year will see the launch of NJR management feedback programme which aims to improve reporting systems in trusts. Systems designed to improve capture of data must be employed to improve the validity of NJR data.

Abstract no.: 32112

PATIENT SATISFACTION WITH THE USE OF AN ENHANCED RECOVERY PROGRAMME FOR PRIMARY ARTHROPLASTY

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Introduction: Enhanced recovery programmes (ERPs) are being increasingly used for patients undergoing arthroplasty. One of the core aims of ERPs is to improve the quality of patient experience. However there is currently no published evaluation of patient satisfaction in relation to this new programme of care within orthopaedic surgery. The aim of this study was to compare the ERP against the standard care programme (SCP). **Methods:** A telephone patient satisfaction survey addressing patient opinions to the key objectives of the ERP was conducted. 142 patients were contacted of which 93 responded. 68 patients were surveyed from the ERP and 25 from the SCP. The groups were matched for demographics and the time since their operation. Patients were asked to rate satisfaction on a 5 point scale. Also included was EQ5D. Patients were contacted at a mean of 26 weeks (4-52 weeks) post-operation. Of the responders 46 received a total hip replacement, 45 a total knee replacement and 2 a patella femoral joint replacement. **Results:** The mean satisfaction score for speed of recovery in the ERP group was 4.08 compared to 3.68 in SCP ($p=0.092$). 84% of ERP patients stated their experience was better than expected compared to 68% of SCP group ($p=0.065$). Patient satisfaction was not significantly different between ERP and SCP groups. **Discussion:** We believe our objectively measured improvements in length of stay and by implication cost saving are not at the expense of the patients' subjective experience. Patients seem generally very happy with ERP in its current form.

Abstract no.: 32114

USE OF MINI-EXTERNAL FIXATOR FOR THE TREATMENT OF HAND AND THE WRIST FRACTURES

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Purpose: To evaluate the outcome of hand and wrist Fractures managed with mini-external fixators (MEFs) in order to assess their usefulness in different fracture types and to make recommendations regarding potential applications. **Methods:** From 2008 to 2010, 22 patients with 6 metacarpal and 7 phalangeal fractures 12 lower end of radius fracture treated with MEFs. Fixators were used to reduce the fracture when anatomical joint reconstruction was impossible. **Results:** The procedure was performed using regional anesthesia and fluoroscopic control, and it lasted 20 to 45, minutes. MEFs were removed in a mean period of 3 to 6 weeks, and follow-up was 12 to 36 months. AO classification was used to identify of the hand and wrist fractures. Different modalities of Mini-External Fixators (MEFs) were used. 2 (AO), 7 Hoffman, 1 Orthofix, 12 universal. Assisted minimal invasive pinning using Kurchner wires used with MEFs in 19 cases. In all cases the skeleton was successfully reconstructed, whereas the clinical outcome varied according to the type of the original injury: intra-articular fractures had worse outcome than extra articular and open fractures had worse outcome than closed. **Conclusions:** The findings of this series demonstrate the efficacy of versatile MEFs to establish union and correct alignment of hand skeleton with minimal tissue trauma while retaining a good clinical outcome even in the most complex injuries. MEFs can be considered for all hand fractures requiring surgical treatment, and especially for the intra-articular and comminuted fractures.

Abstract no.: 32120

**CLOSED REDUCTION AND PERCUTANEOUS FIXATION IN
MANAGEMENT OF PATELLAR FRACTURES**

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Background: Patellar fractures represent 1 % of all fractures in adults. Many techniques are available for the management of these fractures with varying degrees of success and failures. The aim of the present study is to evaluate the results of closed reduction and percutaneous fixation in management of fracture patella. Patients and methods: 14 patients with fracture patella were treated by closed reduction and percutaneous fixation in our institution. Only transverse fractures with two big fragments were included in the study while the comminuted fractures were excluded as they are not amenable for this method of treatment. The age of the patients ranged from 19 to 55 with an average of 33years.11 were males and 3 were females. Closed reduction was done by towel reduction clamp and checked under C-arm then two cannulated screws were inserted perpendicular to the fracture site through two snip incisions. Active range of movement was encouraged from the second post operative day. Results: The follow up period ranged from 3 to13months with an average of 6 months.78% of these patients united at an average time of 3.1 months. The complications included implant failure in 1 case, non union in 1 case. Conclusion: closed reduction and percutaneous fixation is a good method for treatment of certain patterns of patellar fractures.

Abstract no.: 32124

USEFULNESS OF DYNAMIC ULTRASOUND IN THE DIAGNOSIS OF CHRONIC RECTUS FEMORIS MUSCLE RUPTURE

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The rectus femoris muscle that is the superficial part of the quadriceps muscle group passes through the hip joint and functions as a hip flexor. The injuries are most commonly seen during playing soccer due to the overstretching of its tendon while kicking the ball strongly (shooting). The diagnosis might be overlooked in order not to be done a physical examination carefully or might be confused with a simple soft tissue injury. It has been reported that ultrasound (US) and magnetic resonance imaging (MRI) are helpful in the diagnosis of this condition. The main imaging features of this injury are abnormal signal intensity on MRI and the abnormal muscle echotexture on US. It is very difficult to diagnose this injury with these very nonspecific findings in the most of cases. We report a case with a pseudotumor that was occurred after rupturing his right rectus femoris muscle partially. The ultrasound revealed the retraction of the muscle through the transducer on transvers plane. When the muscle retracted during the extension, the height of the muscle was increasing and the anteroposterior to transvers ratio (AP/T) of the muscle were closing to the 1 in opposite to the normal contralateral rectus femoris that is closed to 0,5. We think that the usefulness of dynamic ultrasound is always remembered in the differential diagnoses of the pseudotumors because MRI is very nonspecific and commonly makes the mind confused in those cases.

Abstract no.: 32125

BLOOD LOSS IN PRIMARY CEMENTED TOTAL KNEE REPLACEMENT – IS THERE AN ADVANTAGE OF THE ADDITION OF TOPICAL TRANEXAMIC ACID TO AN INTRAVENOUS REGIME?

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Introduction: The administration of tranexamic acid (TXA) to decrease blood loss in primary joint arthroplasty is firmly established. However there is no study in the literature evaluating whether there is an advantage in adding topical TXA to an intravenous regime for primary total knee replacements (TKR). The aim of this study was to compare the combined intravenous and topical administration of TXA with intravenous TXA alone for reducing blood loss in primary TKR. Methods: We retrospectively reviewed 98 primary cemented TKR performed by the same surgeon at one centre using a standardised technique. Two different regimes of TXA administration were used. Group 1(n= 50), received 1g TXA intravenously during the procedure. Group 2(n= 48) received 1g TXA during the procedure and an additional 500mg TXA topically at the time of closure. Patients with haemoglobin less than 8g/dl were transfused. Haemoglobin loss was calculated using a set formula. The length of hospital stay and thromboembolic events were also noted. Results: The mean haemoglobin loss was 2.48 g/dl (95%confidence interval (CI) 2.19-2.78 g/dl) in group 1 and 2.11g/dl (95% CI 1.81-2.42 g/dl) in group 2. The difference in haemoglobin loss between group 1 and 2 was not statistically significant (p=0.092). There was also no significant difference in length of stay between the two groups (p=0.747). Conclusion: There is no statistically significant advantage of administering a topical dose of TXA in addition to intravenous TXA for reducing blood loss in primary cemented TKR.

Abstract no.: 32126

A NEW TECHNIQUE OF ARCR USING LOOP THREAD AND EVALUATION OF THE MECHANICAL STRENGTH OF LOOP THREAD USED FOR ARTHROSCOPIC ROTATOR CUFF REPAIR

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ARCR has disadvantages of requiring a prolonged surgical time due to complicated procedures and a weaker fixation strength. To overcome such problems, we developed new loop thread to simplify surgical procedures and improve the fixation strength. We demonstrated surgical procedures using the new loop thread, and measured its mechanical strength. The new loop thread is seamless and without knots, produced by the special processing of No. 6 polyester. It is named "MI loop". Rotator cuffs are fixed by hooking this thread on their stumps and driving a Panalok anchor connected to the thread into the bone. We examined the mechanical strength and pressure force of materials, consisting of 10 loop threads and 10 FiberWires (No. 2) prepared by SMC knot methods. The maximal rupture strength of the new loop thread was 468.7 N. That of loops produced using Ethibond thread was 128N for SMC knot, while in the FiberWire loops, it was 224.6 N for SMC knot. The maximal rupture strength was higher with the loop thread. The average pressure of the new loop thread was 33.2MPa and 34.6MPa for the suture anchor. There is no significant difference between the loop thread and fiber wire. This loop thread developed has advantages, such as a high mechanical strength and the absence of thread tangles. Since the loop thread is hooked on the rotator cuff and driven into bone, the bone surface is pressed via the rotator cuff by the thread, which may be effective in bone-tendon healing.

Abstract no.: 32134

HIP OUTCOME AFTER HIP RESECTION ARTHROPLASTY ACCORDING TO GIRDLESTONE.

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Introduction We present results after hip resection arthroplasty according to Girdlestone
Materials and methods In this retrospective study, we evaluated all patients operated between 2001 and 2011 operated according to Girdlestone. We analysed following; indications, preoperative microbial and intraoperative cultures, pre and postoperative X-rays as well as functional status of the patient. **Results** Total of 102 patients were operated, average age at time of operation was 65 (from 26 to 87). 60 were female and 42 male patients. In 98 out of 102 cases reason for operation was either septic or aseptic loosening. In 2 cases septic arthritis, in one case osteolysis and in one case severe hip arthrosis was found. Additionally we present all microbial, patohistological and functional results. **Discussion** Resection hip arthroplasty according to Girdlestone is still in use today. It is predominantly performed in patients with septic hip loosening as the first stage in two-stage revision. Sometimes in spite of endoprosthesis removal and proper antibiotic therapy it is impossible to eradicate the bacteria's and perform revision arthroplasty. Therefore, Girdlestone operation becomes final solution. Although it is not considered good surgery, functional result after such a procedure surpasses our and patient's expectations.

Abstract no.: 32137

SHOULDER INSTABILITY IN SEIZURES

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Introduction: Shoulder instability as a result of seizure is an uncommon finding, often requiring surgery. Having a clear aetiology of this injury can potentially influence management and prevention. Using the largest cohort of its kind (n=1034) for this injury pattern we aimed to delineate the epidemiology and demographics of seizure related shoulder injury. Methods: Between January 1995 to December 2008, all patients treated within our department were coded onto a database. Data was prepared using Excel© and transferred into PASW 17© and Minitab© for statistical analysis. Patients were excluded if they did not present with a first injury during the cohort period, if they did not incur this injury as a result of seizure and if they did not fit our instability categories. This led to a total of 82 patients who were analysed in our study. Results: The median age was 40 years old with males more likely to suffer instability ($p = 0.001$). Prevalence of 7,900 per 100,000 and an incidence of 610 per 100,000. Epileptic and diabetic seizures were significant for shoulder dislocation, but not direction ($p=0.001$). Alcohol withdrawal seizures were associated with shoulder dislocations, especially anterior ($p = 0.001$). Discussion: Literature on this topic is not extensive. Our study confirms that epileptic, diabetic and alcoholic seizures are causative of seizures. However, it does not support the notion that posterior dislocations are linked with any seizure type. Being the largest study to analyse this topic, we believe this makes our findings the most credible to date.

Abstract no.: 32139

**HI FLEXION TOTAL KNEE ARTHROPLASTY : A MYTH OR REALITY :
PROSPECTIVE CLINICAL, FUNCTIONAL AND RADIO - ANALYSIS OF
VARIOUS DESIGNS.**

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Three competitive knee designs were selected to be randomized amongst the patient population and study the ROM obtained Intra-op, 3 months post-op and 1 year later. Some of them were also studied for more than 3 years, but, 1 year time mark was suggested as an optimum time mark to attain maximum ROM in most of them hence was considered in the protocol. This paper will describe the effect of preop ROM, soft tissue balancing and more importantly whether design is responsible in attaining the desired ROM, i.e. High flexion without rendering feeling of instability amongst patients. Results will be discussed.

Abstract no.: 32140

PROXIMAL TIBIAL FRACTURES : A NEW CT BASED CLASSIFICATION SYSTEM AND ITS IMPLICATIONS ON FIXATION METHODOLOGY

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It has been noticed that the standard Hohl's classification, Schatzker's classification or even AO or OTA classification is not enough to recognize some fracture patterns which has been recently identified. These fracture patterns not only render difficulty in articular reconstruction, but, also, if neglected can result into devastating functional and clinical outcome. Such fractures like postero medial or postero lateral articular fragments need to be identified and tackled individually. Intricacies about identification of such fragments, their result on outcome will be discussed in this new classification.

Abstract no.: 32144

OSTEONECROSIS OF FEMORAL HEAD : CHOOSING THE RIGHT HIP : A PROSPECTIVE STUDY BASED ON BMD , CT & MRI ASSESSMENT.

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Osteonecrosis of Hip is the commonest indication at our centre requiring a THR. This paper retrospectively analyses the use of various types of THR benn employed ranging from Hip Resurfacing, Short Stem, Hybrid , cemeneted and Uncemented. Indications are now been laid down which THR should be chosen for which etiology of AVN and depending on the underlying bone quality. This will give a futuristic direction towards successfully doing a total hip replacement in this subgroup with reproducible and consistent results.

Abstract no.: 32146

INTRAMEDULLARY FIBULA GRAFT FOR REVISION HINDFOOT FUSION.

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We describe a case of a 68-year-old man who had non-union following hindfoot nailing for severe tibiotalar calcaneal arthrosis. He successfully underwent revision fusion using a retrograde nonvascularised fibula graft augmented post operatively with Exogen 4000 pulse ultrasound. At 7 weeks post operatively radiographs showed successful arthrodesis and clinically the hindfoot was stable and in good alignment. The merits of fibula grafting are discussed for hindfoot salvage procedures.

Abstract no.: 32149

ABOUT A CASE – MICROFRACTURE: FIRST LINE TREATMENT FOR OSTEOCHONDRAL TALAR LESIONS?

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Objectives: Osteochondral talar defects can either remain asymptomatic or evolve to deep ankle pain on weight bearing. Mainly caused by traumatic events (other possible causes include malalignment, chronic instability, endocrine, vascular and genetic factors) these lesions are often misdiagnosed on plain radiographs. 43% occur in the middle third of the lateral talar portion and 57% in the medial segment. Symptomatic defects often require surgical treatment, but their natural history is benign. Methods: 32 years old caucasian female, with chronic, intermittent, deep ankle pain (7 in the V.A.S. for pain), with normal range of motion and absence of recognizable tenderness on palpation or swelling. No associated trauma history. Plain radiographs demonstrated posteromedial talar cystic lesion. CT scan and MRI confirmed osteochondral lesion (Berndt and Harty stage 3) with 1 cm². Patient was submitted to arthroscopic debridement, curettage and microfracture. Results: Patient demonstrated significant improvement in the A.O.F.A.S. ankle scores. Control MRI showed tissue regeneration, with no disease progression. Conclusions: Various operative techniques are available (excision, fixation, microfracture, autogenous bone grafts, transmalleolar or retrograde drilling, osteochondral transplantation or autologous chondrocyte implantation). Nowadays, arthroscopic excision, curettage and bone marrow stimulation are recommended as first line treatment for primary osteochondral talar lesions (for defects measuring less than 1,5 cm²). The objective is to partially destroy the underlying calcified zone, with disruption of intra-osseous blood vessels and growth factors release, leading to the formation of fibro-cartilaginous tissue. Although associated with decreased morbidity and high success rate, ankle arthroscopy is technically difficult and requires considerable expertise.

Abstract no.: 32150

DO YOUNG PATIENTS LISTEN TO THEIR ARTHROPLASTY SURGEON?

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Purpose: To assess physician recommendations on patient-reported function and activity participation in knee/hip arthroplasty patients. We hypothesized that encouraging postoperative activity will influence the young patient to do more. **Methods:** One-hundred patients were contacted; they were 47yoa(±6). Patient inclusion criteria:DJD of knee/hip, primary TKA/THA, and age 18-55. Exclusion criteria: trauma; medical conditions affecting function (ie.cancer,musculoskeletal disability,congenital disease).The Knee and Hip society postoperative activity recommendations were utilized to create our survey. Activity recommendation categories were created (unlimited, occasional, and discouraged), and patient-reported activity participation was collected. High-activity-arthroplasty-score(HAAS) and University-California-Los-Angeles(UCLA) scores were collected. **Results:**A 50% increase in recommended activities occurred. Patient activity frequency increased. Obese individuals (BMI>30) had decreased HAAS/UCLA scores compared to overweight (25<BMI<29.9) individuals. BMI was associated with joint pain. UCLA and HAAS patient-reported scores were 7 and 12, respectively. Activities were discontinued postoperatively due to physician recommendation (30%), fear of injury (25%), hip pain (14%), early fatigue (17%), decreased interest (14%). Overall satisfaction with surgery, extent of pain relief, ability to perform home or yard work, and ability to perform recreational activities were excellent. **Conclusions:** Young arthroplasty patients likely consider physician activity recommendations. Our liberal recommendations favor age-appropriate cardiovascular exercise, as tolerated. This may suggest the presence of a “physician-induced” postoperative activity phenomenon. Our patients reported great function, plenty of activity participation, and satisfaction. To increase satisfaction as well as benefit the patient medically, we recommend a balance between joint prosthesis preservation and regular activity participation in the young arthroplasty patient.

Abstract no.: 32152

ARTHROSCOPIC ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION WITH ALL PRESS FIT QUADRUPLE HAMSTRING TENDON GRAFT

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Introduction: To avoid disadvantages related to internal fixation devices, a hardware free all press fit ACL reconstruction technique was developed. Methods: A prospective study was performed on 50 consecutive active patients to assess the results and outcome of arthroscopic ACL reconstruction with quadruple hamstring tendon graft using all press fit technique. The mean follow up duration was 20 months (range 6 – 41 months). The mean age was 30 years (range 17 – 44 years). All patients were evaluated with detailed history, clinical examinations, x rays and MRI examination. Patients were evaluated using subjective as well as objective IKDC assessment forms, Tegner Lysholm knee score. Instrumental testing included digital rolimeter as well as the KT-1000 testing. Results : Assessment using IKDC scoring revealed that 95 % of the patients had normal or nearly normal knee (IKDC score of A/B). The mean side to side difference using the digital rolimeter measurements was 1.3 mm (range 0.1 – 5.5 mm). The mean side to side difference using the KT 1000 measurements was 1.4 mm (range 0 – 5 mm). The mean preoperative Tegner Lysholm score was 52 (41 – 90) while the mean post-operative score was 92 (range 67 -100). We found no graft displacement on follow up radiographs. All cases showed radiological evidence of graft osteointegration at last follow up. Conclusion: Our study showed that all press fit arthroscopic technique in ACL reconstruction is a reliable, cost effective technique. Advantages include fast bone-to bone healing, anatomical positioning, ease for revision surgery and cost effectiveness.

Abstract no.: 32155

RATE OF READMISSION AT A TERTIARY REFERRAL SPINAL UNIT: THE FINANCIAL IMPLICATIONS OF CODING ERRORS

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INTRODUCTION: The unplanned readmission rate is a national key performance indicator employed by the Department of Health and contributes towards the star system. Readmission within 30 days will result in a financial penalty for the trust. The aim of this study was to determine the readmission rate for a specialist spinal unit and to identify any costs that may be falsely accrued due to inappropriate coding. **METHODS:** The hospital coding system was reviewed for admissions and readmissions of spinal patients for a 6-month period. From this data the readmission rate was calculated. Each of the readmissions was reviewed to assess if they were classified as appropriate readmissions. **RESULTS:** One hundred and eighteen recorded discharges occurred from the spinal unit during the 6-month period. There were 13 readmissions within 30 days according to the coding system (11.0%). The mean time of readmission was 10.4 days (range 0-29 days). Upon review of the 13 readmissions, 7 (53.8%) were classified as a readmission incorrectly. After adjusting the figures, the actual readmission number was 6 with a rate of 5.4% and a mean time of readmission of 9.7 days (range 3-16 days). **CONCLUSIONS:** Hospitals are not paid for a patient's admission if a patient is readmitted within 30 days. We have shown that errors in coding could account for over half the readmissions, which has significant financial implications to the trust. We recommend thorough education and training of those coding for readmission.

Abstract no.: 32162

AN ASSESSMENT OF MAGNIFICATION FACTOR IN DIGITALISED RADIOGRAPHS ALONG WITH A QUESTIONNAIRE SURVEY.

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Background: The digitalised radiographs used for templating in hip replacement have shown increased magnification of 20-30%. We did a questionnaire survey to assess the opinion of practicing orthopaedic surgeons and radiology consultants with regards to the use of the ruler in digitalised radiograph. We also compared the measurements the prosthesis invitro and invivo to know the reason for increased magnification. Methods: In phase 1, Forty seven surgeons and 25 radiologists participated in our survey with questions based on the accuracy, magnification and positional variation of measurements used. In phase 2 we measured the prosthesis head size in the radiographs of 116 patients who undergone Hip hemiarthroplasty and compared with actual size. To determine the positional variation, the measurements of the nail diameter in radiographs of 33 patients taken on two different occasions were compared. In phase 3 we measured the implants (Prosthesis) placed directly over the table along with radiopaque scale. Results: Seventy percent of the orthopaedic surgeons and sixty percent of the radiologists believed that the magnification is variable. Measurements of the prosthesis head in radiographs have shown that there is a magnification of 18 to 32%. The implants placed directly over the table gave a magnification of 10%. Conclusion: Most of the orthopaedic surgeons compared to the practicing radiologist, believed that digitalized ruler is not accurate. Our study has shown that the digitalized ruler is not accurate and has variable magnification with positional variation and depends on the distance of the measuring segment from the x-ray film.

Abstract no.: 32167

DEEP VENOUS THROMBOSIS IN JAPANESE PATIENTS WITH HIP FRACTURE

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Background: The aim of this study was (1)to investigate the incidence and the risk factor of pre-operative deep venous thrombosis(DVT) in patients with hip fracture, and (2)to evaluated the efficacy of the compression stocking and the arteriovenous(AV) impulse system in reducing DVT after surgery. METHODS: A retrospective chart review was conducted of patients who underwent surgery of hip fracture (47 femoral head prosthesis, 20 percutaneous pinning, and 91 intramedullary nailing). A total of 162 patients were identified (33 males and 129 females; mean age, 82.5±9.53 years, ranged from 39 to 103 years). All patients wore the compression stocking during hospitalization, and underwent duplex ultrasonography(US) to rule out DVT before surgery. Patients without pre-operative DVT was treated with AV impulse for 2days after surgery. No chemoprophylaxis and prophylaxis against DVT was given. RESULTS: Pre-operative DVT was diagnosed in 28 patients(17.3%). DVT positive group showed a significant difference compared to DVT negative group in delayed length from the time of injury until the time of surgery (7.28±3.49 and 6.02±3.12 days, respectively). There was no patient exacerbated to pulmonary embolus(PE) in treatment such as placement of an inferior vena cava filter and mechanical thromboprophylaxis. One patient(0.006%) developed symptomatic DVT after surgery. CONCLUSIONS: We observed that patients experiencing a delayed in surgical care for hip fracture are at a high risk for development of DVT. We recommend the routine use of mechanical thromboprophylaxis to prevent developing DVT/PE, and that undergo US to rule out DVT in all patients with delayed(>1week) surgery.

Abstract no.: 32170

STANDING BALANCE AS A MEASURE OF PROPRIOCEPTION IN THE ACL DEFICIENT COMPARED TO A CONTROL GROUP

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Introduction: Many studies have demonstrated significant proprioceptive deficits including balance in ACL-deficient knees. The purpose of this project was to investigate the efficacy of using standing balance as an indirect measure of proprioception and investigates the relationships between balance, strength, hopping tests and the Lysholm score. Methods: For this project the Nintendo Wii Balance Board (NWBB) was used as a validated tool for measuring balance. Twenty-seven ACL-deficient patients with a mean age of 28+9.6 (Range 15 to 50) and 38 control subjects with a mean age of 26.7+6.7 (Range 15 to 57) were included. Standing balance, isometric quadriceps, and hamstring strength tests were performed using the NWBB and custom-written software. All subjects performed single-leg-hop and vertical jump testing followed by completion of the Lysholm and IKDC scores. Results: Statistical analysis revealed significant between group differences for standing balance ($p=0.02$), quadriceps strength ($p=0.006$), single-leg hop ($p<0.0001$), vertical jump ($p=0.02$) and Lysholm scores ($p<0.0001$). A significant and strong relationship ($r=0.68$, $p=0.002$) was observed between IKDC and vertical jump. Discussion: The results of this study suggest that whilst there were significant differences between the control and the ACL-deficient group for all variables, standing balance is not an important predictor of function in the ACL-deficient group.

Abstract no.: 32172

NEW PIP JOINT IMPLANT FOR RA PATIENTS AND A CASE REPORT

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Summary: Finger joint replacement is a routine but challenging procedure to deal with pathological changes of rheumatoid patients. A new design of artificial PIP finger joint and a case report is presented. Introduction: Finger joint replacement is a routine but still challenging procedure to deal with pathological changes of rheumatoid patients. Attempts in the past have tried to provide stability, functional recovery and longevity of a replacement joint but not many could give promising results. Small joint arthroplasty therefore has not been a popular choice of treatment and received less attention of patients. Current study proposes a new design of artificial finger joint for RA patients and a case report presents. Methods: A new PIP finger joint design was developed and laboratory tested. The concept of intrinsic joint stability to supplement attenuated soft-tissue insufficiency was tested by biomechanical testing. Performance on articulation by metal-on-metal couple was examined by wear simulation study. The fixation mechanism and integration to bone was evaluated by animal model. A phase I trial study on this new implant design has started in Queen Mary Hospital. Results: The study introduces an improved PIP implant design with enhanced joint stability, better wear performance and good geometric bone-implant adaptation. Short-term result suggests this new implant design has improved hand function and satisfaction of patients. Discussion and Conclusion: A review of finger joint arthroplasty techniques by new design concepts was discussed. Pre-clinical evaluations and short-term clinical outcome were reported.

Abstract no.: 32173

SPINE

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A seventy-four-year-old woman with a history of a daily intake of 3 mg warfarin potassium and spondylolisthesis underwent a posterior spinal arthrodesis from L3 to L5. During posterior decompression, 0.5mm dural tear was made and repaired intraoperatively. The patient complained of headache and vomited immediately and a cerebrospinal fluid drainage was collected over the next two days. Warfarin therapy was initiated on the third postoperative day as prophylaxis against varix. During a month after the surgery, the disorientation of the patient was appeared. On the 38th postoperative day, a computed tomography of the head showed chronic subdural hematoma. The hematoma was evacuated immediately, and the patient recovered completely in a few days after the evacuation. She was discharged without further complications after five months. Following this review, we were unable to identify consistent etiologic factors for chronic subdural hematoma. Incidental durotomy is a frequent complication of spinal surgical procedure. With appropriate management, the long-term outcomes for patients who had an unintended durotomy were no different from those for patients who underwent a similar surgery without complications. Although rare, intracranial hemorrhage following an incidental durotomy is a devastating complication. It is important that surgeons should be aware of early signs of neurologic deterioration to prevent a potentially life-threatening complication.

Abstract no.: 32174

MEDIAL PATELLOFEMORAL LIGAMENT REPAIR FOR PRIMARY PATELLAR DISLOCATION

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Conservative treatment for primary patella dislocation leads to high recurrent dislocation and instability rate. Recently, the medial patellofemoral ligament (MPFL) has been recognized to stabilize the patella and to be primary restraint in lateral patella dislocation. So we had operated with MPFL repair for primary patella dislocation. Seven patients with primary patella dislocation have been operated with MPFL repair and were followed up more than six months after the surgery. The seven patients were 4 men and 3 women, ranging in age from 11 to 41 years (mean, 19.5 years). One patient had patella osteochondral fracture, and other one patient had anterior cruciate ligament tear and lateral meniscus tear. We identified all seven MPFL tears, no medial retinaculum tear and three capsule tears. The sites of MPFL tear were three patients of patellar attachment site, two patients of midsubstance site, and two patients of femoral attachment site. Capsule tears were identified with patellar attachment site tears. We added the internal fixation of patella osteochondral fracture for one patient. For other patient with anterior cruciate ligament tear and lateral meniscus tear, we added lateral meniscus suture at the same time with the primary surgery, and anterior cruciate ligament reconstructon at three months after the primary surgery. All seven patients have good results of no recurrence and no complaint of instability, and have recovery for sports activity after surgery. Especially for young patients of high recurrence risk factor, MPFL repair for primary patella dislocation is useful treatment to decrease recurrence and instability.

Abstract no.: 32175

COMPLICATIONS IN THE ELDERLY: HOW TO PLAN FOR YOUR HIP FRACTURE PATIENT

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Introduction: Hip fractures represent a significant injury for the elderly population. Previous literature has related delay to surgery with outcome, but little has done to analyze separate in-house complications and age associations. The purpose of this study was to examine a large series of hip fractures to determine risk factors and in-hospital outcomes resulting from this injury. Methods: 722 patients underwent surgical correction of hip fractures at our institution during a ten year period. Patients were divided into two groups: Group A <75 years old and Group B ≥75. Patient demographics, fracture type and treatment, time to surgery, co-morbidities, complications, and mortality rates were analyzed. Results: Delay to surgery >48 hours was associated with increased complications (p=0.003). Total post-operative complication rates were significantly higher in the older age group (42.3 versus 60.2 percent, p<0.001). Cardiac complications in particular, including arrhythmia, congestive heart failure exacerbation, unexplained hypotension, and acute myocardial infarction, were found to be significantly increased in the seventy five and older age group (2.3 versus 8.2 percent, p=0.003). However, in-hospital mortality rates were not found to differ significantly (0.9 versus 2 percent, p=0.361). Conclusion: Our results highlight the impact hip fractures can have on the elderly population. Although no in-hospital mortality difference was noted, the increased incidence of post-operative complications, particularly cardiac, may contribute to the traditionally high one year mortality rates following this injury. Treating physicians should maintain a high index of suspicion for cardiac events following hip fracture treatment, particularly in the elderly population.

Abstract no.: 32177

DOES HANDGRIP TYPE INFLUENCE INJURY INCIDENCE IN TENNIS?

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Tennis is a major global sports, with over 75 million players in more than 200 countries affiliated with the International Tennis Federation. The upper extremity is particularly susceptible to injury in tennis because of the use of the racquet, which acts as a lever, and due to the effect of repetitive stroke play on the dominant limb. Some role of Racquet Grip-type in injury causing mechanisms has been postulated. 205 tennis players were prospectively evaluated over one year, with special focus on hand/wrist injury, with documentation of injury type, mechanism, forehand racquet grip (Eastern, Western and semi-Western), missed time from Tennis, and treatment given . Players were grouped into low intensity players and high intensity players. 76% players were aware of their handgrip while 9% did not have any knowledge, and 15% were confused about hand grip type. Out of 157 players with handgrip knowledge, 102 players were using semi-western grip, 44 used western grip 11 used eastern hanrdgrip. Only 7 injuries in wrist and hand were documented over 1 year, and no statistical correlation could be derived between handgrip use and specific upper limb injury patterns. We conclude that different handgrip types have no relationship to anatomical site of injury. Earlier studies have however shown a tentative correlation between type of grip and specific pattern of wrist injuries.; further studies are warranted to understand the biomechanics of upper-limb Tennis injuries and their relationship to racquet grip.

Abstract no.: 32178

IS TOTAL KNEE ARTHROPLASTY USING HIGH FLEXION DESIGN ASSOCIATED WITH INCREASED PATELLO-FEMORAL COMPLICATIONS? A PROSPECTIVE STUDY.

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We performed a prospective study involving 39 patients (52 knees) with mean age 65.83 years (range 43-75) for male and 66.48 years (range 60-82) for female who underwent computer assisted total knee arthroplasty (TKA) with high flex design from January 2007 to January 2009 and reviewed with a minimum follow up of 3 years . Patients were evaluated clinically using Fulkerson, Bristol, Barlette patello-femoral scores, Knee Society and Hospital for Special Surgery scores. All patients were followed minimum upto 3 years with mean follow up 3.92 years (range 3 -5 years). At follow up mean scores were Fulkerson (62.46), Bristol (6.71), Barlette (22.75), KSS (151.82) and HSSS (87). All the scores were improved post-operatively. Average pre-operative range of motion was 95.19 degrees which improved to 130 degrees ($p=0.002$) post-operatively. This study demonstrates Patello-femoral complications can be avoided in high flexion TKA by proper surgical technique. Computer navigation helps to maintain joint line, femoral component rotation precisely and thereby improve the post-operative outcomes.

Abstract no.: 32186

**EARLY EXPERIENCE WITH HIGH FLEXION CRUCIATE RETAINING
TOTAL KNEE SYSTEM:A MATCH PAIR ANALYSIS OF 100 PATIENTS**

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The debate over whether to preserve posterior cruciate ligament in total knee arthroplasty has been ongoing for the past several decades. Several reviews of the literature have found insufficient evidence to recommend either retention or substitution of posterior cruciate ligament. The Sigma CR150 is introduced as a high flexion design over the previous cruciate retaining system. We performed a match pair analysis of 50 cases of CR150 with 50 cases of RPF with minimum follow up of 18 months. Both the groups achieved high flexion but there was no statistical difference between the two groups with regards to range of motion, Knee Society Scores and WOMAC scores. The CR150 system offers advantage of bone preservation in smaller size knees

Abstract no.: 32189

**A SIMPLE TECHNIQUE FOR DOUBLE PLATING OF EXTRAARTICULAR
DISTAL HUMERAL SHAFT FRACTURES**

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Treatment of extraarticular distal humeral shaft fracture with plating is often difficult. Traditional techniques do not allow for stable fixation. The use of large plates extending distally over the lateral supracondylar ridge is often associated with pain and sometimes interferes with elbow range of motion. In this study, 22 patients with extra articular distal humeral fractures were managed with dual plating using a paratricapital approach. The first plate -a narrow DCP- was used on the dorsal surface. The second plate -a small 3.5 reconstruction plate- was fixed on the dorsolateral surface. Elbow motion was started immediately after surgery. The average follow up duration was about 25 months. The mean elbow flexion/extension arc was 4° to 138°. Infection was reported in two cases with managed successfully with conservative measures. Postoperative radial nerve contusion was reported in one case with complete improvement within 3 months.

Abstract no.: 32190

IMMEDIATE CONVERSION OF HIP ARTHROSCOPY INTO ARTHROPLASTY IN BORDERLINE CASES

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Clinica Indisa, Santiago (CHILE)

Introduction: Sometimes the indication of hip arthroscopy in the femoroacetabular Impingement (FAI) is controversial in the light of some factors associated with poor results such as age, pain pattern, radiographic and MRI findings. Methods: We prospectively selected a group of patients with FAI that needed surgical resolution. Clinical features, combined with X-Ray and MRI findings, created several different opinions within specialists in regard to the therapeutic procedure. It was agree to conduct a diagnostic arthroscopic procedure of the hip. Depending on this assessment we proceed with the arthroscopic management of FAI or, in the same act, we conduct a total hip arthroplasty. Results: 9 patients were included (5 female – 4 male), mean age 46 years old (38-63). All patients evaluated by at least 3 different hip surgeons. The diagnostic arthroscopy performed showed: extense acetabular chondropathy grade III - IV, chondral erosions and labral calcifications. Uncemented Total Hip Arthroplasty was performed in 8 patients after the diagnostic hip arthroscopy. Only 1 patient (63 years old), with a mixed FAI, no X-Ray or arthroscopic findings of poor prognosis, was managed with a Hip Arthroscopy procedure, with good outcome at 4-years follow up. Discussion: Management of FAI can be controversial. An exhaustive clinical history and physical exam should be performed in combination with a rigorous analysis of the imagenological findings. If no consensus management can be achieved, hip arthroscopy arises as a useful diagnostic procedure before indicating a THA in order to offer a definitive long-term solution for our patients.

Abstract no.: 32194

SELECTION OF OPERATIVE LEVEL IN MULTIPLE NONCONTIGUOUS THORACOLUMBAR FRACTURES –TWO CASES REPORT-

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Introduction: In multiple noncontiguous thoracolumbar fractures, we experienced two successful outcomes of maximal preserving mobile segments in surgical treatment minimizing level of fusion. Material and Methods : Case 1 : A 24-year-old female was admitted with 4th floor fall. In radiologic finding, T11 was the three column fracture, L1 was the burst fracture with little neural canal encroachment and L3 was the burst fracture with about 80% of neural canal encroachment. To remove the fracture fragment compressing dural sac in L3, anterior approach was performed with anterior cage. Then, posterior fusion was performed with pedicle screws from L2 to L4 level. Case 2 : A 17-year-old female was admitted with 8m height fall. In radiologic finding, L2 was the wedge shaped three column fracture by flexion-distraction injury and L5 was the burst fracture with about 50% of neural canal encroachment. We determined the operation of L2 fracture because of the instability. Posterior reduction and fusion was operated using pedicle screws from L1 to L3 level. Results : Case 1 : The neurological deficit was improved to nearly normal and ambulation was started 4 weeks later. During follow-up, the unions of fractures were done without additional collapse and deformity of T11 and L1. Case 2 : Ambulation was started 4 weeks later. During follow-up, unions of fractures were done without collapse and deformity of L2, and with mild collapse of L5. Conclusions : It was considered to preserve mobile segments by minimizing the operative level in multiple noncontiguous thoracolumbar fractures.

Abstract no.: 32196

DYNAMIC COMPUTER NAVIGATED FOOT ORTHOSIS IN CLUBFOOT

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Foot Orthosis plays an important role in maintaining the correction. Improper Orthosis leads to high incidence of recurrence. At present ponseti technique is used for correcting the deformity. In our indigenously developed technique initially we created the 3D computer model and true physical model of the clubfoot. On computer 3D model we did the finite element study after applying corrective forces. Initially we scanned the club feet and the medical scanned data in Dicom format were taken and three-dimensional (3D) modeling after image processing were done in Mimics, and major pathological findings of the clubfoot were obtained. Their Rapid Prototype (RP) model and silicone models were built. These first time developed 3D model of clubfoot give new look and feel of how to correct it scientifically. The finite element study give displacement and stress variations that shows how foot behave under applied corrective loads. The obtained pathology of clubfoot shows clear differences from the pathology of normal foot. It is concluded that the talus is under developed and deviated in medial and plantar direction. The abnormal position of the talus caused the calcaneus to fall into the equinus. In addition, the major tarsal bones were found to be under size. Using Mimics and Computer Aided Design (CAD), an user friendly Ankle Foot Orthosis is developed. The case studies were performed on moderate unilateral clubfoot patients. Using advance techniques a best user-friendly corrective procedure was developed.

Abstract no.: 32197

OPEN ANKLE FRACTURES: A PROSPECTIVE, OBSERVATIONAL CASE SERIES.

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Open fractures of the ankle can be difficult to treat. We describe the presentation, management and outcomes 30 patients who sustained open ankle fractures over a 1 year period, with minimum follow up of 6 months. The majority of patients had grade 2 or 3A (Gustilo) supination type (Lauge Hansen) ankle injuries, with a transverse wound around the medial malleolus. Skin loss was uncommon in this group. 4 patients presented with open pilon fractures. 10 patients were HIV positive. Standard management would begin with initial debridement and washout on the day of presentation. Temporary k-wire stabilisation was used in the majority of cases. External fixation was used for pilon type injuries. In selected cases, where a senior surgeon considered it appropriate, a primary internal fixation of the fracture was performed. All cases of pilon fracture also had significant soft tissue defects requiring prolonged in-hospital treatment. Most of the other cases had wounds that could have delayed direct closure. Wound sepsis was a frequent problem, especially when an ankle joint had been dislocated and heavily contaminated. Readmission to hospital, further debridement and metalwork removal has been common. Overall ankle fractures often present in the same way with transverse medial wounds, in supination type fractures. If significantly contaminated at presentation, the risk of early sepsis is high and difficult to avoid. K-wire stabilisation is sufficient as a temporary measure in these cases. The soft tissue element of open pilon fractures requires entirely different management, with external fixation playing a valuable role.

Abstract no.: 32198

CHONDROBLASTOMA OF TALUS - A RARE ENTITY - (CASE REPORT)

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Abstract: Chondroblastoma is a rare benign tumor arising from epiphysis or apophysis of long bones in younger age group (mostly between 10 -25yrs). We report rare presentation of lytic lesion of talus managed by curettage and autogenous bone grafting. Case Report A 25 years old male patient presented with pain and minimal swelling in the left ankle for 15 days following trivial injury. On clinical examination mild tenderness was present at posteromedial side of ankle just behind medial malleolus. Movement of ankle was full with mild pain .Radiological examination of (L) ankle showed a lytic lesion in the talus occupying posteromedial part of it (Fig -1). Other hematological findings were normal. FNAC was done which revealed chondroblastoma. Keeping this diagnosis in mind patient was planned for curettage and autogenous bone grafting. Cured material was sent for histological examination which confirmed the diagnosis as chondroblastoma. Six months after surgery patient gained full range of motion at ankle without any pain. After 2 ½ years of follow- up, patient is fine and doing his work with out any problem.

Abstract no.: 32199

METHODS OF SURGICAL TREATMENT OF DIFFERENT TYPES OF SCOLIOSIS IN CHILDREN

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Introduction: Scoliosis is a pathogenetically complex and multifactor disease that predominantly affects young children and tends to progress with time leading to multiple complications and comorbidities and, consequently, unfavorable prognosis. Materials and Methods: Two operative methods scoliosis treatment have been introduced to clinical practice in our center: dual rod sublaminar hook fixation and “Ti Ta Med” pedicle screw and rod fixation techniques. Key advantages of given systems compared to I and II generation fixation devices include stable, polysegmental fixation; effective frontal and sagittal correction; correction of vertebral rotation (torsion); high degree of anatomical adaptation and minimal threat for spinal canal penetration. Results and Discussion: 28 patients aged 13 to 24 have been operated in our center with dual rod sublaminar hook fixation technique since 2007. Since 2010, “Ti Ta Med” pedicle screw fixation technique with thoracoabdominal approach to thoracolumbar vertebrae has been introduced in our center. 6 patients have been operated with Cobb’s angle deformity ranging 60-130 deg. Single-stage intraoperative correction was performed in all cases. Postoperatively, all wounds healed per I with no immediate and long-term neurological complications detected. 70% correction was achieved, patients grew in height by 5-13 cm. All patients were mobilized on 4-5th day, with no need for external orthotic support. Average in-hospital stay was 14 days.

Abstract no.: 32200

OSTEOCHONDRAL FRACTURE OF PATELLA MIMICKING AS CHIP FRACTURE OF LATERAL FEMORAL CONDYLE – A CASE REPORT

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Osteochondral fracture of patella, also known as sleeve fracture are commonly associated with acute patellar dislocations and are frequently missed or misinterpreted in initial radiograph. Usually such fractures need surgical treatment. This article presents a case of a 13-year-old girl who sustained a twisting knee injury while doing exercise (yoga) and sustained a small osteochondral fracture of the central part of the patella, displaced inferolaterally, lying close to lateral femoral condyle. The initial radiograph was misinterpreted as chip fracture of lateral femoral condyle. Diagnosis as sleeve fracture of patella was confirmed only during the surgery. This case needs to be reported as the sleeve fracture of patella was not only missed but also misinterpreted. Key Words: Patella, Sleeve fracture, Osteochondral fracture

Abstract no.: 32201

A NEW TECHNIQUE OF TRAPEZIUS TRANSFER FOR LOSS OF DELTOID FUNCTION (JAFRI TRAPEZIUS TRANSFER)

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Akram M*, Jafri S.M.H**, Khawaja M.I, Farrukh S. Lahore Institute of Hand & Arm Surgery (LIHAS), Lahore, Pakistan. * Author, ** Inventor of technique. Key Words: Trapezius Transfer, Deltoid, Silicon Rods, Semitendinosis Tendon Graft Abbreviations: Trapezius Transfer(TT), Semitendinosis tendon (ST), Silicon rods(SR). Introduction: Different muscle transfer techniques for treatment of deltoid paralysis leading to shoulder abduction loss are Bateman TT and Saha TT. Shoulder arthrodesis is rarely performed. We are introducing a unique and absolutely new technique for trapezius transfer for shoulder abduction loss. Method: First stage surgery involves subcutaneous tunnel formation around shoulder and SR placement extending from points of insertions of trapezius to the deltoid for 3 months. Synovial sheath is formed around the SR to provide nutrition to subsequent ST graft. In the second stage, ST graft is taken. Approximately two separate 4cm incisions are made at trapezius and deltoid insertion sites. Trapezius is detached from its insertion site and sutured with ST proximally. Distal end of ST graft is sutured with SR and pulled through the tunnel distally to anchor it with deltoid tuberosity. Shoulder is kept abducted 90o for 2 weeks and subsequently over 10-12 weeks ROM is increased. Result: Jafri's TT is a new addition to literature with practically functional ROM of shoulder abduction. Lever arm of abduction is increased by elongating trapezius insertion to deltoid tuberosity by use of ST graft resulting in abduction at glenohumeral joint.

Abstract no.: 32202

REPLACEMENT OF POST-RESECTION OF BONE CAVITIES AND DEFECTS IN RECURRENT CHRONIC OSTEOMYELITIS WITH USE OF THE MEDICATION "COLLAPAN"

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Materials and methods. The work is based on the results of surgical treatment of osteo-purulent department at BRSCOT, recurrent chronic osteomyelitis with the filling of bone cavities and defects of long bones with CollapAn. 71 cases were investigated. 64 cases of surgical treatment of bones of the lower extremities and 7 upper extremities case were analyzed. In 63 cases the bone cavity filled with CollapAn and 8 patients with more muscle plasticity that is CollapAn plus muscle flap with an axial feed leg. Choosing CollapAn directly depends on the results of sensitivity of micro flora to antibiotics. Among these cases, there are 4 patients were operated on with gunshot wounds: 1 case to the shoulder bone, 1 case of the femur, and 2 cases of tibia. The volume of formed bone cavities ranged from 5 to 60 cubic cm. Results. 62 patients with surgical wounds healed by first intention, 6 by secondary, and 3 patients required additional surgical interventions with collapanoplastic. In the latter case, the volume of received bone cavities was more than 50 cubic cm. it took extra muscle plastic. X-ray control held for postoperative days and then every 2 months. At 5-6 months of post-operative period there was a gradual filling of bone cavities. 68 had a satisfactory result, while the remaining 3 patients were performed repeated operations. Conclusions. collapanoplastic after radical sequestrectomy of osteomyelitic lesions after pathologic fractures in recurrent osteomyelitis, and arthrodesis of the joints, with their total bone epiphyses osteomyelitis, showed its high efficiency.

Abstract no.: 32203

**IS CALCAR-REFERENCED TAD CLINICALLY RELEVANT IN
CEPHALOMEDULLARY NAILING FOR UNSTABLE
INTERTROCHANTERIC HIP FRACTURES**

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Purpose: The calcar-referenced TAD (CAITAD) showed a better guide for nailing of IT fracture model. Here we test the validity of CalTAD in a clinical setting. **Methods:** Radiographs were reviewed in patients with AO A2.2-A3 fracture treated at Elmhurst Hospital with CMN from 2004 to 2011 with a follow-up of at least 6 months. The outcome measurement includes shortening, change of the femoral neck/shaft angle and lag screw sliding. TAD and CalTAD were assessed in the immediate postoperative film and analyzed for an association with clinical outcome. **Results:** 48 patients met our inclusion criteria. Average length of follow-up was 12.5 months with a range of 6 months to 67 months. 85% of the patients belong to AO 31 A3 type fractures. Average shortening of the femoral neck was 4.1 mm., change of femoral neck shaft angle 3.5 degrees, and lag screw sliding 3.9 mm. 82% of patient had TAD less than 25 mm but only 50 % of the patient had a CALTAD less than 25 mm. Interestingly, average of shortening, change of neck shaft angle and lag screw sliding in patient with TAD over 25 mm is not statistically different from those with a TAD less than 25 mm. Whereas, average shortening in patients with CalTAD over 25mm is significantly larger than those less than 25 mm. **Conclusion:** CalTAD is a better predictor for nail fixation of the unstable IT fracture and may serve as a better guide for placement of lag screws while nailing unstable IT fractures.

Abstract no.: 32204

CERVICAL LAMINOPLASTY FOR CERVICAL MYELOPATHY

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【Introduction】 Cervical laminoplasty is one of the surgical procedure for the cervical spondylotic myelopathy, cervical ossification of posterior longitudinal ligament(OPLL)and cervical spinal cord tumor, and the good operative results have been reported. In our hospital, the hemilaminoplasty have been applied for the cervical lesions. In this series, the operative results of the cervical hemilaminoplasty is reported. **【Method】** Clinical materials are 54 operated cases . They are 43 males and 11 females. The mean age of the operation was 71.3 years old. Mean follow-up periods is 20.6 months. Clinical diagnosis are as follows; CSM 36cases, OPLL 17 cases and cervical cord tumor 1 case. The change of cervical canal space on the CT photograph before and after the operation is calculated. Mean recovery rate, mean operating time and operative bleeding volume and post-operative complications such as axial pain and C5 root palsy are reviewed

【Results】 The change of the cervical canal space is as follows. From 0.8cm² to 1.8cm² at C 3/4, 0.9cm²→2.0cm² at C4/5, 0.9cm² →1.8cm² at C 5/6 and 0.8cm² → 1.7cm² at C 6/7. Mean operating time is 2hours 18 minutes, mean bleeding volume is 355ml and mean recovery rate is 60%. Post-operative axial pain was found in 7cases and post-operative C5 root palsy in 1 case. **【Conclusions】** The cervical hemilaminoplasty is one of the useful surgical procedure for the cervical compressive lesions because of the enlargement on the CT photograph after surgery and good operative results with less severe complication.

Abstract no.: 32209

LISS PLATE, DHS AND CEPHALOMEDULLARY NAIL, WHICH IS ANSWER FOR UNSTABLE PROXIMAL FEMORAL FRACTURE

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We conducted a prospective multi-center clinical trial, comparatively assessed the outcomes of less invasive stabilisation system (LISS) plates, dynamic compression screw (DHS), and Cephalomedullary nail (Asian IMSH, Inter-tan, PFNA) for the treatment of unstable proximal femoral fractures. 118 patients with unstable proximal femoral fractures were enrolled in this study. The mean age of the patients was 74 (43–91), they were 72 females and 46 males. Detailed clinical documental recording, including time of surgery, blood loss, image intensifier time of operation, drainage and length of incision were comparatively evaluated. The average follow-up period was 18 (range, 12–24) months, their re-checking X-plain, functional recovery, pain, bony union, varus deformity, implant failure and leg length discrepancy were recorded and then comparatively evaluated. The mean blood loss were 300ml for LISS, 800ml for DHS, 50ml for Nail (including operative blood loss and wound drainage); the mean length of incision was 9cm, 12cm and 6cm perspectivevely. The fractures bony united time at a median of 7 months in LISS group, 9 months in DHS group, 3 months in Nailing group. Parker and Palmer mobility scores were 8 points for LISS, 6 points for DHS group, 9 points for Nailing group. Percentage of hip pain, varus deformity, implant failure and length discrepancy were 20%, 38%, 15%; 8%, 52%, 11%; 8%, 18%, 2%; 11%, 46%, 5% perspectivevely. Nail as the first choice for the treatment of unstable proximal femoral fracture and the use of the locked-plate device is the alternative management of unstable proximal femoral fractures.

Abstract no.: 32210

SURGICAL DISLOCATION FOR TREATMENT VARIOUS HIP JOINT ANOMALIES

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We describe our experience on Surgical Dislocation of Hip for treatment of various hip conditions. 12 patients were operated via surgical hip dislocation technique for exploring, repairing and reconstructing the hip joint problems, such as femoral head fracture (2 cases), femoroacetabular impingement (FAI) (7 cases), hip osteochondromatosis(1 cases), and hip tuberculosis(2 cases). For the 7 FAI cases, the male/female ratio, mean age and mean symptom duration was 4/3, 35.8 years and 1.8years, respectively. Radiographs and MR arthrograms were taken. The clinical evaluation involved changes in the pre- and postoperative Harris hip score (HHS). There were 10 hips (83%) with at least one structural anomaly in the radiographs, with 9 (75%) labral tears and 7(58%) abnormally sign in the MRI. We performed 10 osteochondroplasties, 5 labral repairs, 4 acetabuloplasty, 2 fracture fixation and 3 debridements. 12 patients with a mean follow-up of 1.2 years. The mean HHS improved from 71 to 92 points. One non-unions of the trochanteric osteotomy sites, and a femoral head necrosis with hip joint tuberculosis were encountered as complications. Surgical dislocation of the hip can be used to treat a variety of hip joint conditions. Radiographs and MR arthrograms are important for making a proper diagnosis of FAI and planning treatment.

Abstract no.: 32211

**MORPHOLOGICAL MANIFESTATIONS AS DIFFERENTIAL DIAGNOSIS
CRITERIA OF KNEE SYNOVITIS IN CHILDREN AND YOUNG PEOPLE.**

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Introduction: Knee joint synovitis, despite the diversity of their causes, have similar clinical signs. Methods: Studied arthroscopical biopsies synovial membrane of knee joint 98 patients, mean age – 14,9 years. Of these, 14 patients with rheumatoid synovitis, 39 - with post-traumatic. Pathological changes in the synovial membrane in rheumatoid synovitis characterized by pronounced hyperplasia of the villi, the imposition of fibrin, a perpendicular arrangement of synoviocytes expressed proliferation up to 10 lines or more, fibrinoid necrosis, foci of mucoid swelling, edema subintimal tissue, focal or diffuse infiltration subsurface layer of lymphocytes, macrophages, plasmocytes, with an admixture of polymorphonuclear leukocytes, formation of lymphoid follicular nodules, productive or destructive, productive vasculitis, as well as myxomatosis, angiomatosis and sclerosis of the stroma. Post-traumatic synovitis morphologically expressed in the hypertrophy of the shell and to a lesser extent, proliferation of synoviocytes, moderate hyperplasia of the villi, fibroblasts, and focal sclerosis shell limfomakrofagal perivascular infiltration predominantly. In most cases determined by the accumulation of siderofagov-macrophage phagocytic hemosiderin, which in our opinion, is an important differential diagnostic sign of traumatic synovitis. Immunohistochemical study to determine the nature of the inflammatory infiltrate in the synovium of rheumatoid synovitis, and post-traumatic origin, we used the following monoclonal antibodies: CD45, CD68, CD138, CD79a, CD20. Results: Analysis of expression of the macrophage markers in synovial membrane biopsies shows a significantly more pronounced expression of positive cells in cases of rheumatoid synovitis than with post-traumatic that could be very important in differential diagnoses of on early disease stages especially in children.

Abstract no.: 32212

COMBINED FIXATION FOR COMMUNUTED INTRA-ARTICULAR FRACTURE IN DISTAL RADIUS

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Objective To explore the effective treatment method of the articular fracture in distal radius
Methods Severely comminuted AO type-C3 intra-articular fractures of the distal end of the radius were treated with combined internal and external fixation. The Gartland and Werley system and the Green and O'Brien system were used for comparison of the pre-operative and after operative evaluation. Total articular congruity immediately postoperatively had assessed with both clinical rating systems. **Results** At a mean of nineteen months following-up, the mean arc of flexion-extension was 78% of that on the uninjured side and the mean grip strength was 82% of that on the uninjured side. The mean total articular incongruity (the gap plus the step-off) averaged 2 mm, and the radial length was restored to a mean of 11 mm. According to the Gartland and Werley demerit-point system, seventeen of the patients had a good or excellent result. According to the modified Green and O'Brien clinical rating system, eleven had a good or excellent result. Total articular incongruity postoperatively had a moderately strong correlation with the outcome as assessed with both clinical rating systems **Conclusion** Open reduction and combined internal and external fixation of AO type-C3 fractures can restore radiographic parameters to nearly normal values, maintain reduction throughout the period of fracture-healing, and provide satisfactory functional results.

Abstract no.: 32219

RESULTS OF SURGICAL DIAGNOSIS AND TREATMENT OF YOUNG PATIENTS WITH NONTRAUMATIC SYNOVITIS OF THE KNEE JOINT

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Introduction: Synovitis of knee joint in young patients - is common enough, but, nevertheless, not studied pathology, as in the etiological and pathogenic in the context. Methods: Results on the synovitis of various etiologies were conducted 56 surgeries - 53 arthroscopy and 3 arthrotomy. The structure of the intervention was: 42 (79.2%) - a diagnostic arthroscopy, joint lavage, aiming biopsy (10 cases - 17.9%, it was supplemented by intra-articular injection of steroids), 8 (14.3%) - a diagnostic arthroscopy, dissection / excision of the pathologic synovial folds, 3 (5.4%) - a diagnostic arthroscopy, removal of chondral bodies, the joint cavity lavage, 3 (5.4%) - subtotal synovectomy. Two patients with juvenile rheumatoid arthritis took hold re-surgery due to significant severity of synovitis and its resistance to conservative therapy - was carried out subtotal anterior synovectomy. Also re-intervention with radical removal of the synovium took on the patient synovial chondromatosis (diffuse form, a fast-flow). Results: Results of surgical treatment were traced in 44 patients (83.0%), observation period - from 5 months to 5.5 years. Evaluation of the results was carried out on a scale of Lysholm-Tegner (both before and after surgery). The average value of the state of the knee joint at a specified scale in the preoperative period was 53.4 points in the late postoperative - 89.5 (improved by an average of 36.1 points). Excellent results were observed in 24 patients (54.5%), good - in 19 patients (43.2%), satisfactory - in 1 patient (2.3%).

Abstract no.: 32220

DIAPHYSEAL ACHLASHIS: ARTHROSCOPIC EXCISION OF LARGE CLAVICLE OSTEochondroma VIA THE SUBACROMIAL SPACE.

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Introduction: Large osteochondromata can cause rotator cuff tendonitis. Open excision has been reported. Arthroscopic subacromial decompression followed by arthroscopic resection is reported. Methods: A 34 years male, with diaphyseal achlasis, presented with painful left shoulder (3 months), crepitus and pain interfering with sports and overhead activity. Examination revealed tenderness at the distal clavicle, crepitus with abduction and flexion, and limited abduction to 85 degrees. X-ray showed a large bony lesion arising from under surface of distal clavicle. CT scan confirmed a pedunculated bony lesion with a cartilage cap. Glenohumeral scopic debridement of the biceps tendon and anchor was done. The rotator cuff appeared compressed by the lesion. Through the subacromial space, bursal excision was done. Identifying the acromio-clavicular joint using a needle, a bony lesion was felt with a probe. Under image intensifier control, this bony lesion was removed piece-meal using burr. Crepitus was abolished and pain-free range of motion was restored. Patient satisfaction was confirmed. Discussion: Open excision of large lesions can cause morbidity. Locating the burr beneath the lesion and working from below up, the cartilage cap and bone can be gradually resected, decompressing the coraco-clavicular space and supraspinatus. Subacromial viewing allows gradual resection under vision. Image intensifier control allows exact positioning of the burr, avoiding the danger zone and confirms resection. Conclusion: Arthroscopic subacromial excision of large lesions can avoid morbidity of open approach in the coraco-clavicular space, and allows concomitant glenohumeral and subacromial debridement. Key words: osteochondroma, clavicle, arthroscopic excision, subacromial decompression.

Abstract no.: 32222

CHONDROBLASTOMA WITH ARTICULAR SURFACE INVOLVEMENT IN THE MALLEOLUS OF DISTAL TIBIA: REPORT OF TWO CASES AND SYSTEMIC REVIEW

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Chondroblastomas are rare benign bone tumors of immature cartilage cells mostly arising within the epiphyses of long bone. They usually develop in young patients with a peak incidence in the second decade. The most common affected sites include proximal and distal femur, proximal tibia, proximal humerus, rarely spine and others. We report two cases of the chondroblastoma arising in an unusual location in the malleolus of distal tibia. In addition, we review the literature regarding chondroblastoma in the distal part of tibia. The first case was 14 year-old boy presenting right ankle pain and swelling after minor sprain of right ankle. Imaging studies including plain radiogram, Tc99m isotope scintigraphy and magnetic resonance imaging (MRI) revealed a bony lesion in the posterior malleolus of right distal tibia with articular surface and physis involvement. The patient subsequently underwent a total curettage of the lesion with bone grafting, and histopathologic examination confirmed the diagnosis of chondroblastoma. No recurrence was noted at a 6-month follow-up. The second case was 21-year-old male suffering from right ankle pain for 6 months. Radiographs revealed an approximate osteolytic lesion at medial malleolus of his right ankle. He also underwent thorough curettage with bone grafting and histopathologic examination confirmed chondroblastoma. No recurrence was noted at 6-year follow-up. Chondroblastomas rarely affect the ankle joint. Although controversy still existed regarding surgical treatment of chondroblastoma in the malleolus, thorough curettage but careful physal preservation and joint surface congruity should be recommended to reduce the recurrence and to achieve better clinical outcome.

Abstract no.: 32227

A SAFE TECHNIQUE OF ANTERIOR COLUMN LAG SCREW FIXATION IN ACETABULAR FRACTURE

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We describe a different technique of anterior column screw fixation in acetabular fractures. The technique involves insertion of a partially threaded screw from the outer side of iliac wing, 0.5 -1 cm posterior and inferior to the antero-inferior iliac spine. It comes out from the bone surface and reenters into the iliopectineal eminence to gain final purchase in the lateral part of superior pubic ramus. Twenty-seven acetabular fractures were operated where this technique of screw fixation was a part of the surgical procedure, and followed-up for one year. Eighty-eight percent of patients had excellent to good clinical outcome after mean follow-up of 1.4 years. No loss of reduction, joint penetration or visceral and neurovascular injury were documented. The average duration of surgery was 70 minutes and blood loss was 290 ml. We conclude that the modified anterior screw fixation technique in transverse fracture, T type fracture and both-column acetabular fractures is a safe, simple and effective alternative to conventional technique, with a low anticipated complication rate and excellent outcome.

Abstract no.: 32228

**OSTEOARTICULAR TUBERCULOSIS PRESENTED WITH
TUBERCULOSIS OF POPLITEAL CYST: CASE REPORT AND SYSTEMIC
REVIEW**

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Tuberculosis of popliteal cyst is a rare condition characterized by Mycobacterial infection at popliteal cyst with concomitant osteoarticular tuberculosis of knee joint. We describe a case of a 78-year-old Asian man with symptom of left knee pain who was diagnosed with popliteal cyst tuberculosis and systemically review the previous international literature. Only five cases which were found after international systemic review on MEDLINE had acceptable outcome after accurate diagnosis and appropriate treatment. This case emphasizes accurate diagnosis and adequate treatment for osteoarticular tuberculosis with popliteal cyst infection.

Abstract no.: 32230

CHONDROSARCOMA OF FEMORAL HEAD CAUSING FEMORO-ACETABULAR IMPINGEMENT IN AN ATHLETE

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Femoro-acetabular impingement (FAI) is often diagnosed as a cause of hip pain in athletes. Benign tumorous conditions presenting with FAI symptoms have been described in literature, but there is no mention about any malignant lesion causing such impingement. We report a chondrosarcoma of femur head in a 23-year-old athlete who presented with FAI symptoms. Magnetic resonance scan of hip revealed a bumpy outgrowth (hyperintense T2W signal) from the antero-inferior portion of femoral head without any signal changes in the remaining head and hip joint. Clinical, laboratory and radiological investigations remained inconclusive in pointing a specific diagnosis. The lesion was excised through anterior approach to hip. Histological examination of the specimen revealed an undifferentiated chondrosarcoma. Six-months following surgery, the patient resumed his sports activity and he was completely free of pain and impingement symptoms. After three years follow-up, there was no limitation of activity and there was no evidence of any tumor recurrence.

Abstract no.: 32231

CLOSED CEPHALOMEDULLARY NAILING AS A TREATMENT OPTION FOR PROXIMAL FEMORAL FRACTURES

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Treatment for proximal femoral fracture has always been a challenging task and deciding which method of fixation a debatable subject. Cephalomedullary nails have been a comparatively newer method of treatment and studies have shown it to be a better implant for highly torsional proximal femur. The aim of this study was to find out the outcome of cephalomedullary nails for treatment of proximal femoral fracture, including the union rate, union time, malalignment and complications. Methods: All proximal femur fractures were classified by AO/OTA classification, Russell-Taylor classification and Seinsheimer classification whichever was applicable. All 35 patients were treated with cephalomedullary nails and functional outcomes studied in the form of radiographic union time, malalignments, complications and on clinical grounds. Results: Out of the 35 patients treated with cephalomedullary nails, union rate was 98% with one case of non union due to infection and the average union time was 4 months, the average varus malalignment being 3 degrees, delayed union was seen in 2 cases, complications include infection in one case, delayed union was seen in 2 cases taking over 6 months to unite. Conclusions: cephalomedullary nail is a good and a newer treatment option for treatment of proximal femoral fractures with advantages being minimally invasive technique, ability of early mobilization, less malalignment and good union rates. Disadvantages being, need for indirect reduction technique, procedure is technically demanding and require newer instrumentation and reduction tools. This study has helped us make clear guidelines for when to make use of cephalomedullary nails for treating proximal femur fractures.

Abstract no.: 32234

IDIOPATHIC TRANSIENT OSTEOPOROSIS OF TALUS: A CAUSE FOR UNEXPLAINED FOOT AND ANKLE PAIN

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A 53-years-old woman was investigated for several neoplastic, inflammatory and infective conditions for her left foot and ankle pain associated with swelling that she developed unexpectedly without history of trauma or infection. Gross osteopenia in the talus raised possibilities of several differential diagnoses into consideration, but magnetic resonance scan showed diffuse bone marrow edema in the talus. With negative infective and inflammatory markers, the condition was ultimately labeled as 'transient osteoporosis'. She was reassured and followed-up regularly. At the end 12 months, she was completely asymptomatic, and her radiograph and magnetic resonance images showed significant improvement with normal appearing talus and ankle joint, and there was complete resolution of bone marrow edema. Though 'transient osteoporosis' of foot is an uncommon condition, clinicians should be aware of this. Unexplained foot pain, with osteopenic bone and diffuse bone marrow edema on magnetic resonance scan are features of this condition. However, the diagnosis is established once other causes are excluded. The condition is self-limiting, and watchful expectancy of a normal recovery is the mainstay of treatment.

Abstract no.: 32240

TALONAVICULAR JOINT ARTHRODESIS AND MEDIAL DISPLACEMENT CALCANEAL OSTEOTOMY FOR TREATMENT OF POSTERIOR TIBIAL TENDON DYSFUNCTION.

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The purpose of this study was to evaluate the combination of talonavicular fusion and medial calcaneal displacement osteotomy for the treatment of posterior tibial tendon dysfunction. This was a retrospective study of 14 patients, mean age 45.5 years, who had continued pain despite 12 months of conservative treatment and a minimum Johnson and Strom stage II deformity. Patients completed a detailed questionnaire, were physically examined, and their postoperative improvement was graded according to the American Orthopedic Foot and Ankle Society Ankle-Hindfoot Rating Scale. At a mean of 25 months (range 8- 38 months) after surgery, patients demonstrated a significant improvement ($p < .001$) both in their subjective discomfort and in the structural alignment and function of their feet. The authors feel that this combination of procedures allows greater correction and stability than either procedure performed alone, and provides a variable alternative to triple arthrodesis.

Abstract no.: 32242

THE EFFECT OF SPRAYED BACKPACK LOADS ON THE SPINE AND PELVIS. A RADIOGRAPHIC STUDY.

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Introduction: The purpose of this study is first to measure the spine and pelvis response to sprayed backpack loads in healthy adults, and second to test the effect of a new carrier system. Method: Fifty adult volunteers accepted to participate. A first X-ray, in erected posture is taken, a second after twenty minutes with a sprayed of 20 kg (Vermorel 2000, Berthoud), and a third after twenty minutes with the same sprayed, equipped of a new carrier system. For each X-ray, some parameters describing the shape and orientation of the pelvis and spine have been measured. Results: First, we have verified that our population of volunteers showed parameters for the spine and the pelvis similar to a reference population of 700 asymptomatic subjects. On the radiograph with the sprayer, we found significant variations on the following parameters: tipping forward of pelvis (2.1°) lordosis (5.1°) and kyphosis (5.9°), and an increase of kyphosis angle (2.4°), and a pinch of the disc L5/S1 (2.3°). With the spray equipped with a new carrier system, we observed a decrease in tipping forward of the pelvis (1.2°), a decrease in lordosis and kyphosis angles (1.3° and 1.2°) and the reduction of the pinch of the discs L5/S1 and L5/L4 (1.3° and 0.9°). Conclusion: This study quantified the change in posture brought by sprayed backpack load. It has also been successful in reducing subjective painfulness (33.3%), showing the load transfer between the spine and pelvis for a sprayer equipped with a harness including a belt.

Abstract no.: 32243

KINEMATICS OF SPINE, PELVIS AND THIGH SEGMENTS MOVED BY STAND TO SIT TASK.

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The modeled patient skeleton in upstanding posture, is moved from laws of movement defined from trajectories of targets placed on the skin of the patient. Patient total body is structured as a linear chain of body segments. Body segments correspond to isolated bones: femurs, pelvis, or to set of bones: spinal column. Some body segments are considered as rigid bodies, when others are deformable. Reflecting targets are placed on the skin of each body segment. Body segment set of axis are defined from body segment targets. But, body segment frames must be similar to that of internal bone. Respective frame centers and respective main axes are closely located. Body segment target paths are used for accessing to the displacements of corresponding frames. Body segment kinematics are represented by curves of variations of locating and shape parameters. These curves, obtained experimentally, are modeled by mathematical functions depending on time. Mathematical curves, describing variations of each locating or shape parameters, are the basis of the simulation of bone displacements. Stand to sit and sit to stand have been chosen for illustrating the new techniques. Experimental protocol is such that femoral flexion magnitudes have comparable values for all patients. Associated pelvic flexion and spinal rolling up vary significantly, and may characterize the patient behavior while moved by stand to sit. We present the first step of the global project: it focuses on the kinematics of body segments facing internal bones (femurs and pelvis) and on the variations of the deformable back structure.

Abstract no.: 32246

TECHNIQUES USED FOR DETERMINING 3D PELVIC ARTICULAR SURFACES FROM THEIR 2D RADIOGRAPHIC PROJECTIONS

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Bone volumes may be detected, using techniques based on shape correspondence between projected statistical shape models and bone radiographic contours. These models include articular surfaces. Shape and orientation of articular surfaces, with respect to pelvis frame, govern the functioning of L5/S1 and hip joints. The personified location of pelvic articular surfaces, needed for clinical applications, is obtained from geometric models and 2D/3D transfer techniques. The articular surfaces are modeled as simple geometric shapes: spheres (femoral heads), hemispheres (acetabulii, lower plate of L5 and sacral plate), and trunk of cones (femoral necks). The 3D articular surfaces are located from their projected edge contours. New methods and techniques are validated from an experimental testing, including dry bone specimens. Spherical steel balls have been fixed along the 3D articular surface edges. The same projected edge contour may be observed on two different radiographs (without and with ball images), grasped from the same X-ray exposure. The modeled articular surface edge projections must correspond to the corresponding real edge contours. The 3D articular surface location is achieved through the correspondence between real and modeled edge ellipses. Dispersions locating 3D articular surfaces, when using photogrammetric reconstruction, have been calculated. They mainly depend on the couple of radiographic incidences, and on the record of points along the articular surface edge projections. Examples of standing pelvis, of subjects and scoliotic patients, focusing on relative positions of articular surfaces and pelvis asymmetries, are presented.

Abstract no.: 32256

**SHORT PROXIMAL FEMORAL NAIL FOR TROCHANTERIC FRACTURES
–AN ANALYSIS OF 100 CASES .**

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We retrospectively reviewed 100 patients who had sustained stable and unstable inter trochanteric fracture fixed with short Proximal Femoral nail between July 2004 to July 2011. Of the 112 patients which were studied to assess the results of the short proximal femoral nail Data of only 100 patients was available and were included . Sixty four patients sustained unstable fractures (A2 =40 ,A3 =24) and thirty six had a stable trochanteric fractures (A1 = 36). The age group ranged form 56 -83 yrs (average 67 yrs) and sex ratio was 62 males and 38 females. After the average follow up of one year . 90 %fractures healed by 6 months without any complications . In 8 cases there was superior migration of the screw with varus collapse. We had one case of Non Union and one case of avascular necrosis after 20 months of follow up.We also had two cases of “Z effect” ,one case of “reversed Z effect” and two cases of screw cut out. We conclude that the modified short Proximal Femoral nail is an excellent implant for the treatment of stable and unstable fractures of the proximal femur suited especially for the small femora and short stature of the Indian patients. Keywords: Intertrochanteric fractures , Intramedullary implants. Short proximal Femoral Nail, Hip fractures,

Abstract no.: 32263

EVALUATION OF THE RESULTS OF MOSAICPLASTY FOR THE TREATMENT OF OSTEOCHONDRAL KNEE DEFECTS A REVIEW OF 60 CASES

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Articular cartilage has little ability to regenerate efficacious treatment of full thickness cartilage defects of the weightbearing surfaces of knee is a challenge for the orthopaedic surgeon. Cartilage lesions provoke pain, swelling, locking and disability may predispose for development of osteoarthritis. Osteochondral cylinder grafts aimed at reconstituting the chondral surface has been introduced by the mosaicplasty technique, osteochondral grafts are transplanted from areas of little weight bearing at the outer limits of the trochlea to the focal lesion in the same knee. In this study 40 consecutive mosaicplasties in 36 patients (median age 35 years) have been performed at our hospital and followed up for 4 years mean (32.4) months. The mean area of the lesions was 3.8 sq. cm and the lesions were located at the femoral condyles, trochlea or patella. Results Six months post-operatively we found significant improvement of the. The mean preoperative and postoperative Lysholm knee score was 45.8 (21–60) and 87.5 (74–100), respectively ($p < 0.001$), also short-term results are good regarding symptoms and knee function on the Cincinnati knee score (pain, swelling, giving way, catching as total evaluation). MRI examination at the last follow-up visit revealed that congruency was restored in 34 (85%) without any signs of fissuring or delamination but in six patients (15%) a 1-mm difference between graft and recipient surface was detected. Conclusion: Mosaicplasty is a really effective method of treatment for cartilage lesions in the knee joint, represents one solution: to bring a hyaline like repair of the defected area.

Abstract no.: 32273

THE OPTIMAL TIMING OF CONVERSION FROM TEMPORARY EXTERNAL FIXATION TO DEFINITIVE OSTEOSYNTHESIS IN TIBIAL SHAFT FRACTURES.

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Background: Temporary external fixation and secondary definitive osteosynthesis in tibial shaft fracture is the treatment of choice for severe soft-tissue injuries and polytrauma patients . Increased infection rates have been documented when the duration of external fixation gets longer . The purpose of this study was to evaluate the duration of external fixation and the complications of definitive osteosynthesis in retrospective analysis . Material and Methods: From May 2009 to September 2011 , 28 tibial shaft fractures (26 patients) were treated by external fixation followed by definitive osteosynthesis . Result: The average duration of external fixation was 9.5 (range 2-18) days . Twelve patients had one or more complications . Ten had superficial wound infection . Two required additional surgery (one had osteomyelitis and the other had nonunion) . Conclusions: Conversion from temporary external fixation to definitive osteosynthesis was performed safely within 18 days . Although two patients developed osteomyelitis and nonunion , these two were open fracture with medical complications(compartment syndrome , diabetes mellitus and alcoholic) . In such cases , we have to consider the way of definitive fixation as well as the timing of conversion.

Abstract no.: 32275

PERCUTANEOUS ANTERIOR PLATING FOR DIAPHYSEAL HUMERUS FRACTURES. A CASE SERIES AND SYSTEMATIC REVIEW.

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The purpose of this study was to perform a systematic review of the literature to identify all publications in the English, French and German literature and present our own case series. Our own series included eight consecutive cases with a mean age of 39.5 years. In our series all fractures united rapidly with bridging callus evident at 42.2 days (34 – 54 days) with no complications observed. In the coronal plane there was 2.0o of angulation (1.3 – 6.8o). Full range of motion of the shoulder and elbow are preserved in all cases. Applying the eligibility criteria, four studies were considered for analysis. Pooling these articles with our series a total of 69 patients were treated this technique. The mean age was 36.6 (17-70) years and the overall rate of union occurred at 11.7 (7-32) weeks. The coronal alignment was normal in 47 patients, varus alignment(3-8 degrees) in 10 patients and valgus alignment (3-8 degrees) in 12 patients. One transient radial nerve palsy, one transient musculocutaneous nerve palsy, one flexion deficit of 20 degrees and one 10 degree varus deformity were the reported complications. Full range of motion was observed in all patients. The elbow range of motion was full in all patients. The data convincingly demonstrates this technique is both safe and effective, with a marked reduction in rates of non-union and nerve injury compared to alternative methods of treatment.

Abstract no.: 32276

RADIAL HEAD PROSTHESIS VERSUS RESECTION ARTHROPLASTY FOR RADIAL HEAD FRACTURES MASON TYPE III

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Radial head resection was the treatment of choice before Speed first reconstructed the radial head with a metal prosthesis. Aim of this study is to compare between monoblock radial head prosthesis versus resection Thirty four patients sustained unreconstructible radial head fracture and have been treated by resection (18 patients), prosthesis (16 patients). The two groups of patients were reviewed clinically and radiologically Functional outcomes of the elbow (Morrey scoring system, instability, cubitus valgus and involvement of the wrist (pain, grasp, RUD instability) Elbow or wrist arthritis, ulnar variance, and evolution of prosthesis evaluated on standard radiographs a mean follow up of 3 years . Regarding thIS criteria, there was no significant difference between the resection and the prosthesis group: Morrey scoring 77/100, mean flexion was 130 degrees, mean deficient extension was 18 degrees, mean pronation 60 degrees, mean supination 67 degrees, grasp reached 90% of the controlateral side. Arthritis was noted with the same frequency at the elbow (77%), and wrist levels (66%) in each group. In the resection group the following complications were significantly more frequent: ulnar nerve irritation (2 x) , para articular ossification (4 x), ulnar variance positive in all cases (mean value 3.20 mm). In the prosthesis group only two implants lossening during follow-up. Concolusion ; Comminuted fractures of the radial head treated by resection or prosthesis are both followed by same functional scoring. Only the level of complications differs between groups: at elbow level for prosthesis group, at wrist level for the resection group.

Abstract no.: 32282

**TREATMENT OF POSTTRAUMATIC SHOULDER DEFORMITIES AFTER
TRANSCONDYLAR AND SUPRACONDYLAR HUMERUS FRACTURES IN
CHILDREN**

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Among distal metaepiphyseal humeral fractures trans- and supracondylar fractures occur frequently and are one of the most widespread accidental injuries in children. Over 90% of trans- and supracondylar fractures are displaced and require reduction. Complex anatomical location of these fractures, technical difficulties of reduction and maintenance of fragment alignment, possible neurovascular complications at the time of injury and manipulation are core factors defining necessity for ample and multifarious treatment approach for these fractures in children. During past decades numerous reduction techniques have been developed, of which most widespread are closed reduction with plaster splint immobilization and open reduction with K-wire fixation. These techniques have high fragment redisplacement and mal-union rates, as well as prolonged rehabilitation, which, in turn, leads to elbow joint stiffness. After incorrect treatment of these fractures post-traumatic valgus and varus deformities frequently develop, bringing discomfort, decrease in physical activity and psychosocial problems to child. During our more than 6-year experience of trans- and supracondylar humeral fracture treatment in Juvenile Orthopedics department we have operated 122 children with various distal humerus deformities. Age of operated children ranged 8 to 15 years. A bone plate designed by us repeats contours of distal humerus, providing rigid fixation. In postoperative phase, 7 day plaster splint is applied. Passive exercises in elbow joint are initiated after splint removal. Early patient mobilization allows us to avoid contractures and restore full limb motion. Thus, use of our bone plate has a number of practical advantages and allows performing reduction of posttraumatic deformities more efficiently.

Abstract no.: 32283

THE ROLE OF THE LOWER LIMBS' ECHOGRAPHY IN DIAGNOSTICS OF ASYMPTOMIC PHLEBOTHROMBOSIS AMONG PATIENTS WITH PATHOLOGY IN PROXIMAL FEMORAL BONE

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The reason of pulmonary embolism is in 70 % deep venous thrombosis. Since 2009 the lower limbs echography was included in the pre-protocol analysis before the total hip replacement. The results of ultrasound investigation of lower limbs veins were studied among patients without clinical signs of venous insufficiency. It was done before total hip replacement and during 10th -12th days and nights after the operation. There were 11 women and 7 men. The average age was 51.8. The average hospital stay before investigation – 3.3 days. Distal field of external iliac, femoral, popliteal and big subclitaneous veins were studied. (Cockett-1;2;3). During preoperation period two patients had isoechoic thrombs with signs of organization in sural veins and in lumina of big iliac, one patient had floating thromb in femoral vein. In the last case kava filter was set before total hip replacement. During control ultrasound investigation on 10th – 12 th days after operation one patient had asymptomatic floating thromb in femoral vein, which would also need setting of kava filter. So, among investigated patients without clinical signs of veins pathology, in 22.2% cases asymptomatic phlebothrombosis was found. Conclusions: Ultrasound investigation of lower limbs veins is considered to be high informative minimally invasive method of asymptomatic phlebothrombosis diagnostics among the patients with pathology of proximal femoral end both in pre- and postoperation periods.

Abstract no.: 32284

THE SELECTION OF EFFECTIVE BIOACTIVE PEPTIDES FROM FERMENTED MILKS WHICH PROMOTE CA²⁺ UPTAKE IN VITRO

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Introduction: In recent years, the research on bioactive peptide in natural products has enjoyed much attention. It has been discovered that peptides from much milk proteins are imbued with biological activity, such as Calcium-absorption enhancing. The development of Casein phosphopeptides (CPP) for enhancing Calcium-absorption is of great potential. **Methods:** The project employed UV detector and high-performance liquid chromatography (HPLC) to separate casein phosphorylated peptides (CPP) of interdependent fermentation in pre-trials. CaCO₂ intestinal cell lines were cultured to full 70% to 80% of volume in 6 cm Dish, and then detect the situation of calcium absorption by fluorescence microplate analyzer. **Results & Discussion:** The results show that the calcium uptake of both raw milk 1 and raw milk 2 is better than the CPP commercially available (positive control group). The Calcium uptake of the no aging kefir raw milk products in cells show that the calcium uptake of the no aging kefir raw milk products 1 is significantly better than no aging kefir raw milk products 2. In the calcium uptake of the aging kefir raw milk product, the results indicated that the calcium uptake indeed effectively increases through the after-ripening process. In the separation and purification of the mature interdependent fermented raw milk products. It's found that the main peptides of these subtraction peptide group were under 2 kD through standard comparison, thus indicating milk proteins can effectively break down macromolecule protein into small fragment of peptides through interdependent fermentation which contains effective peptides promote Ca²⁺ uptake in vitro.

Abstract no.: 32286

EXPERIENCE OF SURGICAL TREATMENT OF VALGUS DEFORMITY I TOE.

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The transverse arches, accompanied by a faulty installation I toe, hammer concomitant deformity, the presence of a painful callosity of the skin surface of the sole of the foot, is one of the most common types of orthopedic pathology. The transverse arches develops slowly and tends to progress in the most productive years. The deformation of the foot makes it difficult to wear shoes, pain makes a person inactive, irritable, and leads to a drastic restriction of disability. During the treatment we selected operational tactics to solve this problem. In rejecting what I metatarsal bone of the foot inwards at an angle of less than 25 degrees, the operation was performed in the following amounts: "On the medial surface of metatarsal I-phalanx joint is curved skin incision. After auditing the surgical field is excised inflamed bursa. After the joint capsule is made from cutting out the tongue-shaped flap, the reason I turned to the finger. As I head wound appears metatarsal bone. At 3 months after surgery was prescribed a lot of development and subsequent rehabilitation. After conducting all phases of treatment patients showed improvement in general condition, the pain disappeared, due to surgical removal of valgus deformity of the big toe there was improvement in anatomical and functional results, the removal of a cosmetic defect, rehabilitation.

Abstract no.: 32288

MANAGEMENT OF MALUNITED SUPRACONDYLAR HUMERUS FRACTURE.

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Aims:1)Results of management of malunited supracondylar humerus fracture with cubitus varus by lateral closed wedge osteotomy and 2)To evaluate various technical problems morbidity, complications of lateral closed wedge osteotomy and to suggest Solutions to overcome them.**Materials and Methods:**Since June 2005 to June 2010 we have operated 68 patients of malunited supracondylar humerus fracture, with cubitus varus deformity. We performed lateral closing wedge osteotomy and simultaneous rotation element along with Flexion/Extension deformities, corrected to improve cosmetic appearance and functional output. Bones were fixed by 3.5mm two screws and figure of eight tension band wire (22 gauze). The fixation was supplemented with one lateral K wire (2mm). Post operatively patients operative limb was immobilized in above elbow cast in 100° flexion with forearm in full Supination for 5 weeks.After removal of cast, isometric and isokinetic exercises were performed for 3 wks.After 5wks, correction of deformity achieved was measured clinically and radiologically.Patients were evaluated according to Oppenheim's criteria. Also parents and patients satisfaction with the final appearance and function of the limb was taken into consideration.**Results :**Post-operatively all patients returned to daily activity. In 34patients (50%) there was no functional loss in movement, 1-5% loss of movements in 34(40%) patients, fixation failure occurred in 19 patients.According to Oppenheim's 47(70%) cases Excellent, 34(20%) cases – Good,19(10%) cases – Poor,94% patients satisfied with final outcome.**Conclusion:**Lateral closing wedge osteotomy using screws and tension band wiring with additional 2mm cross P.C.P.F from lat- condyle to medial cortex which provides better stability without risk of ulnar nerve injury.

Abstract no.: 32290

THE METHOD OF RATIOANAL USE OF SKIN AUTOTRANSPLANT IN THE PROCESS OF TREATMENT OF OPEN SHIN FRACTURES

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Open multifragmental shin fractures in 10-12% are complicated by development of posttraumatic wounds of skin integuments, which are needed to be replaced by machine meshed grafts. During 2008-2010 in Minsk Region Clinic Hospital in traumatology department 34 patients' histories of multifragmental shin open fractures with posttraumatic wounds of extremities needed autodermoplasty were studied. In all cases autodermoplasty by split-thickness skin graft was held. The cut-outs of skin autotransplant were not disposed but were gone through cryopreservation according to our method. 16 patients had primary adhesion of the whole skin flap (cryopreserved skin was disposed in a usual way after adhesion of basic flap – during 12th-14th days and nights after skin harvesting). With lysis of skin autotransplant (till 5-10% of the whole wound surface) 18 from 34 patients were undergone occasional autodermoplasty with cryopreserved skin autotransplant using our method in dressing conditions (during 16th -21st days after skin harvesting) – all had engraftment. Cryopreservation method of skin autotransplant allows to use the whole donor material maximal effectively, to reduce the terms of skin integuments adhesion and to provide close of wound defects avoiding occasional serious operations, which need total anesthesia, occasional operational trauma in the process of skin float harvesting.

Abstract no.: 32292

**REFIXATION OF OSTEOCHONDRAL FRACRURE FRAGMENTS –
CLINICAL RESULTS IN AN IN-VIVO OVINE FEMORAL CONDYLE MODEL**

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INTRODUCTION-The refixation of traumatic osteochondral defects and flake fractures remains an unsolved problem. Currently in use are small screws (e.g. Asnis®) or small poly-lactide pins (e.g. Ethipin). Often refixation with these techniques is impossible. To address this problem, a novel technique evolved from bone welding is currently under development (SonicPin, Stryker). Biomechanical testing could show satisfying results, reaching far higher stability than classic poly-lactide pins. Aim was to determine the safety and efficiency of a novel osteosynthesis method with special regards to cartilage behaviour and methodological complications under physiological conditions. **METHODS**-24 medial-condyles of Merino sheep were osteotomized with a saw block to assure a 5mm thickness fragment. Fragments were then reattached randomized with either two SonicPin, Ethipin or Asnis-screws. Animals were sacrificed after 12 weeks. The specimen were evaluated with micro-CT, electron-microscopy and histology. The Outerbridge, O`Driscoll and OsScore was used for cartilage damage classification. **RESULTS**-Healing rates with the SonicPin were significantly better than with an Ethipin but not significantly different from Asnis-screws. Cartilage damage with the SonicPin was classified as Outerbridge 0.8 mean on the femoral and Outerbridge 1.9 on the tibial site. This was not significantly different from Ethipins but significantly better than the Asnis screws that showed a high grade of cartilage damage especially on the tibial side. **CONCLUSION**-The SonicPin allows secure fixation of osteochondral fragments in an ovine in-vivo model. Healing rates are better than with the classic poly-lactide fixation method. On the other hand the cartilage damage caused by screw osteosynthesis can be minimized.

Abstract no.: 32293

GANGLION CYSTS

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Ganglion cysts usually arise close to tendons and joints. Its occurrence inside the joint is rare and is an incidental finding during arthroscopy or magnetic resonance imaging (MRI) test. In knee cyst is more commonly associated with ACL than PCL and literature review showed that all the reported cases till date were in adults. We are reporting here a rare case of ganglion cyst in the PCL in a four year old child, with its aetiology, clinical presentation, imaging features and management. The etiology of intra articular ganglion remains unknown. The theories for intra-articular cysts include herniations of the synovium into surrounding tissue, displacement of synovial tissue during embryogenesis, degeneration of the connective tissue following trauma and proliferation of plueripotent mescenchymal stem cell. The likelihood of synovial herniation into the developing PCL seems to be the most probable cause in our case considering the age and absence of trauma. As the development continued the synovium within the fibers of the PCL might have lost its connection with the intra-articular portion and become a cyst. In majority of cases the cyst is posterior to PCL. Ganglion cyst of the PCL may be confused with meniscal cysts arising from the tear of the posterior horn of the medial meniscus on MRI. Hence the posterior horn of the medial meniscus has to be carefully evaluated to rule out a tear. MRI is the investigation of choice to confirm the diagnosis and arthroscopic resection is a safe treatment modality even in children.

Abstract no.: 32294

CLOSED REDUCTION OF HEEL BONES FRACTURES

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Heel bones fractures constitute to 4% of skeletal system fractures and to 50% of foot fractures. Risk of complications with open reduction of heel bones fractures is seen in 30 % cases. The aim of research: to improve the treatment results of heel bones fractures by closed reduction. Material and methods: We held closed reduction by worked out device among 52 patients (56 fractures). Indications for use of our methodology were closed heel bones fractures with fragments relocation and Beller's angle less then 15° with no rude disruption of joint surface congruence of subtalar and calcaneocuboid joints («stair» not more then 2 mm or dimension of relocated fragment – to ¼ of joint surface). The result and discussion: The analysis of the reduction results of heel bones fractures showed that Beller's angle was reduced among 93.1% patients and was increased to 26.1±6.7°. The offered method turned out to be more effective with tongue-shaped fractures (increase of Beller's angle to 28.3±4.6°) than with impressive (respectively to 23.7±6.3°). Clinical results are valued by MFS. Average numeral during time of treatment 6 months – 84.9±6,4, 12 months – 84,9±6,4, 18 months – 84,9±6,4, 24 months – 84,9±6,4, 36 months – 84,9±6,4

Abstract no.: 32295

METHOD OF PREVENTING OF NEUROLOGICAL COMPLICATIONS IN SURGICAL CORRECTION OF SCOLIOSIS

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Objective: To develop a way to prevent neurological complications in surgical correction of scoliosis with endocorrectors. Methods: 20 patients with idiopathic scoliosis of grade 4 were managed by two-rod distraction endocorrector by method of McCarthy using the method of prevention of neurological complications. The idea of this method is that the correction of scoliosis should comply with the preoperative correction of arch of scoliotic spinal deformity which allows to achieve maximum correction of scoliosis without the risk of neurological complications. Calculated (X) - a distance of safe intraoperative correction of scoliosis between angular vertebrae is determined by a simple mathematical calculation. The value of distance between the arches of angular vertebrae, determined from x-ray by stretching the spine, is multiplied by the value of distance between the arches of angular vertebrae in the surgical wound and divided by the value of the distance between the arches of angular vertebrae with the patient lying defined on x-ray before surgery. Safe distance of intraoperative correction between angular vertebrae is achieved by distraction of rods on the concave side of thoracic scoliosis. Results: method, developed to prevent neurological complications, has enabled to obtain good results without neurological complications in 20 patients with idiopathic scoliosis managed by two-rod distraction endocorrectors by the method of McCarthy in scoliosis of grade 4 deformation. Conclusions: This simple and objective method enables to reach the maximal correction of scoliosis with endocorrectors taking into account the neurological safety.

Abstract no.: 32296

KOCH'S SPINE, SURGICAL MANAGEMENT WITH ANTERIOR DECOMPRESSION & BONE GRAFTING

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MATERIALS AND METHODS- This study is based on 150 cases of tuberculosis of spine with neurological deficits who attended JJMM Medical college, Davangere, during 1993-2011. **CONCLUSION-**The commonest site of disease in present series was in the thoracic region followed by cervical. The response to anterior decompression and bone grafting is better in patients who had evidence of active disease with neurological deficit and duration of deficit below 1 month. Radical debridement of the diseased anterior part of the vertebral body, drainage of abscess, vertebral body fusion with cortico cancellous graft and local instillation streptomycin is remarkably shown an excellent result, which rapidly recovers the neurological deficit and helps the fast disease healing we have noticed in our series.

Abstract no.: 32297

THE REASONS OF OLD DAMAGES OF ANKLE-JOINT

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Fractures and dislocations of ankle-joint constitute 12-32 % of skeletal system fractures, 40-60% of ankle-joint fractures. The most difficult for treatment is the group of old fractures-dislocations in the area of ankle-joint. The aim of research: to reveal the reasons of occurrence of old damages of ankle-joint. Material and methods: The analysis of the results of surgical treatment was made among 59 patients: 35 (59,3%) men, 24 (40,7%) women. All damages involved both medial and lateral structures of ankle-joint. With it syndesmosis breaking, defining 3 (hard degree) of ankle-joint damage, was found among the half of patients (29 cases from 59 or 49,2%). Limitation of damages was from 2 till 12 months. In 56 from 59 cases the reason of old unset damages of ankle-joints were mistakes made while rendering medical help. Only in 3 cases (5,1%) late visit to a doctor of the patients was the reason of later treatment. In most cases (98,3%) old damages of ankle-joints were noticed after conservative treatment. Prodromic conservative treatment included closed reduction and fixation by plaster-of-Paris in 43 cases (72,9%). The mistake was in incorrect interpretation of control x-rays (14 cases), ineffectiveness of fixation (21 cases), late disclosure of fragment dislocation in plaster-of-Paris (7 cases). Incorrect value of damage was the reason of wrong fixation in 12 cases. Nutritional changes were the reason of late curative treatment in 3 cases. One patient had old damage of ankle-joint after surgical interference.

Abstract no.: 32301

HYPERTROPHIED CRUCIATE LIGAMENT IN HIGH PERFORMANCE WEIGHTLIFTERS OBSERVED IN MAGNETIC RESONANCE IMAGING.

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Introduction: It is well known that repeated heavy workout increases the volume of many soft tissue structures. This problem, however, has not been investigated in the knee joint. Possible enlargement of cruciate ligaments may change their three-dimensional orientation and causes impingement. To the best knowledge of the authors, we present the first magnetic resonance imaging (MRI) study analysing the volume of the cruciate ligaments among high-performance weightlifters. Methods: We selected nine athletes with no history of knee trauma whose MRI results were negative for cruciate ligaments problems. Looking for the control group 19 males were selected matched for the age, weight, height with the study group, with no history of knee trauma and negative MRI findings. In athletes group we recorded age of the onset and years of training. Results: Statistical tests confirmed that the cross-sectional areas of the ACL and PCL were significantly higher in weightlifters than in controls 71.7 mm² and 40.56 mm² for ACL, and 64.48 mm² vs. 44.98 mm² for PCL respectively. The Spearman's rank correlation test indicated strong negative correlation between the area of the CL midsubstance and the onset of training with a coefficient of -0.56 for the ACL and -0.71 for the PCL. Using the same test we also found a strong positive correlation (0.6) between the years of training participation and the area of the cross-sections of the PCL. Conclusion: Our study proves that cruciate ligaments are hypertrophied in weightlifters similarly to other soft tissue structures.

Abstract no.: 32302

SURGICAL TREATMENT OF DYSPLASTIC COXARTHROSIS WITH SLPS (SELF LOCKING POROUS SYSTEM) ENDOPROSTHESIS BY ALTIMED JSC

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Total hip joint endoprosthetics is method of choice for treatment of dysplastic coxarthrosis. Main characteristics of the prosthesis are: Initial stability and biocompatibility with bone tissue that are provided by three-wedge form of the stem, conical cup with self-drilling thread, principle of selective porosity, ceramic cold-coating TIOCO (TiO₂). Porous inserts in the proximal part of the stem (depth up to 5 mm, pore size 150-350 micron) provide solid ingrowth of bone tissue. The same technology of porous insert was used on the top of polymeric insert. Aim of the clinical investigation: improvement of treatment of patients with dysplastic coxarthrosis. Materials and methods: During the period 2005-2011 total hip endoprosthetics was performed in 99 patients. Patients demographics: male – 16, female – 83; age group: up to 50 years – 36 patients, 50-70 years – 45 patients, over 70 – 18 patients. Intensity of disease by Grove: 1st – 53 patients, 2nd – 38 patients, 3d – 8 patients. 92 patients suffered double-sided hip joint disease, 7 patients – unilateral disease. All patients operated with anterior-lateral approach. Results and conclusion: Conventional protocols of treatment were used. Long term results were studied 12-60 months after operation. Good or excellent results evaluated by Harris scale were achieved at 88 (88.8 per cent), satisfactory results at 9 cases (9.1 per cent), unsatisfactory results 2 cases (2.1 per cent). Therefore, our experience of endoprosthetics with SLPS endoprosthesis by Altimed JSC are quite positive, we appraise the quality of the implant as very high.

Abstract no.: 32303

IMPLANTATION OF PELVIC COMPONENT OF ENDOPROSTHESIS

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Aim of the study: development of technical approaches that allow to optimize the primary fixation of the pelvic component of prosthesis in case of dysplastic coxarthrosis. Materials and methods: on the basis of hospital of traumatology and orthopedics BelMAPE 14 patients with third degree of dysplastic coxarthrosis by Grove were operated with uncemented hip joint endoprosthesis SLPS and Muller reinforcement ring by Altimed JSC (Belarus). Patients demographics: 2 men and 12 women, age 35-45 years. Results and conclusions: Serious forms of dysplasia (total hip dislocation or above acetabular neoarthrosis, when lower pole of the cavity overlap area of acetabulum – Grove-3) are characterized by substantial defect cup coverage in the upper-external segment and require osteoplasty. In such cases in order to form implantation area for the hip component it is necessary to use small reinforcement Muller ring. Standard protocols of treatment were used. Observation period was 72 month. All patients provided positive feedback after the operation. The described method of implantation allows to illuminate the risk of early instability of the pelvic component and improve the results of treatment of patients with severe forms of dysplastic coxarthrosis.

Abstract no.: 32304

LESS INVASIVE DIRECT ANTERIOR APPROACH FOR THE TREATMENT OF FEMORAL NECK FRACTURES – A PROSPECTIVE COHORT STUDY OF 166 PATIENTS

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Introduction-Less invasive surgical technique in THA is expected to minimize soft tissue damage and expedite rehabilitation. Due to this, it is now in widespread use in elective THA. Aim of this study was to evaluate if this technique is feasible in the non-elective setting of geriatric patients with femoral neck fractures and to explore functional and social outcome in comparison to reported results of the conventional technique. **Methods-**Study setup is a prospective single-arm cohort-study with a positive Ethical Committee vote. Included were patients under legal care of a third party. Inclusion criteria were the indication for bipolar hip arthroplasty. 74% were female. Mean age was 83.5 years. As a less invasive approach, the well-described „Direct Anterior Approach-DAA“ was chosen. The ABG-II stem was used in all cases. The pre- and postoperative regimen was identical over the study period. The Barthel index, Mini-Mental Status, Timed up and go test, Montgomery Asberg Scale and social parameters and were determined preoperatively when possible and postoperatively in all cases. **Results-**All procedures were finished in a minimal invasive technique, twice a fracture of the major trochanter occurred, once a deep infection that required revision. The Barthel index at day 14 was determined with 44 points, at follow up with 64 points. The timed up and go test rose by 0.5 points. **Conclusion-**The DAA approach is feasible in an elderly population. There is a detectable benefit regarding early rehabilitation and a slight but significantly reduced blood loss.

Abstract no.: 32305

A RARE CASE OF HYDATID CYST OF TIBIA-

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Hydatid disease, a parasite infestation caused by echinococcus granulosus, may affect almost any part of the body, though skeletal lesion is rare specially in long bone like tibia. Diagnosis of hydatid disease in bone is mainly based on radiographic findings. We present a case of hydatid disease of left tibia in a 60 year old lady. Diagnosis was made both radiologically and histopathologically with core biopsy. Treatment started with three courses of 400 mg Albendazol orally once daily for 4 weeks with two weeks interval. Patient was operated on 7th July, four months after first presentation. Thorough curettage of lesion and irrigation with hypertonic saline was performed. The cavity was filled with poly methyl methacrylate and prophylactic fixation was done with interlocking tibial nail to prevent pathological fracture. No recurrence was observed after 30 months of follow up.

Abstract no.: 32307

THE ROLE OF MEASURES OF INTRATISSUE AND DIFFERENTIAL PRESSURE IN DIAGNOSTICS OF ACUTE COMPARTMENT SYNDROME AMONG PATIENTS WITH CNEMIS BONE FRACTURES

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Acute Compartment Syndrome – is the condition, occurring with pathologically high intratissue pressure – more often can be seen with cnemis bone fractures in traumatology. The aim of research: to improve the treatment results among patients with cnemis bone fractures by timely diagnostics of Acute Compartment Syndrome. Materials and methods: Delegated to Minsk Region Clinical Hospital there were made measurements of intratissue pressure in fascial compartment of damaged extremity among 62 patients at the age from 19 to 65 during the period from 2008 to 2010. Results and Discussion: Two patients (3.23%) had intratissue pressure higher than 30 mm. and differential pressure (differential between diastolic and intratissue) less than 30 mm. Fasciotomy was made to these patients. During post-operative period the level of intratissue pressure normalized. 5 patients had absolute intratissue pressure higher than 30 mm and differential – more than 30 mm. Conservative treatment and case follow-up was held to this group of patients. The treatment allowed to stabilize pathologic process. 12 patients with intratissue pressure from 20 to 30 mm – risk group- were held also conservative treatment directed to prophylaxis of edema, that allowed to avoid further increase of intratissue pressure. The forth group of patients (43 patients) with the level of intratissue pressure less than 20 mm. They were also held case follow-up. Conclusion: Timely started conservative treatment in consideration of the level of intratissue pressure allows to prevent increase of intratissue pressure and development of nonreversible acute Compartment Syndrome.

Abstract no.: 32308

PERIPROSTHETIC FRACTURES OF THE FEMUR FOLLOWING TOTAL KNEE ARTHROPLASTY (IS IT DIFFERENT IN ASIAN PATIENTS?)

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Periprosthetic fractures of the femur following total knee arthroplasty (is it different in Asian patients?) D Samih Tarabichi, D Mohamed Elfekky, D Muaz Adi, D Marawan Hawari, D Ibrahim Gado Introduction: Periprosthetic fracture following total knee arthroplasty is a potentially serious complication. Management of these fractures can be challenging for orthopaedic surgeons. We are presenting special fracture type we named it insufficiency fracture which is not recognized in the known classification and is challenging in treatment Material & methods: between October 1997 and October 2011, 5000 cases of total knee replacement were done; we had 35 patients encountered periprosthetic fracture above the prosthesis Results & discussion: we report the different fracture patterns with reporting of a new special pattern involving only the lateral femoral condyle. This review article analyzes the various risk factors, proposed classification systems and treatment options for periprosthetic fractures of the femur after total knee arthroplasty. Conclusion: fracture patterns in Asian population are different with special type involving only the lateral condyle of the femur.

Abstract no.: 32311

MID TO LONG-TERM CLINICAL AND RADIOLOGICAL OUTCOME AFTER OF LATARJET PROCEDURE FOR RECURRENT ANTERIOR DISLOCATION OF THE SHOULDER

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Background:The purposes of this study were to analyze the mid to long-term clinical results and the incidence of arthropathy after a modified Latarjet procedure for glenohumeral instability. **Methods:**A questionnaire as well as radiological examination was obtained from a consecutive series of patients. **Results:**148 patients (150 shoulders) responded (42 women and 106 men) with a mean age 28.4 ± 8.7 . The mean follow-up was 14.6 years. Follow-up was more than ten years for 117 patients (78%). Three patients (2%) sustained a re-dislocation or re-subluxation. Results of the Walch-Duplay score were excellent or good. Fifty-three percent of the patients were pain free, 34% presented occasional pain, 9% moderate pain and 4% suffered from severe pain. Seven-nine percent of patients were very satisfied, 18% were satisfied and 3% were dissatisfied. Return to sports activities was possible for 85% of the patients. Radiological complications included three pseudarthrosis (3%), four lysis (2.6%), two fractures (1.3%), and one migration (1%). Signs of arthropathy were found in 30% of patients (24% Samilson 1, 4% Samilson 2 and 2% of Samilson 3). Risk factors for dislocation arthropathy were surgery after the age of 40 ($p = 0,021$) and lateral position of the transferred coracoid process in relation to the glenoid rim ($p < 0,01$). **Conclusion:**Latarjet procedure led to good results with a very low rate of recurrence. The development of arthropathy remains a source of concern in the long-term. It is correlated to surgery after the age of 40 and coracoid transfer in lateral position to the glenoid rim.

Abstract no.: 32315

USE OF 8-PLATE FOR TIGHT ROPE TECHNIQUE FOR ANKLE SYNDESMOTIC INJURY: EARLY RESULTS

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Syndesmotic injuries to the ankle occur in approximately 10 percent of all patients with ankle fractures, but they can also occur with soft-tissue injuries in the absence of fracture. Although no prospective comparison between tightrope and screw fixation has been performed, tightrope fixation has the following potential advantages: allowing physiologic motion at the syndesmosis; lowering the risk of hardware pain; eliminating screw breakage (no screw involved); and permitting an earlier return to motion and activity. Tightrope fixation was developed as an alternative to avoid common screw complications. One or two fixation devices can be used, depending on the degree of stability required. The device consists of a fiberwire suture and two buttons—one oblong to enable it to pass through the bone and the other round to serve as a restraint on the lateral side. We in our study of 5 patients have made use of 8-plate and ethibond sutures for fixation of the syndesmotic injury. The average follow period was 8 months and there have been good functional outcome assessed by foot and ankle disability scores. Although the outcomes seem to be good, but a long term study is required, also prospective comparison between our technique and the technique given in literature is required to justify its use

Abstract no.: 32317

CORRECTION OF POST TUBERCULAR KYPHOSIS WITH IMPLANT FAILURE

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Development of different osteotomy techniques with posterior approach have gained more attention than anterior alone and combined antero-posterior approaches in spinal tuberculosis with angular kyphosis due to less chance of complication. Significant correction can be achieved by posterior procedures even in healed and complicated lesions. A 15 year old girl was presented with painful dorsal kyphosis with subcutaneously protruding implant at middle of the back in February 2011. She had a TB spine of D12-L1 with paraparesis and was operated in another hospital with modified antero-lateral decompression and posterior instrumented stabilization of D11 to L1 in October 2010. Patient was neurologically improved but later on one pedicle screw was broken with increasing kyphosis. Patient was then treated with removal of all implants followed by transpedicular decancellation osteotomy of D12 with posterior instrumentation of D9 to L3. Kyphosis was corrected from 50 to 16. Patient has good fusion with cosmesis at 12 months follow up. Post tubercular kyphosis with implant failure is an unacceptable complication and can be managed with transpedicular decancellation osteotomy.

Abstract no.: 32319

BONY INTEGRATION OF TITANIUM IMPLANTS WITH A NOVEL BIOACTIVE CALCIUM TITANATE (CA₄Ti₃O₁₀) SURFACE TREATMENT IN A RABBIT MODEL

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Background: Surfaces characteristics of implants may be altered in order to achieve an accelerated and enduring bony integration. Classic surface coatings bear the risk of loosening or flaking from the implant body. This is excluded by the chemical conversion of the TiO₂ surface layer into calcium titanate. The aim of this study was to investigate the bony integration of titanium implants with a new calcium titanate surface compared to a conventional Ti6Al4V implant. Methods: Cylindrical implants were implanted in both lateral femoral condyles of New Zealand white rabbits. In each animal an implant with and without surface treatment was inserted. Animals were sacrificed after 4, 12 and 36 weeks respectively. The axial pull-off forces were determined for 25 animals. Furthermore, a histological analysis of the bony integration of the implants was performed in 12 specimens. Results: The pull-off forces for untreated and treated implants increased with longer survival times of the rabbits. No significant difference could be shown after 4 weeks between treated and untreated implants. After 12 weeks, the treated implants revealed a statistical significant higher pull-off force. After 36 weeks the pull-off forces for treated and untreated implants aligned again. Histologically, the reactions in both groups correspond to a high biocompatibility with an increasing amount of mature bone formation over time. Conclusion: Titanium implants treated with calcium titanate, may offer an interesting and promising implant surface modification for endoprosthetic implants. They might lead to an improved early osseointegration of cementless implants.

Abstract no.: 32322

FACTORS AFFECTING EARLY DISLOCATION AFTER TOTAL HIP ARTHROPLASTY.

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Introduction: Hip dislocation is one of the most dramatic events that can happen after total hip arthroplasty. Many factors related to patients, surgeons and/or prostheses are accused. Still there is no agreement on the most common reasons causing dislocation. Patients&Methods: This retrospective study of a group of consecutive series of 285 total hip arthroplasty was designed to analyze the important risk factors causing dislocation after total hip arthroplasty. 15 dislocations in 15 patients (5% of 285 patients) were analyzed clinically using Harris hip score and radiologically using Roman software developed in Oswestry, UK. Results: Low surgeon profile, cementless cups, posterior approach, weak soft tissue structures are the main factors which increase the dislocation rate after hip arthroplasty. Conservative method in the form of manipulation under anesthesia was the usual way of management. Revision arthroplasty was needed in one patient to correct a mal-positioned cup. Conclusion: dislocation is a dramatic event but is usually managed conservatively with a good outcome. Surgical technique, and surgeon experience are the most important factors affecting dislocation incidence. A mal-oriented implant is the common reason for revision after dislocation

Abstract no.: 32323

HAEMORRHAGIC THORACIC FACET JOINT CYST - A TREATABLE CAUSE OF UPPER MOTOR NEURON DEFICIT IN RHEUMATOID ARTHRITIS: CASE REPORT AND REVIEW OF THE LITERATURE

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INTRODUCTION : Lumbar facet joint cysts commonly present clinically as low back pain or sciatica without motor or sensory impairment but they have also been recognized as causing nerve root compression. Haemorrhage into the cyst causing acute neurological deterioration remains an even rarer complication and cases of acute radiculopathy and cauda equina syndrome have been reported. To the best of our knowledge, this is the first reported case of a haemorrhagic thoracic facet cysts in patients with rheumatoid arthritis causing upper motor neurone symptomology with severe lower limb weakness. **CASE PRESENTATION:** We describe the case of a 66-year-old Caucasian female who presented with acute on chronic bilateral lower limb weakness and upper motor neuron signs. A Computer tomography and a Magnetic resonance imaging scan of the whole spine demonstrated an extradural cyst at the level of the T10-T11 disc. Emergency decompression laminectomy at the T10/11 level was performed and the patient demonstrated a significant improvement in lower limb power. **CONCLUSION:** Our case demonstrates a haemorrhagic facet joint cyst located in the lower thoracic region in a patient with rheumatoid arthritis causing acute severe neurological compromise. Previous case studies have described lower motor neurone pathology due to lower lumbar facet joint cysts in osteoarthritis but there are no reports in the literature of facet cysts in patients with rheumatoid arthritis causing upper motor neurone symptomology. Both CT and MR imaging modalities were suggestive of this diagnosis. Prompt surgical decompression resulted in a favorable clinical outcome.

Abstract no.: 32324

**ENDOPROSTHETIC REPLACEMENT OF LARGE JOINTS IN THE
REPUBLIC OF BELARUS**

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Endoprosthetic replacement of large joints is a successfully developed direction of traumatology and orthopedics in Belarus. Hip joint replacement and knee joint replacement are carried out in all regional centers and take roots in other major urban complexes. Since 2001 about 25 000 of such surgeries were executed. In 2011 the number of retry (revision) operations amounted to 4%. Endoprosthetic replacement of large joints was mastered at patients with a various heavy somatic pathologies, inclusively rheumatoid diseases and hemophilia. With 2009 in Belarus are performed replacement of elbow joint, shoulder joint and talocrural joint by modern prosthetic devices. For the purpose of the work optimization we conduct the register of the persons who need endoprosthetic replacement and with established endoprosthesises. Now there are 5212 registered in persons who need hip joint replacement and 2177 - who need knee joint replacement. For the purpose of studying of the remote consequences of the endoprosthetic replacement of large joints the cohort of patients was formed and repeated endoprosthetic replacement of hip joint was done at 521 patients, among which were 61% of women and 39% of men. When studying the reasons which have led to repeated surgeries, it was established that the most frequent causes of epiphenomenon were of mechanical origin 295 (57%), infections and inflammatory reaction due to endoprosthetic replacement 133 (26%). Another causes such as bone fractures and implant fractures were occurred in rare cases.

Abstract no.: 32326

PAINFUL ENTRAPMENT NEUROPATHY OF LATERAL ANTEBRACHIAL CUTANEOUS NERVE OF THE ELITE DISCUS THROWER

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Lateral antebrachial cutaneous nerve is the terminal branch of musculocutaneous nerve. Two risky anatomic site at the elbow are its entrance to coracobrachialis muscle and its course adjacent to lateral site of biceps tendon.. 22-years-old discus thrower athlete with lateral elbow pain and extension limitation of elbow were diagnosed with entrapment of the LACN. Diagnosis was constructed with clinical evaluation and electromyelographic study. Surgery was performed because of the progressive compression of the nerve resulting paresthesia. Clinic presentation was improved for 2 month on the postoperative follow-up evaluation. Extension improved to its normal limits. He had complete relief of pain and preoperative paresthesia on the radial side of the distal forearm was improved 5 months later. Patient returned to his sportive activities with his previous performance. Entrapment neuropathy of the LACN must be take in mind in the eveluation of elbow pain. Confirmation of the diagnosis can be done with electromyelographic studies. This case was report to be pointed out the diagnosis and management of entrapment neuropathy of the lateral antebrachial cutaneous nerve (LACN) presenting as lateral elbow pain and extension limitation

Abstract no.: 32328

**MANAGEMENT OF OPEN LOWER LIMB FRACTURES A
RETROSPECTIVE AUDIT OF PRACTICE (BOAST 4)**

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We present the findings of a clinical audit of all 31 patients attending our district general hospital, with open lower limb fractures between September 2009 and September 2010. The gold standard was identified as the BOAST 4 2009 joint guidance from the British Orthopaedic Association & the British Association of Plastic, Reconstructive and Aesthetic Surgeons. Only 16 (52%) patients received the first antibiotic dose within 3 hours. 31 (100%) had an initial neurovascular examination documented, with 28 (90%) with subsequent neurovascular assessments at regular intervals. 1 (3%) patient was thought to have compartment syndrome and was operated on within 90mins of arrival in accident and emergency, using the suggested fasciotomy technique. 0 (0%) had documented joint orthopaedic/plastics plan and only 12 (39%) had orthopaedic and plastics involvement during their admission. In only 5/12 (42%) there was early plastics involvement (prior to surgical intervention). Of the 19/31 (61%) that had no plastics involvement, 6 (32%) required later referral to plastics for wound complications. Only 1/31 (3%) had a photograph of the wound filed in notes and in 23/31 (74%) there was no documentation regarding dressing of wounds. Of the remaining 8/31 (26%): 3 saline soaked gauze (10% of all pts) and 5 had betadine soaked gauze. The importance of joint management of open lower limb fractures between plastics and orthopaedics teams is crucial. Our data suggests that, despite availability of both specialities, this is not being achieved with a resulting wound complication rate of 32%.

Abstract no.: 32332

5 YEARS RESULTS OF METAL ON METAL HIP ARTHROPLASTY BELOW FIFTY YEARS

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Introduction: Metal on metal arthroplasty aim to reduce the incidence of aseptic loosening and is indicated in young patients. Patients and methods: 34 patients with a mean age of 32 years old had metal on metal hip arthroplasty for avascular necrosis, secondary arthritis, ankylosing spondylitis, and as a sequence of infection. Patients were followed clinically by Harris hip score and radiologically by Roman software. 89 % showed satisfactory results. There were two cases of loose cups which needed revision, one cases of recurrent dislocation, and one case of partial sciatic nerve palsy which improved after 2 years. We concluded that in such a young and difficult group of patients, metal on metal hip arthroplasty gives accepted satisfactory results and that complications usually happen in the first year.

Abstract no.: 32333

INTERCUNEIFORM DISLOCATION OF FOOT: A RARE FOOT INJURY

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Disruption of position of any of the three cuneiform bones is a rare injury. Isolated cuneiform dislocations do occur but are more often associated with fractures. 24 year old male presented following a fall from about five foot height. A.P. /Lateral/oblique X-rays of the foot revealed gross separation between medial and intermediate cuneiform bones with dorsal dislocation of first cuneiform navicular joint. Tarsometatarsal relationship was maintained in all views. Stress views or weight bearing views could not be obtained due to severe pain. The injury was managed by closed reduction under an image intensifier along with internal fixation of the intercuneiform joints with cancellous screw leading to an excellent outcome at 18 months follow-up. Unlike other mid foot injuries medial cuneiform instability can occur following even low energy trauma from disruption of intercuneiform ligaments. The management of this injury needs to be aggressive as relative stability of cuneiform is essential for proper functioning of foot.

Abstract no.: 32341

**INTRAMEDULLARY NAILING OF BOTH BONE FOREARM FRACTURES
IN ADULTS:CLINICAL AND RADIOLOGICAL OUTCOME.**

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Introduction:Both bone forearm fracture in adults are a common presentation to a orthopaedic clinic . Goal of treating shaft fractures of the forearm bones is to obtain good bone healing with good preservation of function. Presenting a review of 80 cases of adult both bone fore fractures treated with intramedullary nailing.Methods :80 patients with middle third shaft fractures of both bone were chosen for this study . 52 male 28 female. Type of study – retrospective. 64 patients had close fracture while 16 had open grade I fracture. Average age was 43 years .patients were followed up for a minimum of 2 years. Square nails (2.5-4.0mm) were used for fixation. Results: Assessment was done clinically using the quick dash score and radiologically for union time. Average time for radius union was 14 weeks and for ulna was 15 weeks . 6 patients had non union which required further surgery . two patients devolped infection , one healed with antibiotics and other required implant removal .Conclusion: Intramedullary nailing offers an attractive options for both bone forearm fractures in adults with good clinical and radiological outcome. It offers benefits of closed nailing , reduced surgical time . but a prospective , randomised , blinded trial including comparison with other modalities such as plating are required for a conclusive opinion .

Abstract no.: 32347

EARLY RESULTS OF LESSER TOE PROXIMAL INTERPHALANGEAL JOINT ARTHRODESIS USING AN INTRAMEDULLARY DEVICE

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Introduction: Proximal interphalangeal joint arthrodesis for lesser toe deformity is commonly stabilised using a Kirschner wire passed through the tip of the toe. This carries a significant risk of pin-site infection. Recently, a number of all-inside intramedullary fusion devices have been developed, with the aim of decreasing infection risk through avoiding exposed metalwork. We report our early experience of the Stayfuse™ (Nexa Orthopaedics). Methods: Case records and radiographs of all patients undergoing Stayfuse™ proximal interphalangeal joint arthrodesis between July 2009 and November 2011 were examined. Results: Twenty-eight Stayfuse™ proximal interphalangeal joint arthrodesis procedures in 14 patients were performed. Overall, 8 (29%) procedures required revision within 6 months. Of these, 3 (11%) intraoperative failures requiring immediate revision (Kirschner wire stabilisation or excision arthroplasty) were reported. All involved bending failure of the implant clip mechanism. A further 5 (18%) toes required revision procedures within 6 months of the index procedure; 3 (11%) for dissociation of the implant clip mechanism and 2 (7%) for nontraumatic periprosthetic fracture. Conclusion: We report high rates of mechanical failure requiring revision surgery following use of the Stayfuse™ implant. It should be noted that the patients studied here were a heterogenous group including diabetics and those having undergone prior forefoot surgery. For these patients perceived to be at higher risk of infective complications, all-inside stabilisation systems are an attractive concept. However, with 29% of patients undergoing revision procedures within 6 months, we question the safety of choosing all-inside implants over Kirschner wire stabilisation.

Abstract no.: 32349

COMBINATION OF QUANTITATIVE ULTRASOUND AND FRAX® IN EVALUATION OF STRUCTURAL-FUNCTIONAL STATE OF BONE IN POSTMENOPAUSAL WOMEN

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The aim of the study was to estimate the informative value of quantitative ultrasound and its combination with FRAX® in evaluation of structural-functional state of bone in Ukrainian postmenopausal women. Material and Methods. 363 postmenopausal women aged 45-87 years were examined, average age $65,1 \pm 0,5$ years, duration of postmenopausal period $16,5 \pm 0,5$ years. Bone mineral density (BMD) was measured by Dual-energy X-ray absorptiometer (DXA) "Prodigy" and calcaneus quantitative ultrasound (QUS) "Sahara". The ten years probability of major osteoporotic fracture calculated with FRAX® tool. Results. There is difference in distribution of bone indexes in depending of used methods. Among women which had osteoporosis of femoral neck by DXA, 34% had osteoporosis, 57% – osteopenia, 9% – norma data by QUS. Sensitivity of QUS indexes ranging was from low to moderate, but specificity was low (with femoral neck – 38% and 39%, total hip – 63% and 34%, lumbar spine – 45% and 34%, total body – 56% and 34% accordingly). Such sensitivity and specificity increased when combining QUS with the ten years probability of major osteoporotic fracture without BMD (FRAX®) (with femoral neck – 71% and 87%, total hip – 90% and 100%, lumbar spine – 72% and 83%, total body – 79% and 91% accordingly). Conclusions. QUS of is informative method in evaluation of structural-functional state of bone in postmenopausal women. Sensitivity and specificity increased when combining QUS with FRAX® from 38% and 34% up to 90% and 100% accordingly.

Abstract no.: 32354

SERUM METAL ION CONCENTRATIONS FOLLOWING LARGE-DIAMETER TOTAL HIP ARTHROPLASTY AND RESURFACING HIP ARTHROPLASTY: TWO YEAR RESULTS OF A PROSPECTIVE FIVE YEAR STUDY

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Introduction: Metal-on-metal hip resurfacing and metal-on-metal total hip arthroplasty (THA) became an accepted and widespread procedure for young and physically active patients. Nevertheless, increased serum metal ion levels are still a matter of concern. The aims of this preliminary study were to determine the raise of metal ion levels at 2-years follow-up in a prospective setting and to evaluate differences between patients with either resurfacing or THA. Methods: Thirty-six patients were followed prospectively. Determination of metal ion concentrations was performed preoperatively, 6 weeks, 3 and 6 months postoperatively, and annually thereafter. Further, we investigated if the inclination of the acetabular component and the arc of cover would influence these findings. Results: The results showed increments for Co and Cr in both groups. Patients treated with large-diameter THA (Co: 3,60 µg/L (range, 0,30-78,20 µg/L), Cr: 4,58 µg/L (range, 0,71-51,98 µg/L)) showed fourfold and threefold, respectively, higher levels for Co and Cr compared to the resurfacing group (Co: 0,90 µg/L (range, 0,30-5,40 µg/L), Cr: 1,41 µg/dl (range, 0,92-9,90 µg/L)). These differences were statistically significant (Co: $p < 0,001$ and Cr: $p = 0,005$). Nevertheless, we observed no significant correlation between serum ion levels, inclination and arc of cover. Conclusion: In order to clarify the biologic effects of ion dissemination and to identify risks concerning long-term toxicity of metals, the exposure should be monitored carefully. Therefore, long-term studies have to be done to determine adverse effects of Co and Cr following metal-on-metal hip replacement.

Abstract no.: 32360

SERUM METAL ION LEVELS IN PEDIATRIC PATIENTS FOLLOWING KNEE RECONSTRUCTION USING MEGAPROSTHESES

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Introduction: The effects of systemic metal ion exposure in patients with implants made of common prosthetic alloys are a matter of concern. The aim of the study was to determine the measurement values of cobalt (Co), chromium (Cr) and molybdenum (Mo) in the serum of pediatrics and young adults following tumour resection and reconstruction of the knee using fixed hinge megaprotheses. Methods: Blood was taken from 10 patients [mean follow-up: 109 months (range, 67 to 163)] treated with fixed hinge megaprotheses (HMRS, Stryker, Mahwah, NJ) and analysis was carried out using electrothermal graphite furnace atomic absorption spectrometry (ET-ASS). Results: After an average follow-up of 109 months the mean results for cobalt were 5,07 µg/L (range, 0,40-12,80 µg/L), for chromium 4,20 µg/L (range, 1,48-8,91 µg/L) and for molybdenum 0,55 µg/L (range, 0,10-0,90 µg/L). The values for Co (normal: 0-0,50 µg/L) and Cr (normal: 0-1,90 µg/L) were tenfold and twofold, respectively, increased, while Mo (normal: 0-1,0 µg/L) was within the limits. Conclusion: Determining the concentrations of metal ions following fixed hinge total knee arthroplasty revealed significant increments for Co and Cr. The authors believe there might be an additional metal ion release from the surface of the prosthesis although the metal-on-polyethylene articulation. Nevertheless, long-term studies are required to determine adverse effects of Co, Cr and Mo following total hip replacement as well as total knee arthroplasty.

Abstract no.: 32362

FUNCTIONAL OUTCOME AND SECOND-LOOK ARTHROSCOPIC EXAMINATION OF ARTHROSCOPIC SINGLE-BUNDLE POSTERIOR CRUCIATE LIGAMENT RECONSTRUCTION USING REMNANT PRESERVATION TECHNIQUE: COMPARISON OF MIXED (ALLO- AND AUTO) VS. ACHILLES TENDON ALLOGRAFT

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Introduction: While controversy continues over the choice of graft tissue for posterior cruciate ligament(PCL) reconstruction, the use of mixed graft, that is auto- and allograft, had not been studied in detail. **Methods:** 58 patients who underwent isolated single bundle PCL reconstruction using arthroscopic trans-septal portal with remnant preservation technique were evaluated. They were divided into group A(mixed tendon. n=30) and group B(Achilles tendon. n=28). The knee functions were evaluated using the Lysholm knee score, Tegner activity score, and the IKDC grade. The anteroposterior stability was measured using the Telos stress view. Twenty(66.7%) from group A and 21(75.0%) patients from group B underwent hardware removal and a second-look arthroscopic examination. **Results:** The Lysholm knee scores in groups A and B increased from an average of 43 and 50 preoperatively to 88 and 90 at the follow-up, respectively. The IKDC grade and Tegner activity scores were also significantly improved in both groups. Stability was improved in both groups, with an average posterior laxity of 2.2 mm(Group A) and to 3.7mm(Group B) at follow-up(p>.05). Second look arthroscopies revealed partial tear in 8(40%) cases from Group A and 15(71.4%) cases from Group B(p=.03). Second look arthroscopies revealed partial tear in 8(40%) cases from Group A and 15(71.4%) cases from Group B(p=.03). Complete synovial coverage was demonstrated in 10(50%) cases from group A and 5(23.8%) cases from group B. **Conclusions:** Satisfactory results were obtained for Group A and B in patients who underwent reconstruction for isolated PCL injury.

Abstract no.: 32364

TOTAL KNEE REPLACEMENT IN GENU VALGUM DEFORMITIES- USE OF TWO STEP SEQUENTIAL SOFT TISSUE RELEASE FOR CORRECTION OF DEFORMITY.

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Introduction: Pie crusting technique has been described for correction of severe valgus knee deformity during knee arthroplasty, however limited literature is available on the outcome of this technique. This prospective study uses a two step sequential release of posterolateral capsule and iliotibial band (IT band) to correct the genu valgus deformities. Methods: The present study was conducted between January 2007 to December 2009. Patients having valgus ($\geq 10^\circ$) deformity of knee with Krackow's types I, II undergoing total knee replacement were included and patients who were previously operated for high tibial osteotomy and Krackow type III valgus deformity of knee were excluded from the study. 32 patients undergoing unilateral total knee replacement were followed for the evaluation of study. Preoperative diagnosis was rheumatoid arthritis in 23 patients (72%) and osteoarthritis in 9 patients (28%). Results: Thirty two patients were followed for period of 23 ± 10.81 months (range, 13-36 month) with clinical and radiological evaluation. The functional score improved from a mean of 30.68 ± 11.78 (range, 15-45) points preoperatively to 82.72 ± 8.55 (range, 65-100) points at final follow up ($P < 0.05$). The mean preoperative valgus deformity was $18.59^\circ \pm 8.32^\circ$ (range, 10-40), which was corrected to $3.66^\circ \pm 0.91^\circ$ (range, -5 to 5) at the time of the latest follow-up. Conclusion: Good to excellent results can be achieved with two step sequential lateral release of posterolateral capsule and IT band pie-crusting which has direct correlation with severity of valgus deformity.

Abstract no.: 32366

TRABECULAR BONE SCORE IN NORMAL UKRAINIAN WOMEN OF DIFFERENT AGE

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The aim of this study is evaluating Trabecular Bone Score (TBS) in normal women of different age. Materials and methods. We've examined 176 normal women aged 40-79 years (mean age–53,4±0,6 yrs; mean height–163,5±0,5 cm; mean weight–80,4±1,1 kg). The patients were divided into the following age-dependent groups: 40-49yrs (n=53), 50-59yrs (n=89), 60-69yrs (n=17), 70-79yrs (n=17). TBS (L1-L4), total body, lumbar spine, femoral neck bone mineral density (BMD), lean and fat masses were measured by DXA using a densitometer Prodigy,GE. Results. We have determined the significant decrease of TBS (L1-L4) in women with age (40-49yrs – 1,334±0,016 mm-1; 50-59yrs – 1,289±0,013 mm-1; 60-69yrs – 1,194±0,034 mm-1; 70-79yrs – 1,205±0,050 mm-1; F=6,56; p=0,0003). BMD of spine is significantly increase with age (BMD of spine: 40-49 yrs – 1,126±0,015 g/cm²; 50-59 yrs – 1,234±0,013 g/cm²; 60-69 yrs – 1,343±0,053 g/cm²; 70-79 yrs – 1,348±0,100 g/cm²; F=4,04; p=0,008). BMD of femoral neck didn't show significant differences. The significant correlation was observed between TBS (L1-L4) and age, fat and lean masses: - TBS=1,64-0,007*Age; r=-0,34; t=4,41; p=0,00002. - TBS=1,47-0,000005*Total fat(g); r=-0,37; t=4,86; p=0,000003. - TBS=1,90-0,00001*Lean mass(g); r=-0,59; t=8,98; p<0,000. We did not find significant correlation between TBS and BMD of spine and femoral neck: - TBS=1,36-0,05*BMD of spine; r=-0,05; t=0,66; p=0,

Abstract no.: 32369

MAINTENANCE OF PHYSIOLOGICAL MOBILITY PARAMETERS WITH LATERAL MALLEOLUS ANKLE FRACTURES IN TIBIOFIBULAR SYNDESMOSIS.

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Introduction: The research is devoted to improve the results of patient treatment with fractures of the external ankle of the leg with tibiofibular syndesmosis injury. Methods: The physiological mobility parameters of the tibiofibular syndesmosis based on researches of uninjured ankle-joint by using X-ray dosimetry and computerized tomography methods. Dynamic fixator allows unite the stability of shin-bone fixation at the level of syndesmosis with providing ideal data of the physiological mobility in three flats. Movement in a pair "cup - screw" is the same as the movement in ankle-joint in the area of syndesmosis. Proof stick is another proposed device. It inserts intraoperatively between cannon-bones in the area of syndesmosis in order to prevent over-tight by keeping the physiological relationship in tibio-fibular articulation. We proved optimal structural data of shin-bone fixation device at the level of tibiofibular joint. They help to keep physiologic mobility of the segment and remove possibility of screw fixation damage in rehabilitation period. We analysed monitoring results of the 87 patients with lateral malleolus fractures with injure of tibiofibular syndesmosis. The main group (43 patients) received developed treatment complex with using of proposed devices. Control group (44 patients) were cured by traditional methods of Association of orthopedist. Results: Comparative analysis of clinical, functional, radiological and medico-statistical rate showed high efficiency of the proposed method of treatment. The proposed system of complex treatment provided significant improvement in functional results and reduce the probability of complications and improve quality of life.

Abstract no.: 32371

DISASTROUS FAILURE OF THE HINGED TIBIAL INSERT OF A ROTATING HINGE DESIGN: A RETROSPECTIVE DATA ANALYSIS

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Introduction: Rotating hinge knee prostheses are known to provide inherent stability. Yoke fractures of the hinged tibial insert of modern generation rotating hinge devices are a matter of concern. The aim of the study was to describe incidence and management of yoke fractures of the hinged tibial insert of a modern rotating hinge design. Methods: Retrospective data analysis of two institutions identified 40 patients who were treated with a Limb Preservation System (LPSTM, DePuy, Warsaw, IN) for distal femoral reconstruction. Implant survival to prosthetic complications was calculated according to Kaplan-Meier. Results: Out of the group of 40 patients, four fractures of the metal yoke occurred in four cases (failure rate: 10%). Furthermore, a second fracture re-occurred in two patients. The overall revision-free prosthetic survival was 57% at 38 months, while prosthetic survival until yoke fracture was 86% at 38 months. Conclusion: Handling yoke fractures as mechanical complication includes; replacing the hinged insert, stabilization of the joint and joint line height preservation in order to decrease the cantilever effect at the insert-base plate interface. Nevertheless, a failure rate of 10% for this specific complication is not acceptable and as a salvage option, we recommend the exchange of the prosthesis to another rotating hinge design.

Abstract no.: 32375

COMPARATIVE STUDY OF ARTHROSCOPIC ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION WITH HAMSTRING GRAFT USING TRANSFIX OR ENDOBUTTON AS FEMORAL SIDE FIXATION METHODS WITH 3 YEAR FOLLOW UP

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Introduction: Quadrupled hamstring graft is most preferred source of graft for ACL reconstruction.. This study was designed to compare two commonly done suspensory methods for femoral side fixation using quadrupled hamstring graft. –transfix & Endobutton
Materials & methods: 84 patients were operated for ACL reconstruction using Quadrupled hamstring graft ,40 by Transfix and 44 cases by Endobutton .
Results: At 3 year follow up, the Lysholm's score was improved to 92.53% in Endobutton & 91.46% in transfix group. In Endobutton group the IKDC score was 69.09 and in transfix group was 69.54. In AP view the tunnel widening at the aperture was 35.94% and 21.24% in EndoButton and Transfix respectively, at the mid way it was 31.88% and 17.85% and at the distal it was 12.91% and 12.56% respectively. In lateral view the tunnel widening at aperture was 24.75% and 18.59% in EndoButton and Transfix respectively, at the mid way was 28.61% and 15% and at distal it was 11.11% and 10.80% respectively.
CONCLUSION: No significant difference in postoperative knee laxity between Transfix and Endobutton . Femoral tunnel widening was maximum at aperture, moderate at the mid way and least at the distal end in both groups.

Abstract no.: 32383

PERSPECTIVE DIRECTION OF PATIENTS' TREATMENT WITH OSTEOGENESIS IMPERFECTA

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The work is based on the results analysis of treatment of 101 patients with Osteogenesis imperfecta. Basic orthopedic manifestations of the disease were pathologic fractures of long bones and their deformation. Retrospective analysis of treatment has shown no effective application of various techniques and metal constructions during at the time of surgical treatment above – mentioned category of patients that was connected with manifested bone osteoporosis and unstable metalosteosynthesis. Taking into account above – mentioned situation we have applied new tactics of treatment of patients with Osteogenesis imperfecta, namely: antiosteoporotic therapy by means of such preparations as pamidronic acid and Ca depending on changes of structural-functional state of bone tissue that has been investigated biochemically (bone markers) and roentgen – densitometry and application of growing telescopic intramedullar rod in 8 patients while treatment of pathologic fracture of hip and carrying out of corrective hip osteotomy with its deformation. In three years after the surgery normal axis of hip has been revealed; in the patients who has undergone surgery pathologic fractures and deformations of femur have been absent. Thus “growing” constructions implement the function intramedullar prosthesis of bone; and their application in the aggregate with medicament antiosteoporotic preoperational preparation and postoperative supporting therapy allow to prevent emergence of pathologic fractures and recurrence of long lanes deformation and to restore of improve the gate function and support in this category of patients.

Abstract no.: 32388

FIRST AID MANAGEMENT OF THE INJURED, DEFORMED FOREARM IN THE EMERGENCY DEPARTMENT: A COMPLETE AUDIT CYCLE

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It is essential that injured, deformed wrists/forearms are splinted on arrival to the Emergency Department as basic first aid management. This will provide analgesia and protect the soft tissues and neurovascular structures from further insult. The aim of this audit was to assess whether patients presenting with deformed, fractured wrists or forearms were receiving appropriate first aid management within our Trust. Methods: The initial radiographs of all patients who received operative management of wrist and forearm fractures in a one year period were reviewed. Deformity of the wrist/forearm was identified through evaluation of the soft tissue envelope. The initial audit results directed in a change in practice within our Trust. Following presentation of the results a protocol was developed for use in the Emergency Department. First aid management of deformed, injured wrists/forearms was re-audited after a one year interval. Results: Prior to the introduction of our protocol the first aid management of deformed, fractured wrists/forearms was poor. Less than 50% of all patients with a deformed wrist/forearm received a splint on arrival to the Emergency Department. Following dissemination of the initial audit results and the introduction of the protocol first aid management improved significantly. Discussion: This audit has enhanced patient care within our Trust. The application of a splint ensures that patients are receiving more effective analgesia and risk of secondary injury to the soft tissue and neurovascular structures is reduced. We highlight the results of this audit to other Trusts and would advocate the introduction of similar protocols.

Abstract no.: 32392

**THIRTY YEARS EXPERIENCE WITH MISSILE INJURIES OF THE
EXTREMITIES**

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For the last thirty years I was treating thousands of patients with missile injuries of the limbs, with long follow up. The author will discuss his experience regarding handling retained missiles, bone defects, vascular and nerve injuries, the incidence of infection and how to avoid it. Also, the details about the indication for the limb salvage and amputation which is very critical decision. The details about the type and timing of wound excision which is the corner stone of treatment will be discussed in depth. A new grading for wounds and a practical pathway for sorting out casualty will be considered too.

Abstract no.: 32393

HIDDEN OSTEOPOROSIS IN ASSOCIATION WITH OTHER SPINAL PATHOLOGY

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Osteoporosis is a real problem in our locality; it is behind so many problems. It is a hidden flame not necessarily associated with cardinal clinical feature. Sadly it is frequently missed because of lack of clinical awareness, missed the diagnosis and the proper treatment may lead to failure of spine surgery (failure back surgery syndrome), the best examples are loosing of the transpidicular screw. One thousand patients presented because of spinal pathology like spondyldisthesis, degenerative or degenerative canal, or disc prolapsed were investigated for the hidden osteoporosis in two cities in Irak, Mosul (North) and Basrah (South). A good example is a 15% incidence of hidden osteoporosis with spondylolisthes. This paper will discuss all the details about the incidence and the accuracy of DEXA for diagnosing osteoporosis.

Abstract no.: 32394

GAIT PATTERNS ASSESSMENT AFTER ACL RECONSTRUCTION: BPB VERSUS DTSG

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Gait parameters shift towards normal value patterns after ACL reconstruction with patellar tendon. The aim of the study was to compare kinetic and kinematical parameters changes after ACL reconstruction using bone-patellar tendon-bone or hamstring tendons. Twenty-four patients undergoing ACL reconstruction were evaluated. Reconstruction was performed with hamstring tendons in 12 patients (group A), while we used BTB on the remaining 12 (group B). Gait analysis was performed, 24 months after surgery, using the ELITE stereophotogrametric three dimensional system and two Kistler force platforms. Kinematic and kinetic data were recorded for the principal lower limb joints (hip, knee, ankle). The results obtained from the two patient groups were compared with each other and with a control group of 10 normal knees (group C). The analysis of sagittal plane joint moments showed normal knee flexion moment at loading response and during preswing in operated subjects compared with normal knees. Furthermore normal value of joint kinematics were obtained during all phases of gait cycle for both techniques compared with those of healthy subjects. The analysis of the results showed that gait parameters tend to shift towards normal patterns after ACL reconstructive surgery using both techniques.

Abstract no.: 32395

A NEGATIVE PRESSURE WOUND THERAPY IN ORTHOPAEDIC TRAUMA - A PROSPECTIVE STUDY.

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Introduction: Management of open fractures and massive soft tissue injuries requires multi-disciplinary approach. NPW therapy is an innovative approach to the treatment of these wounds. NPW therapy facilitates granulation tissue formation, promotes healing, reduces infection and allows early skin grafting or flap closure. The aim of this study was to describe our experience with NPW therapy for orthopaedics trauma around leg ankle, foot and hand. Materials and methods: 18 patients were included in Prospective Study performed in years 2010-11. Only patients having traumatic wound of leg, ankle, foot and hand were included. Patients with bleeding disorders were not included. NPW therapy was used as adjuvant to debridement in wound care. Results: In 17 patients lower limb and in 1 patient hand was involved. The mean age was 39.3 years and all were male. Mean wound grade after NPW therapy decrease by 1 grade. Average wound area reduction was 10%. The mean duration of NPW therapy was 5.2 days. Plastic surgery was done in mean 6 days after removal of NPW dressing. Local flap was required in only 38% of patients. After NPW therapy all 5 patients having heel injury showed good granulation tissue. Complications like infection, bleeding and skin irritation were not seen in our study. Conclusion: NPW therapy is a viable adjuvant in the management of traumatic open wounds. It facilitates the rapid granulation tissue formation and wound healing. It reduces the duration of treatment, hospital stay and need of extensive plastic surgery.

Abstract no.: 32397

**FLOATING KNEE INJURIES MANAGED BY INTRAMEDULLARY
FIXATION ON EITHER SIDE OF THE KNEE JOINT**

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Since 1993, we have been managing distal femur fractures by Interlocking nail. We started using the same device for managing proximal tibial fractures in 1997. Our results have been comparable to the results reported by other methods. This paper describes results of 18 cases of floating knee injuries managed by Interlocking nail on both sides of the knee, between 1-5-1997 and 31-12-2009. The age ranged between 22 to 45 yrs and all were male. Fifteen were open injuries, 7 had an associated patellar fracture and 13 had ligamentous injury. One patient with Grade III open injury required an above knee amputation because of severe infection and failed vascular repair. Another two, also of Grade III open injury with loss of articular fragments underwent fusion of knee. Of the remaining 15, 13 united at an avg. of 16 wks. Three patients required bone graft (one of these had bone loss). Range of motion at the knee was 90 degrees or more in 12 of the 13 united fractures. Ten patients however had quadriceps lag of an average of 10 degrees. six of the 15 open fractures developed infection. In five infection could be controlled. Over all 11 had excellent/good result, 3 fair and 4 poor results. Floating injuries of the knee are serious injuries resulting from high energy trauma, and are quite often open injuries. Interlocking nail provides adequate stabilization of these fractures, permitting early knee motion and ambulation of the patient. Complications depend primarily on severity of injury.

Abstract no.: 32398

**IRREDUCIBLE POSTERIOR DISLOCATION OF HIP WITH IPSILATERAL
INTERTROCHANTERIC FRACTURE.**

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Fractures associated with posterior dislocation of hip are common, as described by Pipkin in his classification. But posterior dislocation of the hip with associated ipsilateral intertrochantric fracture is a rare occurrence and has not been included in this classification system. We here report a case of posterior dislocation of the hip with associated ipsilateral intertrochantric fracture femur. A 26 year old young male was referred to us five days after a road traffic accident. Plain radiographs were inadequate to define the exact pattern of the fracture. CT scan with 3D reconstruction showed posterior dislocation of the hip with associated ipsilateral intertrochantric fracture. The patient was operated in lateral position. Open reduction of the hip with fixation of intertrochantric fracture with dynamic hip screw was done through a lateral approach after adequately extending the incision. 3 months post follow up radiograph showed complete union. On subsequent follow up at 12 months the patient was able to squat and sit cross legged and the Harris hip score was 86. There was no evidence of avascular necrosis of femoral head. The case is being reported not only for its rarity but also to emphasis that this rare injury can be tackled by a single approach. Also a modified classification system is needed to incorporate intertrochantric fractures in Pipkin's classification.

Abstract no.: 32403

SURGICAL TREATMENT OF EXTRA-ARTICULAR ROTATOR CUFF TENDON PARTIAL RUPTURES.

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During the period 2003-2008 years 28 patients with partial extraarticular ruptures of the supraspinatus tendon. were operated in the clinic of orthopedics of Belarussian Medical Academy of post-graduate education The main clinical manifestation of damage was the presence of "painful arc of abduction" in the shoulder joint. Radiography of Bigliani detected 11 (39%) marginal osseous growths in the acromion, the ultrasound scan revealed no pathology. The indication for operation was the absence of positive dynamics after conservative treatment. The diagnostic arthroscopy of shoulder joint was performed to exclude intraarticular pathology and clarify the degree of damage to the rotator cuff, then the mini-access in the deltoid area of the audit was completed extra-articular portion of the rotator cuff, and bursectomy , acromioplastics. In all cases, the audit revealed a local thickening of the bursa and the supraspinatus tendon fiber damage a depth of 3-4 mm, the average square of damage was over 7x8mm. he results of treatment were studied in 22 patients using a questionnaire. The average follow-up was 14 months. (\pm 2,8 months). The complete absence of pain was indicated by 13 patients (61%), recurrent pain during exercise was indicated in 9 (39%) operated patients, but their intensity was low. None of the interviewed patients did not use nonsteroidal anti-inflammatory drugs, all patients estimated good and satisfactory treatment result. Conclusion: Under the condition of careful patient selection acromioplastics combined with bursectomy is the effective treatment of extra-articular rotator cuff ruptures.

Abstract no.: 32404

THE IMPACT OF THE HEAD SIZE AND THE NECK LENGTH ON THE IMPINGEMENT-FREE RANGES OF MOTIONS OF TOTAL HIP ARTHROPLASTY

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To evaluate the impact of the head size and the neck length on the impingement-free ranges of motions (ROMs) of total hip arthroplasty (THA), computer simulation study was performed using the collision detection system of the 3D templating software. The 56mm cup was fixed in the radiographic inclination of 40 degrees and the radiographic anteversion of 15 degrees. The stem was set in the anteversion of 30 degrees. The head size used were 28mm, 32mm, 40mm, 44mm(-4, 0, +4, +8, +12), and 36mm(-5, 0, +5, +10). The stem neck offsets used were 30mm, 35mm, and 40mm, respectively. Generally, the ROMs enlarged according to the head size, head offset, and stem neck offset, except for skirted heads. In case of the stem neck offset of 30mm, -4mm or -5mm length heads could not achieve the flexion angle of 130 degrees and external rotation angle of 40 degrees, even if using a 44mm head. On the other hand, in case of the stem neck offset of 40mm, -4mm or -5mm length heads could achieve the flexion angle of 130 degrees and external rotation angle of 40 degrees, when using a 40mm or 44mm head. ROMs using a 36+10mm head with small skirt were smaller than those using a 28+0mm head regardless of the stem neck offset. Combined use of the short neck offset stem and the short offset head can diminish the positive impact of the ROMs of a large head. Usage of a head with skirt should be avoided.

Abstract no.: 32405

THE POSSIBILITIES OF THE DELTOID MINI-ACCESS IN THE TREATMENT OF LARGE AND MASSIVE ROTATOR CUFF RUPTURES

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During the period from 2003 to 2010 years 94 patients with large and massive rotator cuff ruptures were operated in the clinic of orthopedics of Belarussian Medical Academy of post-graduate education with usage of deltoid mini-access. The average age of patients was 53.6 years ($\pm 4,3$ years). There were 59 men (63%) and 35 women (37%). Remoteness of damage didn't exceed 4 weeks in 18 patients (19%), 8 weeks - in 76 (81%) patients. The study of the clinical status of patients was carried out on a scale of Constant. The most common complaints were pain and limitation of movement in the shoulder joint. The volume of active abduction averaged 4.3 points, passive abduction - 6.2 points. With X-ray width subacromial space in all patients was more than 5 mm. All ruptures were verified by ultrasound scanning, as well as diagnostic shoulder arthroscopy. Materials and methods: All operations were carried out from the deltoid mini-access length of 5-6 cm. Its technical features included the implementation of maximum mobilization of subdeltoid space and damaged tendons. Good mobility of the wound edges and the deltoid muscle in all cases allowed visualize ruptures throughout the rotation at the shoulder. Acromioplastics, bunionectomy, and suture of the damaged section of the rotator cuff were performed with usage of transosseous sutures. Conclusion: Deltoid mini-access is available adequately carry out suture rotator cuff tendons with large and massive ruptures in patients with prescription of the trauma to 8 weeks.

Abstract no.: 32407

OUTCOME OF TOTAL HIP REPLACEMENT FOR SUB CAPITAL NECK OF FEMUR FRACTURE IN YOUNGER ACTIVE PATIENTS – OUR EXPERIENCE IN A NON-SPECIALIZED CENTRE.

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There is an increasing number of Total Hip Replacements being carried out primarily on patients with a sub capital fracture reflecting the change of opinion nationally towards a more positive view on replacement as the initial choice of treatment for these fractures. A number of randomised trials have shown that THR results in better function and improvement in health-related quality of life and has a lower failure rate than internal fixation. Our aim was to compare the early results of THR in our younger, active patients after fracture neck of femur with large series from specialized centres. Between June 2008 and June 2011, 18 patients underwent THR for a fracture NOF. All were fit active prior to fracture, average ages 69.5 (46-83). Surgery was performed by one of five general consultant orthopaedic surgeons. There have been no dislocations, no post-operative complications or revision procedures. The mean follow up is 22 months (6 – 41 months). Average length of hospital stay was 8 days. At the last review, all patients had returned to the same level of mobility as pre operatively. The average Harris Hip Score was 88.84 (51-100). All patients are satisfied with their outcomes. Our results compare favorably with larger published series from specialized centres. We share the positive view on replacement as the initial choice of treatment for these fractures in more active patients. However, we believe that patient selection is an important factor. Longer term follow up is required in our cohort of patients.

Abstract no.: 32411

**SPRENGEL SHOULDER TREATED BY WOODWARD PROCEDURE :
ANALYSIS OF FACTORS AFFECTING FUNCTIONAL AND COSMETIC
OUTCOME**

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We report the functional and cosmetic results of 12 cases with Sprengel shoulder who underwent Woodward procedure. There were 7 girls and 5 boys operated at a mean age of 5.58 years and reviewed at an average follow up of 31.83 months. The mean preoperative Cavendish grade for cosmetic evaluation was 3.17 which decreased to 1.25 postoperatively (statistically significant, $p < 0.0005$, Wilcoxon signed rank test). Similarly the range of abduction at shoulder increased from a mean 115.830 preoperatively to 153.330 at final review ($p < 0.0005$). Age had a negative correlation with both functional improvement ($r = -0.55$, spearman correlation coefficient) and cosmetic improvement ($r = -0.11$) although the latter suggested a very weak association if any. Cavendish grade improvement and increase in abduction had a strong positive association ($r = 0.713$). However there was no correlation between increase in abduction and lowering of scapula achieved ($r = 0.131$). The presence of omovertebral bar did not affect the final functional outcome ($p > 0.2$, Mann Whitney test) nor did presence of associated congenital anomalies ($p > 0.2$). In conclusion, Woodward procedure is a reliable method for obtaining uniformly predictable results in Sprengel shoulder. The surgery should be performed at a younger age to optimise the functional outcome.

Abstract no.: 32414

TURNING DOCUMENTATION INTO EVIDENCE-BASED MEDICINE: THE AO'S EXPERIENCE 1958 – 2012.

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The Arbeitsgemeinschaft für Osteosynthesefragen (AO) was founded in 1958 in Biel, Switzerland, by a group of 13 young surgeons who wanted to investigate the possibilities of internal fixation for the treatment of fractures, an area they felt was neglected. The wide-ranging consequences of that initial meeting are enjoyed by millions of patients around the world who are still treated according to the (lightly modified) AO Principles of Fracture Fixation and with AO-developed implants and techniques. The AO Documentation Center played a critical role in collecting the necessary evidence to overcome widespread doubt and resistance among the surgical community. Around 1,000 cases were recorded during the 1st year of operation (1960). Today, over 200,000 cases and approximately 1.2 million documented radiographs are housed in the AO Center. It is this unique repository of collected cases which provided the basis for the Müller AO Classification–Long Bone Fractures known and used around the world. However, by the 1990s it was realized that the concept of documentation no longer met contemporary standards and that a reorganization of AO clinical study activities was necessary. AO Clinical Investigation and Documentation (AOCID) was founded in 1999 to conduct studies to proactively answer clinical questions. AOCID is currently involved in approximately 50 multicenter, international studies of every type of study design. In 2011, the >20 peer-reviewed publications, 55 presentations at scientific conferences, and the >400 citations of AOCID work in peer-reviewed publications are testimony to the modern realization of a vision begun over 50 years ago.

Abstract no.: 32415

POSTOPERATIVE PERIPROSTHETIC FEMORAL FRACTURES AROUND THE STEM OF A TOTAL HIP ARTHROPLASTY

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are increasing in frequency. The estimated incidence is 0.4-2.1 % and today they represent the third leading cause of revision of hip arthroplasty. The treatment of these fractures have a high risk of complications and a thorough knowledge is essential for proper intervention strategy. The femoral fracture around or near the stem is classified as a Vancouver "Type B". According to the stability of the implant and bone quality, are then distinguished three subtypes: B1 with stable implant , B2 with good bone quality and prosthesis loosening, and B3 prosthetic loosening with poor bone quality. The treatment of type B1 fracture consist of open reduction and internal fixation; for type B2 is recommended the stem prosthesis revision with or without internal fixation. Literature reports a significantly higher risk of failure for fractures type B1 than type B2 despite a less demanding treatment. The loosening of the stem, nonunion and re-fracture are the most common causes of management failure. The increased risk of treatment failure probably lies in a misinterpretation of type B2 as type B1 fractures and a consequent inappropriate indication of bone synthesis without revision of the mobilized stem. Radiographic assessment of prosthetic loosening is often questionable, this suggests a more accurate intraoperative evaluation of stem stability and if there is any doubt about the status of the implant , it should be considered to be loose and treated as such.

Abstract no.: 32418

**USEFULNESS OF PATELLA FRACTURE OPERATION UNDER
ULTRASOUND GUIDED LOWER EXTREMITY NERVE BLOCK**

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Purpose : To evaluate the usefulness of ultrasound guided nerve block for patella fracture operation. **Material and method :** 10 cases that underwent metal fixation of patellar fracture under ultrasound guided nerve block from July 2011 to December 2011 were chosen for the study. Femoral nerve, lateral femoral cutaneous nerve, obturator nerve, and sciatic nerve block were performed. Individual information of ordinary fear of injection, fear of anesthetic injection, presence of interference of operation due to failure of anesthesia, presence of pain, satisfaction of anesthesia, complication and tourniquet pain, future selection of anesthesia were collected. **Results :** For presence of interference of operation due to failure of anesthesia, 9 cases showed no interference and 1 case showed mild interference. During operation, 1 case complained of pain on anterior surface of knee, 2 cases felt mild pain on lateral femoral condyle area, and there was no pain on medial femoral condyle area in all cases. Satisfactory degree was excellent in 7 cases, good in 2 cases, and unsatisfactory in 1 case, and no complications such as infection or nerve injury. 2 cases suffered from tourniquet pain, and for future selection of anesthesia, 9 chose ultrasound guided nerve block and 1 chose general anesthesia. Postoperative bony union was achieved in all cases, and no complication such as infection and nonunion was occurred. **Conclusion :** Ultrasound guided nerve block for operation of patella fracture show satisfactory clinical results, and it could be a useful method to resolve complications of general or spinal anesthesia.

Abstract no.: 32422

LUMBAR INTERVERTEBRAL DISC ALLOGRAFTING IN A GOAT MODEL

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Preliminary study in humans indicated that whole fresh-frozen intervertebral disc (IVD) transplantation may be an effective treatment for disc degenerative diseases, but signs of degenerative change in the allograft were noted after the transplantation. The underlying mechanisms are not fully understood and remain a series of ongoing research in large animal model. Because of the ethically and economically accessible issues as well as anatomical similarity with human disc, the goats were used to develop reliable surgical approaches for lumbar spine exposure and disc allograft transplantation. Out of 14 male goats, 3 goats were used in a pilot study of different surgical approaches for lumbar spine exposure and as IVD donors; the remaining 11 goats were used as allograft recipients. Radiographs were used to monitor the stability and healing of the grafts on day 0 and one month post transplantation, respectively. Compared with the retroperitoneal 'trans-psoas muscle' approach and the 'post-psoas muscle' approach with longitudinal skin incision, the 'post-psoas muscle' approach with transverse skin incision is the superior choice for the transplantation because of broader surgical view and integrity of the psoas muscle. Preservation of the anterior longitudinal ligament and appropriate portion of the annulus fibrosus at the recipient site was crucial for satisfactory transplantation. Furthermore, a slightly reduced height of the disc allografts compared to that of the recipient slot may largely facilitate the transplantation owing to decreased incidents of dislodgement and endplate fracture. With the optimized approach, the IVD allograft can be steadily transplanted and matched well in goats.

Abstract no.: 32423

RADIOGRAPHIC EVIDENCE OF CAM-TYPE FEMOROACETABULAR IMPINGEMENT IN YOUNG PATIENTS WITH END STAGE HIP OSTEOARTHRITIS

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Femoroacetabular impingement (FAI) has been established as an antecedent to the development of degenerative hip osteoarthritis (OA). Cam-type FAI is caused by a lateral increase in the radius of the anterosuperior proximal femur. A validated radiological measurement used to quantify the asphericity of the femoral head-neck junction is the alpha angle. Higher alpha angles are correlated with more pronounced cartilage and labral trauma as well as impeded ranges of motion. The purpose of this study was to determine if patients with end stage hip OA prior to 55 years of age have radiographic evidence of cam-type FAI. The anteroposterior (AP) pelvis and lateral hip radiographs of 326 hip arthroplasty and hip fracture patients (332 hips) were retrospectively reviewed. Alpha angles were measured in three cohorts: 1) patients with end stage hip OA < 55 years old (n=106); 2) patients with hip OA ≥ 55 years old (n=107); 3) hip fracture patients ≥ 65 years old without hip OA used as controls (n=119). Patients < 55 years old with hip OA had the largest AP ($86.1^{\circ} \pm 1.1^{\circ}$) and lateral alpha angles ($76.7^{\circ} \pm 1.6^{\circ}$). These angles were significantly larger ($p < 0.05$) than angles recorded for arthroplasty patients ≥ 55 years ($75.5^{\circ} \pm 1.6^{\circ}$ AP and $66.3^{\circ} \pm 2.0^{\circ}$ lateral) and hip fracture patients ($54.8^{\circ} \pm 1.1^{\circ}$ AP and $51.3^{\circ} \pm 1.4^{\circ}$ lateral). Young patients with end stage hip OA have pronounced radiographic evidence of cam-type FAI. Furthermore, this case-controlled study suggests that cam-type FAI may contribute to the development of early onset hip OA.

Abstract no.: 32425

COMPARISON OF DAY REHABILITATION TO SKILLED NURSING FACILITY FOR THE REHABILITATION FOR TOTAL HIP ARTHROPLASTY: PRELIMINARY STUDY

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Day rehabilitation (DR) is an alternative post-acute rehabilitation (PAR) setting. DR studies have focused on neurological patients. This study compared DR to inpatient skilled nursing facility (SNF) after THA. Methods: A retrospective chart review was conducted of patients ages 40 to 80 years with unilateral THA discharged from a SNF or DR within a PAR system in 2010. DR was outpatient and transportation was available. Patients were seen 5 days/ week for medical, nursing, and physical therapy care. Additional services available included blood work. SNF was inpatient and provided similar rehabilitation services. 20 DR and 20 SNF patients were randomly selected for the preliminary study. Results: DR and SNF groups were similar for age, gender, co-morbidity score, BMI, pain score, hip flexion range of motion (ROM), or ambulation distance. Upon discharge, there was no significant difference in hip flexion ROM or pain score between groups. At discharge, DR patients ambulated significantly further ($P = .000$), had a higher locomotion FIM score ($P = .036$), and were more independent in stair climbing ($P = .002$) than SNF patients. Length of stay (LOS) was similar for both groups but DR cost was less than half that of SNF ($P < .001$). Conclusion: DR and SNF patients were similar upon admission. Patients discharged from DR had similar or improved outcomes to those patients discharged from a SNF with a similar LOS but at significantly lower cost. Preliminary results indicate DR offers comparable patient outcomes to SNF at a significant cost savings.

Abstract no.: 32427

OSTEOBLASTOMA OF THE CARPAL SCAPHOID BONE – A RARE CASE REPORT

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Introduction: Osteoblastoma is rarely found in the hand or wrist, in carpal scaphoid is an uncommon localization. When osteoblastoma involves the scaphoid bone, wrist pain is the most common presenting symptom. A few cases have been reported in the literature.
Methods: We report a new case of right carpal scaphoid osteoblastoma in a 20 year-old women. Pathological examination is mandatory before treatment due to lack of distinctive clinical and radiological features. Treatment consisted in tumor proximal row carpectomy, followed by plaster case immobilization. Clinical and radiological outcome was favorable.
Discussion: Osteoblastoma is an uncommon bone tumor which resembles osteoid osteoma but its larger size and progressive nature make it significantly different. Pain is dull, persistent and less localized so the clinical course may be longer than osteoid osteoma, and pain may be present for periods ranging from weeks to years before medical attention is sought.² In radiography, osteoblastoma is eccentric and expansile lesion with an intact surrounding shell of bone. Osteoblastoma easily recurs after incomplete surgical removal, but even incomplete curettage can affect a cure in a great percentage of cases.
Conclusion: Carpal osteoblastomas are rare. The diagnosis is difficult because of the absence of specific clinical and radiological signs. A complex regional pain syndrome is a possible revealing sign. Resection of the tumor seems to be sufficient in lesions with a slow progression. It is therefore important to identify the aggressive forms of this benign tumor, which may then be an indication for immediate radical resection.

Abstract no.: 32430

INVESTIGATION OF THE USE OF A HAEMOSTATIC MATRIX IN TOTAL KNEE ARTHROPLASTY.

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Introduction: The objective of the present study was to compare the intra-operative use of haemostatic matrix during wound closure reducing an allogeneic blood transfusion (ABT) in primary total knee replacement (TKR). Materials and Methods: Patients (n=71) treated with primary TKR were divided into 2 groups: patients in whom no haemostatic matrix was used at the time of wound closure were assigned to group A (n= 37); patients in whom the same was used in the wound were assigned to group B (n=34). Haemostatic matrix consists of a premixed combination of a gelatin matrix component, a lyophilized thrombin component and calcium chloride. The rate of avoidance of ABTs and postoperative blood loss as measured by drop in Haematocrit values on day 0, day1 and day 4 were examined. Results: In group A 21/37 (56.8%) needed post operative ABTs while 19/34 (55.9%) patients were transfused in Group B. Average transfusion rates in Group A was 0.72 and Group B was 0.76. Drop in Haematocrit on day 0 was 2.3 and 3.1, day was 5.3 and 5.2 and day 4 was 8.7 and 8.7 in the 2 groups respectively. Conclusion: The use of haemostatic matrix in Total Knee Replacement offered no significant advantage to the patient in terms of post operative ABTs. The added cost does not justify its routine use in Total Knee Replacement.

Abstract no.: 32432

A NEW RADIOLOGIC VIEW FOR POSTERIOR ANKLE IMPINGEMENT

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Introduction: A conventional standard lateral radiograph (LAT-view) of the ankle is the first diagnostic tool of choice in suspected posterior ankle impingement. Due to the three-dimensional orientation and overprojection of other structures, a present os trigonum is not always discovered. Additional imaging methods that are currently used (CT/MRI) have several disadvantages (costs, radiation, planning). We developed a new lateral, 25° exorotated view (posterior impingement view, PIM-view) for a better detection of bony posterior ankle impingement. In this study we compared the LAT-view with the new developed PIM-view.**Methods:** Four observers, two experienced and two inexperienced, scored 146 radiographic images on presence of an os trigonum. We matched the results with the gold standard (CT). The sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) were calculated. **Results:** The mean sensitivity and specificity of the LAT-view was 50 and 81 respectively for all observers. For the PIM-view 78 and 89 respectively. The PPV was 50 for the LAT-view and 70 for the PIM-view. The NPV was 84 for the LAT-view and 93 for the PIM-view. Matched with CT, the PIM-view has a higher accuracy compared to the LAT-view ($p < 0.001$) **Conclusion:** The PIM-view is superior to a conventional LAT-view for the detection of an os trigonum.

Abstract no.: 32437

PAEDIATRIC LCP HIP PLATE- AN ALL IN ONE SOLUTION FOR FIXATION OF PROXIMAL FEMORAL OSTEOTOMIES AND PROXIMAL FEMUR FRACTURES IN CHILDREN

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Introduction: The aim of this study was to review the outcome of the paediatric LCP Hip plate use in children, both with and without neuromuscular disease, for fixation of proximal femoral osteotomy for a variety of indications. **Methods:** We retrospectively reviewed all those children who have had Paediatric LCP Hip Plate for the fixation of proximal femoral osteotomy and proximal femur fractures in our institution, between October 2007 and July 2010, for their clinical progress, mobilization status, radiological healing and any complications. **Results:** Forty-three plates were used in forty patients for the fixation of proximal femoral osteotomies (n=40) and proximal femur fractures (n=3). The osteotomies were performed for a variety of indications including Perthes disease, DDH, Cerebral Palsy and leg length discrepancy etc. Twenty-five children were allowed touch to full weight bearing post operatively. Two were kept non-weight bearing for 6 weeks. The remaining 13 children were treated in hip spica due to simultaneous pelvic osteotomy or multilevel surgery. All osteotomies and fractures radiologically healed within 6 months (majority [n=40] within 3 months). There was no statistically significant difference (p= 0.45) in the neck shaft angle between the immediately postoperative and final x-rays after completion of bone healing. Complications included three osteoporotic distal femur fractures, two pressure sores, one periprosthetic fracture and two posterior subluxations. There were no implant related complications. **Conclusion:** The Paediatric LCP Hip Plate provides a stable and reliable fixation of the proximal femoral osteotomy performed for a variety of paediatric orthopaedic conditions.

Abstract no.: 32438

TRANEXAMIC ACID TO REDUCE BLOOD LOSS IN ARTHROPLASTIES

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In a prospective randomised study done on 100 patients who underwent primary total hip and knee arthroplasties, we evaluated the effect of tranexamic acid on blood loss and blood transfusions. In 50 patients in study group, Tranexamic acid was given and 50 patients were in control group. Patients randomized to receive tranexamic acid were given a bolus I/V injection of 10 mg/kg at the time of induction of anaesthesia approx 10 to 15 min before the incision. Another injection of 10 mg/kg was given at the end of surgery. In none of the patients thromboprophylaxis was given. The postoperative blood loss was recorded by measuring the volume in the drain at 24 hour and 48 hour. Eighteen patients were given a blood transfusion in the tranexamic acid group versus 36 patients in the control group. We found a significant reduction of 43% in the average postoperative blood loss which is a rather dramatic clinical effect and in accordance with the studies published so far which all used a bolus of TXA of 10 mg/kg or more before incision. The number of transfused units was reduced by 47% and the number of transfused patients by 50% compared to the controls. Despite the fewer transfusions, the postoperative haemoglobin concentrations in the tranexamic group were higher compared to control group. Tranexamic acid effectively reduces the postoperative blood loss, and the need for blood transfusion in the primary joint replacement surgeries.

Abstract no.: 32442

THE INFLUENCE OF PSYCHO-SOCIAL FACTORS ON THE OUTCOME OF KNEE AND HIP ARTHROPLASTY

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Introduction: Psychological and social factors such as anxiety, depression and social support can influence not only the pain and health-related quality of life a patient experiences but also the outcome of the surgery itself. The primary objective of this study is to investigate the extent to which psychosocial factors influence the outcome of total end-prosthetic for knee and hip. Methods: Seventy-five patients who underwent a primary total-end prosthetic for knee or hip filled out a pre-operative as well as a post-operative questionnaire package. It was filled out pre-operative and six weeks/three months after surgery. Results: Results taken from knee patients displayed a correlation between the following scores: AAS results – pre-operative WOMAC stiffness score, HADS depression score – pre-operative WOMAC stiffness score, HADS depression score – pre-operative WOMAC overall score, HADS anxiety score – three month post-operative WOMAC stiffness score, SF-12 results – three month post-operative WOMAC pain and function score. The correlations in hip-patients were: pre-operative AAS scores – six week and three month post-operative HHS function scores, HADS depression score – six week post-operative HHS pain score, HADS depression score – three month post-operative HHS function score. Discussion: This study reveals that psycho-social factors, such as anxiety and depression, influence the outcome of total-end prosthetics for knee and hip. In order to obtain better subjective results following total-end prosthetic surgery for knee and hip, it would be useful to detect and treat risk factors before the operation.

Abstract no.: 32453

BMP6 MECHANISM OF ACTION IN THE OSTEOPOROSIS MODEL OF OVARIECTOMIZED RATS

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Osteoporosis is a rare, but serious complication of the long-term heparin therapy. Around one third of patients receiving heparin have a reduction in bone density. In plasma, heparin binds to a number of different proteins, including circulating bone morphogenetic proteins (BMPs). BMP6 has a major role in promoting osteoblast differentiation and bone formation. Here we explored the role of exogenous heparin in BMP6 signaling. We treated C2C12-BRE-Luc cells with combination of BMP6 and heparin for different time points. By western blot and luciferase reporter assay, we show that BMP6-induced Smad1/5/8 phosphorylation was inhibited with heparin. BMP6 is known to induce C2C12 myoblast differentiation toward osteoblast phenotype. We incubated the cells with BMP6 with or without heparin for 24, 48 and 72 hours and measured the expression of early osteoblast markers, alkaline phosphatase (ALP) and osteocalcin (OC). After 48 and 72 hours of treatment, heparin statistically inhibited BMP6-induced ALP and OC gene expression. By using the ectopic bone formation assay in rats, we explored the effect of exogenous heparin on the BMP6-mediated osteogenic activity. We implanted heparin together with BMP6 on demineralized bone matrix (DBM) implants. Two weeks later, we could observe that implants containing the highest dose of heparin morphologically appeared smaller. We also show that BMP6 specifically binds to heparin. We incubated BMP6 with the heparin sepharose beads and BMP6 bound to the beads was detected. Altogether, we suggest that heparin-induced osteoporosis is a consequence, at least in part, of the heparin binding to circulating BMP6.

Abstract no.: 32461

OSSEOINTEGRATION OF PERSONALIZED 3D PRINTED METAL AUGMENTS FOR THE MANAGEMENT OF SEVERE ACETABULAR BONE LOSS

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Introduction: The most challenging aspect of acetabular revision is the management of extensive bone loss. Nowadays, porous metal augments are considered as a valuable treatment option. CT-based preoperative planning combined with 3D printing enables to produce augments in a patient-specific manner. In this study, effective fixation and stability of selective laser melted (SLM) titanium augments were evaluated in an in vivo goat model. **Methods:** Six goats were implanted with cylindrical Ti6Al4V constructs (Ø8mm x 14mm). Two regular internal network architectures (both 75% porosity) and the presence of a hydroxyapatite coating were investigated. Three holes were drilled in the subchondral bone of each tibia and femur of the goats, where constructs were inserted into in a press-fit manner. Fluorochrome labels were injected at 3, 6 and 9 weeks. In vivo CT scans and X-rays were taken. Resonance frequency analysis, micro-CT, histology, and pull-out tests were performed postmortem at 6 and 12 weeks. **Results:** Micro-CT analysis and histomorphometry showed bone infiltration into the construct's pores from bottom and sides. The amount of new bone formation increased slightly between week 6 and 12. A tendency towards higher bone volumes in hydroxyapatite coated constructs was noted. Shifts in the resonance frequency spectrum indicated that implant stability increased with time. Pull-out tests showed an increased fixation at the bone-implant interface. **Conclusion:** Bone ingrowth and strong biological fixation were observed for SLM titanium constructs in a 3 months goat model. As custom-made bone augments, they provide a promising approach to the reconstruction of massive bone defects.

Abstract no.: 32462

**COMPARATIVE STUDY OF NEXGEN LPS FLEX MOBILE-BEARING TYPE
AND FIXED BEARING TYPE IN MIS-TKA**

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Intrduction: In an aging society, total knee arthroplasty (TKA) has become a standard operative procedure to relieve pain and restore function in patients with osteoarthritis. Patient satisfaction after TKA is associated with better range of motion and less complications. Mobile bearing TKA has been reported that has potential advantages over a fixed-bearing design in terms of improved motion and diminished wear. The aim of this study was to compare postoperative results between fixed bearing(group F) and mobile bearing(group M) TKA. **Method:** 92 patients(group F:44, group M:48) were randomized to receive TKA using fixed or mobile bearing knee in our unit by the same surgeon and method. They all had osteoarthritis of knee. We evaluated range of motion, Japanese Orthopaedic Association score(JOA score), component setting angle, and complications.

Result: In terms of range of motion (group F:125.1, group M:123.3) 、 JOA score, component setting angle and patient satisfaction, the difference between two groups was not significant. The operation time(group F:95.1 minutes, group M:83.6 minutes) was shorter in group M than in group F. Only one dislocation was occurred in group M as a complication. **Conclusion:** In short term results, there was no significant difference between two groups. In mobile bearing TKA, we have to take care of dislocation. We have to assess long term results such as polyethylene wear.

Abstract no.: 32463

SURGICAL TREATMENT OF VANCOUVER TYPE B PERIPROSTHETIC FRACTURES OF THE FEMUR – MEDIUM TERM RESULTS

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Aim: To evaluate the medium term results of surgical treatment in Vancouver type B periprosthetic fractures of the femur post THA. **Material and methods:** 44 patients who underwent surgical treatment for Vancouver type B periprosthetic fractures post THA were included in a prospective study. The mean age was 68 years (limits: 32 – 81 years). The average postoperative follow-up was 67 months (extremes:26-75). The distribution according to the Vancouver classification was:12 type B1 fractures, 21 type B2 fractures, 11 type B3 fractures. 29 fractures occurred after primary and 15 fractures after revision arthroplasty. Type B1 fractures were fixed by using plates, screws and/or cables, type B2 by revision with long stem prosthesis and osteosynthesis, type B3 by revision arthroplasty with long stem prosthesis and bone grafting + fixation. The Harris Hip Score was determined at 6 months after surgery. **Results:** 34 out of 44 patients (77,27%) returned to their preinjury level of function after a postoperative mean time of 5,4 months (extremes:3,2-6,3months). Fractures healed in all but 6 cases (13,64%), which were reoperated. B3 fractures were associated with the highest complication rate (36,36%) – nonunion, sepsis, loosening, dislocation, graft resorbtion. The average Harris hip score at 6 months after surgery was 84,37 (range 66-94). **Conclusions:** The risk of complications is very high in the surgical treatment of Vancouver type B periprosthetic fractures. In B1 fractures, osteosynthesis with plate, screws and cables had the best results. In B2 fractures, revision with uncemented locked long stems was the most successful solution.

Abstract no.: 32464

COMPARISON OF PROGNOSTIC VALUE OF MRI CLASSIFICATIONS OF SIGNAL INTENSITY CHANGE FOR CERVICAL SPONDYLOTIC MYELOPATHY

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Introduction: There are no previous studies comparing their prognostic significance of Signal Intensity(SI) changes in Magnetic Resonance Imaging(MRI) in Cervical Spondylotic Myelopathy(CSM). We aimed to determine the MRI classification of SI changes in patients with CSM that is useful for prognostication of surgical outcome. Methods: We retrospectively studied 35 of the 77 CSM patients (mean age 57.8 years, range 30-69) who underwent cervical laminectomy. Follow-up MRIs were taken at a mean of 51.3 months postsurgery. SI changes were grouped into Group A (N/N), no SI abnormality on T1WI or T2WI; Group B (N/Hi), no SI abnormality on T1WI and high SI on T2WI; Group C (Lo/Hi), low SI abnormality on T1WI and high SI abnormality on T2WI. Results: Resolution of SI in T2WI was seen in most patients; however, four patients developed low SI in T1WI in the follow-up MRI. There was no significant difference in the recovery rates of patients with different grades in T2WI or with focal or multisegmental SI changes ($p=0.47$ and 0.28 respectively) although patients with low SI changes in T1WI were associated with a poor surgical outcome ($p<0.001$). The linear regression model also confirmed low SI changes on T1WI to be a predictor of surgical outcome. Conclusion: A classification system of MRI signal changes which accommodates both T1WI and T2WI is more predictive of surgical outcome than those with T2WI SI changes alone. Postoperative MRI is useful to identify late onset of low SI in T1WI in patients with poor neurological recovery.

Abstract no.: 32465

**ACETABULAR DEFICIENCY CLASSIFICATION BY NUMBERS:
OVERVIEW OF 40 PAPROSKY TYPE IIIA-B CASES**

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Introduction: The most commonly used classification systems for bone loss associated with acetabular revision are the AAOS [D'Antonio et al. 1999] and Paprosky system [Paprosky et al. 1994]. Orthopaedic classification systems are mainly intended to facilitate communication among physicians, to provide a framework for research and education, and to help guiding treatment selection. Recently, a CT-based tool, TrABL (Total radial Acetabular Bone Loss), was described to quantitatively assess acetabular bone loss [Gelaude et al. 2011]. This study shows how objective measurements of the degree and location of bone loss can be harnessed to facilitate correct and consistent classification into existing systems. Methods: CT scans of 40 patients with severe acetabular defects (classified Paprosky type IIIA and IIIB) were analyzed. The TrABL tool automatically determined the total amount of original acetabular bone that was missing in 6 anatomical regions (anterosuperior, anteroinferior, inferior, posteroinferior, posterosuperior and medial). The ratios obtained for all defects were analyzed statistically. Results: Large variations in the amount and location of bone loss were found between different patients, even within one traditional type. Data analysis indicated that total bone loss was highest in the posterosuperior region (62%±27%). On the other hand, the least bone was missing inferiorly. No statistically significant differences were found between the anterosuperior, anteroinferior, posteroinferior, and medial regions. The majority of the patients suffered at least 25% bone loss in more than half of the regions. Conclusion: Quantitative assessment of total bone loss by TrABL refines the classification of acetabular deficiencies into existing systems.

Abstract no.: 32467

FEMORAL NERVE BLOCK FOR APPLICATION OF SPICA IN PAEDIATRIC FEMORAL SHAFT FRACTURE

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Background: We present the results of early hip spica cast application under femoral nerve block for paediatric femoral shaft fractures. Materials & Methods: In this study 50 patients between age group 5 and 12 years with closed fractures of the shaft of femur were included. Patients with open fractures and those presenting 72hours after injury were excluded. To the selected cases femoral nerve block was given. The effect of femoral block was quantified using Wong-Baker FACES pain rating scale (WBFPRS) by gentle manipulation after every 2 minutes. After analgesia was achieved closed reduction was done & a one and a half hip spica cast was applied. Results: In our study of 50 cases, the mean age was 7.46years with a male to female ratio of 33:17. In 3 patients the procedure failed and we were forced to resort to some other form of analgesia or sedation. In 6 patients, the effect was sub optimal and these patients required midazolam supplementation. It was also found that pain relief in proximal 3rd fractures was least effective. Acceptable reduction was obtained in all our cases. The mean duration of hospital stay was 4.76 days. Conclusion: Femoral nerve block should be used as the preferred modality for pain relief in paediatric femoral shaft fractures for spica application. It is a safe and cost effective method as it leads to less duration of hospital stay. Key words: femoral fractures, traction, hip spica, femoral nerve block

Abstract no.: 32469

CLINICAL RESULTS AFTER SURGICAL TREATMENT OF DISPLACED HUMERAL CAPITULUM FRACTURES

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Purpose: To review the functional outcome of surgically treated displaced humeral capitulum fractures. Material and method: 15 patients with humeral capitulum fractures underwent open reduction and osteosynthesis with retrograde screws, buried screws or flushed screws +/- wires. Patients were reviewed clinically and radiologically at 6 weeks, 3, 6 and 12 months postoperatively and once per year after that. The mean follow-up was 28.3 months (extremes - 14-38 months) after surgery. Elbow flexion, extension, range of motion and complications were recorded. The clinical results were evaluated using the Mayo Elbow Score, HSS (Hospital for Special Surgery) Score and DASH (Disabilities of the Arm, Shoulder and Hand) Score. Results: The postoperative average flexion at 6 months after surgery was 120,4 +/- 8,7 degrees, while the average extension was 9,5 + 5,8 degrees. Mean range of motion was 110,3 +/- 9,6 degrees. The average Mayo Elbow Score and DASH score were 90,7 +/- 9,6, and 7,9 +/- 3,5 respectively, while the mean HSS Score was 91,2 +/- 8,2. Heterotopic ossifications of varying degrees were observed in 4 patients. In one case necrosis of the capitulum occurred, while in another case, nonunion required excision of the bone fragment. Conclusions: Medium term results were good to excellent with open reduction and screw fixation of the fractured capitulum. The most common complication are heterotopic ossifications and impaired range of motion.

Abstract no.: 32470

THE MUSCULOSKELETAL INJURIES. OUR EXPERIENCE IN THE DAR BOMB BLAST EXPLOSIONS AND REVIEW OF LITERATURE

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Tanzania is a peaceful country, and we have not had much experience in the management of blast injuries. However in other countries these injuries are common. Previous such injuries were confined to the military environment but recently are often seen in civilian practice. These injuries are due to blast wave, leading to variety of blast injuries pattern some of which are fatal. Often time the victims are young with multiple organs involvement. However, few physicians are formally trained in such injuries and this remains a concern to Surgeons. Therefore understanding the pathophysiology of blast injuries is essential in addressing this problem. We report our experience based on series of spontaneously bomb blasts explosions that took place in 2009 & 2011 in the Dar es Salaam. More than 58 people were reported dead and thousand were wounded. Majority of the victim were managed at the District hospitals and 77 were referred at Muhimbili Orthopaedics Institute. Over 60% of them were hospitalized, many having musculoskeletal injuries involving the long bones and were treated surgically. Three patients lost their limbs and one remains paraplegic because of penetrating spine injury. We had three ICU deaths and one more patient died a day after discharge Blast injuries are in deed rare in our area but when they occur, the clinical presentation is diverse posing a great challenge in the management. It is of our opinion that orthopaedics surgeons be aware of the pathology and patterns of injuries associated with blast explosions.

Abstract no.: 32472

FUNCTIONAL OUTCOME OF DIRECT REPAIR OF SPONDYLOLYSIS BY BUCK'S FUSION

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Introduction:The lesion in spondylolysis is a pseudarthrosis that follows a fatigue fracture. Direct repair of the defect is a logical alternative to fusion as it helps to preserve the motion segment and prevents abnormal stresses at the adjacent levels. This paper analyses the clinical and radiological results of direct screw osteosynthesis of the pars defect by the Buck's method in patients with symptomatic spondylolysis. **Methods:** Sixteen patients (mean age 27 years) with symptomatic spondylolysis without disc degeneration or spondylolisthesis and failed conservative treatment were evaluated. Direct pars repair by the Buck's method with internal fixation of the defect using 4.5 mm cortical screws and cancellous bone grafting was done. Henderson's score was used to assess the post operative functional outcome (mean follow-up 45.2 months). The radiographs at review were assessed for fusion. **Results:**Spondylolysis was bilateral in twelve and unilateral in four patients. The lesion was at single level in nine, double level in two and three levels in one patient. The mean operative time was 58 minutes (range 45-75 minutes) and blood loss was <100ml. Radiological fusion was observed in all patients at a mean follow up of 45.2 months (24 to 96 months) and the functional outcome was excellent in six patients, good in eight with two fair results. No complications were encountered in the peri or postoperative period. **Conclusion:** Direct repair of the pars defect by the Buck's method is safe and effective technique in patients with symptomatic spondylolysis without associated disc degeneration or spondylolisthesis.

Abstract no.: 32473

TITLE: RESULTS OF ENHANCED RECOVERY AFTER SURGERY (ERAS) PROTOCOL IN HIP AND KNEE ARTHROPLASTY AT DISTRICT GENERAL HOSPITAL IN UNITED KINGDOM.

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Introduction: we are presenting results of the use of ERAS protocol in hip and knee arthroplasty including resurfacing and revision surgery at DGH in UK. Results: Total 109 patients underwent hip or knee arthroplasty (primary/revision /hip resurfacing/bilateral knee replacement) between July 2011 and December 2011. There were 36 TKR, 33 THR, 26 Hip resurfacing, 5 bilateral TKR, 4 Unicompartmental knee replacement, 1 revision hip and 1 revision knee replacement while 3 patients underwent conversion of hip resurfacing to hip replacement. The mean hospital stay for all patients was 4.4 days with 41% (45/109) Of the patients went home at \leq 3 days and 72% patients had \leq 5 days of stay. ERAS diary was given to the patients on the day of admission/surgery from 9th November. It has shown that 50% of the patients walked to the toilet on the day of operation to the toilet. There was significant pain relief for 18-24 hours postoperatively with 75% of the patients had no/minimal pain on VAS (Visual analogue scoring). 78% of the patients had no nausea/vomiting and further 14% patients had only nausea postoperatively. 2 patients had minimal wound problems with 2 patients had nonocclusive below knee thrombus. 1 patient developed aspiration pneumonia on table and 1 patient had posttraumatic hip dislocation. Results: early results have shown that the ERAS protocol gives predictable early good pain relief enabling early mobilisation and early discharge from the hospital.

Abstract no.: 32479

CLINICAL OUTCOMES OF THE DISTAL METATARSAL OSTEOTOMY USING BIO-COMPRESSION SCREW FOR ADVANCED HALLUX RIGIDUS

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Introduction: This study was performed retrospectively to evaluate clinical outcomes of the distal metatarsal osteotomy using bio-compression screw as the joint preservation method for advanced hallux rigidus. Methods: Thirty-two cases were followed up for more than 3 years after distal metatarsal dorsal closed wedge osteotomy for advanced hallux rigidus. The clinical evaluation was performed according to the American Orthopaedic Foot and Ankle Society(AOFAS) scores. The range of motion of big toe, the period to return to running exercise, the satisfaction score were evaluated. As radiographic evaluation, the interval of first MTP joint space and the period to union were measured. Results: The AOFAS score had improved significantly from preoperative average 48.5 points to 88.3 points at final follow-up. Dorsiflexion of first MTP joint had improved significantly from preoperative average 9.5° to 33.5° at final follow-up. The period to return to running exercise was average 3.8 months. The subjective satisfaction score of patients was average 94.6 points at final follow-up. There was no case of subsequent fusion or additional operation, and no complication associated with bio-compression screw. The interval of first MTP joint space was had improved significantly from preoperative average 1.2 mm to 3.5 mm at final follow-up. All cases achieved union of osteotomy site, and the period to union was average 10.4 weeks. Conclusion: Distal metatarsal osteotomy using bio-compression screw seems to be one of effective treatment methods for advanced hallux rigidus, because of restoration of big toe motion, and reliable pain relief, and needlessness of hardware removal.

Abstract no.: 32483

CARPAL TUNNEL DECOMPRESSION IN AN OFFICE SETTING

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Carpal tunnel release is a commonly performed day surgery procedure. It is usually performed in an operating theatre under local anaesthetic. The cost of using the hospital resources utilised, in terms of the operating theatres, fixed and staffing costs and the time lost in the waiting list is considerable. We have performed Carpal tunnel release in a treatment room in day surgery unit. 195 patients had carpal tunnel release in an office setting between Jan 2009 to December 2011. All the patients had good relief of their presenting symptoms and found the experience satisfactory. Carpal tunnel release in an office setting in a treatment room under local anaesthesia can be a faster and equally safe alternative to one done in an operation theatre. It brings down the cost of procedure and the cost incurred by the patient, and the hospital. This will also help in reducing waiting lists.

Abstract no.: 32487

REPAIR OF 30MM MEDIAN NERVE GAP BY DIRECT LENGTHENING THE INJURED NERVE STUMPS ITSELF IN PRIMATES

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Introduction: One of the alternative methods of nerve grafting for repair of a segmental peripheral nerve gap is nerve lengthening. We have shown that the repair of the peripheral nerve gap by direct lengthening of both proximal and distal nerve stumps was successful and showed nerve regeneration that was superior to that in nerve grafting in rats. To determine the applicability of this method to humans, we carried out an experiment on primates. Methods: Three cynomolgus monkeys were used. A 30 mm gap was formed of the median nerve. Both nerve stumps were lengthened 0.5~1 mm/ day using an original distraction device. Nerve lengthening was performed without anesthesia every day. After 34-48 days lengthening, an end-to-end neurorrhaphy was carried out. At 24 weeks after the first operation, nerve regeneration was evaluated. Results: None of the animals showed any pain-related behaviors during nerve lengthening. The lengthened nerves showed nearly normal appearances. Motor conduction velocity was 48% and sensory conduction velocity was 54% compared with preoperation values. Muscle contraction force was 21% and muscle wet weight was 48% compared with contralateral values. The total numbers of regenerated fibers were 86% and the mean axonal diameters of myelinated fibers were 52% compared with contralateral values. Discussion: In this study, we succeeded in repairing the 30 mm gaps of the median nerve of nonhuman primates by nerve lengthening. We will be able to repair peripheral nerve gap not by nerve grafting but by lengthening the injured nerve itself.

Abstract no.: 32488

OBSTACLES AND DRAWBACKS IN USING PONSETI METHOD FOR CLUBFOOT CORRECTION

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Introduction and aim of the work: we aim to define the obstacles and drawbacks in using Ponseti method for clubfoot correction. Methods: Between Mars 2006 and 2008, we examined 56 patients with idiopathic congenital talipes equino varus foot deformity. The parents of 20 patients refused the Ponseti management and preferred open surgical releases. Thirty-six children (54 feet affected with ICTEV), of 1week after birth to two years old were treated using the Ponseti technique. There were 32 patients 47 feet, 12 with previous history of conservative management. Ponseti method was performed with exceptions. Tendoachilis tenotomy was applied if needed to gain full correction. The parents were instructed to apply a Dennis Brown Splint for the patients. Results: The average duration of follow up was 8 months. Thirty-eight feet were treated successfully by Ponseti method and all deformities corrected. The duration of correction ranged from 4-18 weeks. The average number of casts was 5.5, of initial Pirani score was 5.0 range, and of final Pirani score was 0.41. Achilles tendon tenotomy was done in 26 feet and repeated in 6 feet. 4 feet (9.5%) had residual deformity due to non compliance with foot abduction brace which required surgery. Conclusion: Ponseti method proved to be an efficient and reliable method for correcting of ICTEV. However, in our country obstacles and drawbacks in using Ponseti method for clubfoot correction should be solved for improveing the results.

Abstract no.: 32490

SURGICAL OUTCOMES FOR THE PROXIMAL FEMORAL FRACTURE OF THE ELDERLY PATIENTS

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Introduction: We examined the short-term surgical outcomes in walking ability for proximal femoral fracture of the elderly patients. Methods: From January 2010 to June 2011, 88 patients aged ≥ 75 years with proximal femoral fracture were enrolled. 19 patients were males and 69 patients were females (mean 85.7 years). We investigated fracture type, surgical procedure, walking ability before injury and at discharge, and the time between injury and operation. We assessed walking ability using UCLA activity score. Results: There were 50 neck fractures, 36 intertrochanteric fractures, and 2 subtrochanteric fractures. Bipolar hip arthroplasty (BHA) and total hip arthroplasty (THA) was performed to 31 neck fractures, 2 neck fractures, respectively. Internal fixation was to 17 neck fractures, all intertrochanteric fractures and subtrochanteric fractures. The average time between injury and operation was 5.2 days. The average UCLA score before injury was 4.0 in cases of BHA, 3.9 in cases of internal fixation. The average at the discharge was 3.3 in BHA, 2.8 in internal fixation. The days until walking in parallel bars were 2.4 in BHA, 4.5 in internal fixation. When the ratio of the patient who was able to walk without assistance before injury became ambulant after operation assumes walk reacquisition rate, the walk reacquisition rate in our hospital was 69.0%. Conclusion: Walking ability before injury was almost the same between BHA and internal fixation, but it was reacquired earlier in BHA than in internal fixation.

Abstract no.: 32491

PERIOPERATIVE COMPLICATIONS OF SURGERY IN ELDERLY PATIENTS WITH FEMORAL NECK FRACTURES

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Purpose: Femoral neck fracture is a major cause of morbidity, mortality and loss of independence for the elderly. We studied the prevalence of perioperative complications and the predictor for the occurrence of postoperative complications in patients over the age of 75 who had received surgery for femoral neck fracture. Methods: A retrospective study, covering the period between January 1, 2010 and June 30, 2011, was carried out 86 patients (18 males and 68 females, with averaged at 85.8 years). We investigated preoperative diseases such as a cardiac disease, respiratory disease, diabetes mellitus, cerebrovascular disorder, and dementia. We examined some hematological parameters (hemoglobin, albumin, creatinine) at preoperative period. Operative procedures and perioperative complications were studied. Results: 95% complications were found of the patients. Such as high blood pressure (49%), anemia (31%) and cerebrovascular disorder (31%). 67% postoperative complications were demonstrated of the patients. All hypoalbuminemia patients had postoperative complications. In the postoperative, cardiac and respiratory diseases exacerbated in 12.5% and 25% of all cases, respectively. Open reduction and internal fixation, bipolar hip arthroplasty, and total hip arthroplasty were performed 53 cases, 31 cases, and 2 cases respectively. Four cases of sinking were founded in bipolar hip arthroplasty. Postoperative delirium and dementia was presented in 19.8%. Infections and cardiac diseases and respiratory diseases were 19.8%, 9.3%, and 9.3% respectively. Only one death case was included. Conclusion: Many perioperative complications were demonstrated at perioperative period. Thus, careful management during pre- and post operative periods were needed, especially for hypoalbuminemia patients.

Abstract no.: 32494

EARLY CLINICAL AND RADIOGRAPHIC RESULTS OF GANZ OSTEOTOMY

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The purpose of this study was to evaluate our early clinical and radiographic results of Ganz osteotomy. The results of the first twenty-two Ganz osteotomies performed by one surgeon at one institution were reviewed at a minimum of one year postoperatively. Preoperative and follow-up radiographic measurements included the lateral and anterior center-edge angles, acetabular index angle, and acetabulum-head index of Heyman and Herndon. Anteroposterior radiographs of the pelvis were evaluated for the presence of joint congruency, joint-space narrowing, increased sclerosis of the subchondral bone, and bone cysts. Clinical evaluation was performed with use of the Harris hip score. Osteotomy improved the mean lateral center-edge angle from -2° to $+13^{\circ}$ and the mean acetabulum-head index from 52% to 72%. The mean postoperative anterior center-edge angle was 23° . The average Harris hip score of the patients was 86 points. The clinical result was rated good or excellent for 17 of the 22 patients. At the latest follow-up examination, the severity grade of the osteoarthritis was unchanged in thirteen hips. Only 3 of the 22 hips that subsequently required a total hip replacement or that showed progressive osteoarthritis had been congruent after the index operation, whereas 10 of the 22 hips that did not require total hip replacement or show progressive osteoarthritis had been congruent after the index operation. The Ganz osteotomy prevented progression of osteoarthritis both clinically and radiographically in a high proportion of patients with residual hip dysplasia. Operative restoration of joint congruency is associated with a satisfactory outcome.

Abstract no.: 32495

COMBINED TREATMENT OF NODULAR PIGMENTED VILLONODULAR SYNOVITIS: ANTERIOR ARTHROSCOPIC SYNOVECTOMY, OPEN POSTERIOR CAPSULECTOMY AND RADIATION THERAPY

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Advanced diffuse or nodular pigmented villonodular synovitis of the knee is a soft tissue tumor with high recurrent rate if treated by isolated surgical resection. Combined with post-synovectomy adjuvant external beam radiation therapy yielded better results in the literatures. A series of 7 cases either primary or recurrent pigmented villonodular synovitis after several traditional surgical resections received our treatments. Surgical procedures included anterior arthroscopic synovectomy followed by partial open posterior capsulectomy to remove resident tumor mass arise near synovium of PCL insertion site and fibular head. All patients had been undergone adjuvant post-operative external beam radiation therapy (3,500–4,500 cGy) 3 months after surgery. No neurovascular complications were noticed after surgery or after post-operative radiation therapy. We use magnetic resonance imaging for preoperative staging and postoperative follow-up. In all patients, no evidence of pigmented villonodular synovitis recurrence was noted after 2 years follow-up. This surgical technique combined anterior arthroscopic synovectomy and open partial posterior capsulectomy allows excellent visualization and removal of intra-articular and extra-articular pigmented villonodular tissue and yields excellent functional results. Adjuvant postoperative radiation therapy may be helpful for eradication of small residual nodules, but complete resection of all pigmented villonodular tissue especially located at popliteal area appears to be the key to preventing recurrence.

Abstract no.: 32500

TREATMENT OF HALLUX VALGUS USING THE ISHAM REVERDIN PERCUTANEOUS TECHNIC: ABOUT THE FIRST 60 MOROCCAN CASES»

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Introduction : the aim of this study is to report the results of percutaneous osteotomy of M1 for the treatment of mild and moderate hallux valgus using the Isham Reverdin technique and Akin osteotomy of P1. Objectives: objectives are the same as those of open surgery: reorientation of distal articular surface of M1, reducing volume of the exostosis, lateral arthrolysis of metatarsophalangeal joint, reduction of the HVA of P1. Methods: this a prospective monocenter study. The same orthopedic surgeon. The technic was indicated for treatment of hallux valgus in 60 feet and 48 patients between June 2009 and January 2012 with an average of follow up of 19 months (14-28 months). Hallux valgus was included with an IMA between 15° and 20°. Exostosectomy was performed in all cases and also percutaneous adductor tenotomy. Akin osteotomy was associated in all cases. Results were evaluated clinically and radiographic controls used AOFAS score. Results: very good 55,4%, good 37,2%, medium 5,8% and bad 1,6%, 92,6% were satisfied, AOFAS: 52 to 92. Conclusion: S.ISHAM-REVERDIN osteotomy doesn't need internal fixation and immediate weight bearing is allowed. There is no instability if the lateral cortical of M1 is preserved. Post-op bandaging is very important and made by the surgeon himself(50% of success of operation). Self rehabilitation decreases the loss of mobility of MP joint. MIS surgery is less aggressive, practicable in ambulatory. Perfect codifications of the indications. Very long learning curve. Courses on cadaver lab is very important. Mentoring is desirable.

Abstract no.: 32501

RADIOGRAPHIC EVIDENCE OF PINCER-TYPE FEMOROACETABULAR IMPINGEMENT IN PATIENTS WITH END STAGE HIP OSTEOARTHRITIS

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Femoroacetabular impingement (FAI) has been implicated in the development of hip osteoarthritis (OA). In pincer-type FAI, patients have an increased susceptibility to early degenerative wear of the acetabular labrum and cartilage due to the presence of an exaggerated acetabular rim. Radiographic markers of pincer-type FAI include the lateral centre-edge angle (LCEA), Tonnis angle, posterior wall sign (PWS), crossover sign (COS) and the prominence of the ischial spine sign (PRISS). The aim of our study was to determine if patients with end-stage hip OA have a higher incidence of radiographic markers of pincer-type FAI as compared to controls. Anteroposterior pelvis radiographs of 326 hip arthroplasty and hip fracture patients (332 hips) were retrospectively reviewed. Radiographic variables of pincer-type FAI were measured in three cohorts: 1) patients with hip OA < 55 years old (n=106); 2) patients with hip OA ≥ 55 years old (n=107); 3) hip fracture patients ≥ 65 years old without hip OA used as controls (n=119). Older female hip arthroplasty patients had significantly more patients with LCEA values > 40°, indicative of pincer-type FAI, than any other cohort (p<0.05). Conversely, a higher proportion (p<0.001) of younger female arthroplasty patients displayed evidence of hip dysplasia, an LCEA < 20° and/or Tonnis angles >10°, as compared to the other cohorts. The frequency of acetabular retroversion, noted by the presence of PWS, COS and PRISS, was highest in male patients, independent of age or diagnosis (p<0.001). Our study demonstrates that patients with end-stage hip OA commonly display evidence of pincer-type FAI.

Abstract no.: 32509

**SCAPULOTHORACIC DISSOCIATION : LEVEL OF VASCULAR INSULT,
AN INDIRECT PROGNOSTIC**

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Scapulothoracic dissociation is the result of severe blunt trauma or sudden forceful traction applied to the shoulder, simulating a traumatic forequarter amputation but with sparing of the skin. This grievous injury results in injury at three levels : neural, vascular and musculoskeletal. Since the neural damage cannot be ascertained in the acute stage of this injury, whereas the vascular injury can be defined, this study aimed to find out any correlation of the eventual neural damage with the level of vascular injury. It became evident, after compilation of the authors' 8 cases and the 37 relevant cases reported in literature, that the patients with subclavian artery injury had more frequently a complete brachial plexus involvement, whereas those with axillary artery involvement sustained more often a partial plexus injury. This correlation was found to be statistically significant ($p < 0.05$). It is thus concluded that the more proximal the level of vascular injury, the more grave is the neurological damage. This fact can be utilized to prognosticate the eventual outcome of the limb concerned.

Abstract no.: 32511

GIANT LIPOMAS OF THE HAND

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Although lipomas are seen frequently in upper limb they are rarerly seen in the hand. In this study we report on five patients of giant lipoma in hand. The mean age was 61 years (53-72 years). All of the tumors evaluated with plain radiographs, contrasted MRI and tru-cut biopsy under the supervision of multidisiplinary tumour council. There were pinch limitations in the thenar located tumours and were grip limitations in thenar and hypothenar located tumours. In large hypothenar located case, there were hyposthesia in ulnar nerve and hyposthesia in thumb and index finger were observed in thenar located cases. All of the patients underwent marginal exisions. Average dimension of the longest part of the tumours was 5.5 cm. In three cases, neurovascular structures were contiguous to the tumour and careful dissections were applied and tumours were separated from the nerves. The mean follow up period was 18 months. No post operative complications were detected. At final control there was no evidence of recurrence. Although the giant lipomas of the hand are barely seen they must be kept in mind for differential diagnosis of tumours of hand.

Abstract no.: 32513

BILATERAL STRESS FRACTURES OF FEMORAL NECK IN NON-ATHLETES - A CASE SERIES

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Stress fractures of femoral neck (SFFN) are rare constituting only 5% of all stress fractures in young adults. SFFN is commonly reported in military recruits, long distance runners and older adults. They are also reported in association with abnormal anatomy, seizures, renal osteodystrophy, corticosteroid use, amenorrhoea and osteomalacia. Most reported bilateral stress fractures (BSFFN) were of the insufficiency type and seen in elderly patients. It could be of compression, tension or displaced type. We report 4 cases with BSFFN in non-athletic, manual labourers without underlying bony disorders. Clinical and biomechanical studies identifies the sequence of muscle fatigue and compensatory altered gait, leading to changes in the stress application as the common factors which results in SFFN. MRI is considered to be 100% sensitive, specific and more accurate in early diagnosis. Controversy still exists on the treatment of these fractures because of the inherent complications associated with these fractures. We managed these fractures with focus on restoration of normal neck shaft angle by valgus osteotomy and rigid fixation. This helped to bring the forces acting around the hip to normal biomechanical levels thereby leading to fracture union and better results. We strongly recommend osteosynthesis for complete undisplaced fractures without deformity and osteosynthesis with valgus osteotomy for complete displaced fractures with varus angulation. Incomplete fractures with deformity needs correction of deformity by osteotomy. Compression type incomplete fractures without deformity can be treated conservatively and regularly followed up. The tension type fractures are mechanically unstable, they undoubtedly need to be surgically fixed.

Abstract no.: 32514

**NON-BRIDGING EXTERNAL FIXATORS – A PRELUDE TO EARLY UNION
IN DISTAL RADIUS FRACTURES.**

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This study is undertaken analyzing the outcome of treatment for fractures of distal radius, by non-bridging external fixation, especially in terms of the fracture union. It is a prospective study being carried out at teaching a hospital between August 2010 to Dec 2011. The outcome is discussed with the view that unrestricted movements at wrist should enhance the conduciveness for better outcome including early union, as happens due to axial micromotion in lower limb fracture, when early weight bearing is allowed. There are very few evidences for such promotion of fracture healing in distal radius where more popular management is either by casting or rigid plates or wrist spanning fixators

Abstract no.: 32520

IONISING RADIATION RISK TO ORTHOPAEDIC SURGEONS

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We undertook this study to determine the amount of scattered radiation received by the primary surgeon, assistant and patient during dynamic hip screw fixation for proximal femoral fractures. Data was collected from fifty patients. Five registrars were included as operating surgeon and four senior house officers as assistant surgeon. Radiation was monitored by thermo luminescent dosimeters placed on the surgeon and assistant. The approximate distance of surgeon and assistant from the operative site was measured. A dosimeter on the unaffected hip of patients measured the radiation to the patient. The results show that the surgeon's dominant hand receives the highest dose of radiation and radiation exposure is dependent on the experience of the operator. Our study concludes that exposure to radiation during this procedure is well below the toxic levels ; however greater awareness is needed for harmful effects of exposure to long term low dose radiation. Keywords : ionising radiation ; trainees ; dynamic hip screw fixation.

Abstract no.: 32522

THE SEASONALITY OF POSTOPERATIVE INFECTION IN KNEE ARTHROPLASTY

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Introduction: Postoperative surgical site infection after elective orthopedic surgery is a major complication. The purpose of this study was to determine if there is a seasonal variation in rate of infection after orthopedic surgery Methods: We retrospectively reviewed all consecutive hip and knee arthroplasty cases by a single surgeon at a single institution in 2009. Primary and revision cases were included. Patients presenting with a contaminated wound or active infection were excluded. Postoperative infections were identified using ICD-9 coding. All patients with postoperative infection, wound dehiscence, septicemia, and cellulitis were identified. Infection rates were calculated on a monthly and seasonal basis and compared. Results: There were 752 cases in the eligible population. There were 490 knee arthroplasties and 217 hip arthroplasties. There were 45 revision cases. The overall infection rate was 2.2%. There was a statistically significant increase in the infection rate in the summer (4.7%) and fall (2.4%) versus winter (1.5%) and spring (0.9%), $p=0.031$. Conclusion: Arthroplasty cases performed during the summer and fall months were associated with a significantly higher incidence of surgical wound infection compared to the winter and spring. Infection rates reached their peak during the summer months (July, August and September) and fell to their low point in the spring (April, May, June).

Abstract no.: 32524

A NEW PREDICTIVE INDEX FOR BACK MUSCLE DEGENERATION ASSOCIATED WITH AGING

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Introduction: It is widely accepted that maintaining both lumbar lordosis and paraspinal muscle function is important in the prevention of low back pain. Measurements of the morphology of the paraspinal muscles have been an effective method for reflecting the atrophy and fat infiltration of muscles, though it's complicated to perform. We therefore focused on the groove between the left and right lumbar paraspinal muscles as a simple index for evaluation of back muscle degeneration. The purpose of this study was to evaluate the validity of this new index in investigating paraspinal muscle degeneration. **Methods:** A total of 160 patients who had maintained lumbar lordosis were included. Axial T2-weighted MRI was used to measure cross-sectional area(CSA) and fat infiltration of the paraspinal muscle at the intervertebral disc level from L1 to L5. To quantify the depth of the groove between the paraspinal muscles, our own image indicator, the T-back value, equal to the length of the bulge of muscle to the attachment of the spinous process, was also measured. We then determined the correlation between the T-back value and paraspinal muscle degeneration. **Results:** CSA of paraspinal muscle tended to decrease with age. Fat infiltration increased with age, most markedly at lower lumbar levels. There was a negative correlation between CSA and fat infiltration at all levels. T-back value significantly decreased with age, and was strongly correlated with CSA at all levels. **Conclusion:** Our new index, the T-back value, is a simple and practical means of evaluating back muscle degeneration associated with aging.

Abstract no.: 32525

SUTURE BRIDGE TECHNIQUE FOR CHRONIC ANKLE INSTABILITY IN HIGH-DEMAND ATHLETES - A COMPARISON WITH BONE TUNNEL TECHNIQUE

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Introduction: This study was performed to compare clinical outcomes of the modified Brostrom procedure using suture bridge technique vs. bone tunnel technique for chronic ankle instability in high-demand athletes. **Methods:** Thirty-two patients were followed up for more than 2 years after modified-Brostrom procedure for chronic lateral ankle instability. Eighteen procedures with suture bridge technique and 14 procedures with bone tunnel technique were performed by one surgeon. The clinical evaluation was performed according to Karlsson scale and Sefton grading system. Measurement of talar tilt angle and anterior talar translation was performed through stress radiographs. **Results:** Karlsson scale had improved significantly from preoperative average 45.5 points to 91.6 points in suture bridge group, from 46.8 points to 88.4 points in bone tunnel group. According to the Sefton grading system, 16 cases(89%) in suture bridge group and 12 cases(86%) in bone tunnel group achieved satisfactory results. Talar tilt angle had improved significantly from preoperative average 16.3° to 4.7° at postoperative 3 months, to 5.5° at final follow-up in suture bridge group; from average 15.8° to 6.1° at postoperative 3 months, to 6.3° at final follow-up in bone tunnel group. There was significant difference on talar tilt angle in early postoperative period. **Conclusion:** Both modified Brostrom procedures using the suture bridge and bone tunnel technique seem to be effective treatment methods for chronic ankle instability in high-demand athletes. The suture bridge technique has an advantage of more mechanical stability in early rehabilitation period.

Abstract no.: 32532

SEALING THE INTRAMEDULLARY FEMORAL CANAL WITH AUTOLOGUS BONE GRAFT IN TKR

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Sealing the Intramedullary Femoral Canal with Autologus Bone Graft in Total Knee Replacement. Total Knee arthroplasty is associated with post-operative blood loss that could require blood transfusion which brings with it its own risks. This prospective study aims to assess the effectiveness of bone plugging to reduce postoperative blood loss after TKA and compared a non-plugging group. Material and Methods: 150 primary TKAs (primary OA) were divided into two groups of 75 patients with and without autologus bone plug. Surgery was performed using uniform surgical approach, with sequential releases, instrumentation, and technique done under regional anaesthesia with or without sedation in bloodless field. The post-operative rehabilitation programme was identical in both groups. Continuous closed suction drainage was used for 24 hours. The volume of drainage was measured at the time of drain removal. Haemoglobin levels were recorded preoperatively and post-operatively after removal of drain. The decision regarding blood transfusion was based accordingly the NICE guideline. Results: There is statistically significant difference in blood loss in the 2 groups and pre and post op Hb. Conclusion: This simple method of plugging of femoral canal is attractive for its simplicity and effectiveness in minimising blood transfusion in surgical practice. It can help in decreasing the chances of blood transfusion in patients having TKR.

Abstract no.: 32536

CHANGE IN SPINAL ALIGNMENT AFTER TOTAL HIP ARTHROPLASTY

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Introduction: Hip Spine Syndrome is the development of symptomatic spinal complaints after total hip arthroplasty. The purpose of this study was to identify the change in spinal alignment after total hip arthroplasty. Methods: Retrospective case series. The records of patients who underwent total hip arthroplasty from 2006 to 2010 were reviewed. Inclusion criteria were patients who had primary elective THA. Exclusion criteria were patients who had previous THA, previous spinal surgery, infectious, fractures, or neoplastic conditions. Radiograph database was reviewed for patients who had preoperative lumbar radiographs. Radiographic measurements included sacral slope, lumbar lordosis, L1 incidence, and L1 axis S1 distance. Paired samples t test used Results: Eight patients met the inclusion criteria. Average for postoperative radiographs was 386 days. Mean preoperative, postoperative, and change was recorded in the following parameters: Preoperative sacral slope 17 degrees (SD 4.8), postoperative sacral slope 16 degrees (SD 8.9), change -1.3 (SD 7.5), preoperative lumbar lordosis 47.6 degrees (SD 16), postoperative lumbar lordosis 39.5 degrees (SD 22), change in lumbar lordosis -5.4 degrees (SD 11.2), preoperative I1 plumb line 53mm (SD 28), postoperative I1 plumb line 55mm (SD 30), change in I1 plumb line 2.2 (SD 23), preoperative L1 inclination 126 degrees (SD 8), postoperative L1 inclination 124 degrees (SD 12.7), change in L1 inclination -1.1 degrees (SD 6.8). Using paired samples t test, there was no significant difference between preoperative and postoperative measurements ($p>0.05$). Discussion: Hip-spine syndrome may occur from other etiologies other than change in spinal posture and alignment after arthroplasty.

Abstract no.: 32537

UP TO SEVEN YEARS RESULTS OF A SHORT PROXIMAL LOADING FEMORAL COMPONENT IN 56 UNDER 50 Y.O. PATIENTS

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Many young patients present for treatment with degeneration of the hip, requiring joint replacement. Important issues when planning joint replacement in young patients, it is preservation of proximal femoral bone stock, physiologic stress transfer in the proximal femur, normal hip kinematics, low dislocation rate and easy femoral revision procedures. In this study we evaluate the results of the Proxima stem in young patients. This implant presents three innovative features: absence of the diaphyseal portion of the stem, well defined lateral flare with load transfer on the lateral column of the femur and very high neck cut. These innovations grant a very conservative implant both of the bone stock and of the soft tissues. From January 2005 to January 2008 we performed 56 total hip replacement using Proxima. Patients mean age was 41 years (21 to 50) and the mean follow-up was 5.2 years (4 to 7). Bone ingrowth was studied on the postoperative radiographs. BMD was evaluated in 16 patients after THA. Mean HHS improved from 49 (8 to 66) pre-operatively to 95 (86 to 100). WOMAC index was 95 of 100 at final review. None of the patients reported thigh pain. No hips were revised. Radiological changes in the proximal femur were good, as evidenced by spot welds both on the medial and lateral aspects of the femur. Presence of a lateral flare and use of a high osteotomy of the femoral neck provided good results. Absence of a diaphyseal portion of the stem didn't impair stability

Abstract no.: 32546

A TALE OF DISAPPEARING MEDIAL END OF CLAVICLE

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Background: We present a case of Chondromyxoid Fibroma of the clavicle. Materials & Methods: A 13 year old female presented to us with complaints of pain and swelling over left clavicle for past 8 months with disappearing medial end of left clavicle. On careful clinical, radiological and microscopic examination the lesion in the medial end of clavicle proved to be Chondromyxoid Fibroma. The patient was treated with a wide excision of the lesion. Results: At six months post wide excision of the lesion the patient is asymptomatic and has no signs of recurrence. Conclusion: Clavicle is a rare site for any bone tumour. Chondromyxoid Fibroma at any site is a rare occurrence with the incidence of 0.5% of all bone tumours. Chondromyxoid Fibroma is usually present in the long bones with proximal tibia being the most common site. Wide excision has shown good long term results in previously published reports. To the best of our knowledge this is the fourth time that this tumour is being reported in clavicle.

Abstract no.: 32547

PROXIMAL FIBULAR OSTEOCHONDROMA: EARLY RESULTS OF A MODIFIED RESECTION TECHNIQUE

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Osteochondroma is one of the most common tumors arising from the proximal fibula. Surgical treatment of proximal fibula osteochondromas may vary from debulking to resection of proximal fibula. We describe a modified surgical technique for excision of proximal fibular osteochondromas which preserves the proximal tibio-fibular joint (PTFJ). We present a series of seven cases of symptomatic proximal fibular osteochondroma. Four cases were solitary osteo-chondromas while three were a manifestation of a hereditary multiple exostoses. Indication for surgery was peroneal nerve symptoms in three, cosmesis in one, restricted knee motion in one, and pain in one case. All these cases were operated by a modified resection technique where the head of fibula was preserved. The PTFJ was preserved. Lateral stabilizing structures of the knee were left undisturbed, and hence did not need repair. Complications occurred in two patients, one had marginal wound necrosis and one had persistent weakness of extensor hallucis longus. At a minimum follow-up of 2 years, none had recurrence or late disruption of PTFJ.

Abstract no.: 32550

MEASUREMENT OF INTER-DENTAL SPACE FOR CLINICAL DETECTION OF OSTEOPOROSIS

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As the age progresses , the bone becomes fragile due to senile and hormonal changes. The natural teeth are compactly fit in the maxilla and mandible during lifetime ,leaving no recess in the inter-dental space . This inter-dental space becomes wider in later age ; as has been observed by many of clinicians. This reflects the morphological status of bones where the teeth are placed compactly in young and healthy persons ; vice-verse in old and weak bones teeth are placed widely , leaving an increased inter-dental space . We measured the inter-dental space in 1000 persons above 45 years of age attending the OPD . Randomly , X-Ray examination of non-working hand in AP view was done and fed to the scanner for the computer to analyse the BMD by Prononsco Method. We conclude in 60% of persons the wider inter-dental space is showing Osteopenia/Osteoporosis . Thus measuring the inter-dental space may be useful in determining the BMD .

Abstract no.: 32551

**CHALLENGES IN MANAGEMENT OF MUSCULOSKELETAL TUMOURS
AT MUHIMBILI ORTHOPAEDIC INSTITUTE, DAR ES SALAAM –
TANZANIA**

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Precise incidence of musculoskeletal is not known, though benign lesion are 3 to 4 times commoner than malignant counterpart. Literature report only 1-1.5% of all malignant conditions being that of musculoskeletal system. Despite being rare they cause significant morbidity and mortality in the under resourced countries. This is despite the advances that have been made in diagnosis and treatment in recent years. In developing countries there are more challenges ranging from late presentation difficulties in diagnosis to treatment. We reviewed our in patient data from sept 2007 to sept 2010 and analyzed the number of patients who were admitted during that time with musculoskeletal tumors. Seventythree patients were hospitalized, majority aging between 11 to 30years. Osteosarcoma was the commonest Mss malignant seen while Giant cell tumors was the commonest benign lesion. The mean duration of symptoms was 9 months (Range 3days -4years). The reasons for late presentation were ignorance as majority of patients and their parents had attained only primary education. Traditional belief, distance from the health facility and refusal of proposed mode of treatment were among the cause of late presentation. Only 8 patients could afford a CT scan or MRI while a minimum of 4weeks will be needed for histology result. Contrary to developed world, amputation remains to be the main Rx option in our patient while LSP was done to those with benign lesion. Mss tumours are rare, late presentations, difficult in diagnosis and limited treatment options are among the obstacles that we face.

Abstract no.: 32554

LESSONS LEARNED FROM AN APPARENTLY BENIGN PRE-PATELLAR MASS

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Background: We present a case of a pre-patellar spindle cell sarcoma. Materials & Methods: A 40 year old female presented to us with complaints of painless, gradually progressive, clinically benign pre-patellar swelling of 8 months duration. Excisional biopsy revealed spindle cell sarcoma. We describe the clinical and imaging features of the patient with literature review. Results: At six months post excision of the lesion the patient is asymptomatic and has no signs of recurrence. Conclusion: Spindle cell sarcoma displays a wide variety of malignant soft tissue tumours that can arise in any connective tissue of the body. This case is being presented in view of its atypical clinical presentation of the patient.

Abstract no.: 32555

HOFFA FRACTURE OF MEDIAL FEMORAL CONDYLE: OUR EXPERIENCE OF 7 CASES

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Isolated coronal fracture of medial femoral condyle with intact lateral femoral condyle is extremely rare. We present our experience with such seven cases of coronal fractures of medial femoral condyle. All the 7 patients with medial femoral condyle fractures were retrospectively evaluated both clinically and radiologically. Of the 7 patients with medial condyle fractures, four patients had an isolated medial femoral condyle fracture, while three of them had associated fractures. Four of these patients were identified at the initial presentation. However, the fracture was missed during initial evaluation in one of the patients, while 2 patients presented with neglected medial Hoffa fracture after 6 months of injury and 2 months of injury respectively. Mechanism of injury was direct impact to the medial side of knee in flexion in 4 out of 7 cases. All cases were operated through medial or antero-medial approach, and fixation was achieved in all with antero-posterior screws. All cases united at a mean period of 4.6 months. Coronal fractures of the medial femoral condyle are very rare, and there is a highly likelihood of these fractures being missed by an average orthopaedic surgeon. A high index of suspicion is necessary for early diagnosis especially in cases of undisplaced fractures. Being intra-articular, the ideal management includes open reduction and internal fixation. Medial or antero-medial approach with antero-posterior screws is the preferred method for fixation.

Abstract no.: 32559

POST TRAUMATIC KNEE DISLOCATION: 3 CASES WITH VARIED PRESENTATION

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Introduction: Acute knee dislocations are uncommon orthopaedic injuries. They often are spontaneously reduced before initial evaluation. It is unlikely that any single physician personally cares for more than a few knee dislocations in a lifetime is an intercept from a classic article "Traumatic dislocation of the knee joint" by Meyers. We present our experience of 3 cases of knee dislocation with varied presentation. Methods and Materials: patients were presented from June 2010 till Dec 2011. We studied the mechanism of injury, presentation, classification, evaluation, management and functional outcome using Lysholm score of 3 cases of Knee dislocation. 1st was irreducible Posterolateral dislocation, for which open reduction was done. 2nd was anterior dislocation, for which close reduction and later bicruciate ligament reconstruction was done. 3rd case patient himself reduced the dislocation and presented with subluxating knee, for which bicruciate ligament reconstruction was done. Results: All were male, follow-up duration is 12 to 18 months. Excellent result with regard to stability and functional outcome is seen in two patients where ligament reconstruction was done at 12 months postoperative. Other case where open reduction was done without ligament reconstruction had average functional outcome results at the end of 18 month follow up. None of the patient had distal neurovascular injury. Conclusion: Acute knee dislocation is an uncommon diagnosis with potential limb-threatening complications, Identification of neurovascular injury is key. Definitive ligament reconstruction after initial reduction gives good functional outcome. Patient age and ability to participate in rehabilitation affect the functional outcome.

Abstract no.: 32560

ANALYSIS OF COMPONENT ASYMMETRY IN 289 BILATERAL KNEE ARTHROPLASTIES: ARE BOTH THE KNEES OF THE SAME SIZE?

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Variations in the anatomy of knee are well described, however the true incidence of component asymmetry in bilateral total knee arthroplasties is rarely reported. Incidence of component asymmetry in bilateral total knee arthroplasties (TKA) was retrospectively analysed in 289 cruciate retaining total knee arthroplasties. Medical records of these 289 patients were evaluated for the incidence of asymmetry of either femoral or tibial components. Clinical outcomes were compared between the cases of asymmetrical components to that of symmetrical components. Incidence of femoral component asymmetry was found to be 9.2% and tibial component asymmetry to be 8.7%. Of 289 cases, TKA 178 were done in a single day (group A), while 111 were done at 2- to 3-day intervals (group B). Asymmetric and symmetric knees were equally distributed among both groups, male and female patients in both groups, and the incidence of component asymmetry was similar between all four different implants – Optetrak-CR (Exactech, Gainesville, FL, USA), Nexgen-CR (Zimmer, Warsaw, IN, USA), PFC-Sigma CR (DePuy, Warsaw, IN, USA), Genesis II CR (Smith and Nephew, Memphis, TN, USA) we used. The pre- and postoperative range of motion and pre- and postoperative knee society scores were compared between the symmetric and asymmetric cases in both the groups and the difference was found to be insignificant. We conclude that incidence of component asymmetry in bilateral total knee arthroplasty is around 9 % and independent sizing of both knees during bilateral arthroplasty is recommended rather than simply relying on the contralateral knee measurements

Abstract no.: 32565

NAVICULAR INDEX FOR DIFFERENTIATION OF FLATFOOT FROM NORMAL-ARCHED FOOT

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Aim: The height of navicular bone from the floor is in proportion with height of longitudinal arch of foot. The study was conducted to evaluate correlation of navicular bone height with most often used angles, heel valgus and a foot print in order to simplify procedure diagnosis of flatfoot. **Methods:** From 1997-2010, 218 operated children(436 feet),flexible flat foot was evaluated clinically and radiologically. Meary angle, lateral talonavicular angle, talocalcaneal angle, calcaneal pitch, heel valgus and arch index(Staheli) were evaluated preoperatively and postoperatively. 122(244 feet) chosen children(8-15 age), who had all preoperative angles and clinical values corresponding flatfoot; postoperatively all measured values were good. We got the navicular index by dividing length of longitudinal arch with navicular height, to remove mistakes caused by different sizes of X-ray images. Values of navicular index were compared with measured values preoperatively and postoperatively. Pearson correlation and ROC test were used for statistical analysis. **Results:** We obtained values of navicular index for flatfeet in the interval from 4.75-31.2(median 8.97), range – normal-arched feet was 3.58-22.6(median 5.47). Pearson correlation of arch index and measured parameters were significant in majority, degree according to Colton was good. Area under the ROC curve was 0.861 (P=0.0001), therefore the navicular index has an ability to distinguish between the flatfoot and normal-arched foot. The cut-off value with 86% sensitivity and 75% specificity was 6.7407. **Conclusion:** Navicular index can be used reliably, without measures of the other parameters, to differentiate flatfoot from normal-arched foot.

Abstract no.: 32566

ESTABLISHING AN ORTHOPAEDIC QUALITY SCORECARD

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Introduction: In order to monitor outcomes for hip and knee replacement surgery as well as develop standards for performance it was felt that an orthopaedic quality scorecard could be developed to assure appropriate monitoring. Methods: A survey of the available literature suggested that four points of information could be easily collected from the discharge abstract database for all total joint replacement patients. Additional information on individual patient's implants would be required and this could be obtained from the Canadian Joint Replacement Registry (CJRR). Results: The four performance standards collected include: (1) length of stay, (2) discharge disposition, (3) re-admission rate at 30 days and (4) revision rate within one year. This would apply to all patients undergoing unilateral primary hip or knee replacement surgery. The target of 4.4 day length of stay, re-admission rate of less than 4% and revision rate within one year of less than 1% were met by 90% of hospitals. The goal of 90% of patients discharged home within 4.4 days was not met in the majority of hospitals. Conclusions: It is recognized that all hospitals in Ontario performing joint replacement surgery must be compliant with these standards in order to obtain government funding. This will standardize treatment for these patients across the province, free up badly needed inpatient rehabilitation resources for other musculoskeletal and cerebrovascular conditions and importantly will provide significant post-market surveillance for implants used in Ontario hospitals.

Abstract no.: 32572

THE EFFECT OF REHABILITATION PROGRAM IN SHOULDER FUNCTION AFTER ROTATOR CUFF REPAIR

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Introduction: Optimal program of rehabilitation after rotator cuff repair has not to be well established. Well-controlled randomized studies regarding rehabilitation benefit after rotator cuff repaired has been instituted recently but with frustrated results. This study is to determine the effect of rehabilitation program in shoulder function after rotator cuff repair. Methods: Subjects with rotator cuff tear visiting to our institute for surgical repair were collected. The subjects were randomized into two groups. Subjects in Group A were instructed their home exercise by the orthopedic doctor. Subjects in Group B received rehabilitation program by the professional physical therapist. All subjects were evaluated pre-operation, 1, 2, and 3 months after operation. An independent physical therapist evaluated Constant shoulder (CS) score, UCLA shoulder rating scale, and Western Ontario rotator cuff (WORC) index as outcomes. Results: Fifty-one patients were collected, and 30 patients met the inclusion criteria. Group A had 16 patients, and group B had 14 patients. Average among 2 groups, significant improvements were found in outcomes at 3 months follow-up (CS: 47.6 to 66.8; UCLA: 16.9 to 26.3; WORC: 46.2 to 72.1). Group B had significant higher UCLA shoulder rating scale and WORC index than group A at 2 months follow-up (2.1 and 5.6 difference, $p < 0.01$). No significant difference were found between 2 groups at 3 months follow-up. Conclusions: Rotator cuff repair is an effective treatment for the patients regardless of home exercises or rehabilitation program. Compared to home exercise program, rehabilitation program provide early improvement in UCLA and WORC scores.

Abstract no.: 32576

SALVAGE OF INFECTED TOTAL KNEE ARTHROPLASTY WITH ILIZAROV EXTERNAL FIXATOR: ANALYSIS OF FACTORS AFFECTING FRAME APPLICATION TIME

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Knee arthrodesis may be the only option of treatment in cases of chronic infected total knee arthroplasty (TKA). Circular external fixation offers possible progressive adjustment to stimulate the bony fusion and to make corrections in alignment. We evaluated the results of knee arthrodesis with one or two stage circular external fixator for infected TKA. 16 cases of femoro-tibial fusion were retrospectively evaluated.. Surgical technique involved either single or two stage arthrodesis using circular external fixator. Union was achieved in 15 patients (93.75%). The mean duration for union in these patients was 28.33 weeks (range 22 to 36 weeks). Analysis showed that in the group with frame application time of less than 28 weeks, the incidence of mild to moderate bone deficiency was 83.33%, while in the frame application time more than 28 weeks group the incidence was 20% (P-value 0.034). Similarly the incidence of Cierney-Mader 4B (BI, Bs, BIs) was found to be 33.33% in the group of frame application time of less than 28 weeks, while it was 90% in the group with frame application time more than 28 weeks (P-value 0.035). Circular external fixator is a safe and reliable method to achieve knee arthrodesis in cases of deep infection following TKA. Severe bone stock deficiency and Cierney- Mader type B host are likely risk factors for prolonged frame application time. We recommend a two-stage procedure especially when there is compromised host or severe bone loss.

Abstract no.: 32578

MANGEMENT OF CLUB FOOT WITH PONSETI TECHNIQUE: OUR EXPERIENCE AT A TERTIARY REFERRAL CENTER

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Clubfoot or congenital talipes equinovarus is a common congenital abnormality of uncertain etiology. The purpose of this study was to assess the results of the Ponseti method in India and to investigate the demography of relapse and resistant cases. A total of 86 children (146 feet) below 1 year of age who had presented to the paediatric orthopedic outpatient department of our institution with unilateral or bilateral idiopathic clubfoot deformity were included in our study and treated conservatively by use of the Ponseti technique. 128 feet responded to the Ponseti casting technique initially and 18 feet were resistant to the conservative treatment. Of the responsive feet, for 20 feet there was a relapse of the deformity. Evaluation of the results showed that poor compliance with splintage was the most common cause of relapse; delayed presentation and atypical clubfeet resulted in high resistance to this technique. Correction achieved at our centre was 82.18%. This is less than in many recent studies and could be attributed to increased incidence of delayed presentation, poorer compliance, and atypical feet in our population. We conclude that the Ponseti technique is recommended for management of clubfoot and strict compliance with splintage is essential to prevent relapses. People of lower socioeconomic status are at high risk of relapse and must be targeted to create awareness among them about the importance of compliance with splintage

Abstract no.: 32579

MULTIPLE INTERVERTEBRAL DISC CALCIFICATION – TWO CASES

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55 year old female presented with complaints of back pain and multiple joint pain. All investigations were performed. X ray revealed multiple intervertebral disc calcification. Since she had features of blackish discolouration of sclera and nailbeds, urine for homogentisic acid was sent which came as positive. Ochronosis is the syndrome caused by the accumulation of homogentisic acid in connective tissues. The phenomenon was first described by Rudolf Virchow in 1865. The condition was named after the yellowish ocher-like discoloration of the tissue seen on microscopic examination. Treatment is predominantly preventative. Avoidance of topical phenols and diets low in tyrosine. Replacement and repair of damaged tissue is also possible. A 58 year old female presented with complaints of multiple joint pain, back ache and joint deformities. Clinical examination revealed joint deformities especially involving both hip and knees, blood investigations ruled out rheumatoid arthritis. Screening x rays revealed multiple intervertebral disc calcification along with arthritic changes. Joint aspirate demonstrated the rod shaped positively birefringent crystals suggesting a calcium pyrophosphate dehydrate crystal deposition disease which is a rheumatologic disorder with varied symptoms arising due to the accumulation of crystals of calcium pyrophosphate dihydrate in the connective tissues more commonly known as Pseudogout. We present these two cases due to the similarity in the clinical presentation and similar radiological findings in the vertebrae and the rarity of the disease condition.

Abstract no.: 32581

ACCURACY OF ACETABULAR COMPONENT POSITIONING IN TOTAL HIP ARTHROPLASTY USING THE ANTERIOR APPROACH AND FLUOROSCOPIC IMAGING-AS GOOD AS COMPUTER NAVIGATION?

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Background: Malpositioning of the acetabular component in THA is associated with increased occurrence of dislocation, impingement and longterm wear as well as impaired range of motion. Computer-assisted navigation techniques proved to be valuable to improve accuracy and reduce outliers [1], but are associated with increased radiation, surgical time and costs. We therefore assessed, in a retrospective study, the accuracy of cup orientation in using the anterior approach and intraoperative fluoroscopic imaging. Methods: A consecutive series of 102 primary THA, performed over a period of 6 month using the anterior approach, were included in the study. A preoperative radiological planning using the IMPAX 6, Agfa program was performed for each hip and realisation in terms of cup orientation confirmed intraoperatively by fluoroscopic imaging. Inclination and anteversion measured according to Lewinnek [2] on a postoperative ap pelvic radiograph were evaluated. Outliers were defined according to the "safe zone" described by Lewinnek with inclination of 30-50° and anteversion of 5-15°. Results: The average inclination was 43° and the average anteversion 15°. There were two outliers found within 5° out of the safe zone regarding the inclination, but none in view of the anteversion. None of the included patients have had a dislocation within 18 months of follow-up time following hip replacement. Conclusions: We consider cup positioning with the anterior approach accurate and reproducible and the intraoperative fluoroscopic imaging a useful, time- and cost-efficient tool to achieve safe positioning with results comparable to computer-assisted navigation techniques.

Abstract no.: 32585

PREOPERATIVE STARVATION AUDIT : PREOPERATIVE STARVATION, POSTPONEMENT AND PLANNING IN FRACTURED NECK OF FEMUR PATIENTS.

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Preoperative dehydration and malnutrition lead to prolonged rehabilitation, delayed recovery and increased length of stay for neck of femur (NOF) patients. Adequate preoperative hydration and nutrition are paramount. We present a completed audit cycle of compliance to the following standards: patients should be starved for 2hrs for oral fluids; 6hrs for oral solids; should receive maintenance intravenous fluid; patients should not be postponed unless medically unfit. An audit of 144 consecutive trauma cases, including 59 NOF cases was carried out. Oral fluid mean starvation was 5hrs (range:2-14hrs). Oral solids starvation mean was 11hrs (range:6-20hrs).29% received no IV fluid during starvation. 43% of patients had at least one postponement. Evening lists were introduced twice per week, providing a further 8hrs of operating time, staff were educated regarding IV fluid prescription and breakfast was provided for evening list patients. Reaudit of a further 43 NOF cases showed oral fluid mean starvation increased to 6hrs and oral solids starvation remaining at 11hrs. 27% received no IV fluid during starvation. Overall postponement of all trauma patients had reduced from 78% to 33%, but no change in the NOF group with 43% having at least one postponement. Conclusion:The introduction of evening lists has reduced the number of postponements overall, however it has lead to no improvement in starvation times for fluids and solids. Intravenous fluids are still not prescribed appropriately. Although a single centre audit, the results are likely to represent an important national shortcoming in preoperative optimisation of the most vulnerable patient group.

Abstract no.: 32590

**A NEW HYPOTHESIS FOR RECURRENT SHOULDER DISLOCATIONS
AND ITS TREATMENT BY GLENOPLASTY**

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Recurrent dislocation of shoulder is a common problem . Many methods have been reported in literature for its treatment.During last 20 years 53 cases of recurrent shoulder dislocation were treated by Glenoplasty operation by the author.A small incision is made in posterior fold of axilla. Scapular neck is osteotomised and a tringular graft taken from iliac crest or bone bank is inserted at antero-inferior part to change the direction of glenoid. only skin sutures are applied and the arm is strapped to chest in flexed and adducted position, the hand resting on opposite shoulder.After 3 weeks sutures were removed and active exercises started.Scar is invisible as it is in axilla and in line of skin creases. All cases had full range of motion post-operatively.Follow up ranges from 2 to 17 years.Only one case had recurrence.Rest had Execellant results.A new hypothesis is proposed to explain how this operation works.

Abstract no.: 32591

RISK OF CONTRALATERAL FEMORAL NECK FRACTURES FOLLOWING SURGICAL FIXATION.

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Context: It has been suggested that contralateral hip fractures tend to be higher in screw fixations when compared with arthroplasties. Our objective is to determine the rate of contralateral femoral neck fractures, if there are any differences between screw fixations and arthroplasties, and if there is any medicosocial correlation. Methodology: Medical records from our neck of femur fracture database were reviewed to identify patients with contralateral femoral neck fractures. The rate of contralateral fractures were calculated retrospectively. Fracture type, usual mobility and ASA status were also obtained. Patients with pathological fractures and those younger than 50 were excluded. Results: 9.1% of our patients sustained contralateral fractures since 2010; of which 35 had screw fixations and 33 had arthroplasties. The male to female ratio was 1: 5.2 and the median age was 86 years old. 6 out of 10 of these patients came from their own home or sheltered housing. The contralateral fracture risk is estimated to be 3.2% at 1 year and 4.8% at 2 years. Our data shows similar fracture pattern in the contralateral hip (p-value=0.034). There were no significant differences in medical co-morbidities of the patients in the re-fractured group. Conclusion: Our study shows a higher rate of contralateral femoral neck fracture in patients with arthroplasties, which is contrary to previous evidence with no differences in the existing medicosocial status. It also suggests that the risk of a contralateral femoral neck fracture increases with time and that it may be beneficial to offer preventative measures to those at risk.

Abstract no.: 32593

STABILIZING OF THE ANTERIOR CHEST WALL IN RECURRENT PECTUS EXCAVATUM WITH STERNOCOSTAL PSEUDARTHROSIS BY ELASTIC STABLE CHEST REPAIR (ESCR): AN INNOVATIVE FIXATION DEVICE

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Introduction: Open operative procedures in the treatment of pectus excavatum are based on well defined incisions of the parasternal cartilage and the bony ribs. Some operation procedures even dissect the ribs from the sternum to get a better retrosternal mobilization for a better elevation of the funnel. Due to this the sternocostal conjunction needs to be restored tightly. In a couple of cases patients suffer from sternocostal nonjunction, e.g. pseudarthrosis, and dislocated ribs. In this context they also suffer from pain and a recurrence of pectus excavatum. Methods: The treatment of those patients was another open operation with revision of pseudarthrotic sternocostal conjunctions and a sufficient mobilizing of the anterior chest wall followed by an open reduction and internal fixation using Matrix Rib® titanium plates [Synthes, Switzerland] placed rib to sternum to rib or if only one side suffers from pseudarthrosis with a rib to sternum plate. This procedure, the ESCR, was studied in a series of 20 patients, 3 female and 17 male in the Department of Pediatric Surgery of Erlangen, Germany in 2011. Clinical examination, ultrasound studies and x-ray radiographs were performed after operation, after three and six months. Results: The follow-up shows sufficient outcome. All sternocostal pseudarthroses developed a stable conjunction from rib to sternum. The elevation of the recurrent funnel chest was significantly better in all patients. Pain in the anterior chest wall was significantly reduced after operation in the majority of cases. All patients instead of one had been mobilized the day after operation.

Abstract no.: 32595

PSEUDOANEURYSM OF THE SUPERIOR LATERAL GENICULATE ARTERY FOLLOWING TOTAL KNEE ARTHROPLASTY IN A STIFF KNEE

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Vascular complications after Total Knee Arthroplasty (TKA) are uncommon, ranging from 0.03% to 0.2%. These complications include arterial thrombosis, arterial transaction, arteriovenous fistula, true aneurysms and pseudoaneurysms. There have been two case reports of pseudoaneurysms arising from the superior lateral genicular artery, three from inferior medial geniculate artery and one from inferior lateral geniculate artery. We present a case of superior lateral geniculate artery pseudoaneurysm in a patient of stiff knee who underwent secondary to long standing osteoarthritis. Patient developed right knee swelling and increased pain on fifth postoperative day. His neurovascular examination was stable with palpable posterior tibial and dorsalis pedis pulses as well as good capillary refill. We believe that no such case of development of pseudoaneurysm post TKA in stiff knee has been reported in the literature. An urgent ultrasound was performed which revealed pseudoaneurysm arising from a vessel on lateral aspect of knee joint. A subsequent angiogram revealed pseudoaneurysm originating from superior lateral geniculate artery. Using a micro catheter, a super selective catheterization of the lateral genicular artery was performed and the artery was embolized by means of 3mm coils. Total knee arthroplasty in patients with arthritis and stiffness is technically challenging, particularly in surgical exposure. Wide exposure and extensive release of fibrous tissue required in a stiff knee may lead to such complications. A high index of suspicion is necessary for early diagnosis and management.

Abstract no.: 32598

MORPHOLOGICAL ANALYSIS OF PROXIMAL FEMUR OSTEOMETRY IN SRI LANKAN FRACTURE NECK OF FEMUR PATIENTS, WITH COMPARE TO THE EURO-ASIAN OSTEOMETRIC FIGURES.

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Introduction: Incidence of hip fracture varies considerably between different ethnic populations. Highest rates are observed in Caucasians in the Europe; intermediate rates in Southern European and Asian countries; and lowest rates in Africa. Objective: To identify the radiographic osteometric features of proximal femur, in patients who had a fracture on the other side femur neck. And compare the Sri Lankan osteometric figures with Asian, Middle East, African and European populations. Methodology: A prospective morphometric measurements of the proximal femur anatomy on conventional anteroposterior radiograms of pelvis. Developmental abnormalities, other bony abnormalities and pathological fractures are excluded. Anteroposterior radiographs were performed with a standard protocol; measurements were done by the same investigator. Results: 210 individual s were assessed. There were 82.9% females and 17.1 %males. Male and female patients were analyzed separately. Average age distribution was 72.65yrs(SD13.135) .65.7% had extrcapsular fractures, 34.3% had intracapsular fractures in the affected hip. Hip axis length, collodiaphyseal angle, femoral neck diameter, femoral neck length, circumference of the median point of femur neck, maximum circumference of the femoral head ,Angle of Wiberg were assed. Conclusions: This is the pioneer study on osteometric features of femur neck in a Sri Lankan population. Collodiaphyseal angle, length of femur neck, hip axis length and femur neck diameter are smaller, when compare to the Caucasian population. No statistically significant differences in femoral osteometry among the South Asian populations. These differences should be address when designing hip implants and fracture fixation devices like PFN nails and DHS plates.

Abstract no.: 32600

ABSCESS IN SUPRASTERNAL NOTCH – AN UNUSUAL LOCATION FOR PRETRACHEAL LYMPH NODE TUBERCULOSIS.

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Tuberculosis is a major health concern in the developing world and is making a resurgence in the developed world with the increased incidence of AIDS. Tuberculosis usually starts as a primary focus in the lung. The primary lesion in the lung along with the lymph node is known as Ghon complex. Pretracheal lymph nodes are also commonly involved in the disease. We present a case of a 9 year old boy presenting with a midline suprasternal fluctuant swelling. The swelling spontaneously burst leaving a sinus followed by an ulcer in the suprasternal notch. MRI and CT scans revealed pre and para tracheal enlarged lymph nodes communicating with the sinus. Pus from the lesion was positive for PCR for M. tuberculosis and the patient was strongly Montoux positive. The ulcer healed on anti-tubercular therapy given for 6 months. Suprasternal notch. abscess is a rare presentation for pulmonary tuberculosis involving the pre and para tracheal lymph nodes and any midline swelling in the neck should raise the suspicion of tuberculosis.

Abstract no.: 32605

VALGUS OSTEOTOMY IN THE MANAGEMENT OF ACUTE DISPLACED VALGUS OSTEOTOMY IN DISPLACED ACUTE INTRACAPSULAR FRACTURE NECK OF FEMUR IN YOUNG ADULTS – OUR EXPERIENCE

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Introduction: Management of intracapsular fracture neck of femur in young adults is a challenging problem because of nonunion and avascular necrosis. Even though valgus osteotomy is recommended for nonunion of fracture neck of femur, it can be also used in treatment of acute displaced intracapsular fracture neck of femur in young adults. Aim: To provide practical guidelines to achieve good results and to share our experience. Material: This is a prospective study done in our hospital from September 2004 to December 2011. We have treated 30 young patients between 30-50 years with fracture neck of femur using valgus osteotomy. Our indications were Pauwel's Type II and Type III cases, presence of posterior comminution, and late presentation (more than 12 hours). Our preoperative planning, surgical technique and postoperative protocol were discussed. Results: 4 cases lost to our follow-up. Among the 26 cases, one developed avascular necrosis two years after the surgery. Rest of our patients had excellent result based on Harris Hip Score. Discussion: Good preoperative planning, exact assessment of magnification in the preoperative reduction x-ray is essential. We recommend under correction by 5°. Do not take laterally based wedge more than 15 mm as it can alter proximal femoral anatomy complicating future arthroplasty. Always reassess Pauwel's angle intraoperatively. Always use fracture table to have proper lateral view. Conclusion: Valgus osteotomy is a technically challenging surgery. Beware of intraoperative surprises. Our surgical technique has been encouraging in dealing with this unsolved problem.

Abstract no.: 32606

COMPARATIVE STUDY OF PERITROCHANTERIC FRACTURES TREATED WITH PROXIMAL FEMORAL NAIL INTRAMEDULLARY FIXATION DEVICE VERSES DYNAMIC COMPRESSION SCREW WITH EXTRAMEDULLARY DEVICE

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METHODS: A prospective study from June 2009 to Aug 2011, including 50 patients with peritrochanteric fractures. In group I 25 patients were treated with long proximal femoral nail intramedullary fixation and Group II 25 patients treated with dynamic hip screw with extramedullary device for peritrochanteric fractures. Clinical assessments regarding pain and function, radiological assessment were undertaken at the final follow-up. **RESULTS:** Fracture healing was observed at an average of 6 weeks in Group I and 7 weeks with Group II. Excellent and good results were obtained in Group I with 88%, fair in 12 % .We had no case with poor results. In Group II, 80% showed excellent and good, 16% with fair and 4% with poor results. **CONCLUSION:** From this sample study, we consider that PFN is an excellent implant for the treatment of peritrochanteric fractures. The terms of successful outcome include a good understanding of fracture biomechanics, proper patient selection, good preoperative planning, accurate instrumentation, good image intensifier.

Abstract no.: 32608

PRETRAUMATIC SUB CLINICAL CHRONIC RENAL FAILURE IN FRACTURE NECK OF FEMUR SRI LANKAN PATIENTS – AND COMPARISON WITH REGIONAL DATA

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Introduction: Majority of fracture neck of femur (NOF) patients are suffering from comorbid factors. Impaired renal function is a common comorbid factor and it is attributed to an acute renal impairment following the fracture and surgery. Objective: To identify the effect of renal comorbid factors and their probable relative risk for a fracture and compare the results with regional data. Specific objective is to identify a possibility of presence of subclinical chronic renal failure among fractured Sri Lankans. Methodology: Data were collected from fractured patients (N=200) and non-fracture sample through a survey and direct observations. Variables studied are, Bone mineral density (BMD), Body Mass Index (BMI), corrected serum calcium, serum phosphate, blood hemoglobin level, blood urea and serum creatinine. Data were analyzed using binary logistic and multiple regressions, principal component statistical technique using STATA software. Results: The logistic regression of renal co morbid factors with fracture showed that relative risk of occurrence of higher blood urea is 3.35 times higher(p value 0.012), relative risks of occurrence of high serum creatinine is 3.17(P value-0.027) , risk of low hemoglobin is 2.58(p value 0.005) times higher. Results were compared with regional data. Conclusions: Low bone mineral density and hypocalcaemia are well known associated factors. Elevated blood urea, serum creatinine and low hemoglobin are associated with NOF patients. Comparative regional data shows higher figures in Sri Lanka. Further studies are required to assess the association of sub clinical chronic renal insufficiency in Sri Lankan fracture neck of femur patients.

Abstract no.: 32617

GLENOID FOSSA FRACTURES: RESULTS OF OPERATIVE AND NON-OPERATIVE TREATMENT

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Introduction: Glenoid fossa fractures are rare injuries having a prevalence of 0.1%. These fractures may be managed operatively if substantially displaced. However, several fractures of glenoid fossa are managed non-operatively, even if displaced, due to high incidence of associated injuries which may render patient unfit to undergo major orthopaedic surgery. There is a relative paucity of articles reporting on outcome of treatment of glenoid fossa fractures. We present our experience of treating these injuries with operative and non-operative methods. Materials and Methods: 21 patients of glenoid fossa fractures were included in this series with 14 males and 7 females. Patients with displacement of >5 mm who were fit to undergo surgery within 3 weeks of injury were operated using a posterior Judet's approach. Overall 8 patients with displaced fractures were operated (Group A) while 9 patients with displaced fractures (Group B) and 4 patients with undisplaced fractures (Group C) were managed non-operatively. Results: The mean age and follow up period in this series was 29 years and 7.3 years respectively. In group A, average constant score was 87.25. The least constant score was observed for group B (58.55) while group C had an average constant score of 86. Brachial plexus injury and fracture-dislocations had poorer outcome. Conclusion: Operative treatment for displaced glenoid fractures is a viable option at centres equipped to handle critically ill patients and subset of patients with fracture-dislocation as opposed to fracture alone should always be treated operatively due to persistent loss of function.

Abstract no.: 32618

THR IN FAILED AUSTIN MOORE HEMIARTHROPLASTY

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Austin Moore Hemiarthroplasty is still widely used on account of its easy availability, low cost and simple surgical technique. However, failure rates are high and occur early due to poor design characteristics and metallurgy. We present twenty three cases of failed AM Hemiarthroplasty. The average duration from implantation to failure was 4.5 years. The causes included protrusio acetabuli, stem subsistence, femoral cortical breach, implant breakage and infection. Patients presented pain, shortening and limp. They were treated with one stage THR in 16 cases and two stage THR in 7 infected cases. Cemented implants were used in 18 and non cemented in 5 cases. The intra operative challenges faced included dislocating the head in presence of extreme protrusio, reconstructing the acetabular floor defect, managing osteoporotic bone and femoral cortical defects and restoration of leg length and offset. Results were gratifying with abolition of pain, restoration of limb length equality, normalization of gait and significant improvement of hip scores.

Abstract no.: 32621

OUTCOME OF MANAGEMENT OF PERITROCHANTERIC FRACTURES WITH MINIMALLY INVASIVE TROCHANTERIC ENTRY NAIL

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Introduction: Peritrochanteric hip fractures have become more common as the elderly population continues to increase, and surgical stabilization of these fractures remains a persistent challenge. Aim of the Study: To assess the functional and radiological assessment of management of peritrochanteric fractures with a minimally invasive trochanteric entry nail. Materials & Methods : It is a prospective randomized study done in Apollo Hospital, Hyderabad on 150 patients who have sustained Peritrochanteric fractures of the femur from Jan 2009-Jan 2011. All the patients were followed up for a minimum period of 6-18 months. Assessment of these patients was done based on Harris Hip score. We have used AO Classification of trochanteric fractures. Observation & Analysis : Average full weight bearing time was 2.3 months and average radiological union time was 4 months. We have found that 2% of our patients had superficial & 2% had deep infection. Screw cut out was seen in 4% of our cases. We have found excellent results in 79% of our patients. 70% of our patients had no pain. 78% of our patients had no limp. Average blood loss during surgery was 50ml. Conclusion : We have found that minimal blood loss, less soft tissue damage, smaller incision, early mobilization, less post operative pain and shorter hospital stay can be achieved by this procedure. This definitely has advantages over open reduction & DHS fixation. The use of long nail has eliminated the risk of fractures at the tip of implant seen in shorter nails.

Abstract no.: 32624

ASSESSMENT OF LUMBAR CANAL DIMENSIONS BY PLAIN RADIOGRAPH, CT SCAN AND MRI IN SYMPTOMATIC PATIENTS OF LUMBAR CANAL STENOSIS WITH REFERENCE TO AGE MATCHED ASYMPTOMATIC POPULATION”

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Introduction:Lumbar spinal stenosis or Lumbar canal stenosis is a medical condition in which the spinal canal narrows & compresses the spinal cord & nerves at the level of lumbar vertebra. It is increasingly a common disease in elderly. These condition may coexist or occur independently in any given patient. Central spinal stenosis is most common at the L2-L3, L3-L4, L4-L5 & patients present with symptoms of radiculopathy or myelopathy often with bilateral extremity claudication on exertion. The most common canal stenotic conditions are acquired. These acquired conditions occur along with developmental conditions, such as narrowed or abnormally shaped spinal canal. The most common shape of canal is round & ovoid; perhaps 15% of humans have a trefoil canal. Canals of this shape are most vulnerable to the degenerative changes that decrease the space occupied by the neurological structures.Aim:To find out radiological dimensons of lumbar spinal canal and to find out critical dimensions at which symptoms appear.Methods:20 patients were interviewed & examined using a defined protocol. All study subjects underwent plain radiograph, CT & MRI and lumbar canal dimensions in form of diameters and cross-sectional area determined, recorded & compared. Measurements ware done at all lumbar vertebra levels(L1-L5). results depended upon statistical data analysis.

Abstract no.: 32628

POTT'S SPINE PRESENTING AS BILATERAL PSOAS ABSCESS – A SERIES OF 3 CASES

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Background: Described by Percival Pott in 1779, tuberculosis of the spine is a common entity encountered by orthopaedic surgeons in tropical countries. Although psoas abscess due to spinal tuberculosis had been described, bilateral psoas abscess with varied presentation is rare and it is considered worthwhile to present our experience with three cases treated in our hospital. **Case reports:** We have discussed three patients (2 female and 1 male; Age-14, 21 and 24 years respectively) who presented to surgical out-patient department with features suggestive of acute abdomen. On thorough evaluation, they had bilateral psoas abscess and on detailed investigations, tuberculosis was found to be the aetiological factor. They were treated conservatively with good follow-up results. **Discussion:** Association of tuberculosis with bilateral psoas abscess presenting as an acute abdomen is not commonly recognized. Psoas abscess may be clinically difficult to diagnose because of its rarity, insidious onset of the disease and non specific clinical presentation which can cause diagnostic delays resulting in high morbidity. Early diagnosis and appropriate management remains a challenge for clinicians. All the three patients presented here presented like acute abdomen. But on detailed investigation and appropriate management the patients recovered. The diagnosis of spinal tuberculosis should be considered in patients with vertebral osteomyelitis, psoas abscess and appropriate risk factors such as history of previous exposure in both developed and developing countries as it is re-emerging to be an important etiological factor in spinal pathologies facilitated by varied factors causing immune compromise.

Abstract no.: 32632

COMPARATIVE STUDY OF MIDSHAFT CLAVICULAR FRACTURES TREATED WITH LOCKING COMPRESSION PLATE VS DYNAMIC COMPRESSION PLATE

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METHODOLOGY: A prospective study was done from May 2007 to Jan 2012, including 60 patients with fractures of middle third clavicle. In Group I 30 patients were subjected to open reduction and internal fixation with 3.5 mm stainless steel DCP and nonlocking screws. In Group II, 30 patients were managed by 3.5mm LCP and locking head/nonlocking screws. Clinical assessments regarding pain and function, radiological assessment were undertaken at the final follow-up. **RESULTS:** The mean time to definite radiological bony union in the Group I was 10 weeks and in the Group II was 12 weeks. Results of functional outcome were based on status of fractures union and range of movement. Excellent & satisfactory results were observed in 88% cases in Gp I and 92% cases in Gp II. **CONCLUSION:** Both were equally effective in treating middle one third fractures of clavicle. Locking plate offers the flexibility of being used as compression plate, as a bridging fixator, or as a system combining both techniques.

Abstract no.: 32633

VEIN THROMBOSIS IN PATIENTS UNDERGOING ARTHROPLASTY

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Introduction: patients undergoing joint arthroplasty are at high risk (40 à 85%) of developing venous thromboembolism. the purpose of this study was to define the incidence of distal vein thrombosis during administration of low molecular weight heparins (enoxaparin). Materials and methods: we studied consecutive 87 patients who underwent joint arthroplasty surgery. patients received, after randomization, once-daily subcutaneous injections of 4000 ui of lovenox® (enoxaparin, sanofi-aventis) or enoxa® (enoxaparin, medis) for 30 to 45 days after surgery. distal vein thrombosis was diagnosed by ultrasonography, and it was scheduled on the seventh day, and day 35 after surgery (this study is registered at www.clinicaltrials.gov nct number: nct01354704). Results: the incidence of distal vein thrombosis (dvt) was 32% on day 7 and 0% at the 35th postoperative day. the incidence of dvt was 30,6% in the group of generic enoxaparin and 34,8% in the originator enoxaparin group with no statistical difference. thrombophlebitis was asymptomatic in all cases. no pulmonary embolism was deplored. the risk of bleeding and thrombocytopenia was null in this study. Discussion: the risk of distal vein thrombosis was significantly higher during the first postoperative week and in elderly patients (p<0.001). the evaluation of thrombotic risk specific to the surgical and prosthetic on a given patient is essential to define disease management strategy to ensure the best benefit (antithrombotic) / risk (bleeding). Conclusion: five weeks' extended prophylaxis with enoxaparin after arthroplasty reduced significantly distal deep vein thrombosis.

Abstract no.: 32635

DESMOPLASTIC FIBROMA OF HUMERAL DIAPHYSIS – A RARE PRESENTATION

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Introduction: Desmoplastic fibroma is a rare locally aggressive benign tumour. It is most frequently reported in mandible, metaphysis and metadiaphysis of long bones. This tumor has been observed infrequently in the diaphysis like the one presented here. Case report: An 18 years old female presented with progressive swelling left arm, for past one and a half years with dull aching pain for the past one year. She had a bony hard lobular well-defined swelling in the midshaft of humerus, which was not warm but tender. There was abnormal mobility present indicating a fracture. Plain radiograph of the affected arm showed an expansile, well-defined, intraosseous, radiolucent lesion with expansion involving the entire circumference of the humerus. There was marked thinning of the cortex with delicate and diffuse trabeculations giving a soap bubble appearance. There was cortical discontinuity indicating pathological fracture. An open biopsy was carried out and the report came out to be desmoplastic fibroma. She underwent wide segmental resection and simultaneous interlocking nailing and bone grafting. The limb was protected in a plaster of Paris splint for 6 weeks. After 6 weeks follow up the patient had visible callus and by 12 weeks there was significant union. There was no functional impairment at a follow up of 2 years. Discussion: Diaphysis is a rare location for the bony counterpart of fibromatoses and only two cases were reported previously. The rare location posts diagnostic challenge. Various possible differentials and treatment options are discussed.

Abstract no.: 32636

REVISION OF FAILED TOTAL ANKLE ARTHROPLASTY TO FUSION.

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Introduction We wish to report our results of the revision of failed TAR to fusion. Patients and methods Between July 2005 and February 2011 the senior author had performed 20 arthrodesis in 19 patients (13 male and 6 female) who had failed total ankle arthroplasty (TAR). Their mean age was 63.5 years. All of them had the AES total ankle replacement. (Biomet UK). The mean period from the original TAR to fusion was 51 months (6 to 72). The indication for revision of TAR to fusion was septic loosening in 4 patients and osteolysis and or aseptic loosening in 16 cases. Four type of fusion techniques were used . Results The mean follow-up was 15 months. 3 patients had tibiotalar arthrodeses with screws, 11 patients had fusion augmented with an Ilizarov frame, 2 patients had tibiocalcaneal fusion and 5 patients had tibiotalocalcaneal fusion with a hind foot nail. There was 2 non-union in the septic loosening group and 1 non-union in the aseptic group. The average time to fusion was 5 months and the frame was removed at an average of 17 weeks. The average shortening as a result of the fusion for the failed TAR was 1.5cms. **Conclusion** Our results were comparable to the previously published results. We recommend the use of tibiotalocalcaneal fusion with a hind foot nail in the presence of severe osteolysis or accompanying subtalar arthritis. In the presence of good bone stock an ankle fusion supplemented with a circular frame gives a good predicatble outcome.

Abstract no.: 32637

RESULTS OF TKR IN FIXED VALGUS DEFORMITY

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Correction of fixed valgus deformity is a significant challenge in total knee replacement surgery as it involves extensive soft tissue releases and bony procedures. Seventeen cases of fixed valgus knees, Krackow types 1 and 2, were treated with total knee replacement. Seven knees were exposed by lateral approach and ten by standard medial para-patellar approach. Tibial tubercle osteotomy was required in 3 cases. Lateral soft tissue pie crusting was in 10 cases. The Briard procedure was performed in 4 cases and the Keblish procedure in 2 cases. Bony augmentation of a hypoplastic lateral femoral condyle was done in 6 cases. All cases were done using computer navigation to achieve accurate axial alignment and soft tissue balance. Cemented PFC Sigma implants PS design were used in 11 cases and TC3 implants in 6 cases. The average follow up period was 3 years. Results were excellent in 15 cases and fair in 2 cases. The average knee society scores improved from 37 pre operatively to 121 post operatively.

Abstract no.: 32647

"GIANT"GIANT CELL TUMOR OF LOWER END RADIUS-MULTISTEP SINGLE STAGE SUCCESSFULL SALVAGE

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ESI-PGIMER, Basaidarapur, DELHI (INDIA)

introduction:Giant cell tumor is a locally invasive tumor in young adults.The lower end of the radius is the common site second to knee,it is a well known fact that india and other developing countries have much more higher incidence of giant cell tumor(15%-18%) as compared to other countries.An intracompartmental giant cell tumor can be adequately treated by currettage and bone grafting/bone cementing,while extracompartmental lesion requires excision and suitable reconstruction,however if extracompartmental tumor has spread extensively particularly after recurrence,ampuation is the option left.unfortunately in country like india because of plethora of reasons,patient do report with huge giant cell tumor warranting amputation.one such case report of a yong men with recent giant cell tumor lower end radius in which we avoided amputation by a multistep single stage surgery.Aim:to avoid ampuation and to salvage limb.Method:centralisation of ulna and Plating done with abdominal flap and bone graft.Results:excellent result with complete union and limb salvage was successfully achieved.

Abstract no.: 32649

TOTAL ANKLE REPLACEMENT IN POSTTRAUMATIC OSTEOARTHRITIS

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The majority of surgeons still prefer to fuse ankle joint at the final stage of posttraumatic osteoarthritis, though it is proved that ankylosis leads to the development of pathology of the adjacent joints and functional disability. We operated 18 patients 2-4 stage of posttraumatic osteoarthritis according to Kellgren-Moor scale during the period between 2009 and 2011. The mean age of the patients was 46,8, mean weight was 81 kg. Three-component cementless systems were used. The results were observed in all patients from 4 months to 2.5 years. They were estimated following the international AO FAS scale. The rate before surgery varied from 4 to 60 (average 22.9). Postoperative rate was from 13 to 100 (average 61.7) for except of one case when poor result appeared due to incorrect setting of the prosthesis that finally demanded its removing and fusing of ankle joint. The increasing of postoperative rate was mostly due to the relieving of pain syndrome, excepting one case of the development of definitely observed paraarticular heterotopical ossification. ROM in the ankle wasn't changed significantly in comparison with that before the operation, but it remained not less than 10°-15° of dorsal and 20° of plantar flexion that was satisfying for every-day activity. Subjectively 16 of 18 patients were satisfied with the results of surgery because of the pain syndrome was eliminated or greatly reduced, walking for usual distances became possible and physical activity increased. Thus, when performed properly TAR is the method of choice for final stage of posttraumatic

Abstract no.: 32652

DISTAL FEMORAL FRACTURES MANAGED WITH DISTAL FEMORAL LOCKING PLATES

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Fractures of the distal femur are frequently seen in practice. many methods are described in literature for its management like 95 degree blade plate, Dynamic compression screw, Distal femoral nail etc. We report our experience using recently introduced distal femoral locking plates, from a developing country. we treated 80 patients using these plates. A fracture table and image intensifier was used, to reduce the fracture. Lateral incision and minimally invasive technique was used. Follow up ranges from 2 to 4 years. Majority of patients had good results with minimum blood loss. we conclude that it is an excellent method for treating these fractures

Abstract no.: 32654

POSTERIOR BICONDYLAR TIBIAL PLATEAU FRACTURES

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Background: Bicondylar fractures involving the posterior tibial plateau are high energy injuries. These fractures cannot be exposed and reduced by the conventional anterior approaches. We present case series of patients with posterior bicondylar fractures treated by direct fracture exposure and fixation through a simultaneous posteromedial and posterolateral approach. Materials and methods: This is a prospective study of six patients with posterior bicondylar fractures evaluated by CT and MRI scans. Open reduction and internal fixation by posteromedial followed by a posterolateral approach and dual plating performed. The patients were evaluated clinically and radiographically for outcomes at a minimum follow-up of one year. Results: Five males and one female patient with an average follow-up of 15 months showed a consistent fracture pattern with a primary, inferiorly displaced posteromedial shear fracture with variable amounts of lateral condylar impaction. Primary bone grafting was performed for lateral impaction in all cases. All fractures healed after the index surgery by 4 months. Average range of motion was 110 degrees. Average flexion contracture was 2 degrees (Range 0 - 5). Five patients had a satisfactory articular reduction, all had satisfactory coronal plane and sagittal plane alignment, 4 patients demonstrated satisfactory tibial plateau width (0 to 5 mm). All patients returned to their pre-injury employment. Conclusion: Posterior bicondylar fractures can be successfully managed using a simultaneous dual posteromedial and posterolateral approach with direct reduction and buttress fixation of articular fragments. Flexion contractures can be a problem, and patients should be encouraged to regain/maintain knee extension.

Abstract no.: 32657

RESULTS OF ONE STOP CLINIC IN ORTHOPAEDICS

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Since January 2009 we have been offering a novel approach to consultation, diagnosis and treatment- in terms of surgical intervention, if required- on the same day to the patients for common surgical procedures that is amenable under local anaesthesia. Patient referrals from GP are screened and those patients deemed suitable for day surgery under local anaesthesia are offered an appointment and treatment on the same day. Various surgical interventions offered on the day of consultation include, carpal tunnel decompression, ganglion excision, needle fasciotomy for Dupuytren contracture, trigger finger release and ingrowing toe nail treatment. Total 348 patients have been seen on the day surgery unit since January 2009 and 251 patients underwent surgical intervention under L/A on the same day. 97 patients did not have the treatment on the same day for various reasons. Out of 97 patients, 39 did not require the surgical intervention, 18 patients did not attend the appointment, 33 patients deemed unsuitable for local anaesthesia or required further investigations. 7 patients did not want the surgical intervention on the day. Summary: The concept of one stop clinic works very well for common orthopaedic problems amenable under local anaesthesia. It reduced the number of hospital visits for the patients and reduces the cost of the treatment for the hospital and at the same time it helps in reducing the waiting lists

Abstract no.: 32662

Q-ANGLE AND EXTERNAL TIBIAL TORSION IN OSGOOD-SCHLATTER DISEASE

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We studied the relationship of Osgood-Schlatter disease with Q-angle and external tibial torsion in 31 patients and 35 controls in the age group 11-20 years selected from a tertiary care center. We measured Q-angle and tibial torsion in all subjects by clinical methods with help of a goniometer. We found a male preponderance of the disease. We found bilateral symptomatic disease in 32.26 percent of the patients. Mean Q-angle was 17.380 ± 3.070 in symptomatic knees, 13.140 ± 3.670 in asymptomatic knee and 13.760 ± 2.890 in the control group. Mean external tibial torsion was 14.240 ± 5.310 in symptomatic limb, 9.140 ± 5.300 in asymptomatic limb, 14.900 ± 3.560 in bilateral cases and 11.890 ± 1.550 in control subjects. The Q-angle and tibial torsion values showed statistically significant differences between patient and control groups and in symptomatic and asymptomatic sides with p value <0.001 . In bilateral cases, the values of Q-angle and tibial torsion amongst the two affected sides were not statistically significant (p value 0.935 and 0.290 respectively). We conclude that these increased torsion parameters viz. Q-angle and external tibial torsion may be the responsible for initiation and progression of Osgood-Schlatter disease.

Abstract no.: 32663

MANAGEMENT OF CLUBFOOT BY PONSETI TECHNIQUE – OUR EXPERIENCE

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Abstract: We report our experience of using the Ponseti method for the treatment of congenital idiopathic club foot. From August 2007 to July 2010 we treated 107 feet in 79 patients by this method with the mean follow-up time of 15 months (6 to 24). The standard protocol described by Ponseti was used except that, when necessary, percutaneous tenotomy of tendo Achillis were performed under general anaesthesia in the operation theatre and change of plaster fortnightly. The Pirani score was used for assessment. The results were assessed in terms of the number of casts applied, the need for tenotomy of tendo Achillis and recurrence of the deformity. Tenotomy was required in 87 of the 107 feet. Ten feet failed to respond to the initial treatment regimen and required extensive soft-tissue release. Of the 97 feet which responded to initial casting, 35 (32.71%) had a recurrence, 19 of which were successfully treated by repeat casting and/or tenotomy and casting. The remaining 16 required extensive soft-tissue release and External Fixator application. Poor compliance with the foot-abduction orthoses (Denis Browne splint) was thought to be the main cause of failure in these patients. **Key Words:** Clubfoot, Ponseti technique, Pirani scoring, Percutaneous tenotomy

Abstract no.: 32664

A RANDOMIZED COMPARATIVE STUDY ON FUNCTIONAL OUTCOME OF PERTROCHANTERIC FEMORAL FRACTURES TREATED WITH A DYNAMIC HIP SCREW OR A PROXIMAL FEMORAL NAIL

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Proximal femoral fractures are one of the commonest fracture in geriatric population and their incidence is predicted to grow rapidly with increase in ageing population. The ratio of female to male ranges from 2:1 to 8:1. Vast majority of these fractures almost invariably occur as a result of fall. Patients with a pertrochanteric hip fracture present with an external rotation deformity with shortened extremity. Older patients withstand badly with their immobilization on bed, they are threatened with pneumonia, catheter sepsis, cardio respiratory failure, decubitus ulcers. So the timing of surgical intervention is critical. The operative goal of the treatment is either short term or long term benefits which include Stable construct enough to withstand early mobilization, mobilization in early post operative period, Minimise complications associated with long term recumbency, decrease hospital stay and restoration of function. Aim: To compare the functional outcome of pertrochanteric fractures of femur treated with Dynamic hip screw or a Proximal femoral nail. Methods: The study was done in ESIPGIMER, New Delhi. Results: 40 pt study, 20 for DHS and 20 For PFN was taken up. Two patients in PFN group required revision surgery while all cases unite in DHS group. In general postoperative complication rate in PFN group was more than DHS. The most common complication was screw cutout and varus deformity in PFN group. keywords: PFN, DHS.

Abstract no.: 32665

IMPLANT FAILURE IN DISTAL RADIUS LOW PROFILE PLATE – A REPORT OF BIOMECHANICAL ANALYSIS

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We report a case of fracture of a low profile Ellis T plate implant, which is rare. Case Report: 60 year old male patient sustained an extra-articular distal end radius fracture with dorsal comminution and distal ulnar fracture. The fractures were fixed adequately with Ellis-T plate and a K-wire. After 3 weeks of surgery, when graded wrist ROM exercises were started, the patient complained of pain on second day of starting exercises. On radiological examination, the implant had broken at the stem of the plate overlying the fracture site. The patient underwent a revision surgery of implant removal and refixation with precontoured distal radius locked plate and a locked plate and K-wire for distal ulna. After 2 years of follow up, functional results have been excellent. Discussion: Analysis of the implant showed that the fracture occurred at one of the midline holes, the weakest portion of the implant. A small tensile crack would have probably occurred when the implant was contoured. The crack then grew ductilely via a combination of fatigue and stress corrosion across the width, as evidenced by its rough intergranular fracture surface. The implant finally failed brittlely by transgranular fracture. A search of the literature did not reveal any previous studies which had investigated the mechanical consequences of contouring bone plates. Biomechanical results have demonstrated that locking volar plates provided significantly greater resistance to fracture gap motion compared with standard volar plates.

Abstract no.: 32668

CERAMIC ON CERAMIC HIP REPLACEMENT: THE 'HARD ON HARD' SOLUTION?

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Introduction: Total hip arthroplasty is one of the most successful orthopaedic operations performed to date. Following recent media attention and published research in the literature, there has been an increase in awareness about the use of 'hard on hard' joint replacements, especially surrounding the use of metal on metal bearings. This has led to increased anxiety levels amongst patients who may have had such prosthesis or are awaiting a prosthetic joint replacement operation. Hard on hard bearing surfaces has gained in popularity amongst younger patients due to the proposed increased longevity. Methods: The purpose of this review is to discuss an alternative bearing that is increasingly being used to tackle the problem of wear of arthroplasty in younger patients. Results: Ceramic on ceramic bearing surfaces are gaining in popularity and seem to have a safer profile than other hard surfaces. They have a very low wear rate, low coefficient of friction and are less biologically active. This causes less osteolysis. The catastrophic fracture rates associated with the first generation ceramics has been addressed and has become a rarity. Conclusion: The challenge of hip arthroplasty surgery is to find a durable prosthesis that will last as long as possible and allow the patient to return to an acceptable level of activity. Medium to long term results of series using these types of bearings are encouraging and not associated with the well known adverse effects of metal on metal bearings.

Abstract no.: 32671

ACCURATE ALIGNMENT AND FUNCTIONAL OUTCOME IN TOTAL KNEE REPLACEMENT USING PASSIVE ROBOTICS. PRELIMINARY RESULTS.

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INTRODUCTION: It has been advocated that the use of passive robotics in total knee replacement results in more accurate limb and prosthesis alignment and assists in ligament balancing. This study focuses on our preliminary results in examining alignment and functional outcomes using this method. **METHODS:** 25 patients (14w/11m) underwent primary TKR using passive robotics. The mean age was 73 y.o. and the mean BMI was 32. All procedures were performed by the same surgeon, the mean hospitalization period was 5 days. Pre-op and post-op evaluation was performed using the International Knee Society score and the Patient Functional Outcome score. Also pre-op and post-op long-leg films were obtained. **RESULTS:** We assessed the patients at 6 weeks, 3 and 6 months post-op. They all achieved significant improvement in both IKSS and PFOS. The mechanical axis was within 3 degrees of neutral in 97% of the patients. The femoral rotational alignment was performed using the transepicondylar axis as reference and the outcome was excellent. The mean post-op Hb was 100 g/L and there were no major complications after surgery. The instrumentation is compatible to MIS, the method is quicker than the conventional and the rehabilitation was achieved easier. **CONCLUSION:** Our preliminary results in using passive robotics in TKA seem to be more than encouraging. There are significant advantages in this method. For sure there is still need for long term follow-up and greater number of patients, in order to prove the efficacy of the method.

Abstract no.: 32672

CONGENITAL KNEE DISLOCATION – A SERIES OF 18 KNEES

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15 cases of CKD of grade II and III were seen in our outpatient department in last 5 years. 3 patients were having bilateral dislocation. Age composition was 3 months to 12 years with sex ratio 7:5. Group I - <1 year of age – 5 knee of 4 patients. Group II – 1 to 8 years of age – 12 knees in 10 patients. Group III - >8 years of age – 1 knee. In group I - conservative management was done with serial castings in all except one patient with grade III CKD in which surgical reduction was done. In group II – open reduction and quadriceps plasty was done in all cases. In group III – patient was operated in two stages, arthrodiastasis in first stage followed by open reduction, quadriceps plasty and fixation with k-wires in second stage. Results – Group I - all patients with grade II CKD were successfully managed by serial castings. Grade III CKD (1 knee) in group I, needed open reduction and quadriceps plasty. All patients in this group were having stable knee with normal range of motion at latest follow up. Group II – elongated hypoplastic or atrophic ACL was found in all patients in this group. All patients except one, having stable knee with 90 degree flexion at knee at end of 3 months. Group III – we were able to get stable reduced knee at 3 months after first surgery but knee flexion achieved was only 10 degrees.

Abstract no.: 32677

**EARLY ARTHRITIS OF THE 1ST MTPJ WITHOUT AVN OF THE MT HEAD,
AS A COMPLICATION FOLLOWING LENGTHENING SCARF
OSTEOTOMY FOR TRANSFER METATARSALGIA- A CASE REPORT**

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Introduction: Scarf osteotomy is a versatile osteotomy and it can also be used to lengthen the 1st ray as a revision procedure to treat transfer metatarsalgia. We describe a case of lengthening the 1st metatarsal by SCARF osteotomy complicated by early osteoarthritis. Case report: A 49 year old female patient presented with pain and tenderness over the heads of the 2nd and 3rd metatarsals of the right foot in June 2005. She had undergone a hallux valgus correction one year previously at a different institution using a distal osteotomy which resulted in significant shortening of the first metatarsal. Her symptoms did not respond to conservative treatment. A lengthening Scarf osteotomy of the 1st metatarsal together with a medial closing wedge osteotomy of the proximal phalanx was performed for the transfer metatarsalgia. Post operatively the alignment of the great toe and the transfer metatarsalgia were much improved. She returned to the clinic after 2 years complaining of increasing pain and stiffness around the 1st MTPJ. Radiographs of the foot showed evidence of severe osteoarthritis. Her symptoms failed to respond to conservative treatment and she underwent removal of the previous metalwork together with a fusion of the 1st MTPJ. At her last follow up she was able to walk for more than five miles without any recurrence of her transfer metatarsalgia. This case report highlights that AVN can occur following SCARF osteotomy and the patient need to be warned of this potential complication.

Abstract no.: 32680

**THE EFFECT OF AUTOLOGOUS MESENCHYMAL STEM CELLS ON THE
ARTICULAR CARTILAGE REGENERATION (EXPERIMENTAL
EXAMINATION)**

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For the studies of influence of application of cultures of autologous mesenchymal marrow stem cells with a different level of chondrogenic differentiation on the course of reparative chondrogenesis, a traumatic model of injured articular cartilage has been used. Mechanical application of a full-thickness defect on articular cartilage with a retained subcartilage bone plate leads to fibrous tissue formation in the defect area with pronounced dystrophy and necrosis events. Degenerative and dystrophic processes originate in joint, that are based on progressive dystrophy of an adjacent maternal articular cartilage. Intra-articular administration of a culture of autologous marrow MSC after mechanical application of a full-thickness defect on articular cartilage with a retained subcartilage bone plate leads to a hyaline-like tissue formation in defect area without general degenerative and dystrophic changes in a joint. During the analysis of the data obtained basing on alternative OS scale and ICRS ($M \pm m$), a truly better result has been shown when non-differentiated culture of autologous MSC (8.6 ± 0.24) have been applied on a model with mechanical traumatic injury of articular cartilage in comparison to a culture of autologous MSC with targeted chondrogenic differentiation (7.6 ± 0.24), ($p < 0,05$). By using a method of labeling of autologous marrow MSC by fluorescent probes RNK-26, it was discovered that exactly autologous marrow MSC take a direct participation in chondroreparation processes when exogenously administered into a joint cavity.

Abstract no.: 32684

PATTERNS AND SPECTRUM OF WORK-RELATED TRAUMATIC HAND INJURY AMONG HOSPITALISED WORKERS IN EMPLOYMENT STATE INSURANCE HOSPITAL IN INDIA.

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The hands that earn the livelihood, build futures and keep economical balance of a nation have to face a lot of physical threat to same hands in our industries. The aim of this study is to analyze the patterns of hand injuries sustained in industrial accidents in patients attending ESI Hospital in Delhi. A total of 78 Indoor admissions due to industrial trauma were studied from January 2010 till June 2010. The age, sex distribution, patterns of hand injuries, and compensations awarded were analyzed. It was seen that 93% injuries were seen in males and peak incidence being between ages of 20 to 30 years. Even though in 97% patients, right hand was the dominant hand, both hands were almost equally injured. Lacerations and amputations at various levels were very common. Among finger amputations, a combination of index and middle fingers was most common followed by combination of index, middle and ring fingers. The compensation awarded to the patients in accordance to guidelines issued by ESI Corporation and Ministry of Social justice and Empowerment was also studied. Majority of patients (58%) were granted compensation of up to 20% while 3% got compensation of 100%. Hand injuries are rarely life threatening, but cause severe psychological trauma and huge financial losses. Prevention of these injuries should be our long term goal. Key Words: Hand, Amputation, Disability

Abstract no.: 32685

COMPARISON OF THE MINIMALLY INVASIVE AND STANDARD MEDIAL PARAPATELLAR APPROACHES FOR PRIMARY TOTAL KNEE ARTHROPLASTY: A META-ANALYSIS

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Introduction: The minimally invasive surgical (MIS) approach has been popularised as an alternative to the standard medial para-patellar approach (MPP) in total knee arthroplasty (TKA). Advocates of this technique suggest earlier functional recovery due to less injury to the surrounding tissues. Potential disadvantages however, may include reduced overall exposure, component malalignment and damage to neurovascular structures. **Material and methods:** We conducted a systematic review and meta-analysis of randomised and quasi-randomised trials comparing the MIS and MPP approaches in primary TKA. Methodological features were rated independently by two reviewers. **Results:** We included 17 studies involving 733 patients with mean age of 69 (SD±2.8) in the MIS group and 692 patients with mean age of 68.6 (SD±3.1) in the MPP group. Using a MIS approach led to significant increase in flexion within the first week after a TKA (mean difference (MD) of 9.89 degrees (95% confidence interval (CI) 8.15 to 11.63, P<0.01). However, this effect was not sustainable at further follow ups of ≥ 3 months. MIS showed a significantly increased risk of developing intraoperative complications with a risk ratio (RR) of 7.59 (95% CI 3.54 to 16.29, P<0.01). **Discussion and conclusion:** MIS results in superior function in the immediate postoperative period after a primary TKA but is also associated with increased rates of intraoperative complications and therefore, a standard approach which allows adequate exposure and avoids tension to the wound edges would be more appropriate to prevent such complications.

Abstract no.: 32687

BROKEN DYNAMIC HIP SCREW GUIDE WIRE TRANSFIXING THE HIP JOINT - A TECHNIQUE TO REMOVE IT

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Breakage of DHS guide wire during surgery and its migration into the pelvis through the hip joint is a rare complication. It is a real challenge for the surgeon to remove it. It cannot be left in situ for a long period. Here we are presenting an easy method for removal of these broken guide wires in joint that can be reproduced by any competent orthopaedic surgeon. In this method modified ilio-femoral approach was used to expose wire tip and its removal was done after doing iliac crest osteotomy to reach in depth of the pelvis up to posterior part of quadrilateral plate.

Abstract no.: 32690

**FUNCTIONAL OUTCOME OF DOUBLE -TUNNEL CORACOCLAVICULAR
LIGAMENT RECONSTRUCTION USING AUTOGENOUS
SEMITENDINOSUS TENDON**

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Background: Numerous techniques for reconstruction of the coracoclavicular (CC) ligaments have been developed to treat acromioclavicular joint (ACJ) separations. We report the functional and radiological outcomes of double-tunnel CC ligament reconstruction using autogenous semitendinosus tendon. Methods Between June 2009 to January 2011, a total of 15 patients, with a Rockwood type IV, type V, or a chronic type III ACJ) dislocation underwent CC reconstructive surgery using a semitendinosus autograft. All patients were followed up clinically and radiographically. All patients were evaluated for range of motion, the American Shoulder and Elbow Surgeons Rating Scale (ASES) and the Acromioclavicular Joint Separation Questionnaire (AC). Preoperative and postoperative radiographs were compared. Results: The mean follow-up was 16 months (range, 11 – 28), and the mean patient age was 35 years. Range of motion measurements were normal in all motions except a loss of $5^{\circ} \pm 4^{\circ}$ ($P < .05$) in extension. Mean ASES Rating scores were 96 ± 5 out of 100; At the final follow-up, inspite of 4 patient having minimal loss of reduction ($< \text{or} = 5\text{mm}$) on AP view, 7 patients achieved an “excellent” result and 8 a “good” result according to the AC scoring scheme. Conclusion: Coracoclavicular ligament reconstructions using semitendinosus tendon graft gives satisfactory clinical results. Minimal loss of reduction seen in some cases may be due to tendon stretching out in the follow-up period and may be reduced with using a intraoperative tensioning of the tendon to remove the creep.

Abstract no.: 32692

LONGITUDINAL EVALUATION OF BONE MINERAL DENSITY BY DUAL ENERGY X-RAY ABSORPTIOMETRY IN SPINAL CORD INJURY PATIENTS

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INTRODUCTION: Osteoporosis is a frequent cited complications occurring after SCI. DEXA is currently gold standard for assessing skeletal mechanical competence. It provides measures of bone mineral content (BMC) and Bone mineral density (BMD) . This study was conducted to evaluate longitudinally the bone metabolism by dual energy X-ray absorptiometry in spinal cord injury patients. **METHODS:** The study was carried out on 106 patients with acute spinal cord injury with neurological deficit. At the time of presentation, patients were subjected to DEXA scan and was repeated at 3, 6 and 12 months. **RESULTS:** Decreasing trends of BMD were seen at infralesional sites with maximum decrease at proximal tibial epiphysis. At one year, there was 20.2 % decrease in hip, 28 % decrease in proximal tibial epiphysis, 10 % decrease in tibial diaphysis and 24 % decrease in distal tibial epiphysis. In tetraplegics BMD at distal radius was 25% less than initial values at one year. Average 17.2% linear decrease in bone mineral content(BMC) was seen in patients of SCI at one year in lower extremities. Arm BMC was 13.2% less than the initial values in tetraplegics at one year. **CONCLUSION:** This longitudinal study in acute spinal cord injury patients shows marked decrease in bone mineral density and bone mineral content. These adverse bone changes may negatively impact body metabolism which may increase the risk of fractures. It will be prudent to take measures like early mobilization, rehabilitation, and specific interventions to prevent bone loss early in the course of the spinal cord injury.

Abstract no.: 32697

GEOGEBRA: A RELIABLE AND FREE SOFTWARE FOR MEASURING ANTEVERSION ON DIGITALIZED PLAIN RADIOGRAPHS.

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Postoperative assessment of acetabular anteversion is vital but difficult task. Various methods have been devised with good results for measurement on radiographs. Use of softwares like EBRA on digital images has become popular recently, however these softwares are not available free of cost. We devised a method of using 3D geometry software Geogebra (available free of cost) for measuring anteversion on digitalized plain radiographs. Anteversion was estimated on 50 different radiographs by 3 different observers to calculate intra-observer and inter-observer variability. The Intraclass Correlation Coefficient (ICC) was 0.976 (95% CI of 0.942-0.987) for intra-observer reliability measurement and 0.947 (95% CI of 0.915-0.972) for inter-observer reliability measurement. We describe step-by-step method for measuring anteversion in GeoGebra software.

Abstract no.: 32702

DOES LOCK NAILING ALSO LOCKS THE HEALING PROCESS

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IT IS A STUDY OF 150 CASES OF DIFFERENT TYPE OF FRACTURE SHAFT FEMURS IN ADULTS .PATIENTS DEVIDED IN THREE GROUP , 50 EACH .ONE GROUP BY SIMPLE CLOSE NAILING .SECOND BY PLATING & BONE GRAFTING PRIMARY PROCEDURE IN COMMINUTTED # & 3RD GROUP BY BIPOLAR LOCKNAILING. IT WAS FOOND THAT IN IST GROUP TREATED BY SIMPLE NAILING WHETHER CLOSE OR OPEN UNION OCCURRED IN 98% IN 2 TO 3 MONTH WITH SATISFACTORY RANGE OF MOTION , IN 2ND GROUP TREATED BY PLATING HEALING OCCURRED IN 3 TO 4 MONTH TIME WITH SATISFACTORY FUNTION IN 97%. MAXIMUM NON UNION SEEN IN GROUP TREATED BY LOCK NAILING SPECIALLY IN TRANSVERSE FRACTURES .IF STRICT INSTRUCTION WERE GIVEN TO PATIENT DEPENDING ON THE CHOOSEN METHOD & SURGEON CAPABILITY ALL METHOS ARE REASONABLY GOOD . THE INCIDENCE OF NON UNION MORE IN BIPOLAR LOCKING & IT CAN SAFELY BE PRESUMED THAT BIPOLAR LOCKING ALSO LOCKS THE HEALING PRCESS .OF COURSE FOR A BONE LIKE FEMUR ONE NEEDS PRECAUTIONS AS PREVENTING WEIGHT BEARING ETC IF PLATED . ONE HAS TO PAY PRICE OF BIGGER SCAR. IN SIMLE TRANSVERSE FRACTUTES THERE IS NO NEED OF LOCKING IF WE FIT A SNUGLY FITTING NAIL HEALING IS A NATURAL PROCESS IT HAS TO OCCUR BY ANY MEANS OF RESONALE ALLIGNMENMT & FIXATION, IN ANIMALS AFTER FRACTURES UNION AFTER FRACTURE WILL NEVER OCCUR WHERE WHO IS APPLING A IMLANT FOR UNION.SO EVERY METHOD IS GOOD FOR HEALING OF FRACTURE IF FUNDAMENTALS ARE FOLLOWED PROPERLY .LET NATURE PLAY ITS PART

Abstract no.: 32703

LEIOMYOSARCOMA OF HUMERUS PRESENTING AS SECOND MALIGNANCY IN A PATIENT OF THYROID CARCINOMA WITH HISTORY OF RADIOIODINE ABLATION THERAPY

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The risk of development of post-irradiation sarcoma has been estimate to be about 0.03-0.8%. Second malignancies have been rarely reported following treatment of thyroid carcinoma with radioactive Iodine-131 ablation. Equally rare is leiomyosarcoma presenting as second neoplasm, with only limited case reports available in the literature. We present here a case of leiomyosarcoma presenting in a patient with history of papillary thyroid carcinoma. Case report: The patient presented with papillary thyroid carcinoma with metastasis to left proximal humerus, for which she underwent total thyroidectomy and multiple sessions of iodine-131 therapy, with remission. She however, again presented after about 5 years with a swelling in left humerus at the same place where the earlier metastasis was present. This time, it was unresponsive to iodine-131 and very aggressive in nature. Histopathological examination revealed a leiomyosarcoma and the patient underwent a left forequarter amputation. Afterwards, the patient developed pulmonary metastases and expired after 6 months. Conclusion: In a case of recurrent growth developing at a site of previous malignancy that was irradiated either externally or internally, the possibility of post-irradiation second malignancy should be kept in mind. There has been a previous report of leiomyosarcoma originating in uterus coexisting with thyroid papillary carcinoma in the literature, and a common pathway connecting thyroid gland neoplasms and sarcomas has been suggested.

Abstract no.: 32709

ULTRASOUND SCREENING FOR DEVELOPMENTAL DYSPLASIA OF THE HIP (DDH) USING THE PAVLIK HARNESS: A 5 YEAR REVIEW

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The authors report the results of a retrospective 5 year review of developmental dysplasia of the hip (DDH) treated in the Pavlik harness using ultrasound screening. The aim of our study was to determine the significance of routine ultrasound scanning of the hips and its role in monitoring the reduction of the hips whilst using the Pavlik harness. From 2006 to 2011, children were recruited into the study having been referred from the neonatal and community clinical screening programme. All these children underwent ultrasound scans of the hips. The scans were then ultrasonographically graded using the Graf classification system into four categories: Graf I-IV. All Graf II, III and IV hips were placed into a Pavlik harness. Those babies with Graf II hips who were younger than three months old were initially trialled in double nappies for 2 weeks. A total of 232 patients with 337 abnormal hips as identified on ultrasound scanning were treated in a Pavlik harness. Three hundred of these hips were successfully reduced using the harness based on serial ultrasound scans, thus giving a success rate of 89.0%. Thirty three hips required surgical intervention. One case of avascular necrosis (0.3%) was found in a child treated successfully in a Pavlik harness. The authors conclude that ultrasound screening of children in whom a Pavlik harness was used for DDH has led to a high reduction rate and a low surgical intervention rate.

Abstract no.: 32710

COMPUTER NAVIGATION IMPROVES COMPONENT POSITIONING AND MECHANICAL ALIGNMENT IN TKA IN THE HANDS OF A BEGINNER ARTHROPLASTY SURGEON

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The learning curve for navigated total knee arthroplasty {CAS} is acceptably low and we believed the same may not be applicable to the conventional hand guided technique {CON}. We compared the results of two techniques in a study cohort of 100 patients {50 – CAS, 50 – CON} done by two beginner surgeons in arthroplasty {no fellowship training and less than 3 months experience in either technique}. Both the surgeon and the assessor were blinded from the outcome of the trial. Post-operative mechanical axis calculation and other frontal and sagittal measurements were done using standing long leg radiographs. The mechanical alignment was significantly better in CAS group, 95% - within 3° of neutral compared to 80% in the CON group {P = 0.02}. The mean Oxford scores and ROM at 1 and 2 year follow up were similar (P > 0.05). None of the knees have been revised for any reason at last follow up. The learning curve with the computer-assisted technique is significantly low with respect to component positioning and axis correction. The implication of the study outcome on component survival and long-term function requires longer follow up and a better study design with a bigger cohort.

Abstract no.: 32713

ANTEGRADE INTERLOCKING NAILING FOR SUBTROCHANTERIC FEMUR FRACTURES

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Purpose: To evaluate the results of subtrochanteric femur fracture fixation following antegrade interlock nailing. Methods : The radiological outcome for 38 patients treated with antegrade nailing over the past 3 years were assessed. Out of the 38 patients, Seinsheimer Classification for Subtrochanteric Fractures, 22 were Type IIIA, 5 Type IIIB, 9 Type IV & 2 Type V. All fresh trauma cases were included in the study. Fracture table & supine position was used in all cases. Entry point for the nail was kept on the tip of the greater trochanter or slightly medial to it. All the fractures were nailed by closed technique, or mini open technique in 6 patients to obtain medial cortex alignment. Nailing was done only after medial cortex alignment was achieved and various instruments were used to obtain near anatomical reduction. Poller screws were used to narrow the canal in 3 cases. Post-operatively early mobilization exercises and weight bearing was delayed in unstable fractures. Results : The mean duration of follow up was 18.8 months. All the 38 fractures had healed at an average duration of 16.8 weeks. Complications were infrequent and included malunion in 3 cases. There were no cases of infection or non-union. Conclusion: Interlock nailing is a good option in the management of difficult subtrochanteric fractures. The closed procedure needs minimal incisions & allows early mobilization. Near anatomical reduction of the fracture is the crux and if this is followed, good results are easy to come by even in difficult situations.

Abstract no.: 32714

FEMORAL VARUS OSTEOTOMY FOR ADVANCED PERTHES DISEASE

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we are presenting our short term results after proximal femoral varus osteotomy in children with late onset perthes disease. there were 12 boys and 6 girls. all children were between 6 and 10 years at the onset of the disease. 3 were in stage II, 7 in stage III, and 8 were in stage IV at time of presentation according to catterall classification. 14 children had head at risk signs. all cases had limitation of abduction ,average 28.3 degrees and internal rotation, average 21.6 degrees. between 15-20 degrees proximal femoral varus osteotomy was performed to contain the femoral head and was fixed by 6-7 hole narrow dcp contoured to the shape of upper femur. no spica cast was used postoperatively. all ostotomies healed and plates were removed 2 years po. the average abduction improved to 37.2 degrees and average internal rotation improved to 38.3 degrees. at the time of latest follow up, stulburg classification showed that 3 hips were class I, 11 hips were class II, and 4 hips were class III. the mean shortening at time of healing was 1.5 cm. surgical containment, of subluxed femoral heads with advanced stage of perthes disease, is satisfactory.

Abstract no.: 32717

DIAGNOSTIC ULTRASOUND IN THE TREATMENT OF HAND TUMOURS

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Introduction: One of the basic methods for diagnosing pathological processes that occur in the hand is ultrasonography. Materials and Methods: The study carried out using the ultrasound system LOGIQ-3 PRO supplied with an ultrasound scanner of high quality class and multipower sensor 8L. Longitudinal and transverse scanning was performed before surgery, after wound healing and at long-term follow-ups. Tumours were detected, their size, structure and contours were estimated, and topical diagnosis was performed. The study was conducted in 118 patients with tumours of the hand. Results: In cases of tumour-like diseases of hand tendons, a discontinuity of their contours can be detected with appearing hyperechogenic defect zone. In a number of cases, lesions to nerve trunks and their shift due to a tumour can be clearly identified. If the joint is involved, the changes in width and uniformity of the joint space, lytic alterations of the articular surfaces are revealed. In cases of malignant tumours of hand bones (chondrosarcoma), thickening of the cortical layer round the tumour, usuration and collaps (fibrosarcoma and osteosarcoma) of the latter can be noted. In peripheral types, there is destruction focus, bone lysis and the exite into soft tissues. Diagnostic ultrasound enables observation of the reparation process in the postoperative rehabilitation period, in particular after suturing tendons and nerves, and osteoplasty (organ salvage surgeries).

Abstract no.: 32719

NON-OPERATIVE TREATMENT OF SCAPULAR FRACTURES

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Scapular fractures represent 1% of fractures occurring in the body making it a relatively rare injury. Traditional treatment for scapular fractures has been non-operative but recent reports on successful operative treatment have changed opinion of several orthopedists. We had undertaken a study on non-operative treatment of 57 scapular fractures during year 2002 which revealed excellent outcome at short-term follow-up. We are currently reviewing our results at 10 years follow-up and plan to present the same at the congress.

Abstract no.: 32721

IS RECONSTRUCTION OF THE MEDIAL WALL IS CRUCIAL FOR THE STABILITY OF THE HIP IN EVERY ACETABULAR FRACTURE?

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The relationship between the clinical outcome and the medial wall fracture pattern in acetabular fractures is not clearly addressed in the literature. One could not be in favour or against the selective fixation of the medial wall. Moreover, there is no consensus on the appropriate fixation method. In this work, a new classification for medial wall fractures was adopted to define those situations in which the selective fixation of this component is mandatory. The study was conducted at EL-hadrah Orthopaedic and Trauma University Hospital; Alexandria-Egypt between July 2007 and July 2011. During 28 cases of acetabular fractures showed independent fracture line of the medial wall. Based on Letournel classification, categorization of their medial wall fractures was suggested depending on the presence of medial subluxation and the condition of the supporting column. Based on this work the proposed protocol may be adapted to classify and treat fractured medial wall of the acetabulum.

Abstract no.: 32728

A RARE CASE OF ULNAR NERVE COMPRESSION BY ACCESSORY OSSICLE AT WRIST

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Repeated trauma, fracture of the hamate, arterial thrombosis or aneurysm and ganglions can rapidly compress the ulnar nerve in Guyon's canal. The aim of this study is to present a case of ulnar nerve entrapment in Guyon's canal caused by an accessory ossicle. A 20 years-old man felt a progressive loss of strength in his right, dominant hand last year. On clinical examination his hypothenar muscle showed atrophy and he had sensory deficits in the palmar surfaces of his hypothenar eminence, fourth and fifth digits. Radiological oblique view of the wrist joint showed an accessory ossicle. Electromyography showed abnormal spontaneous activities in the left first dorsal interossei and abductor digiti minimi muscles. Then, because the motor weakness had progressed rapidly and the lesion was peripheral, we performed wrist Ro. To reveal the relationships between the accessory ossicle and other structures, we performed wrist CT, which showed an accessory ossicle in Guyon's canal loosely connected to soft tissues lateral to the piso-hamate ligament overlying and compressing the ulnar nerv. An accessory ossicle at wrist can compress the ulnar nerve. So, clinicians should consider this rare case as a possible underlying cause of ulnar nerve compression in patients with ulnar nerv entrapment symptoms at wrist. Early decompression with removal of this accessory ossicle is very important to promote complete recovery. This case of ulnar nerve compression is extremely rare. However in such clinical setting, clinicians should consider an accessory ossicle at wrist as the possible underlying cause of compression.

Abstract no.: 32732

AN URGENT NEED FOR MULTIDISCIPLINARY, TRANSITIONAL AND ADULT CARE IN CEREBRAL PALSY: NATIONAL AND SINGLE INSTITUTION TRENDS

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Background: Currently, over 90% of patients with cerebral palsy (CP) reach adulthood, which leads to growing demands for healthcare. However, there is no literature relating demographic and healthcare trends. This study investigates the healthcare trends of CP patients to identify an optimal healthcare environment. Methods: The National Hospital Discharge Survey was used to extract data on hospitalized CP patients from 1970-2007. Values were normalized, grouped into 14 specialties, expressed as percentages and divided into three age ranges—pediatric (0-19 years), transitional (20-29 years), and adult (>30 years). Data were obtained on all visits to NewYork-Presbyterian Hospital (NYPH) from 2003-2007. Results: The number of specialties involved in CP healthcare increased from 1970-2007 for transitional and adult ranges (from 4 and 6 specialties to 12 and 14, respectively) and became more evenly distributed. Orthopaedics was 66.4% of procedures in 1970 but 14.2% by 2007 across all age ranges while cardiovascular and gastrointestinal procedures increased. The age distribution shifted from pediatric to transitional/adult patients being a majority. The number of pediatric, transitional, and adult patients at NYPH increased by 17%, 105%, and 72%, respectively. Conclusion: There was a clear movement towards multispecialty care. This suggests the single provider model is unfeasible and multidisciplinary, collaborative healthcare is needed. A second trend is a shift in the current CP age distribution away from pediatric predominance. With patients in the transitional/adult age ranges now a majority, there is a need for teams of specialists that are capable and trained to take care of this aging population.

Abstract no.: 32733

CERVICAL FRACTURE IN PATIENT WITH ANKYLOSING SPONDYLITIS

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Introduction: Ankylosing spondylitis is a rheumatic disease in which spinal and sacroiliac joints are mainly affected. When, a fracture happens it should be considered as high-risk injury, especially when located in the cervical-thoracic junction of the spine. Case Report: A 73 years-old male was admitted in the Emergency Room after a fall from height with cervical trauma. He had cervical pain and bilateral upper limb paresthesias. At the initial physical exam he had tetraparesis ASIA C with neurologic level C6; bilateral grade 2/5 of muscular force below at C7, C8, T1, L3, L4 and bilateral grade 1/5 in L2, L5 and S1; decrease of thermic, light touch and pain sensation below C6 bilaterally, Babinski sign positive bilaterally and sphincteric alterations. At the imagiological examination had C6-C7 flexion-type fracture and C2 dens fracture type II of Anderson e D'Alonzo. He was submitted to surgical treatment with a combined approach. First an anterior approach with fracture reduction and fixation with VECTRA® plate C5-C6-C7-D1 and after posterior approach with occipito-cervico-thoracic fusion and laminectomy C6 and C7. He had progressive recuperation of the neurologic deficits and at one year follow-up he was ambulant and had improved to a grade of muscular force above C6 of 4/5. He also had improvement of the sensation and had better bladder and bowel control. Discussion: The operative treatment of these injuries is effective and usually improves the patients' neurological status. The anterior or posterior-only approaches have the benefit of short operative times and reduced postoperative morbidity, but combined approaches provide higher primary stability and easiest aftercare.

Abstract no.: 32734

ARTHROSCOPIC SURGERY OF THE HIP

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Arthroscopic surgery of the hip is a relatively new minimally-invasive technique. It has a role in the assessment and treatment of non-arthritic conditions of the hip including femoro-acetabular impingement, labral pathology and loose bodies. There are very few prospective clinical outcome studies on this procedure. Thirty two consecutive patients undergoing hip arthroscopy by a single surgeon were followed prospectively. Pre-operative work-up included clinical evaluation, plain film radiography and magnetic resonance arthrogram. Oxford hip scores and patient satisfaction scores were collected pre-operatively and at 12 months following surgery. There was a statistically significant improvement in mean Oxford hip score following surgery from 33.20 ± 1.54 (standard error) pre-operatively to 25.36 ± 2.36 at 12 months follow-up. The mean improvement in Oxford hip score was 8.33 ± 2.31 at 12 months. In three cases there was a failure of treatment with each undergoing total hip arthroplasty, hip resurfacing or further hip arthroscopy, respectively. Overall 78% of patients were satisfied or very satisfied with 9% dissatisfied at 12 month follow-up. This study demonstrates an improvement in patient-reported outcomes at 12 months following arthroscopic hip surgery.

Abstract no.: 32737

EARLY POST OPERATIVE RECURRENCE OF A MASSON'S TUMOUR IN A CHILD'S HAND

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Masson's tumour was first described by Pierre Masson in 1923 as a lesion in an ulcerated hemorrhoidal vein and has since appeared in the literature under a variety of other names. Although the original author considered the lesion to be a neoplasm inducing endothelial proliferation, the Masson's tumour is now recognised to be an unusual and overly exuberant endothelial proliferation following traumatic vascular stasis within the lumen of medium-sized veins. The lesion has a propensity to occur in the head, neck, fingers, and trunk primarily in adults. We describe here a case of a Masson's Tumour in a four year old girl, which was completely excised. There was then a rapid recurrence in this case.

Abstract no.: 32739

COMPUTERIZED FULLY IMPLANTABLE FITBONE-NAIL FOR POSTTRAUMATIC LIMB LENGTHENING, AXIS CORRECTION AND BONE DEFECT RECONSTRUCTION

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Introduction: The Fitbone-System is the only fully implantable motorized device worldwide which can perform limb lengthening without external fixators. It is based on an external computerized control unit and a wireless energy transmission to a distraction nail. The system is not only a lengthening device but also a multifunctional correction tool for treatment of posttraumatic deformities and bone defects. Methods: According to precise preoperative planning, the bone has to be cut and all deformity corrections have to be done completely intraoperative. Using a minimal invasive operation technique the longest skin cut is 2cm. The lengthening process starts 1 week postoperatively and is done by the patient himself. Physiotherapy is mandatory to maintain range of motion of the joints. Results: Worldwide about 1600 implantations of the Fitbone-System were done, 950 of them in the Limb Lengthening Centre Munich which is the only one licensed in Germany. 63% of the cases were posttraumatic, 25% congenital and 12% cosmetic. In 87 patients both, the femur and the tibia was lengthened simultaneously. 250 posttraumatic cases were evaluated. The lengthening goal was reached in 235 cases (94%), the treatment of bone defects was successful in all cases. 100 patients were re-evaluated by CT or long radiographs. 95% had a leg length-difference less than 1cm. In 82% the mechanical axis was centered to the knee joint with a deviation of less than 5mm. There was no primary infection; the cosmetic result was excellent in nearly all cases.

Abstract no.: 32741

EFFECTIVENESS OF SELECTIVE DORSAL RHIZOTOMY IN ADOLESCENTS/YOUNG ADULTS WITH CEREBRAL PALSY

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Background: Selective dorsal rhizotomy (SDR) is performed to reduce tone and pain in patients with spastic cerebral palsy (CP). Recent literature indicates a decline in function when SDR is performed in adolescents. However, there is no data on pain, tone, range of motion (ROM) or quality of life (QoL). This study assesses whether SDR can reduce pain and tone and increase ROM and QoL in adolescents/young adults with CP. Participants: 18 patients (spastic quadriplegia n=9, spastic diplegia n=9, age range at surgery 13-27, male n=10, female n=8, GMFCS Class II n=4, III n=4, IV n=4, V n=6, one unidentified) were followed prospectively. Methods: Preoperative and postoperative assessment (6 months, 1 year and 2 years) of tone, ROM and QoL was performed by the Modified Ashworth Scale, a goniometer and the Rehab Institute of Chicago's CareQ, respectively. Results: To date, 17 patients have 6-month, 11 have 1-year, and 5 have 2-years of follow-up (range 6-37 months). All patients had increased preoperative tone in the lower extremity. After 1-year there was a statistically significant decrease in hip and knee flexor and extensor tone compared to preoperative values ($p < 0.05$). After 1-year, 80% reported partial or complete alleviation of pain. Conclusions: Initial results show a reduction in tone after one year. In addition, SDR decreased self-reported pain in this population. Despite this procedure being performed for mobility purposes in the young child population, our initial results suggest pain and tone reduction should be an additional consideration for performing SDR in the adolescent population.

Abstract no.: 32742

TREATMENT OF TIBIAL PLATEAU FRACTURES USING TENSION-BAND-WIRING WITH SURFACE FLAT PLATING TECHNIQUE: SHORT TERM RESULTS

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Background: Tibial plateau fractures are difficult to treat and represent one of the most challenging problems in orthopedic surgery. To achieve good results, the fractures should be anatomically reduced and adequately stabilized, but the optimal treatment of displaced proximal tibial fractures has remained controversial. The purpose of this study is to evaluate the technique of treatment of displaced bicondylar tibial plateau fractures using tension-band-wiring with surface flat plating technique, as well as to evaluate the treatment outcomes. We questioned if this method would be a preferable treatment option compared with other treatments. Material and methods: From 2006 through 2008, 13 consecutive patients (9 men, 4 women), mean age was 42.7 ± 11.8 years, with displaced tibial plateau fractures were treated using tension-band-wiring with surface flat plating technique. Results: Clinical and radiographic follow-up to healing was obtained for all patients; the plateau fractures were radiographically united at an average of 21.5 ± 10.9 weeks (range 11–44 weeks). At final follow-up, the mechanical axis of the affected lower limb was normal in five patients (range 2o varus to 3 o valgus), four in varus (range 3o — 12o) and four in valgus (range 5o — 10o). Conclusions: Displaced bicondylar tibial plateau fractures follow a regular pattern. A tension band wiring combined with limited internal fixation using flat plate results in accepted fracture reduction with low complication rates and excellent knee function.

Abstract no.: 32743

DESMOID FIBROMA OF THE HAND: 2 CAS

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Introduction: Desmoid fibroma is a rare benign fibrous tumor taking its origin from the aponevrotic structures and of the fascias. The attack of the hand and foot is rare with variable clinical aspects. Observation 1: 42 year old man, who had presented for five months a palmar and ulnar tumor (4cm×3cm) of the right wrist, with paraesthesias. Electromyography objectified an ulnar compression. Echography found a solid tumour, heterogeneous. The intervention revealed an adherent encapsulated mass in Guyon tunnel. At 2 years follow up, none recurrence. Observation 2: 33 year old patient has consulted for a recurrent soft tissues tumor of the dorsal face of the hand with an osseous reaction of the 2nd metacarpal bone for 2 years. The MRI showed a diffuse tumor including the extensor tendon of the index. We found a tumor none limited with an osseous invasion. With the 12 months follow up, any recurrence. Discussion: The palm of the hand and the fingers are seldom touched with 13 cases described, including two digital localizations. Classically, it appears by a subcutaneous nodule, slow, firm and painless growth. This nodule is often palmar, the dorsal attack was not described. This tumor is likely to involve the compression of elements vascular and nervous structures as in our case. Conclusion: Histological benignity of the desmoid fibroma contrast with their local malignity by their infiltrating character. In the event of mass sub aponevrotic with the hand, the desmoid fibroma must be evoked.

Abstract no.: 32744

**TOTAL KNEE ARTHROPLASTY WITH ANTERIOR-POSTERIOR-GLIDE
LOW CONTACT STRESS MOBILE BEARING SYSTEM**

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Purpose: To evaluate the clinical and radiologic results of total knee arthroplasty using Anterior-Posterior-Glide (APG) Low Contact Stress (LCS) mobile-bearing system. **Materials and Methods:** We evaluated 130 knees in 117 patients who had undergone total knee arthroplasty with APG LCS mobile bearing system between September 2005 and July 2007 and could be followed up over 3 years. The mean follow-up period was 42(36~57) months. The clinical and radiologic results were evaluated using the American Knee Society Scoring System, Oxford Knee Score and the American Knee Society Roentgenographic Evaluation and Scoring System. And we analyzed the short term complications. **Results:** The average range of motion of the knee joint was 118°(70°-135°) preoperatively and 125°(90°-135°) at the last follow-up. The average knee and functional scores were improved respectively from 39.1 and 42.0 preoperatively to 71.2 and 75.6 at the last follow-up. Oxford Knee Score was decreased 42.9 preoperatively to 23.1 at the last follow-up. The tibio-femoral angle changed from varus 10.1° preoperatively to valgus 3.3° at the last follow-up. The radiolucency rate was observed at 12% of all cases. There were 1 case of traumatic dislocation of the polyethylene liner, 1 case of deep infection and 3 cases of posterior instability because of posterior cruciate ligament (PCL) insufficiency. **Conclusion:** Total knee arthroplasty with APG LCS mobile bearing system demonstrated relatively good results in clinical and radiological aspects. Further evaluation is needed in consideration of posterior instability due to PCL insufficiency.

Abstract no.: 32747

CONCOMITANT ELBOW AND PERILUNATE DISLOCATION: FLOATING FOREARM

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INTRODUCTION: Traumatic perilunar and elbow dislocation is rarely seen together. The clinical picture in which both unilateral proximal and distal dislocation of the forearm are seen is called bipolar forearm dislocation or floating forearm and there are only a few such reported cases in the literature. We here report two cases presenting to us with unique combination of fractures in same limb. Case 1: elbow dislocation of right limb associated with distal radius styloid fracture and trans-scaphoid peri-lunate dislocation of same limb. elbow was reduced and elbow-spanning fixator applied to maintain the reduction. wrist-spanning fixator was applied to align fragments by ligamentotaxis. Scaphoid fracture was subsequently fixed by Herbert screw. Case 2: fractures of distal radius and fracture scaphoid along with elbow dislocation on the same side. Elbow dislocation was reduced by closed means and spanning external fixator was put across the wrist. After distracting and aligning the fracture fragments by ligamentotaxis, scaphoid fracture was fixed. **DISCUSSION:** There is no recommended treatment model for bipolar forearm dislocations in the literature. While elbow dislocations were usually treated with closed reduction, open reduction and fixation method was chosen for wrist dislocations we recommend first distraction of the distal radius by ligamentotaxis and then scaphoid fixation by as minimal exposure as possible so as not to devascularise distal radius fragments. A careful physical examination, a thorough knowledge of radiographic studies and radiographs of both the proximal and distal joints are definitely necessary. Early reduction is necessary to prevent possible complications same as the other joint dislocations.

Abstract no.: 32749

TRIPLANE ANKLE INJURY WITH IPSILATERAL TIBIAL DIAPHYSEAL FRACTURE IN AN ADOLESCENT - A CASE REPORT AND REVIEW OF LITERATURE

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ABSTRACT: The combination of ipsilateral tibial shaft and distal tibial triplane fracture has only rarely been described in the literature. This can be easily overlooked and has the potential for serious sequel if it is missed. We present the case of an adolescent girl known to have Gilbert's syndrome who sustained this rare injury when she mistakenly stepped over a basketball. She was found to have a closed, oblique, fracture at the junction of the middle and distal third of shaft of right tibia along with a closed ipsilateral distal epiphyseal triplane injury. The triplane ankle injury was also confirmed on CT scan. Unlike previous reports of successful closed reduction of both fractures, in our case the instability of the tibial diaphyseal fracture hindered acceptable reduction of both fractures and it necessitated an anatomical open reduction of the tibial diaphyseal fracture which subsequently helped achieve anatomical reduction of the triplane injury distally as well. **CONCLUSION:** We conclude that vigilance should be maintained in detecting this very rare combination of lower leg injury. When faced with an unstable injury pattern we suggest a low threshold for internally fixing the tibial fractures to ensure easier and anatomical closed reduction of the ankle injury. We discuss here the further details of the case with review of available literature.

Abstract no.: 32751

FINANCIAL IMPACT AND PATIENT SATISFACTION WITH FOUR DIFFERENT ANTICOAGULANTS FOR HIP AND KNEE ARTHROPLASTY IN PATIENTS WITH A PREVIOUS HISTORY OF VTE- A PROSPECTIVE RANDOMISED TRIAL

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Introduction: New generation oral anticoagulants (dabigatran/rivaroxaban) have recently become available for prevention of venous thromboembolism (VTE) following hip and knee arthroplasty. Traditional therapies (warfarin/low molecular weight heparins) are less costly, but have several limitations. The aim of this study was to evaluate the financial impact of substituting enoxaparin and warfarin with newer therapies dabigatran and rivaroxaban. A secondary objective was to investigate patient satisfaction with treatment. Methods: A randomised prospective study was conducted over 12 month period. Patients with history of VTE undergoing hip or knee replacement were randomised to receive one of four anticoagulants for five weeks post-surgery. Information was gathered during the hospital stay and then post discharge, by telephone, for five weeks to determine costs. The costs included cost of drug, nursing time, blood monitoring and transport costs. The patients were also asked to complete the Duke Anticoagulation Satisfaction Scale (DASS). Results: Although dabigatran and rivaroxaban had higher drug acquisition costs, warfarin and enoxaparin were financially more costly overall. These additional costs were mainly due to increased blood monitoring and time for training and administration which is not required for newer therapies. DASS scores were significantly better with dabigatran (38.5 ± 5.1) and rivaroxaban (38.6 ± 8.3) compared to warfarin (71.8 ± 16.2) and enoxaparin (68.5 ± 14.2) ($p<0.001$). This indicates more satisfaction for patients prescribed dabigatran or rivaroxaban compared to traditional therapies. Conclusion: Use of new generation oral anticoagulants has potential to significantly reduce the financial burden of thromboprophylaxis on NHS with an additional benefit of better patient satisfaction when compared to traditional therapies.

Abstract no.: 32753

INDICATIONS AND RESULTS FOR THE TOTAL KNEE REPLACEMENTS ABOUT 44 PATIENTS

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Indications and results for the total knee replacements about 44 patients M.HAMIDANI M. OUBIRA K. MOUSSAOUI. F.TOUATI Introduction Total knee replacement in some form has been practiced for over 50 years, but the complexities of the knee joint only began to be understood 30 years ago. Because of this, total knee replacement initially was not as successful Significant advances have occurred in the type and quality of the metals, polyethylene, and, more recently, ceramics used in the prosthesis manufacturing process, leading to improved longevity. Materiels From January 2006 to December 20011 In our practice, we treated 44 patients by TKA and 48 knees There are 07 males and 37 female Middle age < 50 years old : 05 / 51 to 60 : 08 /61 to 70 : 13 >70 : 18 Right Side 24 / Left side 12 / Both 08 For different pathologies : primary arthrosis 37 / Synovitys 01/ Old fractures 06 Rhumatoid arthritis 02 Methods : we used cemented postero stabilised total knee arthroplasty for all the cases and we performed a replacement for the patellar for all our patients we begin a mobilisation of the knee one week post operatively results follow up 126 weeks we obtained a good results for 37 patients ROM : 0°/100° Improved Walking No pain For the remain patients 07 cases Stiffness of the knee :02 cases Low femur fractures :01 case Early loosening: 01 case Patellar luxation:01 case Sepsis: 02 cas

Abstract no.: 32758

DISTAL RADIUS BUCKLE FRACTURES – KEEP THINGS SIMPLE. A RETROSPECTIVE STUDY.

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OBJECTIVES: The objectives of this study were (1) To compare the outcomes of the management of paediatric wrist buckle fractures using splints or soft cast versus rigid cast with the aim of establishing the preferred treatment and (2) to determine if emergent treatment is essential for such fractures. **METHODS:** We performed a retrospective review of medical records of all children less than 16 years of age who presented to our fracture clinic between 1st of January 2011 and 31st of December 2011 and were diagnosed with a distal radius buckle fracture. **RESULTS:** We identified 167 children with a mean age of our study cohort being 8.8 years (range 1to16). They were seen at an average of 9 days (range 1to21) after injury. Of these 79 children (47.3%) were treated with removable splints (n=16) or soft casts (n=63). The splints were discarded or the soft casts were removed by parents at home after 3 to 4 weeks without the need for any follow-up appointment. On the contrary 88 children (52.6%) were treated with rigid casts and were followed up at 3 to 4 weeks for cast removal. All children recovered fully with no problems and parents were satisfied with the outcome. **CONCLUSIONS:** Our study showed that buckle fractures of the distal radius can be safely treated with a soft cast or removable splint with a single fracture clinic appointment irrespective of delay in first attendance. Being such a common occurrence, this can significantly reduce costs and optimise management of resources.

Abstract no.: 32765

IS EXTENDED ORAL THROMBOPROPHYLAXIS A RISK FACTOR FOR PROSTHETIC JOINT INFECTIONS? A CASE CONTROL STUDY.

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Objectives: To identify risk factors for prosthetic joint infection (PJI) after the change in protocol of extended thromboprophylaxis in patients undergoing elective primary joint replacement to oral factor Xa inhibitors (Rivaroxaban) at our institution. **Methods:** Fourteen cases of early onset PJI (infection within 30 days after procedure) were matched to fourteen non infected controls by procedure, consultant, gender, age, ASA grading, BMI, duration of procedure, wound class (oozing or dry), skin disinfection, method of skin closure, and chemical thromboprophylaxis. **Definition of ooze:** >25% saturation of dressing. **Definition of PJI:** ≥ 3 tissues collected during washout grow same organism and histology shows >5 WBC/HPF. A p value of less than 0.05 was considered significant. **Univariate analysis** (Fisher test, Chi square test) and **multivariate regression analysis** were performed to identify risk factors for PJI. **Results:** Postoperative wound oozing was a significant risk factor for PJI ($p < 0.01$ Fisher test) in this study. An oozing wound makes it 47 times more likely to become infected. Period between procedure and first dressing change was shorter for oozing wound than for dry wounds. There was a trend for PJI, if first dressing period was shorter than 3 days however, this did not reach significance level. On multi variate analysis only oozing wounds was identified as significant risk factor ($OR > 300$). **Conclusion:** Post-operative wound ooze and subsequent contamination was found to be a statistically significant risk factor. However there was not enough evidence in to support that patients on Rivaroxaban were having more wound ooze and subsequent PJI.

Abstract no.: 32770

ARTHROSCOPIC TREATMENT OF OSTEOCHONDRITIS DISSECANS OF THE TALUS

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Purpose : To report the results of arthroscopic treatment in osteochondritis dissecans of the talus. **Materials and Methods :** This study included 32 patients who had osteochondritis dissecans treated with arthroscopic procedure and were able to be followed-up over 3 years from 1999 to 2007. The mean follow up period was 48 months, 22 male patients and 10 female patients were included and their mean age is 34 years old. Location of lesions were evaluated with simple X-ray and MRI, and severity of lesions were classified by Berndt and Harty classification. All cases were treated by arthroscopic microfracture or debridement. The treatment results were assessed by ankle-hindfoot scale and subjective and functional score of Kailkkonen and the group which treated by arthroscopic microfracture were compared with the groups which treated by arthroscopic debridement. **Results :** The post-operative mean ankle-hindfoot scale (84 points) and the post-operative mean subjective and functional score (88 points) were improved with statistical significant. There were no relations between the severity of lesions and the postoperative functional score of ankle. There were no significant differences in the clinical results between the group which treated with microfracture and the group which treated with debridement by arthroscopy. **Conclusion :** Arthroscopic treatment of the osteochondritis dissecans shows excellent result in terms of patients' satisfaction and functional aspect relatively. But, there were no significant differences in the clinical results between the treatment procedure of arthroscopic microfracture and debridement.

Abstract no.: 32771

TOTAL KNEE ARTHROPLASTY IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Introduction: Posterior instability which develops as a result of the destruction of the retained PCL following disease progression, is considered a source of persistent pain and functional impairment following total knee arthroplasty. Methods: We analysed 60 knees in patients with rheumatoid arthritis with implanted cemented total knee prosthesis. The patients were divided in two groups. The 30 patients in the first group were implanted with PCL retaining knee prosthesis, while the PCL of patients in the second group of 30 were sacrificing. The average age in both groups was 67 years and the average follow-up period 5 years. We evaluated the HSS Knee score, knee flexion, correction of deformity, patient satisfaction and radiographic analysis of radiolucency. Results: The mean HSS scores improved, from 36 points to 73 points for the PCL retaining group, and from 34 points to 75 points for the PCL sacrificing group. Knee flexion was approximately 105° and 110° in the PCL retaining and PCL stabilized groups, respectively. In both groups we achieved an average 60° of valgus. In both groups the patients reported major pain relief and satisfaction with surgery. We did not observe significant radiolucency in the follow-up period in either group, nor any other clinical signs of loosening. Conclusions: We could not observe the superiority of one knee arthroplasty design over the other. We thus suggest using PCL retaining knee prosthesis design in RA patients, because this model preserves much more bone stock, which is important in potential knee revision arthroplasty.

Abstract no.: 32773

MUELLER-WEISS SYNDROME; A PATHOLOGY TO LOOK OUT FOR IN CHRONIC MIDFOOT PAIN.

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Spontaneous osteonecrosis of the navicular bone is called Mueller-Weiss syndrome. This is characterized by collapse of the navicle and peri-navicular arthritis. We present a case of a 35 year old gentleman who presented with chronic midfoot pain without any preceding history of trauma. The diagnosis was confirmed with a Technitium-99 bone scan and MRI scan. In our case, symptoms resolved with non-operative treatment but the pathology may cause long lasting consequences and we intend to present a review of literature about this rare condition.

Abstract no.: 32774

IS THERE A ROLE OF PROCINE AUGMENTATION GRAFT IN REVISION ROTATOR CUFF REPAIR?

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We aim to assess the use of porcine small intestinal Sub-mucosal augments in revision repair of rotator cuff tears. **METHODS:** We recruited symptomatic, very active patients with painful shoulders, who had a failed rotator cuff repair & reduced function for revision surgery. If it was felt that the cuff was repairable on US scans, a revision arthroscopic repair performed. The graft was used to augment the repair as an 'on lay graft' and not to bridge tissue deficits. Patients were then immobilized in a polysling and active mobilization was commenced at six weeks. Ultrasound scan assessed the integrity of the repair at 3, 6, & 12 months, for wound problems, active and passive range of motion and validated standard outcome shoulder scores. **RESULTS:** Of the Fifteen patients, 13 had 1 previous failed repair and 2 patients had 2 previous failed repairs. Mean age of 63 (range 54-78), 8:7 female to male ratio. 7 right shoulders and eight left. Follow up ranged from 6-24 months. Ultrasound scan confirmed 3 repairs had failed (poor), 4 showed 90 % apposition and 8 showed 100% healing (good & excellent). **CONCLUSION:** Recent papers have questioned Porcine grafts in the use of primary repair of massive rotator cuff tears, quoting high failure rates, multiple sensitivity reactions and poor patient satisfaction. However, we report satisfactory results in the revision situation with an 80% success rate. Augmented rotator cuff repairs, may be considered as an armamentarium in revision surgery.

Abstract no.: 32778

ELASTIC STABLE INTRAMEDULLARY NAILING (ESIN) IN TREATMENT OF SPONTANEOUS LONG BONES FRACTURES IN CHILDREN WITH OSTEOGENESIS IMPERFECTA

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Introduction: Osteogenesis imperfecta (OI) is a disorder of bone formation that may affect more than 1:10,000 individuals. It is characterized by bone fragility due to low bone mass giving an increased fracture incidence. The aim of drug therapy in OI children (Pamidronic acid) is to increase bone strength and it is accompanied by the closure of the bone marrow canal. Fractures of the lower extremities bones often occur in the zone of strongest curvature due to the critical loads. Methods: All the children were admitted to the clinic with diagnosis of hip or tibia fractures. During year 2011 in our clinic 9 operations were performed. Mean age was 8 ± 4 years. In all cases "one-step" surgical treatment was done: corrective osteotomy and marrow channel reconstruction combined with intramedullary fracture fixation. Orthopaedic surgeon, pediatrician and rehabilitation followed all the patients after surgery. Hospital stay was approximately 3 days after the surgery. Results: A full range of motions in the knee and hip joints were allowed from the 1st day after the surgery. Full weight bearing on operated limb was allowed in 8 weeks based on x-ray signs of bone healing. All fractures and osteotomies were healed in 3 months. No complications were mentioned in follow-up period. Conclusion: ESIN is a method of choice in treatment OI children that requires enough stability for the pathologic bone and allows early mobilization of patients.

Abstract no.: 32784

THREE-POINT CASTING INDEX FOR PREDICTING THE RISK OF DISPLACEMENT OF CONSERVATIVELY-MANAGED FRACTURES OF THE DISTAL RADIUS: A RELIABLE, REPRODUCIBLE AND PRACTICAL TOOL?

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Fractures of the distal radius account for a large proportion of the caseload to busy A&E and orthopaedic departments. Cases usually present in a bimodal distribution accounting for the increased fragility of skeletally-immature and osteoporotic bone populations. Conservative management of simple extra-articular distal radius fractures has been the mainstay of treatment; however many factors, such as quality of definitive casting, have been implicated in the risk of fracture re-displacement during follow-up. This often necessitates further surgical intervention, exposing patients to risks of anaesthesia, surgery, and a protracted recovery. Objective assessments of casts using various indices (Canterbury, Cast, Gap, Pad and 3-Point Index(3-PI)) have been documented in the literature, although overall evidence remains scant. This retrospective study of 56 (49 female, 7 male) eligible candidates assessed the 3-PI in terms of predicting fracture re-displacement and practicality in everyday clinical use. 36 patients had a 3-PI greater than the 3-PI cut-off value of 0.8, which 61% went onto re-displace. The remaining 20 patients had a 3-PI below the cut-off and 70% went onto re-displace. Inter-observer reliability was high, whilst impact on clinic times (in calculating the 3-PI) remained low. This study did not find the 3-PI to be a good predictor for distal radial fracture re-displacement. However, it did have a good educational benefit in highlighting the factors for for a proper cast application and maybe a trial with larger numbers might be useful to evaluate this index further.

Abstract no.: 32785

MONTEGGIA FRACTURE DISLOCATION WITH ULNOHUMERAL SUBLUXATION; AN UNUSUAL PATTERN OF INJURY AS YET UNDESCRIBED.

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A monteggia pattern of injury is a combination of proximal ulnar fracture with radiocapitellar dislocation. Various uncommon variants have been described in the paediatric population as subgroups of this injury. We came across an extremely uncommon pattern, in a 14 year old boy, where the proximal ulna fracture was associated with subluxation of the ulnohumeral articulation. Both the radiocapitellar and ulnohumeral components were dislocated posteriorly giving rise to a monteggia with complete elbow dislocation. Interestingly the mechanism of injury was relatively low energy. We have not come across any similar injury in the english literature and would like to present a review of this condition and postulate the probable biomechanical basis for the extent of ligament damage.

Abstract no.: 32787

FATIGUE FRACTURE OF A TOTAL KNEE PROSTHESIS: A CAUSE OF KNEE PAIN

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Around 500,000 total knee replacement(TKR) are performed annually worldwide. Femoral component fracture is a rarely reported complication. The 1990s saw an increased incidence of implant fractures with uncemented Whiteside Ortholoc II knee replacements. Metallurgical studies of retrieved fractured implants revealed that these fractures are typically secondary to a fatigue mechanism. We present a case of a fracture of the medial femoral condyle of a Press Fit Condylar(PFC) cemented implant 11-years post implantation in a 64 -year-old obese man who presented with acute unresolving medial knee pain. Plain radiographs revealed loosening and evidence of prosthesis fracture. A revision was carried out with a good post-operative result. The fracture occurred at the medial femoral component likely to have been precipitated from osteolysis. We reviewed all the fractured cemented and uncemented total knee components in the literature and their causes. Failure in TKR can be attributed to multiple factors. Cemented TKR seem to fracture less in comparison to uncemented implants. Early detection of polyethylene wear and replacement may prevent failure from osteolysis and loosening, which could lead to metal fatigue. As more arthroplasty surgery is carried out with lenient restrictions to body habitus and weight; component fracture is likely to become a more prevalent complication. Presently, it is a rare cause for knee pain after TKR, however, clinicians should remain vigilant and maintain a high index of suspicion with patients presenting with acute onset pain, with evidence of a varus deformity and concomitant obesity, as component fractures can be easily missed on plain radiography.

Abstract no.: 32788

**DOES THE ADDITION OF SUB ACROMIAL DECOMPRESSION BENEFIT
NON DIABETIC ADHESIVE CAPSULITIS PATIENTS UNDERGOING
CAPSULAR RELEASE?**

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AIM:To study the medium term difference in functional outcomes for non diabetic patients with adhesive capsulitis who underwent an arthroscopic subacromial decompression (ASAD) and capsular release compared to those who only had an arthroscopic capsular release. **MATERIALS AND METHODS:** The pre operative and one year post operative Oxford shoulder scores of the two cohorts of patients who underwent the procedures over a one year period under the care of the same surgical team was collected and analysed prospectively. **RESULTS:** Pre operative and one year post operative Oxford shoulder scores were available for 16 patients in the ASAD with capsular release group and 13 in the capsular release group. There was no statistically significant difference between the two cohorts either in their demographic data or their pre operative Oxford shoulder scores. The average improvement in the Oxford shoulder score one year after the index intervention was 13.88 (Range -7 to 36) for the ASAD with capsular release group and 13.92 (Range -1 to 32) for the capsular release group. One patient in each group showed deterioration after the intervention. The difference in outcomes as measured with the Oxford shoulder score was not statistically significant between the two groups with a p value of 0.99. **CONCLUSION:** The addition of an ASAD to a standard arthroscopic capsular release may not provide any additional functional benefits in non diabetic patients with adhesive capsulitis.

Abstract no.: 32792

EFFECT OF ARTHROSCOPIC SHOULDER SURGERY ON NIGHT TIME PAIN.

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The aim of the study was to assess the effect of therapeutic arthroscopic shoulder surgery in relieving the symptom of night time pain. Patients listed for arthroscopic shoulder surgery were asked to score the severity of night time pain on a Visual Analogue Scale (VAS). After a minimum of six months after the index operation, these patients were asked again about their night time pain and whether they were glad to have undergone the procedure. If they had residual night time shoulder pain, this was scored on the same VAS scale. 30 patients were available for final inclusion in the study from an initial sample of 42. The average age of this cohort of patients was 57.1 years (range 36-76). The commonest arthroscopic intervention was a sub acromial decompression which was performed on 14 patients. The average pre operative night time pain recorded on the VAS was 58.8 which decreased to 25.4 post operatively. 12 patients (40%) did not have any night time shoulder pain post operatively. Four patients had increased night time pain post operatively as assessed by the VAS. 25 patients reported that they were glad to have the operation. Three patients who had decrease in night time pain after the operation were still not happy to have had the operation. Arthroscopic shoulder surgery is effective in providing significant improvement in the symptom of night time shoulder pain in the vast majority of patients. A good proportion of patients can expect complete relief of night time shoulder pain.

Abstract no.: 32793

HOSPITAL INPATIENT FALLS AND PROXIMAL FEMORAL FRACTURES.

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Objective: To describe the epidemiology of neck of femur fracture among hospital inpatient falls, including characteristics of sustained fractures, method of treatment and effect of best practice tariff (BPT) for hips on overall management. Design: Retrospective descriptive study of inpatient falls. Data on patient characteristics, injury pattern and compliance with BPT were collected through review of adverse event reports and medical records. Setting: A 700-bed district general hospital over 03 years. Patients: All inpatient falls reported for medicine, cardiology, neurology, orthopedics, surgery, care of elderly and rehabilitation services sustaining neck of femur fractures during the study period were included. Results: A total of 413 patients fell during the study period. The fracture of neck of femur was identified in 26 patients. The average age of patients was 73.6 years (range 37 to 94). Extra capsular fractures (Intertrochanteric) were the most common injury among 54% of patients. Intracapsular fractures (garden II, III and IV) were diagnosed in 31 % patients and 15% patient's sustained per-prosthetic fractures. Only one patient was treated with total hip replacement and one with cannulated screw fixation. Best practice compliance was high (85%) in patients requiring hemi-arthroplasty or DHS fixation and overall 30 days mortality in these patients was low. Conclusions: Neck of femur fractures are common among inpatient hospital falls. Fall prevention programs should target falls involving older patients and best practice compliance can help reducing morbidity and mortality

Abstract no.: 32794

THE MANAGEMENT OF A STRESS FRACTURE AND NONUNION SEEN AFTER PRONATOR REROUTING PROCEDURE AT A 8 YEARS OLD CEREBRAL PALSIED BOY.

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Pronator rerouting procedure is a reported solution for pronation deformity of the forearm at cerebral palsied children. In this procedure, pronator muscle is released and elevated with a piece of periost from its insertion and transferred from interosseous membran to its insertion again among a drill hole for being a supinator. This hole generates a stress point for a radius fracture theoretically but to the best of our knowledge, there have not been reported a radius fracture after this procedure yet. An 8 years old hemiplegic boy was performed a pronator rerouting procedure. And after 10 days from removal of standart 3 weeks lasted long arm cast immobilisation. Patient admitted with pain and swelling at his forearm . A stress fracture among the drill hole and a little metallic reflection was seen at radiography. This reflection was a part of tendon passer , which was broked and dropped into medullary canal at operation . Patient followed with long arm cast for 4 weeks and additional forearm brace for 8 weeks. But there could not be achieved an union. The union achieved 4 weeks after open reduction internal fixation and DBM grafting of the nonunion site. The broken part of the tendon passer was removed also. Although children have a good potential for fracture union and filling bony gaps, pronator rerouting procedure generates a stress point for a fracture with the hole and elevated periost. With the addition of a foreign body effect a fracture and nonunion can be seen.

Abstract no.: 32796

**COMPRESSION PLATING OF SPECIFIC FEMORAL SHAFT FRACTURES
IN PRESCHOOL CHILDREN.**

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Introduction: Femoral shaft fractures in preschool children are usually treated with traction and spica cast. Surgical options include external fixation, flexible intramedullary nailing, and compression plating. Method: 35 patients with 39 femur fractures below 6 years treated with AO narrow DCP through lateral approach between 1995 and 2005 were retrospectively studied. Inclusion criteria were comminuted; spiral; malunited; closed or open grade-I fractures below 6 years with a minimum 5 years follow-up. Mean time to surgery was 152 days (1-6). Mean age was 4.6 years and mean weight was 14.9kg. There were 22 boys and 17 girls. Fractures were 8 proximal, 20 mid-shaft, and 11 lower-third; 34 closed and 5 open-grade-I; 26 right and 13 left (4 bilateral). There were 18 spiral; 2 segmental; and 19 comminuted fractures (12 were malunited). Weight-bearing was allowed after healing. Mean time of metal removal was 10.2 months. Mean follow-up was 62.2 months. Results: Mean time to union was 8.4 weeks. Mean hospital stay was 3.6 days. Mean time to return to nursery was 8.5 weeks. Shortening ≤ 1 cm occurred in 2 cases; lengthening of 0.5-2.5cm in 9 cases within 5 years after surgery; and angulation of 6-7° in 3 cases. We had one wound infection, no nonunion, no metal failure or re-fracture. Conclusion: Compression plating offers anatomic reduction, rigid fixation, short hospitalization and easy rehabilitation but with thigh scar, need for removal, blood loss and re-fractures. Compression plating would compare favorably to other treatment methods for preschool femur fractures.

Abstract no.: 32797

**THE LATERAL MENISCUS AS A GUIDE TO ANATOMIC TIBIAL TUNNEL
PLACEMENT DURING ANTERIOR CRUCIATE LIGAMENT
RECONSTRUCTION**

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Anatomical reconstruction of the Anterior Cruciate Ligament (ACL) reconstruction has been shown to improve patient outcome. The posterior border of the anterior horn of the lateral meniscus (AHLM) is an easily identifiable point on arthroscopy, which could guide tibial tunnel position in the sagittal plane and provide anatomical graft position. We analysed 100 normal MRI scans. We measured the distance between the posterior border of the AHLM and the midpoint of the ACL. The mean distance between the posterior border of the AHLM and the ACL midpoint was -0.1mm (i.e. 0.1mm posterior to the ACL midpoint). The range was 5mm to -4.6mm. The median value was 0.00mm. 95% confidence interval was from -0.5 to 0.3mm. A normal, parametric distribution was observed and Intra-observer variability showed significant correlation ($p=0.01$) using Pearsons Correlation test. Using the posterior border of the AHLM is a reliable, reproducible and anatomical marker for the midpoint of the ACL footprint in the majority of cases. It can be used intra-operatively as a guide for tibial tunnel insertion and graft placement allowing anatomical reconstruction. There will inevitably be some anatomical variation. Pre-operative MRI assessment of the relationship between AHLM and ACL footprint is advised to improve surgical planning.

Abstract no.: 32799

FEMUR FRACTURES IN PRESCHOOL CHILDREN: THE OUTCOME OF EARLY SPICA CAST.

Yasser ASSAGHIR

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Introduction: Spica cast for femur fractures in preschool children has not widely studied. Methods: 56 children with 56 fractures were retrospectively examined. Their mean age was 3.5 years, 37 were boys and 19 were girls, and mean weight was 15.6 kilograms. There were 37 motor vehicle accident and 19 falls. All fractures were closed. There were 3 upper-third, 10 middle-third, 7 lower-third, 28 at junction of upper-middle-thirds and 8 at junction of middle-lower-thirds. 24 were transverse, 14 were oblique and 18 were spiral. 9 had associated injuries. Mean follow-up was of 68.3 months. Results: Mean time to union was 9.7 weeks. Mean shortening was 0.36cm. (0-2). Mean lengthening was 0.22cm. (0-1.5). Mean sagittal angulation was 3.2° (0-35). Mean coronal angulation was 1.3° (0-10). Mean rotational deformity was 1.5° (0-12). Mean time to weight bearing was 9.75 weeks. Mean rehabilitation time was 4.2 weeks. Mean time to return to nursery was 13.6 weeks. Flynn score was excellent in 20, satisfactory in 26 and poor in 10. Cast sores occurred in 9 cases. Wedging was needed in 16 and revision was needed in 7 cases. Conclusion: Spica still produces good results but with high incidence of angular and rotational deformities and length discrepancy in preschool children.

Abstract no.: 32806

QUALITY CONTROL IN ORTHOPAEDIC TRAUMA CARE: A SIMPLE METHOD FOR EVALUATING THE QUALITY OF ANKLE FRACTURE FIXATIONS.

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Introduction: To optimise ankle fracture fixation, we have started to evaluate the quality of fixation with a simple scoring system. Quality of ankle fracture reduction and stabilisation has been shown to produce optimal early and mid-term functional outcomes, with fewer associated complications. We introduce the concept of scoring the post-operative ankle radiographs, based on the premise that fracture fixations will look perfect (score=3), satisfactory (score=2) or poor (score=1). We can correlate the scores to the complexity and pattern of fracture, grade of surgeon, temporal relationship to fixation, and early complication rates. Methods: In a consecutive series of 50 evaluated radiographs of ankle fracture fixations, we noted 42 with good scores, 8 with satisfactory and none with poor fixations. There were 50% with single malleolar fixations. Overall, 22% of the fractures were rated as complex. The mean score for the series was 1.16. Of the 8 with satisfactory scores, we were able to identify that 75% occurred in patients with bimalleolar fractures (with commonly occurring technical errors). Only 2 of the less good scores occurred in complex fracture patterns. Matching surgical expertise with more complex fractures appears to correlate with a better outcome. Conclusion: We feel that the x-ray evaluation system is of significant use as a simple method of quality control within a department, and carries potential for wider application.

Abstract no.: 32808

A CLINICAL AND ANATOMICAL RANDOMIZED STUDY OF IMMEDIATE PASSIVE MOTION VERSUS IMMOBILIZATION AFTER ARTHROSCOPIC SUPRASPINATUS REPAIRS

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Purpose: Rehabilitation after supraspinatus repair must allow function restitution without affecting cuff healing. The purpose of this continuous randomized study was to compare clinical and anatomical outcomes after 2 postoperative protocols of rehabilitation: immediate passive motion versus immobilization. Material and Methods: We observed 100 patients, mean age 55 years, who underwent an arthroscopic supraspinatus tear repair. Postoperative rehabilitation was randomized between «immediate passive motion» or «immobilization» during the first six weeks. A clinical evaluation was performed for 92 patients (range of motion, Constant score) and a CT-arthrogram for 82. Mean follow-up was 15 months. Results: Mean Constant score improved from 46.1 preoperatively to 73.9 at follow-up ($p < 0.001$). The rate of watertight cuff was 58.5%. Better functional results were noted after passive motion: mean passive external rotation at 58.7° versus 49.1° ($p = 0.011$), mean passive forward elevation at 172.4° versus 163.3° ($p = 0.094$), mean Constant score at 77.6 versus 69.7 ($p = 0.045$), and a lower rate of stiffness and frozen shoulder. There appeared to be a slight superiority of immobilization on tendon healing, without statistical relationship: normal healed tendon in 35.9% of the patients after immobilization versus 25.6% after passive motion, intratendinous addition image in 25.6% versus 30.2%, minor leak in 23.1% versus 20.9%, and recurrent tear in 15.4% versus 23.3%. Conclusion: The protocol of rehabilitation which can give the best tendon healing without shoulder stiffness have not been established yet. Our results promoted the use of an early passive motion: functional results were better, without statistically difference of tendon healing.

Abstract no.: 32809

BIRMINGHAM HIP RESURFACING (BHR) VERSUS TOTAL HIP REPLACEMENT (THR)- A STUDY COMPARING PATIENT REPORTED OUTCOMES AT 5 YEARS

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Introduction: Metal-on-metal total hip resurfacing (BHR) is a bone-conserving reconstructive option for patients with advanced articular damage. While, the outcome of Total Hip Replacement (THR) is well documented, there is a paucity of literature comparing the outcomes of BHR versus THR. This study aims to compare the patient reported outcomes for an impact on quality of life between patients who had a BHR vs. THR. **Methods:** Patients who underwent a BHR or THR performed by the senior author (JP) between July 2003 and December 2006 were invited to participate for the hospital joint registry. Pre-operative patient questionnaires included demographic details, height and weight, WOMAC scores (pain, function, stiffness), SF-36 Scores (General Health Status) and co-morbid medical conditions. Post-operative follow up questionnaires included the above scores as well as patient satisfaction questions (on a 4 point Likert Scale) and a subjective question asking them if they would have the same operation again. Data was collected pre-operatively and at 1,2,3,5 years post-operatively. **Results:** 347 patients were included for this study (214 for THR and 132 for BHR). BHR patients were younger than THR patients (49 vs. 67 years, $p < 0.01$), were more likely to be male (68% vs 42% of THR, $p < 0.01$) and reported fewer co-morbid medical conditions (1.3 vs. 2, $p < 0.01$). **Discussion:** At five years patients with a BHR reported significantly better WOMAC pain scores ($p = 0.04$) and in all SF-36 domains ($p < 0.05$). Patients undergoing BHR report a significantly greater improvement in general health compared with those with a THR.

Abstract no.: 32811

KNEE ARTHROSCOPY ON THE INTERNET: HOW WELL INFORMED ARE YOUR PATIENTS?

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Introduction: By 2001, 52 million adults had used the internet to obtain medical information. A systematic review found that quality was a problem in 70% of health websites. This study assesses the quality of medical websites with information on knee arthroscopy. Methods: We searched the keywords “knee arthroscopy” (English Language, exact phrase setting) in three search engines: Google, Yahoo and MSN/Bing. The top 50 websites were evaluated from each. Readability was assessed using the Gunning-Fog Index (GFI, measure of years of schooling needed to understand content) and the Flesch Reading Ease Score (FRES, index rating – score/100). We then used the LIDA tool (an online validation instrument of medical websites) to assess the accessibility, usability and reliability. Results: 49 appropriate websites were analysed. Websites were excluded due to irrelevant information (30), repetition (60) and inaccessibility (11). The mean GFI showed the average website was similar to reading the Wall Street Journal (mean GFI = 12.18, SD 1.90). The mean FRES was 52.18 (SD 10.5), which is below the recommended target of 60-70. The mean results of the LIDA validation tool were accessibility 81.20%, usability 54.86% and reliability 39.67%. Conclusion: We found readability and reliability of the websites was variable and generally poor. The best resources are those belonging to recognised medical or academic institutions and those without financial interests. In conclusion, since patients are likely to be heavily influenced by what they read on the internet, it is essential that we guide patients by identifying reliable sources of information.

Abstract no.: 32814

STRESSES IN THE ANKLE JOINT AND TOTAL ANKLE REPLACEMENT DESIGN

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The ankle is a highly congruent joint with a surface area of 11-13 cm². Total ankle replacement design has continually evolved as the early designs were a failure. This was because the stresses involved and the mutiaxial motion of the ankle was not understood. The talus slides as well as rolls during the ankle arc of motion from plantarflexion to dorsiflexion. Furthermore, the articular surfaces and the calcaneofibular and tibiocalcaneal ligaments form a four bar linkage dictating ankle motion. From the model it was deduced that the shape of the articulation surface compatible with the ligament rotation during various ankle motions was an arc of a circle which is polycentric and polyradial in nature. A new design convex-tibia fully congruent three-component prosthesis has been suggested recently which allows multiaxial motion at the ankle while maintaining congruency throughout the arc of motion. The early results have been encouraging. Ingrosso et al. (2008) have shown that the prosthesis seems to contribute to an early functional recovery at 6 months which is maintained at one year. With reduction of pain and recovery of joint control, gait variables of high clinical interest, such as stance balance and ability in propulsion, improve considerably.

Abstract no.: 32815

THE DISTAL FEMORAL HYPOPLASIA ACCORDING TO AXIAL ALIGNMENT IN LATERAL COMPARTMENT OSTEROARTHROTIC KNEES

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Background: This study investigates whether distal femoral hypoplasia varies with axial alignment in lateral compartment osteoarthritis(OA) of knees. Methods: The axial alignments were evaluated by mechanical axis angle(MAA) which was formed by femoral mechanical axis and by tibial mechanical axis in radiographs of entire lower limb. The difference between transepicondylar axis and posterior condylar line(TE-PC) in MRI axial image was used for measurement of lateral femoral hypoplasia. Among 137 knees with lateral OA, 55 knees with varus alignment (group A) were compared with 82 knees with valgus alignment(group B). Valgus knees were divided into subgroups: 44 knees with MAA 1° - 5° (group B1); 20 knees with 6° - 10° (group B2); 18 knees with $>10^{\circ}$ (group B3). TE-PC was compared by groups. Results: The mean TE-PC of group A was $8.19^{\circ}\pm 2.11$; group B1, $7.82^{\circ}\pm 1.87$; group B2, $8.24^{\circ}\pm 1.68$; group B3, $8.67^{\circ}\pm 2.35$; overall group B was $8.11^{\circ}\pm 1.95$. The statistical difference between group A and B was not shown ($p=0.829$) and statistical significance between TE-PC and MAA by groups, (group A, $P=0.617$; group B1, $P=0.817$; group B2, $P=0.417$; group B3, $P=0.721$, Pearson's correlation coefficient). The abnormal hypoplasia which had TE-PC more than 11° was shown in 22.2% of group B3, but in 7.2% of group A, 6.8% of group B1 and 5% of group B2. Conclusion: The overall TE-PC presenting distal femoral hypoplasia in lateral OA was not affected by axial alignment, but in subgroup analysis, abnormal hypoplasia was often shown in valgus knees with $MAA>10^{\circ}$. In these cases, more attention should be paid on femoral component rotation during total knee arthroplasty

Abstract no.: 32819

FACTORS AFFECTING OUTCOMES OF ARTHROSCOPIC SUPRASPINATUS REPAIRS, AND COMPARISON OF FUNCTIONAL RESULT ACCORDING TO CUFF HEALING

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Purpose: An interest was taken to decrease healing failure and improve functional result following rotator cuff repair. The purpose of this continuous monocentric study was to analyze factors affecting clinical and anatomical outcomes of supraspinatus repair, and to compare functional result according to cuff healing. Material and Methods: Ninety-two patients, mean age 55 years, underwent arthroscopic supraspinatus repair. Epidemiological criterias, preoperative radiological parameters, peroperative observations and surgical procedure were noted. All patients were assessed with Constant score. The tendon healing was checked by CT-arthrogram for 82 patients. Mean follow-up was 15 months. Results: Factors that were negatively associated with functional result were female gender ($p=0.005$), a long delay between injury and repair ($p=0.001$), a work-related compensation claim ($p=0.001$), and a preoperative delamination of the infraspinatus ($p=0.054$). Factors that were negatively associated with anatomical result were the extension of the tear in the sagittal plane ($p<0.001$), a preoperative delamination of the supraspinatus ($p=0.049$) or the infraspinatus ($p=0.006$), and fatty infiltration of the infraspinatus ($p=0.022$). A watertight rotator cuff and the quality of tendon healing did not seemed to improved functional result. Conclusion: Factors affecting the outcomes have a stake in therapeutic forecast and indications of the surgery. Despite the lack of correlation between structural integrity of the cuff and functional result in this study, the Constant score was significantly increased. The reason of this improvement when the tendon did not heal could be imputed to subacromial decompression, biceps tenotomy, or a partial repair effect.

Abstract no.: 32822

DIFFICULTIES IN TREATING CONGENITAL TALIPES EQUINOVARUS (CTEV) IN CHILDREN WITH MOEBIUS SYNDROME

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Moebius syndrome is a rare, congenital, non-progressive neurological disorder that presents with a broad range of neuromuscular abnormalities. Most people with Moebius syndrome have normal intellect. It is estimated that there are 2 to 20 cases per million births; its rarity often leads to late diagnosis. It is primarily characterised by facial palsy, although orofacial anomalies and malformations of the upper and lower limb are commonly associated with the condition. Lower limb abnormalities include missing toes and congenital talipes equinovarus (CTEV). There have no previous reports on the treatment of CTEV and Moebius syndrome. We present a case series of children with this syndrome treated in our specialist tertiary Ponseti unit. Our 10 year experience with over 500 Ponseti treated children has included four patients with Moebius Syndrome. We noted that during the course of the Ponseti casting, correction was more difficult to achieve and required more casts than the general congenital talipes equinovarus patients. All patients had a high initial Pirani score and needed percutaneous Achilles tenotomy, two required a tibialis anterior tendon transfer. We conclude that patients with Moebius Syndrome and CTEV need to be observed more closely during their treatment and have a higher rate of tendon transfer. It is advised that these patients are referred to a tertiary centre early in order to avoid complications with the initial casts using the established Ponseti method.

Abstract no.: 32823

THE OUTCOME OF ANKLE FUSIONS WITH TIBIAXYS PLATES

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Osteoarthritis of the ankle may be treated with ankle replacements in elected patients but there is no long term follow up of most of the prosthesis, however ankle fusions had good results come the long term follow up. Ankle fusions can be carried out with screws, external fixators, nails or plates. Tibiaxys plates consist of two plates (anterior-medial and anterior-lateral) which are designed to approximate the patient's bony anatomy. I reviewed eleven patients who had ankle fusions with tibaxys plates; six females and five males with a mean age of 58years. They all commenced weight bearing in cast at four weeks post-operation, and at 18 weeks there was fusion seen on x-rays and no pains recorded. There were no post-operation complications. In this short review with tibiaxys plates, there were good and rigid fixations with fusion before 18 weeks. This is a good method of ankle fusion.

Abstract no.: 32824

RESULTS OF LONG PHILOS PLATE OSTEOSYNTHESIS OF COMPLEX PROXIMAL HUMERAL FRACTURES.

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The aim of the study was to assess the outcomes of complex proximal humeral fractures treated with long proximal humeral internal locking system (PHILOS) plate fixation. Thirty four patients who had the index procedure were reviewed. Outcomes were assessed using the Oxford shoulder score (OSS), DASH, Stanmore Percentage of Normal Shoulder Assessment (SPONSA) and Visual Analogue Scale (VAS) for pain. Out of the initial cohort of 34, one patient died, 2 patients had unrelated illnesses resulting in them being unable to complete the assessment and 6 patients were lost to follow-up, leaving 25 patients (74%) for final analysis. All patients had proximal humeral fractures with metaphyseal or diaphyseal extension requiring long plate osteosynthesis. One patient had the procedure for non union following initial treatment with an intra medullary nail. The patients were followed up after a mean of 27 months (range 11-60). There was one wound infection. Three patients had non unions which required bone grafting and revision internal fixation with double plating. At final follow-up, mean pain was 3.6 (range 0 – 10) and only 4 patients had residual pain greater than 5 on the 0-10 scale. Mean DASH score was 41 (range 0 – 95), mean OSS was 29 (range 5-48) and mean SPONSA was 67% (range 0 – 100%). This is the first study presenting mid-term outcomes of the long PHILOS plate. The long PHILOS plate appears to present a successful treatment option in the management of complex proximal humeral fractures with distal extension.

Abstract no.: 32826

FRACTURE OF PROXIMAL TIBIA AFTER PRIMARY ALL-PRESS FITT ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION: A CASE REPORT

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Tibial fracture after primary All-Press Fitt Anterior Cruciate Ligament (ACL) reconstruction is rare. This is the first case of proximal fractures of the tibia after ACL reconstruction using All-Press-Fitt to our knowledge. The patient suffered a fatigue fracture in the 6 weeks after ACL reconstruction surgery, at the start of forced loading of the limb. The patient was treated conservatively with immobilization in a brace-and physiotherapy ultrasound monitored. Case report. 26 year old patient after trauma in August 2009. Diagnosis of fracture of the tibia shaft and left the left talus, and after 4 months - ACL injury. Treatment surgery- ACL reconstruction performed by All Press-Fitt . Equipped with an orthosis knee flexion- initially the range 0-30 `then recovering gradually increased range of motion. After the surgery in 6 weeks there were pain in the tibial attachment. MRI was proximal tibial metaphysis transverse fracture, without displacement. It was to relieve limb, the knee was immobilized in a brace for a period of 6 weeks ultrasound control examination. After about 8 weeks were bone remodeling. Conclusions. Literature tersely writes about cases of tibial fracture after ACL reconstruction. There are cases after BTB , the Anatomic Double-Bundle quad, within the bioabsorbable screws. All Press-Fit seems to be a good alternative to other methods of reconstruction of the ACL. To date, the Department of "The Weir" and "Orthos" made a successful 150 ACL reconstruction m. All Press-Fitt . Unfortunately along with these reports, there are rare cases of each of these methods.

Abstract no.: 32829

DOES THE COMBINED USE OF INDOMETHACIN AND WARFARIN REDUCE THE RISK OF HETEROTOPIC OSSIFICATION IN ACETABULAR FRACTURES OPERATED THROUGH KOCHER-LANGENBECK APPROACH?

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Introduction: The reported incidence of Heterotopic ossification(HO) following fixation of acetabular fractures through Kocher-Langenbeck approach has been reported to be as high as 60% with severe HO being as high as 20%. Prophylactic regimens remain controversial; commonly used are either Indomethacin or radiotherapy or both. Aim: We report our results of incidence of HO following fixation of acetabular fractures through Kocher-Langenbeck approach Methods: 24 patients were identified from our operation database over a 16 month period. Post-operative radiographs were reviewed retrospectively with a mean follow up of 11 months (range 6 – 20 months). Brooker classification was used for grading of HO with grades 3-4 being classed as severe. All patients received 6 weeks course of Indomethacin as prophylaxis. 17 patients received Warfarin as thromboprophylaxis and 7 patients received Dalteparin. Fishers's exact test was used for testing the significance. Results: 4(16.7%) patients developed HO, of which 2(8.3%) were severe ($p<.05$). Out of 17 patients who had received Warfarin with Indomethacin, 3(17.6%) patients developed HO with severe HO in 1(5.8%) patient ($p<.05$). Out of 7 patients who had Dalteparin and Indomethacin 1(14.2%) patient developed severe HO ($p>.05$) Conclusion: Our results show significant reduction of HO when compared to the published randomized controlled trial with Indomethacin alone. Based on the suggestion in the literature that Warfarin may also have an action in reducing the incidence of HO, we suggest that our improved results may be due to the use of combination of Warfarin and Indomethacin in the post-operative period.

Abstract no.: 32830

CLINICAL, ANATOMICAL AND ELECTROMYOGRAPHIC OUTCOMES OF LATISSIMUS DORSI TRANSFER FOR IRREPARABLE POSTEROSUPERIOR ROTATOR CUFF TEARS

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Introduction: The purpose of this retrospective study was to evaluate clinical, radiological and electromyographic results of latissimus dorsi transfer in massive irreparable posterosuperior rotator cuff tears. Methods: Fourteen massive irreparable posterosuperior rotator cuff tears were performed with latissimus dorsi transfer. Mean age was 53 years. We measured clinical outcomes, osteoarthritis and acromiohumeral distance (radiographs), tendon integrity (ultrasound examination), latissimus dorsi atrophy (CT-scan) and electromyographic activity. Mean follow-up was 56 months. Results: Twelve patients were satisfied. Mean adjusted Constant score improved from 34 to 60% ($p=0.003$), forward elevation from 89° to 132° ($p=0.006$), abduction from 92° to 104° , external rotation from 12° to 24° ($p=0.015$). Mean abduction and external rotation strength were 2.5 kilograms. Osteoarthritis progressed, and acromio-humeral distance has a significant decrease from 7.5mm to 4.4mm ($p=0.003$). Ultrasound examination showed 12 transferred tendons healed. CT-scan showed a small atrophy of the transferred muscle, with a cross-sectional area of the muscle belly at 1405mm² versus 1644mm² for the controlateral ($p=0.06$). Electromyographic analysis demonstrated a significant higher electric activity on the operative side during abduction and external rotation, and significant lower activity during adduction and internal rotation in comparison with the nonoperative side. Conclusion: Latissimus dorsi transfer allows pain relief and shoulder function improvement. Its electric activity increase in abduction and external rotation shows that the transferred muscle can integrate a new function and act like an active muscle transfer, in addition to an interposition or tenodesis effect. However we didn't find any depression of the humeral head or force improvement.

Abstract no.: 32832

A CASE OF ISOLATED GRANULOMATOUS VASCULITIS AND ASEPTIC LYMPHOCYTIC VASCULITIS ASSOCIATED LESION SEEN IN THE PERIPROSTHETIC SOFT TISSUES OF A FAILED METAL-ON-METAL TOTAL HIP REPLACEMENT

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Introduction: The pathogenesis of Adverse Reaction to Metal Debris (ARMD) is not fully understood. We report a unique histopathological finding of isolated granulomatous vasculitis and aseptic lymphocytic vasculitis associated lesion (ALVAL) in the periprosthetic tissues obtained from a failed MoM THR. **Materials:** 71 yr old female presented to the MoM recall clinic with marked pain in the hip. She had a primary 36mm MoM THR in 2007. On examination, Harris hip score was 48. Serum cobalt of 3.15 µg/L and serum chromium of 2.55 µg/L. ESR and CRP were not elevated. Joint fluid revealed, cobalt of 4708 µg/L and chromium of 1539 µg/L. No organisms grown from joint aspirate. Pelvic radiograph revealed bone loss at the Gruen zone 7 of femur and zone 1 of acetabulum. This patient underwent a revision of the hip to a ceramic-on-polyethylene bearing. Intraoperative there was minimal soft tissue necrosis around the MoM prosthesis. Explant analysis revealed a massive taper wear with volumetric loss was 5.17 mm³ and wear depth was 27.4 microns. Histology from the periprosthetic tissues revealed isolated granulomatous vasculitis and ALVAL. The patient is followed-up with no evidence of systemic vasculitis. **Discussion:** It appears that excessive material loss from taper junctions tends to cause raised local metal ion concentrations and has a greater potential to stimulate an aggressive local immune response than the debris released secondary to bearing surface wear. This case demonstrates that granulomatous vasculitis can be a part of the spectrum of changes associated with failure secondary to ARMD.

Abstract no.: 32834

ACROMIOCLAVICULAR JOINT PAIN AND MRI FINDINGS- DO THEY GO HAND IN HAND?

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OBJECTIVE: This study aims to explore the correlation between painful acromioclavicular (AC) joint and magnetic resonance imaging (MRI) changes. **METHODS:** We retrospectively analysed case notes and records of a total of 40 patients with a mean age of 51 years (range 30 to 70 years) presenting to our unit with a painful shoulder over a period of six months and were investigated with a MRI scan. They were equally divided into 2 groups of 20 patients. Group 1 included patients with a clear clinical documentation of painful AC joint and group 2 were those with asymptomatic AC joint. **RESULTS:** 17 patients (85%) in group 1 had peri-articular cysts with a positive predictive value (PPV) of 89.4% while 18 patients (90%) had distal clavicle reactive bone oedema with a PPV of 90%. In the 2nd group, 2 patients had distal clavicle cystic changes and reactive bone oedema. The remaining 18 patients had no changes with a negative predictive value of 90%. The sensitivity of distal clavicle cystic changes is 85% for AC joint pain and 90% for reactive bone edema. All 40 patients in the study had changes including degenerative hypertrophy, joint effusion or osteophyte formation and these changes were found to be non-specific for AC joint symptoms. **CONCLUSION:** Reactive bone oedema and distal clavicle cystic changes on MRI scan seem to more reliably correlate with clinically symptomatic AC joint. The other non-specific degenerative changes on MRI scan on the other hand do not seem to have much clinical relevance.

Abstract no.: 32836

PRWE SCORE AT ONE YEAR, IN PATIENTS WITH DISTAL RADIUS FRACTURE TREATED WITH VOLAR LOCKING PLATE, AND ITS CORRELATION WITH PATIENTS' AGE

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Objectives: to evaluate the functional outcome of distal radius fractures treated with volar locking plate, using PRWE score at 12 months post-operatively, and to review the correlations between the score and patient's age, pre-operative fracture pattern and quality of post-operative reduction. Cohort: a series of 32 patients, aged between 22 and 82, with distal radius fracture, and had their operation in the first six months of 2009. Objective measures: PRWE score has been selected as our main outcome measure and its correlation with quality of reduction post-operatively according to Lidstrum's classification, fracture classification according to AO classification and patients' age has been reviewed. Results: average PRWE score was 24.5 in all age groups, whilst average PRWE score in patients older than 60 years old was 15.3 compare to 33.7 in patients younger than 60 years old. (P=0.02) Our study has failed to show statistically significant difference in the average PRWE score between extra-articular fractures (AO type A) and fractures with intra-articular extension (AO type B / C). It has also shown no statistically significant difference between the average PRWE scores in patients with excellent post-operative radiographic reductions, compare to good or fair reduction (according to Lidstrum classifications). Conclusion: (with acknowledge of study design limitations) our study has shown patient's age is the only factor with reverse correlation to a satisfactory outcome, as patients in 60 and older age group have generally demonstrated a better PRWE score at one year assessment compare to patients younger than 60 years old.

Abstract no.: 32837

POPLITEAL ARTERY INJURY: TREATMENT AND OUTCOME

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Management of popliteal arterial injuries (PAI) is a challenging task, as early diagnosis and adequate treatment strategies are mandatory to avoid irreparable limb damage. In current literature limb salvage and amputation rates vary widely. The purpose of this study was to analyse characteristics, epidemiology and clinical outcome with a particular interest in limb amputation rates. Materials and Methods: We reviewed the trauma database of Vienna General Hospital and identified all patients with traumatic popliteal artery injury in a period of 20 years. Results: We included 64 patients with both blunt and penetrating mechanism of injury. Arterial repair was obtained within three hours in 31%, within 6 hours in 64% and after more than 6 hours in 5%. Arterial continuity was restored by using autogenous vein grafts, vein patches, or primary arterial sutures. The overall amputation rate within our study was 14%. One amputation was performed primarily whereas 8 amputations were obtained delayed. Conclusion: PAI due to blunt or penetrating trauma is associated with high morbidity and amputation rate. Prolonged ischemia as well as the surgical technique of vascular repair and concomitant injuries of the affected extremity were detected as significant influence factors for limb loss. We observed the best clinical outcome in patients who did not exceed the critical time period of 6 hours to revascularisation and primary suture of the injured artery was possible. Other surgical techniques of vascular repair, prolonged time of ischemia and blunt mechanism of injury resulted in increased amputation rate.

Abstract no.: 32838

**AO TYPE C3 INTRA-ARTICULAR DISTAL RADIUS FRACTURES
TREATED WITH VARIOUS LOCKING PLATES AND ARTHROSCOPY**

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HYPOTHESIS: Treatment of AO type C3 distal radius fractures is controversial. We treat by a combination of various locking plating and arthroscopically assisted reduction. **METHODS:** The subjects were 40 patients aged from 16 to 81 (mean:50.8) years. The type of fracture was C3-1 in twenty-two patients, C3-2 in sixteen, and C3-3 in two. The mean follow-up period was 13.7 months. The number of bone fragments, gap and step off was evaluated. And in eighteen patient under 50 years, soft tissue injury was assessed. The radial inclination (RI), volar tilt (VT), and ulnar variance (UV) were measured. The Cooney score and DASH were used for clinical evaluation. It made comparative study of C3-1 and C3-2/C3-3 both group' clinical evaluation. The Mann-Whitney U test was used for statistical analysis. **RESULTS:** At arthroscopy, the mean number of bone fragments was 3.7, mean gap was 2.8 mm and step off 1.8 mm. The TFCC injury was detected in ten patients, SLIL in eleven, and LTIL in ten. Radiographic evaluation showed that the mean loss of correction of RI was 0.1 degree, VT 0.1 degree and UV 0.2mm. The Cooney score averaged 83.6 points, DASH 9.8 points. When we compared C3-1 and C3-2/C3-3, the Cooney score were 85.3 and 81.0, showing no significant difference, on the other hand, DASH score were 6.1 and 16.4, showing a significant difference between the two groups ($p<0.05$). **SUMMARY:** Although treatment with locking plates and arthroscopy achieved good results, C3-2/C3-3 fractures admitted the tendency with an inferior clinical evaluation.

Abstract no.: 32842

VALIDATION OF THE SERNBO SCORE FOR DISPLACED INTRACAPSULAR FRACTURED NECK OF FEMUR

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This study assesses the reliability of the Sernbo score by assessing the inter- and intra-observer variability of the scoring system. Methods: 20 sets of notes from patients with displaced intracapsular fractured neck of femur were reviewed by 5 experienced consultant orthopaedic surgeons, 5 trainees and 5 senior house officers. Each observer reviewed the case notes on two separate occasions. Inter- and intra-observer reliability was calculated using intraclass correlation co-efficient. Results: Overall inter-observer agreement was 0.89 (0.81-0.95). Overall intra-observer agreement was 0.91 (0.78-0.96). Inter-observer agreement for consultants was 0.92 (0.82-0.96), for trainees was 0.87 (0.76-0.94) and for SHOs was 0.86 (0.68-0.94). A correlation co-efficient of >0.80 indicates good agreement. Discussion: The Sernbo score has been proven in selecting ideal management for patients with displaced intracapsular neck of femur fracture. It uses four components: age, accommodation, mobility and mental state. A patient scores either 5 or 2 points for each component, giving a score out of 20 points. Patients are stratified into a high-demand group (Sernbo >15) for total hip arthroplasty and a low demand group for hemiarthroplasty (Sernbo <15). It is easier to use than other available scoring systems and data from standard admission clerkings is sufficient for surgeons of all levels to calculate a Sernbo score. Our data show excellent inter- and intra-observer reliability. Conclusion: The Sernbo score is a useful and repeatable tool in the assessment and management of patients with displaced intracapsular fractured neck of femur. Our data confirm the reliability and reproducibility of this classification system.

Abstract no.: 32844

CHARACTERISTICS AND FUNCTIONAL RESULTS IN OPERATIVE AND CONSERVATIVE TREATMENT OF THE „JERSEY FINGER TYPE III“

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Introduction: Bony avulsion of the flexor digitorum profundus tendon is a very rare flexor tendon injury. Precise diagnostics and a well chosen therapeutic approach are obligatory to achieve a satisfying functional result. We present clinical results after operative and conservative treatment of this injury. Methods: 21 Patients with a bony avulsion of the profound flexor tendon were included. We retrospectively evaluated the trauma mechanism, treatment modality and functional results. Open reconstruction was indicated at a dislocation of the bony fragment of more than 1mm. Patients were separated in 2 groups: Group 1: conservative treatment Group 2: operative treatment Grip strength, pinch strength, flexion and extension deficit, range of motion and pathologic anomalies in radiographs were evaluated at follow up. To investigate life quality limitations we performed DASH score, MHQ and SF12 questionnaire. Results: In 12 cases an open reconstruction was performed and a Kleinert protocol was applied. In this group 80 % of the patients showed a persisting extension deficit of 5° to 10° in the DIP joint. In 9 patients a conservative therapy by 4 weeks static splinting was conducted. These patients had no restriction in their range of motion of the injured finger. Tensile strength was equal and satisfactory in both groups. DIP joint arthrosis was observed in 2 conservatively treated patients. Patients reported no limitations of life quality or hand function. Conclusion: Conservative treatment should be considered in non- or slightly dislocated bony avulsions of the profound flexor tendon due to satisfying functional results.

Abstract no.: 32845

FATAL PULMONARY EMBOLISM FOLLOWING ELECTIVE TOTAL HIP REPLACEMENT: A TEN-YEAR STUDY

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Incidence of fatal pulmonary embolism (PE) following elective total hip replacement (THR) with multi-modal prophylaxis regimen in a large teaching DGH over a 10 year period. Methods: Information from a prospective audit database, examining clinical coding for THR and those dying within 42 and 90 days. The 10 years from April 2000 were analysed to establish both 42 and 90 day mortality rates. The multi-modal prophylaxis regime used for all patients comprised regional anaesthesia (when possible), mechanical prophylaxis (Flo-tron calf garment per-operatively, AV impulse boots until mobile and anti-embolism stockings for 6 weeks), mobilisation within 24 hours, and chemical prophylaxis (either aspirin, warfarin or low molecular weight heparin (LMWH) according to defined consultant protocol). Case note review was performed to ascertain the causes of death. The coroner's office provided PM results where relevant. Results: There were 6,528 cases; the mortality rates at 42 and 90 days were 0.47% and 0.64%. As part of their regimen, 1478 (22.6%) patients received warfarin, 1722 (26.4%) LMWH, and 3328 (51.0%) aspirin. 90 day mortality for these groups was 0.41%, 1.05% and 0.54% respectively. There were 6 fatal PE's (0.09%). 3 occurred within 42 days of surgery, all from the LMWH group. 3 occurred between 41 – 90 days, one on warfarin, two on LMWH. The leading causes of death were respiratory tract infections and myocardial infarction. Discussion: Fatal pulmonary embolus following THR with multi-modal prophylaxis is an infrequent cause of mortality. Choice of chemical prophylactic agent conferred no significant benefit.

Abstract no.: 32846

INJECTABLE CLOSTRIDIUM HISTOLYTICUM COLLAGENASE: SHORT TERM RESULTS OF A NEW NONSURGICAL TREATMENT FOR DUPUYTREN'S DISEASE

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Dupuytren's disease, a non-malignant, progressive disorder of the hands, can severely limit hand function and diminish quality of life. Treatment has remained surgical with few effective, nonsurgical options. With the recent introduction of collagenase clostridium histolyticum Xiapex® (Pfizer, Austria) a new, office-based, non-surgical enzymatic treatment option is available. We present our first experiences in clinical application and 1-12 months results. In this study 28 patients (25m, 3f, average 66ys) were injected in 43 Dupuytren's cords and an extension maneuver under local anaesthesia was performed the next day. Following parameters we recorded prae and post injectionem (1 week, 1 month, 3 month and 12 months), overall flexion contracture of the finger, DASH-score, grip-strength, VAS, and satisfaction. The overall mean contracture of 40° improved significantly to 8.5°, whereas most of the post injectionem extension deficit was recorded in the PIP-joints (mean 18.9°) and 1.5° in the MCP-joints. Grip-strength did not change at all (prae 35.4 kg versus 35 kg). The DASH-score showed a significant decrease from 25.2 to 5.3 points. All patients were very satisfied with the clinical outcome. We recorded in all patients swelling and haematomas of the treated region. Major side effects were 3 skin tears and 1 reversible digital nerve irritation. Treatment with collagenase appears to be effective and safe in selective cases. But it should be performed only by professionals with experience in the treatment of Dupuytren's disease. The value of the new method in relation to standard surgical procedures needs to be ascertained by further research.

Abstract no.: 32848

PRIMARY COMPLEX TKR

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Asian knees are characterized by their varus malalignment as well as Tibia Vara with medial erosion of their tibia. We prospectively followed up 45 knees in 33 patients , who underwent "PRIMARY COMPLEX TKR" from august 2006 till Nov 2009. Mean age at the time of surgery was 65 yrs, 30 females , 13 male patients. Minimum follow up was 2 yrs, (range 25 months-64 months) We assessed their pre and post op outcome scores using KSS/Womac pain and function /SF-36/ as well as Range of motion. The average arc of motion preoperatively was 120, with post op average ROM arc 130 degrees There were no signs of radiological loosening particularly of the tibial component. One patient had residual medially translated weight bearing line 2ndry to the varus bow of her femur One patient had a traumatic hyperextension injury requiring revision of the femoral component The functional outcome of this group of patients when compared with a matched cohort (matched on age and pre op functional scores) undergoing simple primary TKR were identical, with no significant difference. There was a longer time in the OR by about a mean of 18 minutes. We believe that using the principle of revision TKR by using stemmed augmented tibial components to achieve neutral alignment is an optional technique to achieve results similar to the simple primary tkr

Abstract no.: 32852

OATS IN THE KNEE SURGERY

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Introduction. The problem of surgical treatment of defects of condyles of the femur one of actual in modern traumatology and orthopedy. There are three main methods to cover defects: reparative, reconstructive and regenerative. OATS is reconstructive method, which was offered in 1992 to cover defects of condyles of the femur. This method has own advantages and disadvantages. During the procedure the defect is covered by hyaline cartilage, there is only step to close defect, but it is impossible to cover large defects, arise the problem of donor place. Methods. Since July 2007 till July 2011 we made 21 OATS procedures, COR system was used (Mitek, Johnson and Johnson). Middle age of patients has made 22.5. Most patients had focal cartilage damage. Results. In 6 months after operation all patients had good results. The estimation of results of treatment was conducted on a scale of Lisholm. Average value before operation has made 72.53 ± 3.44 . In 6 months after operation value has grown to 93.28 ± 4.05 . In 19 cases (90.4 %) function of a knee joint after operation is estimated as very good, in 2 cases (9.6%) as good.

Abstract no.: 32853

OUTCOME OF ALL POLY TIBIA TKR

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55 patients, 33 female , 22 male, mean of age 60 yrs , were prospectively followed up undergoing TKR using the all poly tibial component. Their pre and post op functional scores were assessed using KSS/womac pain and function/sf-36, and were compared to a matched cohort (on basis of age and pre op functional score). At minimum of 2 yrs (range 24-48 months) no statistical difference was found regard to functional score in between both groups. One patient in each group had developed deep infection two, three yrs, respectively, post op requiring two stage reimplantation. In our experience using this type of implant is functionally effective yet cost saving.

Abstract no.: 32856

**SURGICAL TREATMENT WORKS MUCH BETTER FOR KICKERS THAN
NON OPERATIVE TREATMENT**

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Background: Proximal avulsion of rectus femoris muscle is an uncommon injury. It is characterized by the avulsion of the anterior proximal tendon (short head) from the anterior inferior iliac spine and/or the posterior proximal tendon (reflected head) from the groove above the brim of the acetabulum. Objective: The aim of this study was to retrospectively review the clinical presentation, radiological investigation, treatment and outcome of patients presenting with this injury between 2007 and 2011. Materials and methods: 20 patients were included in this study and subjects were classified as being treated conservatively or surgically. Patients were professional footballers, rugby players or runners. MR imaging studies, radiology reports, medical records, and operative notes were reviewed including the type and mechanism of injury, patients' profession, method of treatment, and time to return to activity. Results: A total of 9 patients required surgical intervention whereas 11 patients were treated non-operatively. MR imaging studies showed 12 patients with avulsion of the short head compared to 6 patients with avulsion of the reflected head and 2 patients with injury to the conjoint tendon. Conclusion: Injuries of the origin of the rectus femoris muscle are rare. Surgical intervention was favoured towards kickers with injury affecting their dominant leg. Both conservative and surgical treatment resulted in a satisfactory outcome with a mean recovery time of 6 to 12 weeks.

Abstract no.: 32858

BASE OF CORACOID PROCESS FRACTURE WITH ACROMIOCLAVICULAR DISLOCATION IN A CHILD.

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ABSTRACT: Fracture of the coracoid process is a rare injury. It can be easily missed when associated with other injuries to the shoulder girdle, for instance, acromioclavicular joint (ACJ) dislocation. Clinical attention is easily drawn to the more obvious ACJ dislocation, hence, the need for further radiological evaluation. We report an unusual case of fracture of the base of coracoid process associated with a true acromioclavicular joint dislocation in a 12 year old boy, with no separation of the epiphyseal plate, as one might expect. Treatment also remains controversial. Our patient underwent open reduction internal fixation of the acromioclavicular joint and coracoid process. He subsequently made an uneventful progress with pain free full range of shoulder movement at 5 months, and was discharged at 9 months.

Abstract no.: 32865

TOTAL KNEE REPLACEMENT IN UNSTABLE KNEES

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PURPOSE: To retrospectively evaluate the results of rotating hinge total knee arthroplasty. **MATERIALS AND METHODS:** 6 patients underwent total knee arthroplasty with rotating hinge prosthesis. The indication was osteoarthritis (4 patients), supracondylar fracture of femur (1 patient) and periprosthetic fracture (1 patient). Of the 4 osteoarthritis patients, two had genu valgum with incompetent MCL, one had tibia vara and one had genu valgum with recurvatum. The ages of the patients were between 50 to 80 years. All the patients underwent a standard procedure for total knee arthroplasty with medial parapatellar arthrotomy. Both the collateral ligaments were detached from the femoral attachment for better exposure. Link prosthesis was used in 5 patients and SROM Noiles in 1 patient. Patella resurfacing was done only in 2. Patients were evaluated by Knee society score. The average follow-up was two years. **RESULTS:** The average preoperative clinical score was 20 which improved to average of 80 postoperatively. The average preoperative functional score was 35 which improved to an average of 75 postoperatively. The follow-up x-rays show no evidence of loosening. The range of movements was found to be 0 to 100 degrees postoperatively. **CONCLUSION:** A rotating hinge knee can be successfully used in major ligamentous and bony deficiencies in the short to medium term when unconstrained implants are contraindicated. It is indicated in dealing with a severely deformed knee with incompetent collateral (MCL in particular), revision knees and comminuted distal femoral fractures in elderly for quicker mobilization.

Abstract no.: 32866

TIBIA VALGA IN VALGUS KNEE

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Methods: Between 1994 and 2011 all arthritic-valgus-knee were reviewed. Radiographic measurements, including mechanical and anatomic Femorotibia angle (FTA) were measured. Any diaphyseal, metaphyseal-diaphyseal deformity was measured utilizing proximal and distal best-fit axes. The coronal knee joints orientation were measured including: lateral distal femur angle (LDFA) and medial proximal tibial angle (MPTA). Results: 97 cases were matching the inclusion criteria (85 F and 12 M patient) average age of 70 years. 53% (52) patients were found to have tibia valga (group A), and the remaining (group B) have non. Average FTA was 16.1 Vs 16.3 in the group A and B respectively ($p=0.8$), when the best-fit anatomic axes were centered over the distal femur and proximal tibia, the measured FTA was (13 & 15.4) respectively ($p=0.019$). The tibia deformity in the group A does influence the FTA significantly ($p=0.0005$), if compared to group B ($P=0.45$). Average LDFA 78 (68-82) and 77 (71-82) in the group-A and B respectively (average normal 81 (79-83)). Average MPTA were 91.3 (85-95) and 90.8 (85-103) respectively (average normal 87 (85-90)). When considering the coronal orientation of the knee joint in relation to the proximal tibial best-fit axes in the group A, the MPTA will be 89.5 (84-97) Vs 93.4 (86-99) when distal best-fit axis is utilized ($P=0.0000$) and 91.3 (85-95) when anatomic axis is utilized ($P=0.0005$). Conclusion: There dominant intrinsic changes (mostly soft tissue in origin) in the group B, if compare to group A. Nevertheless, extrinsic factors are the most influencing changes in the group A. Tibia valga are commonly encountered with knee valgus deformity and may add specific surgical challenges to obtain neutral mechanical alignment, ligamentous balance may be problematic and constrained implant may be required. Furthermore, it may prevent use of intramedullary tibial

Abstract no.: 32872

IS IT POSSIBLE TO PROTECT THE ULNAR NERVE WHEN INSERTING MEDIAL K-WIRE IN THE TREATMENT OF SUPRACONDYLAR FRACTURES OF HUMERUS IN CHILDREN

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Aim: Several recent studies have suggested that medial pinning in pediatric supracondylar humerus fractures leads to increased rates of ulnar nerve injury. The purpose of this study was to prevent the risk of iatrogenic ulnar nerve injury with the assistance of the intraoperative nerve stimulation in a consecutive series of supracondylar fractures treated using a standardized technique of crossed pin placement. **Materials and Methods:** The present study concerned 48 children with Gartland types III supracondylar humeral fractures treated at our institution by closed reduction and percutaneous crossed pinning method between March 2008 and December 2010. Exclusion criteria were open fractures, fractures that required open reduction, neurological or vascular injuries found on presentation. Intraoperative nerve stimulation was assist in localizing the nerve prior to placement of the medial pin. A neurological examination was done within 24 h of operative intervention. **Results:** There were no iatrogenic ulnar nerve injuries. All patients were noted to have normal ulnar motor and sensory nerve function at final follow-up (average 6 months). No cases of nonunion, malunion, or infection were identified during the follow-up period. **Conclusions:** Our series demonstrates that medial pin fixation with he assistance of the intraoperative nevre stimulation can be performed safely and reliably when treating supracondylar fractures of humerus in children.

Abstract no.: 32876

USE OF INTRAOPERATIVE X-RAY FLUOROSCOPY DURING TOTAL HIP ARTHROPLASTY: DOES IT IMPROVE COMPONENT POSITIONING?

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INTRODUCTION: Recent difficulties with alternative bearing surface implants have highlighted the essential nature of correct positioning of total hip arthroplasty (THA) components. The objective of this study was to examine the effectiveness of simple intraoperative fluoroscopy in improving THA component positioning. **METHODS:** We identified 469 consecutive cases of unilateral primary THA done by a single senior surgeon at our institution. After exclusions, 165 sequential THAs (group A) done without the use of fluoroscopic guidance and 171 consecutive THAs (group B) done with the use of intraoperative fluoroscopy were identified for analysis. Two independent observers evaluated postoperative AP radiographs for acetabular cup inclination angles, leg length discrepancy, and restoration of femoral offset. **RESULTS:** Observer 1 found that group A had greater mean LLD (0.46 vs. 0.19 mm), less femoral offset discrepancy (1.82 vs. 2.19 mm), and a smaller cup inclination angle (42.8 vs. 43.5 degrees). Observer 2 noted that group A had greater mean LLD (0.92 vs. 0.68 mm), greater femoral offset discrepancy (1.49 vs. 1.05 mm), and a smaller cup inclination angle (43.2 vs. 44.1 degrees). **DISCUSSION:** Based on our results, the use of intraoperative fluoroscopy did not significantly improve cup inclination angles, LLD, or restoration of femoral offset compared to controls at our high volume center. However, the percentage of cups in the “safe zone” of both groups was improved compared to historical controls. The use of intra-operative fluoroscopy could be an important tool in helping non-high volume arthroplasty surgeons improve positioning of THA components.

Abstract no.: 32877

DOES THE LENGTH OF STAY FOR HIP AND KNEE ARTHROPLASTY DIFFER ACCORDING TO THE DAY OF OPERATION?

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Introduction: It is assumed that arthroplasty surgeons operating at the end of a week will have a higher length of stay than surgeons at the start of a week due to a reduction of staff over the weekend. There are two senior surgeons in the unit and one operated on a Tuesday and the other a Friday. The surgeons utilised the same surgical technique, equipment, implants and protocols for post-operative care. Method: All patients who underwent either a total hip arthroplasty (THA) or a total knee arthroplasty (TKA) by the two senior arthroplasty surgeons over a three year period between 2007-2009 were included in this study. The length of stay was found by reading the case notes. An unpaired t-test was used to compare the two surgeons hip and knee arthroplasty results. Results: TKA operated on a Tuesday: 45 males and 51 females Mean length of stay was 8.9 TKA operated on a Friday: 25 males and 50 females Mean length of stay was 7.84 Unpaired t-test p-value=0.1156 THA operated on a Tuesday: 47 males and 90 females. Mean length of stay was 8.58 THA operated on a Friday: 32 males and 62 females. Mean length of stay was 9.56 Unpaired t-test p-value=0.1156 Conclusion: There is no statistical difference in the length of stay based upon the day of the week that the operation was performed. The age was compared using an unpaired t-test in both hip and knee groups and was found to not be statistically significant.

Abstract no.: 32879

JOINT SPECIFIC SATISFACTION AFTER TKR: SATISFACTION ON A VAS SCALE AND THE FORGOTTEN KNEE RESPONSE

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Introduction: Health related quality of life outcomes measured after TKA using generic self reported tools is common practice. These outcomes however are dependent on multiple patient factors and lack specificity with respect to satisfaction specifically from the procedure. We aimed to validate a simpler visual analogue scale (VAS) approach to measuring satisfaction and the dichotomous response to the “forgotten artificial knee” question. Methods: We reviewed 114 patients with a unicompartmental knee replacement (UKR) and 119 patients with a Total knee replacement (TKR) at a minimum follow up of 1 year. The patients were assessed using a VAS asking about satisfaction from the procedure, how normal the knee felt, and a yes/no response to whether they felt that they had forgotten their knee replacement (FKQ). The SF-36, Oxford knee and WOMAC scores were concurrently administered. Results: 47.4% of patients with a UKR and 17.4% with a TKR responded “yes” to the FKQ. There was no difference in the mental health components of the SF-36 between patients with a “yes” and patients with a “no” response. All other physical components were statistically significant between the “yes” and “no” groups ($p < 0.05$). The VAS measure of satisfaction had high test-retest reliability (ICC 0.91) with high internal consistency (Cronbach’s α 0.81). Construct validity was demonstrated by expected correlations to the WOMAC, Oxford and SF-36 scores. Conclusion: A VAS measure of satisfaction and the FKQ provides a simple yet specific measure of patient satisfaction following knee arthroplasty which may augment other assessment tools.

Abstract no.: 32882

SINGLE SHOT FEMORAL NERVE BLOCK DOES NOT IMPROVE POSTOPERATIVE ANALGESIA IN LOWER LIMB ARTHROPLASTY

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Introduction: Single Shot Femoral Nerve Block (SSFNB) is used as an adjunct in joint arthroplasty to improve postoperative analgesia. However its efficacy following surgery has been variable. Our aim was to examine the effectiveness of SSFNB in our lower limb arthroplasty. Methods: Patients undergoing primary Total Hip Arthroplasty (THA) and Total Knee Arthroplasty (TKA) receiving SSFNB at our hospital were prospectively evaluated, and compared to a control group of no SSFNB (NSSFNB). Postoperative pain on a VAS scale and cumulative morphine consumption was measured postoperatively. Results: There were 41 patients with a mean age of 69.2 years. The SSFNB and NSSFNB groups were well matched with respect to age, gender anaesthesia type, prosthesis types and intraoperative opiate usage. The mean postoperative VAS scores at 4 hours were similar in both SSFNB and NSSFNB groups (2.1 vs 2.5; $p=0.65$). Similarly mean postoperative VAS scores at 24 hours were similar (3.43 vs 3.44; $p=1.0$). Cumulative postoperative morphine consumption was also similar (45.2mg vs 35.9mg; $p=0.99$). There was no difference in overall hospital length of stay (6.1 days vs 5.7; $p=0.75$). Conclusion: The use of SSFNB as an adjunct to anaesthesia does not confer any added benefit in improving postoperative analgesia in patients undergoing lower limb arthroplasty

Abstract no.: 32883

THE MEDIAL PATELLOFEMORAL LIGAMENT

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The medial patellofemoral ligament (MPFL) has been gaining increasing importance as a stabiliser of the patellar to prevent lateral dislocation. Patella dislocation occurs in 5.8 per 100,000 adults, rising to 43 per 100,000 in children. Management of acute patellar dislocation remains controversial. An early MRI scan will diagnose the tear allowing judicious and correct reconstruction of the MPFL. This appears to confer greater stability for the patella leading to a better outcome. This poster aims to provide a comprehensive review of the current literature for the anatomy, classification, imaging modalities, conservative and operative management and the post-operative rehabilitation of MPFL reconstructions.

Abstract no.: 32884

**ANTERIOR CRUCIATE LIGAMENT REVISION RECONSTRUCTION WITH
MACINTOSH PROCEDURE USING THE FASCIA LATA**

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Introduction: The purpose of this retrospective study was to assess the functional outcomes after ACL revision surgery with MacIntosh procedure using the fascia lata. **Methods:** Seventy-three patients, mean age 30.2 years, underwent ACL revision surgery with MacIntosh procedure using the fascia lata between 2001 and 2006. Were excluded patients with posterior or postero-lateral laxity associated, contralateral knee laxity, or prior valgus tibial osteotomy. Functional outcomes were assessed with IKDC Score, Lysholm Knee Score and Tegner Activity Scale. Thirty-nine patients underwent a clinical examination according to the IKDC protocol, and antero-posterior laxity measurement with a KT-2000 arthrometer. Mean follow-up was 53 months. **Results:** At follow-up, mean IKDC subjective score was $79.5 \pm 20\%$ (21-100%). Mean Lysholm Knee Score was $82.8 \pm 17\%$, distributed in 21 excellent results, 27 good, 15 fair and 10 poor. The Tegner Activity Scale was 7.8/10 before initial ACL injury, and 6 at follow-up. Mean differential laxity measured with KT-2000 (maximal manual) was 2.2 ± 2.2 mm. There were 79% of normal or nearly normal knees (IKDC A or B) at objective evaluation. The pivot-shift test was negative in 37 out of 39 knees (95%). **Conclusion:** Functional results were comparable to previous series of ACL revision surgery reported in the literature. MacIntosh procedure using the fascia lata allows good function improvement and knee stability restitution, in antero-posterior direction with its intra-articular part, but also rotatory with its automatic extra-articular supplementation. It can therefore provide a good alternative procedure for ACL revision surgery.

Abstract no.: 32887

SMART DEVICE APPS IN ORTHOPAEDICS: BRIDGING THE GAP BETWEEN THE PATIENT AND THE SPECIALIST

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Introduction: A smart device is simply defined as an electronic device that is cordless, mobile and cable of connecting to the Internet. It is an umbrella term for smartphones and tablet devices. Applications (Apps) are downloadable items of software which provide a specific function or role. Most people at some point in their life will have a bone or joint complaint and with over a billion Smartphone users alone in the world, it is not surprising that there is a rapidly expanding market for Apps relating to Orthopaedics. Methodology: A keyword search was conducted using the terms 'Ortho', 'bone' and 'joints' in the most popular online markets for Apps, the Apple App Store, The Android Market and the Blackberry App World. All the apps that were related to Orthopaedic surgery, bone and joint disease were included. Results: 255 Apps were reviews. 37% were free, 86% were available in the Apple App Store, 25% in the Android Market and 3% in Blackberry App World. Most of the Apps were reference material (49%), patient information (16%) and exam revision aides (15%). Conclusions: The popularity of these Apps in Orthopaedics must be embraced. This platform allows the Multidisciplinary Orthopaedic Team to engage more with their patients. Furthermore they represent a means for keeping up to date with current literature, educating and training the next generation of service providers. This represents an opportunity for national and international Orthopaedic regulatory bodies to lead in the development of such Apps for patients and clinicians.

Abstract no.: 32891

SEASONALITY OF INFECTION RATES AFTER TOTAL JOINT REPLACEMENT

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The correlation between season (fall, winter, summer and spring) and infection rate in surgical patients is well defined in many specialties. We hypothesized that there would be an increased infection rate in the summer months in patients undergoing elective total joint replacement. We retrospectively reviewed consecutive patients undergoing elective total knee, total hip, total knee revision, or total hip revision at a single institution during 1 year by a single surgeon. Wound infections were defined as any patient requiring oral antibiotics for cellulitis, readmission for IV antibiotics, any patient taken back to the operating room for I&D or any patient undergoing excisional arthroplasty and placement of cement spacer within 30 days of the initial procedure. A total of 750 patients were identified. 17 patients developed an infection for an overall incidence of 2.2%. The incidence was highest during July (4.5%), August (5.4%), and September (4.3%). There was a statistically significant ($p=0.031$) difference in infection rate according to season: 3 infections occurred in winter (1.5%), 1 in spring (0.5%), 9 occurred in summer (4.7%), and 4 during the fall (2.4%). There was a statistically significant difference in infection rate between summer/fall (3.6%) versus winter/spring (1.0%), ($p=0.013$). We hypothesize that this difference is related to increased pathogen colonization on both patients and operating room staff during the warmer and more humid months of the year. We recommend increased surveillance as well as more thorough pre-operative sterilization procedures during these warmer months.

Abstract no.: 32895

PERCUTANEOUS MINIMALLY INVASIVE EXCISION OF OSTEIOD OSTEOMA LOCATED IN THE RT PEDICLE OF L5. A CASE REPORT

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Osteoid osteomas are rare specifically distinctive benign tumor appearing in bones, it stands out from the surrounding osseous tissue as a sharply nidus. Approximately 20% of osteoid osteomas occur in the spine, We report a case of a male patient aged 28 years with late diagnosis of osteoid osteoma localized in the right pedicle of L5 managed by complete surgical excision percutaneously. . Clinical, radiological, and technical aspects of the case are discussed. The presenting symptom is localized pain of several months duration, which was persistent and radiated along RT sciatica and severe enough to wake the patient at night. As to treatment, the pain became resistant to conventional conservative treatment, Normal xray, MRI ,were not enough to define the diagnosis, Skeletal scintigraphy demonstrated a hot spot at the right side of the fifth lumbar vertebra, and 3D CT scans showed a typical osteoid osteoma in the right pedicle of that vertebra. The time between onset of symptoms and final diagnosis was 18 months. The lesion was cored out by means of a special percutaneous instrument usually used for kyphoplasty under fluoroscopic guidance and local anesthesia and deep sedation. patient experienced immediate relief of 70% of the pain, and also remained free of symptoms after 3 months till one year of follow-up. CONCLUSION: Minimally invasive surgery can successfully be applied in the treatment of osteoid osteoma of the lumbar spine under local anesthesia.

Abstract no.: 32900

EVALUATION OF CLUBFEET TREATED BY PONSETI'S TECHNIQUE – AN ANALYSIS OF RELATION BETWEEN FORM, FUNCTION & RADIOLOGY AT 2 YRS FOLLOW-UP

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Ponseti's technique for treatment of clubfeet is currently accepted as the gold standard. On critical analysis of the papers published, there is lack of uniformity in the method of evaluation of treated clubfoot. This study was aimed to evaluate the clubfeet treated by Ponseti technique at a minimum of 2 years follow up based on form, function & radiology and to study the relationship between these three domains. Also various patient characteristics and treatment variables were analysed to identify the potential risk factors which would affect the final outcome. Methods: The study involved 34 babies with 49 clubfeet treated by the Ponseti technique at our institution and had completed two years of follow-up. The evaluation of each foot was done based on the scoring system described by Munshi et al. Results: The mean duration of follow-up was 3.2 years and the mean age at follow up was 3.5 years. The mean total Munshi et al. score was 154.46(+SD 28.61). There was no significant correlation between form, function and radiological parameters. Out of 49 feet treated by Ponseti technique 8 feet had relapse of one or more deformities amounting to a failure rate of 16%. Conclusion: Clubfeet treated by Ponseti's technique needs to be assessed independently for form, function and radiological parameters. A normal appearing foot need not necessarily have normal function and radiological parameters. All these feet need to be followed up for a longer period of time to decide on their further course and treatment.

Abstract no.: 32901

SLIDING-ANGULATION OSTEOTOMY OF ULNA FOR CHRONIC RADIAL HEAD DISLOCATION FOLLOWING MISSED MONTEGGIA INJURIES – AN INNOVATIVE TECHNIQUE.

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Introduction: Radial head dislocation in a Monteggia lesion is often missed in children during the initial presentation and they present later with persistent radial head dislocation. If left untreated this leads to a painful arthritic elbow due to secondary degenerative changes due to valgus instability. Missed Monteggia lesion is a difficult problem to manage and many intra-articular, extra-articular and combined procedures have been described in literature with variable results. We report a new technique of sliding-angulation osteotomy for this condition which had good clinical end results. Methods: 5 patients presented to us between Nov 2006 and Feb 2011 with persistent radial head dislocation following Monteggia fracture dislocation. The average duration since injury was 10 months and male to female ratio was 4:1. They were treated by sliding-angulation osteotomy of the proximal ulna and a stable reduction of the radial head was achieved in all but one patient who needed additional procedures to achieve reduction. The average follow-up duration was 22 months and all four patients with type I injury showed a well reduced radial head on radiological evaluation and clinical evaluation based on elbow performance score revealed excellent results. One patient with type III injury had persistent residual subluxation. Conclusion: Sliding-angulation osteotomy is a technically simple procedure which addresses the deformity, radial head dislocation and restricted movements and hence serves as a simple solution for this complex problem. This technique works well in Type I injuries and needs larger case series to arrive at a firm conclusion.

Abstract no.: 32902

IS PRONE POSITION IDEAL FOR MANIPULATION & PINNING OF PAEDIATRIC SUPRACONDYLAR FRACTURES OF HUMERUS? – A RANDOMIZED CONTROLLED TRIAL

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Background: Though closed reduction and pinning for paediatric supracondylar fractures is routinely done in supine position some authors recommend prone position as it aids in gravity reduction and has better perception of anatomical landmarks. Pinning in prone position under regional anaesthesia has not been described in literature and there is lack of knowledge about the difficulties in prone position. This study was conducted to compare pinning in prone position versus supine in terms of both the technical difficulties of pinning and the clinical and radiological outcome. Methods: Fifty two children with displaced supracondylar humerus fractures were included. They were grouped into prone(n=26) and supine(n = 26) based on block randomization. Duration of procedure(DoP), number of radiation exposures(NoR), attempts for closed reduction (NCR) and attempts at pinning(NP) were compared. Functional & Radiological outcomes were assessed for a minimum follow-up of one year. Results: There was no significant difference between the two procedures with respect to the variables and final clinical and radiological outcome. The cases were divided into simple and complex based on NCR due to the high standard deviation. There was no significant difference between the two procedures despite dividing them into simple and complex fractures. Conclusions: Prone position is as good as supine position for closed reduction and pinning of simple supracondylar fractures. However one should be beware of using prone position in complex fractures. Guidelines to identify complex fractures have been formulated.

Abstract no.: 32903

IMPROVING THE DIAGNOSIS OF METASTATIC CANCER IN PROXIMAL FEMORAL FRACTURES

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Introduction: Proximal femoral fractures are often the first presentation of malignancy in the elderly population. Identification of bony metastases through histological samples taken at operation will allow appropriate management to be directed to the primary cancer. The aim of this audit was to improve the system through which histological diagnoses of intra-operative samples are followed up within our unit. Methods: Seventy eight patients with suspected pathological proximal femoral fractures were identified in having samples taken for histological diagnosis between April 2010 and July 2011. The results were presented and a departmental protocol change was implemented. The audit was repeated after a 6 month interval. Results: The follow-up of histological samples taken for suspected bony malignancy within our department was initially poor with only 10% of samples having documented evidence of recognition of the result. Following presentation and dissemination of these initial results the introduction of a new protocol has ensured that 100% of all samples are now followed up. Discussion: Although it is common practise to send histological samples for analysis in suspected pathological fractures, we have identified the results are not commonly followed up and documented. This may result in a missed or delayed diagnosis of cancer. We have developed a system within our unit which has minimised the risk of missing a diagnosis of bony metastasis, allowing the patient to receive the appropriate oncological intervention at the earliest opportunity.

Abstract no.: 32911

ARE “PATELLOFEMORAL SYMPTOMS” TRUELY RELATED TO THE PATELLOFEMORAL JOINT?

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We studied 33 patients undergoing Patellofemoral (FPV, Wright Medical) and 30 undergoing Tibiofemoral (Miller-Galante, Zimmer) unicompartmental arthroplasty to assess whether the commonly held symptoms of patellofemoral (PFJ) disease are in fact selective for that compartment. All patients were studied prospectively using the Oxford Knee Score. The score was used as a whole and 4 questions were studied in detail: ability to kneel, descending stairs, ‘giving way’ and rising from a chair after a meal. These symptoms are normally associated with the PFJ and hence ought to improve after FPV. Pre-op mean Oxford score was 28.8 in the FPV group improving to 17.8 at 6 months. Pre-op mean was 28.5 in the MG group improving to 14 at 6 months. Pre-op subscores were 10 in the FPV group and 9.8 in the MG group. These improved to 6.8 and 7.0 respectively. Scores for each question showed that ability to rise from a chair was the same pre- and post op for each group. Ability to kneel got slightly worse in the MG group but better in the FPV group. Giving way was worse pre-op in the MG group compared to FPV group and improved more in the MG group. Interestingly ability to descend stairs was also worse pre-op in the MG group and improved equally in the two groups. Our study did not confirm the common belief that these 4 questions are selective for patellofemoral disease.

Abstract no.: 32915

HYPERBARIC OXYGEN THERAPY IN THE TREATMENT OF DIABETIC PATIENTS WITH THERMAL BURN OF LIMB

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Aim: To investigate and evaluate the efficacy of the Hyperbaric Oxygen Therapy (HBOT) in the treatment of diabetic patients with thermal burns of the limbs which lead up to ischemic and progressive tissue damage. **Patients and Methods:** Between the years 2006 and 2011, we applied HBOT together with standard treatment modalities to consecutive 8 Type II diabetic patients for their thermal burns of the limbs. HBOT was applied in multichamber with 1-3 ATA (Atmosphere Absolute) pressure. All patients have had polineuropathy in the wake of Diabetes Mellitus (D.M.). The etiologies were hot-water burn (to be boiled) when having bath, contact with electric heater and contact with flame of LPG explosion in kitchen. 5 of the patients have had retinopathy and 2 had nefropathy and 2 had angiopathy. **Results:** The mean starting time of HBOT was 45.1 days after burn. All of the wounds were infected. HBOT was applied 37.6 sessions on average. All of the wounds were epithelized and healed. The mean follow-up time was 27.6 months. No other complications were occurred around wound. **Conclusion:** Infection is a great problem following burn wounds especially in diabetic patients. Furthermore it can be results with amputation because of the existence of necrotic tissues, hypoxia and depressed immune system. We concluded that, with addition the HBOT to the standard treatment modalities, we may counteract to extremity losses

Abstract no.: 32916

OUTCOME OF INTERNAL FIXATION OF DISPLACED PROXIMAL HUMERAL FRACTURES WITH LOCKING COMPRESSION PLATE

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Medical Trust Hospital, Kochi (INDIA)

Introduction: The ideal treatment of displaced proximal humeral fractures is still the center of scientific debate. The benefits of locking compression plate include improved fracture stability because of the fixed-angle construct, a short period of immobilization with the opportunity for earlier rehabilitation; lower risk of damage to the rotator cuff or need for implant removal; reduced hardware complications. **Materials and Methods:** 29 patients were met the inclusion criteria, of which 21 were males and 8 were females. The mean physiological age was 40.96 years (19-72 years). 22 patients were injured by road traffic accident and 7 by household fall. According to Neer's classification system, 18 had two part fractures, 8 had three part fractures, 3 had four part fractures. ORIF was done using Synthes 3.5 locking proximal humeral plates via delto-pectoral approach in all cases. 2 patients were lost to follow-up. **Results:** All the patients were followed up by clinical and radiographic assessment immediately after treatment and at 1, 3, 6 and 12 months. Outcome was assessed according to Constant Murley score at each visit. Accordingly 4 patients had excellent results, 20 patients had good results and 3 patients had fair results. **Conclusion:** The Stability of fixation allowed early rehabilitation of patients and aided in care of polytrauma patients. The range of motion at follow up was satisfactory, given the complexity of reconstructive undertaking. Sound union was achieved in all patients. None of the patients were having secondary loss of reduction or implant failure.

Abstract no.: 32918

OUTCOMES FOLLOWING TOTAL KNEE REVISION WITH TRABECULAR METAL CONES

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Trabecular metal (TM) cones are a relatively new construct utilized to address bone loss in revision total knee arthroplasty (TKA). The purpose of this study was to evaluate the outcome of revision total knee arthroplasty using trabecular metal cones. We identified 39 knees that underwent revision total knee arthroplasty with TM cone augments at our institution and had minimum 2 year follow-up. Cones were utilized with several different manufacturers revision knee systems. The cones were used in 38 tibial revisions and 3 femoral revisions all of which had moderate to severe pre-operative bone loss. Final follow-up X-rays were reviewed by two independent surgeons for alignment, loosening, and radiolucent lines. Average follow up was 2.6 years (range: 2.0 to 3.5 years). Patients improved significantly in terms of pain and function. At the time of final follow-up, no patient had required revision for aseptic loosening. Radiographically, none of the implants demonstrated progressive radiolucent lines around the trabecular metal cone. Radiolucent lines were seen around the tibial stem in one case and at the bone cement interface of the tibial plateau in 5 cases. Average tibiofemoral alignment was 4.6 degrees valgus (range: 2 to 7 degrees valgus). In our cohort of patients, in the setting of moderate to severe bone loss, trabecular metal cones provided reliable fixation at short term follow-up. We found minimal radiolucent lines, suggestive of stable, biologic fixation. Longer follow-up is needed to demonstrate the survival rate of total knee revision in conjunction with the use of TM cones.

Abstract no.: 32919

ACUTE ACQUIRED CONSTRICTION RING SYNDROME. INCREASING SURGEONS' ALERTNESS OF A RARE CONDITION.

Khaled Loutfy EL-ADWAR

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Introduction: Congenital constriction ring syndrome is well known. However, the acquired syndrome is not described in most pediatric orthopaedic textbooks. Case Report: A mother of a 10-week-old infant realized increasing redness and mild swelling of the left 3rd toe at around 3:00 pm. By mere coincidence, I met the family socially, a few hours later, where the mother denied that this was a congenital condition. On examination, the infant was generally well. At the level of the distal interphalangeal joint of the affected toe, a dorsal constriction ring was seen, with surrounding congestion and mild swelling. The ring extended onto the medial plantar aspect of the affected toe, while the lateral plantar skin island was free of constriction. The distal circulation and capillary filling of the 3rd and all other toes were normal. Instructions were given to the mother to keep an eye on the distal circulation, and capillary refill. A "medline search" showed a few articles accusing mothers' hair strands as the causative agent and discussing the surgical treatment. Because the condition was slowly getting worse, 23 hours after the onset, under general anaesthesia, a short longitudinal incision lateral to the extensor tendon was made down to bone. Immediately thereafter the congestion was relieved. One week later, the wound had healed and the toe was back to normal. Conclusion: Physicians need to be aware of acquired constriction rings during infancy, as these are under reported in the literature and are easy to treat to save the affected digit.

Abstract no.: 32920

OUTCOME OF REVERSE TOTAL SHOULDER ARTHROPLASTIES [RTSA]

Venkata Sunil DACHEPALLI, John EDWIN, Sudhir RAO

South London Healthcare NHS Trust, Bromley, London (UNITED KINGDOM)

Aim: To assess the results and failures of RTSA. **Introduction:** Total shoulder arthroplasty relieves pain and improves function. Unconstrained surfaces allow healthy shoulder muscles to restore function. However, conventional total shoulder design does not account for concomitant musculotendinous pathologies. Reverse total shoulder arthroplasties were designed to compensate for severe cuff deficiency. Earlier designs lead to catastrophic glenoid failure but recent designs gave favourable results. Current design concepts are based on Grammont's principles. **Materials & Methods:** We present assessment of the RTSAs performed at South London Healthcare NHS Trust. Radiographs were assessed based on 8-point check list published by Roberts et al. Scapular notching was assessed based on Nerot classification. Functional outcome was assessed utilising Oxford Shoulder Score. Twenty-one RTSAs were performed in 20 patients from March 2005 to June 2011. **Results:** Fifteen patients were female and 5 were males. Patients' age ranged from 53 to 85 with an average of 71.26 years. Twenty shoulders were diagnosed to have cuff tear arthroplasties and one had non-union of proximal humerus. Follow up ranged from 4 to 56 months with a median of 15 months. Radiographs showed good alignment and no loosening in all except 2 shoulders. Oxford shoulder scores showed significant improvement, with a mean of 42. Ten complications were noted that included superficial infection, anterior dislocation, scapular notching, heterotopic ossification, inferior screw malposition and acromion fracture. Our results are comparable with the studies published. **Conclusion:** RTSA is a favourable choice when performed for the right indication and with stringent patient selection.

Abstract no.: 32921

SINGLE BUNDLE ANATOMIC ACL RECONSTRUCTION – ARE WE IN THE RIGHT PLACE?

Venkata Sunil DACHEPALLI, John EDWIN, Sudhir RAO

South London Healthcare NHS Trust, Bromley, London (UNITED KINGDOM)

Aim: To assess the results and failures of RTSA. **Introduction:** Total shoulder arthroplasty relieves pain and improves function. Unconstrained surfaces allow healthy shoulder muscles to restore function. However, conventional total shoulder design does not account for concomitant musculotendinous pathologies. Reverse total shoulder arthroplasties were designed to compensate for severe cuff deficiency. Earlier designs lead to catastrophic glenoid failure but recent designs gave favourable results. Current design concepts are based on Grammont's principles. **Materials & Methods:** We present assessment of the RTSAs performed at South London Healthcare NHS Trust. Radiographs were assessed based on 8-point check list published by Roberts et al. Scapular notching was assessed based on Nerot classification. Functional outcome was assessed utilising Oxford Shoulder Score. Twenty-one RTSAs were performed in 20 patients from March 2005 to June 2011. **Results:** Fifteen patients were female and 5 were males. Patients' age ranged from 53 to 85 with an average of 71.26 years. Twenty shoulders were diagnosed to have cuff tear arthroplasties and one had non-union of proximal humerus. Follow up ranged from 4 to 56 months with a median of 15 months. Radiographs showed good alignment and no loosening in all except 2 shoulders. Oxford shoulder scores showed significant improvement, with a mean of 42. Ten complications were noted that included superficial infection, anterior dislocation, scapular notching, heterotopic ossification, inferior screw malposition and acromion fracture. Our results are comparable with the studies published. **Conclusion:** RTSA is a favourable choice when performed for the right indication and with stringent patient selection.

Abstract no.: 32922

DISCHARGE INR IN PATIENTS MANAGED WITH WARFARIN FOR DVT PROPHYLAXIS: ARE WE REALLY ANTI-COAGULATING OUR PATIENTS?

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Prophylaxis for prevention of DVT and PE is a major concern in the management of patients undergoing total joint arthroplasty (TJA). In our practice we have chosen to use warfarin with a goal INR of 2.0-2.5. With accelerated rehab and hospital discharge, it is increasingly common that patients may be discharged before their INR has reached a therapeutic level. The purpose of this study was to evaluate what percentage of patients are discharged at a therapeutic INR and how the INR at discharge correlates with perioperative complications and readmission. We retrospectively reviewed the patient records of all patients undergoing primary total hip or total knee arthroplasty by one of two surgeons at our facility during two calendar years. INR levels on discharge were recorded as well as all complications and readmissions. 437 patients met criteria and were included in our analysis. The average INR on discharge was 1.61. 352 patients (80%) were sub-therapeutic, 56 (13%) were in the therapeutic range and 33 (7%) were supra-therapeutic. The incidence of any complication or readmission was highest in the supra-therapeutic group at 27%. We found a large portion of TJA patients managed with warfarin for DVT prophylaxis were discharged at sub-therapeutic INR levels. However, the patients who were at greatest risk of developing a complication were those whose INR was too high. This finding suggests that bleeding risk is more a threat to patient health than risk of clot formation after TJA.

Abstract no.: 32923

PERIOPERATIVE COMPLICATIONS AND OUTCOMES OF JEHOVAH'S WITNESS PATIENTS FOLLOWING TOTAL JOINT ARTHROPLASTY

Fabio OROZCO, Zachary POST, Alvin ONG, Ian KANE

Thomas Jefferson University, Philadelphia (UNITED STATES)

Total joint arthroplasty (TJA) is associated with significant blood loss. Refusal to accept blood transfusion may lead to increased complications. The purpose of this study is to evaluate the outcome of patients undergoing TJA who refuse blood transfusion. We retrospectively reviewed all patients undergoing TJA at our facility during the past 10 years (May 2001 to December 2011). We identified 24 Jehovah's Witness patients who refused any transfusion due to religious reasons. We compared this group to matched controls. Length of stay, post-operative Hgb levels, transfusion requirements and complications were analyzed. Compared to matched controls, Jehovah's Witness patients had an increased length of stay in the hospital (4.92 days vs 3.9 days). They also had a higher incidence of post-operative anemia (mean post-op Hgb 10.1 vs 12.2), though no transfusions were given. There was not an increased incidence of major complication. Outcome scores did not demonstrate a difference. Jehovah's witness patients who refuse blood transfusion had a longer length of stay than controls. They also had higher incidence of postoperative anemia. However, there was not an increase in the incidence of complications and overall, their outcomes were no different than controls. It is our position that Jehovah's Witnesses, and thereby all patients who refuse transfusion, may undergo elective TJA safely, without increased risk of major complication or a negative impact on outcome. Furthermore, our experience with Jehovah's witness patients has improved our management of all patients allowing us to be more selective with transfusion of blood products.

Abstract no.: 32930

TUMORAL CALCINOSIS: A CLINICAL CASE SERIES

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Tumoral calcinosis is a poorly understood phenomenon. It can be described as a syndrome of calcium deposits principally affecting the juxta-articular areas. Only approximately 250 cases have been reported worldwide, thus far. The aim here is to share our experience in recognising and treating this rare condition and highlight a special and unusual case of an 11 year old with a large, relatively painless lump in her buttock. The patients that we included presented to the Bone Tumour Unit in the period of 1996 to 2007. We investigated 7 men and 8 women ranging from 5 to 67 years old. The mean age was 34 years. The symptom patients presented with was mainly that of a lump increasing in size, some of which were painful. On further examination, 2 patients were found to also have skin ulcerations and discharging sinuses. The duration of symptoms ranged from 2 months to 6 years. Of all sites, the buttock was the most affected by tumoral calcinosis (6 cases). One patient had tumoral calcinosis in a particularly rare location – the distal phalanx of thumb. Laboratory tests demonstrated no metabolic abnormalities in 14 patients, but 1 patient was noted to have a hyperphosphataemia. Histologically, all lesions demonstrated classical features of tumoral calcinosis with islands of amorphous calcified material surrounded by bands of soft tissue showing histiocytic and multinucleated giant cell reaction. All lesions in our patient group were successfully excised. For all patients, no surgical complication was reported and no recurrence seen on follow-up.

Abstract no.: 32932

EXTRA-CORPOREAL SHOCK WAVE TREATMENT FOR REFRACTORY PLANTAR FASCIOPATHY: A RETROSPECTIVE REVIEW WITH MINIMUM 1 YEAR FOLLOW UP

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Introduction: There is a paucity of evidence over the long term results of extra-corporeal shock wave treatment (ESWL) for plantar fasciopathy (PF). We present results of minimum one year follow up after ESWL treatment for refractory PF. Methods: 42 patients (77 heels) received ESWL for recalcitrant plantar fasciopathy between 2005-2010. All of them failed treatment with analgesia, orthotics, physiotherapy and heel injections. Three interventions of ESWL (average 14 micro Joules/mm²; 2000 impulses) was given at monthly intervals. Visual Analogue Pain Scale (VAS) was recorded pre procedure and at follow-up. Patients were interviewed by telephone and sent a satisfaction questionnaire by post at the end of follow-up. 4 patients were lost to follow up and 2 could not complete the treatment. The remaining 36 patients (66 heels) were followed up for an average follow up of 2.3 years (1-5 year). Results: 31/36 reported significant pain relief with improvement in VAS score from pre treatment (mean 8.7) to post treatment follow up score (mean 4.2). 29/36 were able to return to their previous occupation, 3 patients were retired and 4 were on benefits. 26/36 could undertake their recreational activities of choice after ESWL treatment. There were no systemic or local complications of treatment. 3/36 required further surgery. Majority of the patients (29/36) expressed overall satisfaction with ESWL therapy and most (31/36) would recommend it to others. Conclusion: ESWL therapy resulted in satisfactory pain relief and patient satisfaction for patients with refractory plantar fasciopathy over a minimum follow-up period of 1 year.

Abstract no.: 32933

EFFECTIVE POSITIONING OF THIGH TOURNIQUET IN OBESE PATIENTS

Ravi BADGE, Amit SHAH, Ram MOHAN

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Background Lower limb tourniquet has been widely used in orthopaedics to reduce intra-operative blood loss. The use of tourniquet in knee surgeries has proven to be beneficial and is often routine in a total knee replacement. Application of proximal thigh tourniquet in obese patients has always been challenging. It poses two important difficulties; one inappropriate application and other is distal slippage whilst application which thus limits the operative field. In this group of patients the tourniquets tend to slip more distally than desired. Along with this the obese patients also warrants longer surgical incision for adequate exposure during procedure. Routinely the tourniquet is applied in following order: First the soft roll is applied around the proximal thigh followed by fastening the tourniquet. The area is then sealed with adhesive U drape. In order to overcome the problem of slippage and limitation of surgical exposure we suggest a simple modification in the routine technique. Description of Technique Instead of applying tourniquet first we propose following steps Step1. Mark adequate surgical incision with marker pen. (Fig.1) Step2. Apply adhesive U drape around the thigh to provide enough surgical draping and exposure. (Fig 2) Step3.The tourniquet is then snugly applied proximal to drape. (Fig 3) This simple maneuver prevents any inadvertent slippage of tourniquet and also ensures the adequate surgical exposure.

Abstract no.: 32934

PSEUDOTUMOUR PRESENTING AS DVT FOLLOWING METAL ON METAL TOTAL HIP ARTHROPLASTY

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OBJECTIVES: To present this unique complication as a result of metal hypersensitivity reaction following MOM total hip arthroplasty as first ever reported case. **INTRODUCTION:** Metal on metal hip arthroplasty has recently been under the spotlight over hypersensitivity reactions associated with these prosthesis, the so-called atypical lymphocytic vasculitis associated lesion, or "ALVAL" Histologically these have been identified as lymphocytic invasion of surrounding tissue and vasculature forming "pseudo tumours", usually presenting as a groin lump associated with recurrence of preoperative pain. We present an unique case of patient with venous obstruction and signs of DVT following Metal-On-Metal (MOM) Total Hip Arthroplasty. **METHODS:** 67 year old male presented to a medical unit with gradual onset pain and swelling in the leg three years following MOM Left total hip replacement. Doppler studies suggested a sluggish flow and patient was started on treatment for DVT. CT pelvis revealed a pelvic mass with compression on the femoral vein. The patient was then treated with excision of the pelvic mass followed by a revision of components. **RESULTS:** The histology of the mass confirmed the diagnosis and a dramatic symptomatic improvement followed. **CONCLUSION:** Metal hypersensitivity is an uncommon but worrisome complication following MOM total hip or resurfacing arthroplasty. Patients may present with rare signs like in our case from individual compression of structures in the inguinal canal and an index of suspicion needs to be maintained. Prompt diagnosis and intervention in the form of revision of components remains the treatment of choice.

Abstract no.: 32937

MINIMAL INVASIVE USE OF DISTRACTION HISTOGENESIS IN RELAPSED CLUB FOOT

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Introduction and aim of the work: Conventional surgical treatment of relapsed club foot deformities is not always successful or easy to apply. In this study we evaluate the use of the distraction histogenesis technique for management of relapsed club foot deformities. Methods: From Jan 2001 -2006, 53 cases 2- 6 years old with relapsed club foot deformities with history of average 3 previous operations (range, 1-8 operations). This thesis based on 50 consecutive cases (61 feet), of average age 4 years and 3 months (range, 2- 6 years). We used preoperative assembly of the leg construct of the apparatus but ankle and foot construct was designed according to the condition of deformity. Twenty patients were discharged from the hospital the same day of the operation. Results: The range of operative time was 1 – 2.5 hours (average of 1.5 hours). Average time in the fixator was 18 weeks (range, 10 weeks - 30 weeks). After fixator removal cast was applied for one month, followed by night splint and special shoes for their daily activities. The average follow-up period was 42 months (range, 36 - 84 months) after fixator removal. The results were: good in 50 feet, fair in 7, bad in 4. Conclusion: Ilizarov Treatment is lengthy, difficult, fraught with complications, and a technically demanding procedure. However, we believe that Minimal invasive use of distraction histogenesis in relapsed club foot using Ilizarov external fixator in a closed management method in treating relapsed club foot deformities in the gray old age zone is an effective.

Abstract no.: 32939

TRAUMA CURRICULUM IN UNDERGRADUATE ORTHOPEDIC EDUCATION

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Musculoskeletal conditions consume enormous resources and costs, and their incidence is increasing worldwide. Therefore, an appropriate education of medical students about these conditions is required. Medical training in musculoskeletal conditions is very inhomogeneous and requires further improvement and standardization regarding quantity and implementation. The developments towards a combined specialty of orthopedic and trauma surgery requires not only the consolidation and revision of the undergraduate education training program but also the development of a catalogue of learning objectives as a uniform basis for undergraduate medical training in the new specialty at Indian medical schools and teaching hospitals. In order to strengthen undergraduate training in the "new" specialty all medical faculties should discuss and define their implementation concepts. The fusion of orthopedic and trauma surgery into a combined specialty requires a new evaluation of postgraduate and undergraduate training. This study presents a structured analysis of the implementation possibilities for undergraduate training. An overhaul of the undergraduate curriculum in orthopedic learning of medical schools is the urgent need of the hour as new medical graduates are found wanting in basics of orthopedics and trauma after they graduate. The results of the study undertaken in this regard with few medical schools are being discussed.

Abstract no.: 32940

MANAGEMENT OF MASSIVE AND IRREPARABLE ROTATOR CUFF TEARS – THE ROLE OF ARTHROSCOPIC TENOTOMY OF THE LONG HEAD OF THE BICEPS TENDON.

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Purpose: To evaluate the efficacy of the arthroscopic tenotomy of the long head of the biceps tendon as an isolated procedure in the treatment of massive and irreparable rotator cuff tears. **Materials:** 91 consecutive patients were operated between December 2002 and October 2010. 77 patients were available for follow-up. The mean follow-up time was 24 months (range, 6 to 64 months). **Methods:** Retrospective study. All patients had a massive and irreparable rotator cuff tear and 6 months of nonoperative treatment prior to surgery. In all of them an arthroscopic tenotomy of the long head of the biceps tendon was performed as an isolated procedure. The Constant Score and shoulder range of motion were assessed preoperatively and on the date of follow-up. The degree of patient satisfaction and complications were registered. **Results:** The average Constant Score improved 20.8 points postoperatively (pain improved 7.9 points, activity 8.9 points, mobility 2 points and strength 2.1 points). 74 patients were very satisfied or satisfied with the surgery. There were 3 cases of postsurgical hematoma, 4 cases of bicipital cramps, 4 cases of unaesthetic popeye sign and 1 case of adhesive capsulitis. There were no surgical reinterventions. **Discussion:** The spontaneous rupture of the long head of the biceps tendon is common in the natural evolution of massive rotator cuff tears and its analgesic effect is well known. As with other studies, we observed a significant improvement in the Constant Score. This arthroscopic procedure offers good clinical results and a low reintervention and complications rate.

Abstract no.: 32941

ARTHROSCOPIC ASSISTED SURGERY OF FEMORAL NECK FRACTURES

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Purpose:Hip arthroscopy is young endoscopic surgical procedure that developed at the end of the last century.In University Hospital Split first hip arthroscopy was preformed in 2003.**Material and methods:**In period from 2007.to 2011 we did 76 arthroscopic assisted surgery of femoral neck fractures. The average age of patients was 69,2years. These were patients who sustained injury to fall in level. Number of injured women was 42 and 34 men, On the occasion of femoral neck osteosynthesis we used three titanium cancellous screws and standard portals for hip arthroscopy. In order to do hip arthroscopy we made hip toilet and partial capsulotomy. Surgical procedure we did in the first six hours after injury.**Results:**In over 75% of all operated full recovery was achieved.Soon after the operation we started with physical therapy. Average of bone healing was 3,7 month. In the other 25% there was no fracture healing . After 6-8 month in these patients we did THP. To emphasize that in patients in whom there is no fracture healing they did not had pain,but because of radiological findings we decided to further operative treatment**Conclusion:**Our first experience in hip assisted arthroscopy of femoral neck fractures is encouraging.This is a demanding procedure that is almost impossible to perform without proper instruments(extension table,C-arm X-ray device,arthroscopic instrumensts).Beside hardware the operator has to know anatomical relations in hip arthroscopy.Hip arthroscopy is very convenient for patients because the hospital stay is short(1-5 days)and physical therapy is started immediately after surgery.

Abstract no.: 32942

ADHESIVE CAPSULITIS IN SHOULDER

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introduction: adhesive capsulitis in shoulder is commonly seen disorder in day today practice. It still remains an enigma and successful treatment depends on proper diagnosis, stage of disease and exercise protocol and surgical treatment. aim: to determine the stage of the disease and to develop a set stretching program to return to functional activities. methods: only patients who underwent extensive exercise protocol were assessed . 150 patients from age of 25 to 65 were followed over a period of 4 years.methods: all patients were given supervised stretching and strengthening shoulder program according to the stage of disease. range of motion, pain control were measured according to shoulder disability index.results: 90% reported good outcome.significant improvement in pain at rest and motion($p < 0.001$)active forward flexion increased by 45 deg,active external rotation increased 25 deg,passive int rotation improved by 8 vertebrae levels.poorly motivated patients and defaulters were associated with decreased range of motion.conclusions: it is complex common problem. stretching exercises work successfully if the diagnosis is precise and the program followed. manipulation under anesthesia or arthroscopic release is required for only a minor group of patients. early rehab program is successful and yields good reproducible results.the set of these stretching exercises that we follow and have shown yields consistent good results and should be followed.

Abstract no.: 32946

OSSIFICATION OF THE ANTERIOR CRUCIATE LIGAMENT □ A CASE REPORT □

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Ossification is observed in a many areas of the human body, particularly in tendon and muscle tissues. We report here a case of the ossification of the anterior cruciate ligament (ACL). The patient was a 47-year-old woman with ossification of the ACL in her right knee. She had previously undergone surgery on 4 occasions for bipartite patella and stiffness of her right knee. Radiological examinations showed that there was ossification in the whole ACL from the intercondylar fossa attachment to the intercondylar eminence. We suggest that this ossification caused the patient pain and limited the range of motion (ROM) in her right knee. Arthroscopic total excision of the ACL was performed. Histological examination showed that the ligament had a trabecula layer structures, with the presence of osteocytes and bone marrow tissues, thereby allowing definite diagnosis of ossification. One year after surgery, the pain and limitation of ROM had improved compared to those experienced prior to surgery. There was no anterior instability after the surgery. To our knowledge, this is the first report of a case of ossification of the ACL.

Abstract no.: 32948

CORONAL BOWING OF FEMUR MAKES FIXED ANGLE OF DISTAL FEMORAL CUT UNSAFE IN INDIAN PATIENTS

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Aim: To analyze the morphological variations in coronal plane in Indian population and to assess if standard angle distal femoral cut is safe. **Materials & Methods:** We measured the valgus correction angle in 254 knees in 134 patients undergoing total knee arthroplasty and studied its correlation with the femoral bow and proximal femoral geometry. In the second part of the study a randomized controlled trial was done to investigate if varying the valgus resection angle of distal femoral cut according to pre-operative measurement improves femoral component placement and alignment in 102 knees. **Results:** The mean valgus correction angle was 5.5° and seventy five out of 254 (29.52%) knees had Valgus Correction Angle (VCA) outside the usual range of 4-7°. VCA shows most significant correlation to coronal femoral bow and the incidence in South Indian population is 56.86%. Femoral bowing more than 4° indicated that valgus correction angle will be outside the standard resection angle. VCA has inverse correlation to neck shaft angle and no relation to BMD. The randomized controlled trial showed improved femoral component placement (89.21±2.20 vs 88.05±3.06, mean & SD, p=0.03), postoperative alignment (177.35±1.89 vs 176.18±2.88, p=0.016) and reduced incidence of outliers (5 vs 18, p < 0.05) when valgus resection angle was individualized as compared to fixed valgus resection angle. **Conclusion:** Coronal femoral bow is common in Indian population and bowing of more than four degrees is associated with abnormal valgus correction angle and consequent malplacement of implant if appropriate correction is not done.

Abstract no.: 32953

TREATMENT OF PROSTHETIC INFECTION BY 2 STAGE REVISION WITH ARTICULATING CEMENT SPACERS – A MIDTERM FOLLOW UP STUDY

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Background/Aims: The purpose of this study was to analyse the effectiveness and functional outcome of two stage revisions with articulating cement spacers in the treatment of infected arthroplasty. Materials and methods: From 2006 till 2011, 37 infected hips and knees with prosthesis in situ were debrided and antibiotic loaded spacers were applied. Of these 30 underwent revision joint replacement and 25 have a minimum followup of 2 years. 11 hips and 14 knees were treated by a staged exchange protocol with antibiotic impregnated articulating cement spacer. 6 weeks of sensitive antibiotics and 6 more weeks of antibiotic abstinence was advised. Revision was done if a sterile repeat aspirate was obtained. Functional scoring and serial ESR/CRP measurements were done at each postoperative visit upto 2 years. Results: Staph aureus was the most common organism isolated. 3 patients (12%) had positive cultures on repeat aspiration on spacer and required re-debridement. Average duration of spacer retention was 17.14 (2 to 34) weeks. 95.6% patients obtained fully functional aseptic joints after revision. Average range of knee motion while on spacer was 65° and after revision 90°. Harris hip scores ranged from 74 to 90(82) and knee society knee scores from 70 to 83 (77). The oxford hip score was av. 21.7 (12-30). The Womac score for knee revisions was 14 (1-32). Conclusion: 2 stage revisions with articulating cement spacers is a very safe and effective method giving early range of movement and uncompromised function during first stage and a highly successful 2nd stage surgery.

Abstract no.: 32955

**ACCURACY OF THE BICEPS TENDON SHEATH INJECTION:
ULTRASOUND-GUIDED OR UNGUIDED INJECTION? A RANDOMIZED
CONTROLLED TRIAL**

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Introduction: Complaints of shoulder pain are very frequent in clinical practice. To relieve this type of pain, intra-subacromial bursa (SAB) injection therapy is commonly employed. Injection procedures include blind and ultrasound-guided injection. In clinical practice, blind injection is routinely performed. However, the SAB is a very thin tissue. Poor response to blind injection may be due to a misplaced injection. It is assumed that ultrasound-guided injections are more effective than blind injections. The purpose of this study was to compare pain-alleviating effects between ultrasound-guided injection and blind injection with lidocaine alone. **Materials and methods:** The subjects were 16 patients (20 shoulders) in whom pain was possibly derived from inflammation of the SAB. Initially, ultrasound-guided injection was performed with 2 ml of 1% lidocaine. After 1 week, blind injection was conducted in the same patient. They subjectively expressed the grade of pain at each time point (before and 1, 5, 10, 15, 20, 25, and 30 minutes after injection) as pain scores. We calculated the amelioration rate by dividing differences between the scores at each time point and before injection by the pre-injection score. **Results:** Pain scores of ultrasound-guided injection were lower than blind injection. Ultrasound-guided injection achieved higher mean amelioration rates compared to blind injection, showing significant differences at all time points ($P < 0.01$). **Conclusions:** Ultrasound-guided technique achieved higher effectiveness compared to blind technique.

Abstract no.: 32957

APPROPRIATE TIME TO JUDGE ULTRASOUND-GUIDED LIDOCAINE TEST RESPONSE FOR SUBACROMIAL BURSITIS

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Background: Shoulder pain derived from inflammation of subacromial bursa (SAB) is a symptom frequently observed in treatment at the department of orthopedic surgery and pain clinic. The diagnosis of subacromial bursitis is based on night pain, pain during shoulder elevation, the result of physical examination and effusion in the SAB on MRI. However, these findings are observed in not only subacromial bursitis but also other disorders. Therefore, to determine whether the responsible lesion is subacromial bursitis, the lidocaine test is performed. However, the appropriate timing of evaluation in the lidocaine test has not yet been clarified. The purpose of this study was to investigate appropriate time to judge lidocaine test response for subacromial bursitis. Materials and methods: The subjects were 18 patients (22 shoulders) in whom pain was possibly derived from inflammation of the SAB. Ultrasound-guided injection into the SAB was performed and 2 ml of 1% lidocaine alone was infused. They subjectively expressed the grade of pain at each time point (before and 1,5,10,15,20,25, and 30 min after injection) as pain scores. We calculated the amelioration rate by dividing differences between the scores at each time point and before injection by the pre-injection score. Results: The mean maximum amelioration rate in all joints was the highest (89.7%) 10 minutes after the injection, it decreased to 88.9% after 15 minutes, and continued to decrease thereafter with time. Conclusion: It is appropriate to evaluate the result of the ultrasound-guided lidocaine test for subacromial bursitis 10 minutes after injection.

Abstract no.: 32959

CONCURRENT USAGE OF HYDROXY APATITE WITH CALF FETAL GROWTH PLATE POWDER FOR BONE HEALING MODEL IN RABBIT

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Introduction: Synthetic hydroxyapatite (HAP), beta-tricalcium phosphate (β -TCP) and their composite are promising biomaterials specifically in the orthopedic, as their chemical composition is similar to that of bone. Due to the need for safer bone graft applications, these bone graft substitutes are gradually gaining increased acceptability. To stimulate the process of bone healing, several methods have been used previously. These methods include use of ultrasound, electrical stimulation, exposure to electromagnetic field, bone grafts, interporous hydroxyapatite and bone growth factors. The following study was designed to evaluate concurrent usage of hydroxyapatite with demineralized calf foetal growth plate (DCFGP) effects on bone healing process. Methods: Fifteen female New Zealand white rabbits were used in this study. In group I (n=5) mid radii bone defect created and filled with DCFGP. In group II (n=5) mid radii bone defect created and filled with hydroxyapatite and DCFGP finally in group III (n=5) other rabbits defect was filled with hydroxyapatite alone. Radiological and histopathological evaluations were performed blindly and results scored and analyzed statistically. Results: There was a significant difference for bone formation and remodeling at the 56th post operative day ($P < 0.05$). Group II was superior to group I and III at the 56th postoperative day. Histopathological evaluation revealed significant differences between group II with group I and III. In conclusion the results of this study indicate that in group II hydroxyapatite has osteoconduction and DCFGP has osteoinduction effects that lead to superior bone healing process in comparison of other two groups.

Abstract no.: 32960

LONG-TERM (10 YRS) CONSEQUENCES OF SCOLIOSIS SURGERY IN ADULTS AND HEALTH CARE SERVICES COST

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Background: Long term follow-up studies report residual issues with quality of life (QOL) and employment after adult scoliosis surgery. With high scoliosis prevalence (18%) and increasing number of adults seeking surgery; return to work, leisure, health care utilization, and QOL needs investigation w.r.t normal adults. No study has investigated the long term consequences of scoliosis surgery in a combined perspective of health economics and health gains in QOL. Methods: a) Economic and clinical data from 122 adults (mean age 22±3 yrs) operated for scoliosis between 1999 -2009 is analyzed. Clinical data (EQ-5d, SRS-30, ODI, Work and QOL questionnaire in Danish settings) is currently completed for 57 AIS and 24 degenerative scoliosis. Imputations are used for missing items of questionnaires. b) Register data for annual rates of resource use and Costs for primary and secondary health care use is acquired from LPR register. All contacts until dead or censoring are included. Activity and costs are analysed from 3 years before surgery to 2011. All costs are valued using tariffs of National Health Service. All service utilization is derived from National Patient register and valued using Diagnosis-Related-Grouping tariffs. Results: Latest updated data (57 patients) shows poor clinical outcome at 3 yrs compared to normal but appear similar in long term. Increase in number of contacts to primary sector health care is seen after surgery with an increase over the years. The trend is seen with costs, and is costlier compared to normal. Analysis to be completed by July 2012.

Abstract no.: 32962

FACTORS INFLUENCING SUBSIDENCE IN CORAIL FEMORAL STEMS

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Aims:To evaluate the factors associated with subsidence in collared and uncollared versions of the Corail femoral stem. **Methods:** 121 hips in 113 consecutive patients were studied, operated on by two surgeons in our hospital differing in their choice of Corail stem. This gave two groups of patients with 66 hips having collared stems and 55 hips having uncollared. We recorded patients' age, ASA grade and BMI. Also their radiographs post-operatively at day 1, 6 weeks and 1 year, were evaluated measuring subsidence and canal fill ratio (correcting for magnification errors by calibration using femoral head size). Canal fill ratio was defined as the ratio of the width of the prosthesis to the width of the femoral medullary cavity and was calculated at a level one-third down the length of the stem and two-thirds down the stem. **Results:**Clinically significant subsidence (>3mm) occurred in 7.6% of collared and 10.9% of uncollared stems, all within six weeks, but did not reach statistical significance ($p=0.75$). Predictive factors for subsidence were a combination of reduced canal fill ratio in the distal third of the stem; low ASA grade; male sex and collarless stem ($p<0.05$). Revision for symptomatic loosening was required in 1 patient in each group (1.5% collared versus 1.8% uncollared). **Discussion:** We have identified factors predictive of stem subsidence which should alert surgeons to closer patient follow-up as the rate of early revision is 18% in stems with >3mm of subsidence. However, the presence of a collar does not seem to be protective.

Abstract no.: 32968

COMBINED QUADRICEPS AND BIPARTITE PATELLA AVULSION – CASE REPORT AND LITERATURE REVIEW

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Bi-partite patellae is a rare congenital synchronosis of the patella occurring in 1-8% of individuals, occurring bilaterally in 50% of those affected. Saupe described the classification of this condition in 1943. Fractures of non-bipartite patellae account for 1% of fractures with well-established treatment rational. Separation injuries to bipartite patellae are rare injuries and separation of the bipartite patella with an associated ipsilateral quadriceps tendon rupture are a very rare combination with no consensus on best method of treatment. Treatment of quadriceps tendon rupture is well established and the literature describes a range of treatment options for separation of the bipartite fragment in the absence of quadriceps rupture a variety of treatment techniques have been described. These include non-operative, excision and osteosynthesis of the fragment. But there are only a handful of reports of the occurrence of a combined injury with no consensus on the best treatment of this condition. We present the case of a quadriceps tendon rupture that extended to include an avulsion of a type III bi-partite patella in a fit and well young patient. We examine a range of treatment options described for this and similar injuries. We discuss the operative technique which we used to treat this patient's injury using a combination of compression screw osteosynthesis and suture anchors. This method yielded excellent results in our patient. Our fixation technique allowed for strong repair of the bony and soft tissue elements of this injury to allow for early range of movement and rapid recovery.

Abstract no.: 32971

HYPERBARIC OXYGEN THERAPY IN THE TREATMENT OF DIABETIC HAND

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Aim: To investigate the efficacy of the Hiperbaric Oxygen Therapy (HBOT) in the treatment of diabetic hand. **Patients and Methods:** Between the years 2006 and 2011, we applied HBOT to consecutive 9 patients with diabetic hand. HBOT was applied in multichamber with 2.5 ATA (Atmosphere Absolute) pressure. **Results:** The number of diabetic hand was approximately 1% of all patients we treated with HBOT for their diabetic foot or hand ulcers. The mean age of the patients was 54 years. Polyneuropathy was detected 78% and angiopathy 22 % of patients. The etiologic factors were as: penetrative trauma to the hand, minor traumas, cutting injury, human bite and after thromboembolic wound. Because of necrotic tissue infection we applied finger amputation in one patient and distal phalanx amputation in one patient. Remaining 7 patients were healed without surgical intervention. In amputated 2 patients D.M. was diagnosed with the existence of ulcerative wound. The mean HBOT sessions were 35.8. The mean follow-up period was 20.4 months. There was no major complication related with the treatment. **Discussion:** Although diabetic hand was seen markedly rare when compared with the diabetic foot ulcers, the amputation is still a great risk especially when we faced with uncontrolled glycemia and circulation deficiency. HBOT may be effective when we treat diabetic hand ulcers with improving tissue oxygenation and wound healing period.

Abstract no.: 32977

TREATMENT OF ACROMIOCLAVICULAR JOINT DISLOCATION WITH SUTURE RECONSTRUCTION AND CORACOCALVICULAR LIGAMENT TRANSFER

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Introduction: Acromioclavicular joint (ACJ) dislocation is common in sports medicine. Surgical intervention is generally indicated for acute dislocation of Rockwood grade III and more severe injuries. Various methods of reconstruction and augmentation have been described. The aim of this study is to evaluate the results of treatment of acute ACJ dislocation with coracoclavicular ligament transfer combined with coracoclavicular suture loop and acromioclavicular suture fixation. Methods: Twenty-five patients with acute ACJ dislocation were treated with previous technique. All patients underwent surgery within two weeks of injury. Through anterosuperior shoulder incision, two ethibond sutures were wrapped under the coracoid and around the clavicle. Moreover, four drill holes were made in the acromion and clavicle (2 in each bone) where another ethibond suture was used to pass through these holes to fix the ACJ. Finally, the coracoacromial ligament was transferred to the undersurface of the clavicle. Results A mean follow-up was 15 months, the mean constant score improved to 96 points. All 25 patients returned to normal life at a mean of 2.5 months postoperatively. Radiologically, 22 patients achieved anatomical reduction of ACJ. In 3 patients, mild subluxation was encountered. Conclusion: Treatment of acute ACJ dislocation with coracoacromial ligament transfer combined with coracoclavicular suture loop and ACJ suture fixation is a reliable technique for restoring stability to the ACJ. It does not only prevent the superior translation, but it also prevents the anterior-posterior translation of the clavicle

Abstract no.: 32981

PROXIMAL HUMERUS 3 AND 4 PARTS FRACTURES- RESULTS OF FIXATION WITH LOCKING PLATE

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Introduction: The aim of the study is to evaluate early results of proximal humerus fractures treated with PHILOS plates. We present 24 cases of proximal humerus fractures, 15 with 3 parts according to neer and 9 with 4 parts treated with Philos plates. Methods: In this study, we reviewed 24 patients retrospectively treated by one senior surgeon between Oct 2009 - Oct 2011 by using proximal humerus internal locking system. All cases were done by using Neviasser-Mckenzie(19) and deltopectoral(5) approach. Inclusion criteria: 3 and 4 parts proximal humerus fractures Exclusion criteria: patients treated with polaris nail and hemiarthroplasty Mean follow up was 18 months with age of 28 to 77 years. Patients had check xrays and clinical evaluation with oxford shoulder and DASH score. Results: One patient had wound infection, was treated with washout and intravenous antibiotics. Two patients had prominent screws which were removed later. No late necrosis of the humeral head noted. One patient developed partial axillary nerve neuropraxia, which gradually improved. The Extended Neviasser-Mckenzie approach offers good exposure but risk of damage to the axillary nerve is higher. The mean DASH score at the end of one year was 14.2 +/- 15.8 points and mean oxford shoulder score was 32 +/- 4 References: sudkamp N., Bayer J., Hepp P., Voigt C., Ostern H., Kaab M., Luo C., Pleck M., Wendt K., Kostler W., Konrad Open reduction and internal fixation of proximal humerus fractures with use of the locking proximal humerus plate. Results of prospective, multicentre, observational study. JBJS (America) 2009

Abstract no.: 32982

A CASE REPORT OF ACUTE RUPTURE OF AN OCCULT POPLITEAL PSEUDOANEURYSM SECONDARY TO A DISTAL FEMORAL OSTEOCHONDROMA IN A PATIENT WITH HEREDITARY MULTIPLE EXOSTOSES

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Introduction: Osteochondromas constitute 25-50% of all benign bone tumours and their pathognomonic feature is that of continuity with the underlying bone cortex and medullary canal. Complications arise in 4% of osteochondromas giving rise to osseous deformity, growth abnormality, fracture, and pressure on surrounding structures (nerves, vasculature, bursa). Vascular complications include displacement of surrounding vessels, stenosis, arteriovenous fistula formation, and development of pseudoaneurysm. Case Report: A 21 years old male with known hereditary multiple exostoses presented with a 24 hour history of atraumatic bruising and swelling of the posterior thigh. A leaking popliteal pseudoaneurysm was diagnosed on ultrasound and computed tomography angiography (images available for presentation). Emergency long saphenous vein bypass grafting was performed and the exostosis excised. The patient required a post-operative blood transfusion but otherwise made a full and uncomplicated recovery. Discussion: Pseudoaneurysm secondary to osteochondroma usually presents as an enlarging mass behind the knee. They occur in this location since they lie in close proximity to the fixed position of the popliteal artery leaving the adductor canal. This complication most commonly affects young patients who are approaching skeletal maturity as the soft cartilage cap covering the exostosis undergoes ossification and becomes firm and often sharp. Acute rupture of a popliteal pseudoaneurysm has only been reported twice, once from a tibial osteochondroma and once from a fibula osteochondroma. Acute rupture of an occult popliteal pseudoaneurysm caused by a distal femoral exostosis has not previously been reported.

Abstract no.: 32983

TILLAUX FRACTURE IN AN ADULT: A CASE REPORT AND REVIEW OF THE LITERATURE

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This report presents a rare ankle fracture pattern which is more commonly seen in the adolescent population. Forced supination and external rotation of the foot causes an intact anterior inferior tibiofibular ligament (AITFL) to become taut resulting in a tension force being applied to the anterolateral aspect of the distal tibia. Asymmetric physeal closure of the distal tibia between the ages of 12 to 15 years renders this area vulnerable to avulsion by the pull of the AITFL. This injury is called a Tillaux fracture. In the adult where physiodesis has occurred this injury is far less likely as the ligament ruptures preferentially. A 68 years old gentleman presented to the emergency department having fallen down a flight of stairs. His ankle became immediately swollen and was unable to weight-bear. Clinical examination confirmed the swelling with tenderness over the medial aspect of the ankle. Plain film radiographs revealed a widening of the ankle syndesmosis with an associated fracture of the antero-lateral tubercle of the distal tibia. He was taken to theatre where the bony fragment was fixed using a cancellous screw and the syndesmosis was further strengthened using two TightRope® (Arthrex) suture anchors. After a period of 4 weeks non-weight bearing the fracture had united and he made an uneventful recovery. There are only two other reports of such an injury in an adult in the literature, here we describe the underlying anatomy and method of fixation of this rare injury.

Abstract no.: 32985

THE MOREL-LAVALLÉE LESION AS A RARE DIFFERENTIAL DIAGNOSIS FOR RECALCITRANT BURSITIS OF THE KNEE: A CASE REPORT AND LITERATURE REVIEW

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Introduction: Maurice Morel-Lavallée (1853) first described this closed degloving lesion from blunt shearing forces separating the hypodermis from the underlying fascia. The space created becomes filled with blood, lymph and necrotic fat around which a fibrous pseudocapsule may develop. Letournel and Judet first used the name 'Morel-Lavallée lesion' (MLL) in their classification of acetabular fractures but are now accepted to occur throughout the body. Case Report: A 72yrs old male ex-jockey was referred to our institution with recalcitrant prepatellar bursitis. The injury was sustained after striking his right knee whilst horse riding 9 months prior. Previous treatments included repeated aspiration and excision of the bursa with elastic compression bandaging. A diagnosis of a Morel-Lavallée internal degloving injury was made and the lesion was satisfactorily managed by an internal quilting procedure to eliminate the potential dead-space. Discussion: A review of the literature reveals 29 published reports of Morel-Lavallée lesions with sufficient information for inclusion. These came from 14 separate countries with a total of 204 lesions in 195 patients. Most common anatomical location was the greater trochanter / hip (36%), followed by the thigh (24%) and the pelvis (19%). Most were managed surgically with evacuation of the haematoma and necrotic tissue followed by debridement which was often repeated (36%). Conservative treatment with percutaneous aspiration and compression bandaging accounted for the next most common treatment (23%). The knee was the fourth most common region affected (16%) and only 3 other lesions in the literature have been managed by a quilting procedure.

Abstract no.: 32988

AIR ARTHROGRAM FOR HIP INJECTIONS

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Indications for injection of the hip are twofold. Firstly, intra-articular corticosteroid injection may provide pain relief and improve range of movement in those with significant osteoarthritis. Secondly, injection of local anaesthetic into the hip joint can be used as a diagnostic procedure in order to help differentiate between intra-articular pathology such as labral tears and extra-articular pathology such as tendonitis, hernias and muscular pain. To confirm intra-articular entry, many surgeons currently inject a small volume of radio-opaque dye into the joint. This carries an inherent risk of hypersensitivity and cost, both of which could be potentially avoided. Objectives: The aim of this report is to present a relatively simple, cheap, safe and reproducible technique of confirming intra-articular entry into the hip joint. Methods: A 17G needle is introduced into the hip joint until the image intensifier shows it to be within the capsule. Rather than injecting a radio-opaque dye into the joint space at this stage, 10ml of air is injected using a standard 10ml sterile syringe. This results in the formation of an air arthrogram within the capsule of the hip joint which confirms intra-articular entry. Results: We have found this technique reliable and consistent for all our patients undergoing an injection of the hip joint without any complications. Conclusion: The replacement of dye with air reduces the chance of a hypersensitivity reaction during the procedure, reduces costs and allows slightly faster set-up with no reduction in diagnostic sensitivity or specificity and no increase in technical difficulty.

Abstract no.: 32990

SEPTIC SHOULDER CAUSED BY ACUPUNCTURE

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Worldwide, acupuncture is a popular alternative medicine option for releasing pain, treating diseases, or promoting health. Although it is generally considered safe, a few complications have been reported. These complications range from minor side effects such as pain, local hematoma formation, or the aggravation of symptoms, to serious complications that include mechanical injuries such as pneumothorax and severe infection requiring surgical treatment. In orthopedic clinics, reports of complications caused by acupuncture are rare. We are presenting three cases of septic shoulder caused by acupuncture.

Abstract no.: 32995

**ONE CHALLENGE CASE OF SEVER DEFORMITIES AND SHORTENINGS
CORRECTED WITH ILLIZAROVE**

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Dr Ismail Wardak from ANA hospital Kabul Afghanistan 10 challenges Cases of sever deformities and shortenings corrected with Illizarove. A Power point documentary presentation having pre and post op as will as 1-10 years follow up X-rays, pictures and videos. 1: U ship deformity of tibia in a 18 Y/O F while walking before surgery the meddle part of the front side of the leg touching her toes. Resection of deformed part and two stages straitening of the leg using Illizarove with a excellent outcome. 3Y FU 2: old Epiphysial Separation of femoral condyls The separated epiphysial surface healed in front of femur bone. Closed reduction using circular apparatus in 4 months. 3 : 16cm Femur defect 45Y/O man Closed osteotomy with Illizarove ,12cm lengthening 4 : 24cm shortness of lower limb 17 Y/O , 16 cm limb lengthening 5 : Tibia Giant cell tumor, 13 Y/O Resection of Tumor with 8 cm bone transport of 6 : Tibial defect and 8cm shortening in a 18Y/O male. Tibialization by Illizarove 7 : Lordotic 8cm short Tibia in 16Y/O F corrected by 2 osteotomy and Illizarove 8 : Tibial Kyphosis 22 Y/O M with 40o angulations. 2 closed Giggle saw osteotomy. 9 : lower limb sever shorting in a 13 Y/O F after knee condyles resection, Repeated lengthening of limb in a 10 years period. 40cm of her bone is regenerated bone. 10 : 5cm tibial defect in a 34Y/O M treated by TON(transport over nail).with 2 rings

Abstract no.: 32997

THE EFFICACY OF D-DIMER MEASUREMENT IN THE SCREENING OF DEEP VEIN THROMBOSIS FOLLOWING TOTAL HIP ARTHROPLASTY

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Plasma D-dimer measurements have been widely used for screening of deep venous thrombosis (DVT). However, the efficacy of the screening of DVT after total hip arthroplasty (THA) remains controversial. The purpose of this study is to evaluate the efficacy of D-dimer in the screening of DVT after THA. 159 consecutive patients undergoing THA underwent ultrasonography and D-dimer assay preoperatively and postoperatively on days 1 and 7. DVT was confirmed with ultrasonography preoperatively and postoperatively on days 1 and 7, respectively. The cut-off values of the D-dimer postoperatively on days 1 and 7 were determined by a receiver operating characteristic analysis. Mechanical prophylaxis was carried out in all the patients, but anticoagulants were not used until DVT was diagnosed with ultrasonography. Preoperative DVT was diagnosed in 7 (4.4%) of 159 patients. Postoperative DVT was diagnosed postoperatively on day 1 in 10 (6.6%) of the remaining 152 patients without preoperative DVT, and on day 7 in 7 (4.6%) patients. There was no significant difference in the D-dimer levels between patients with and without DVT preoperatively and postoperatively on days 1 and 7, respectively. The cut-off value of 6.0 μ g/ml on postoperative day 1 yielded a sensitivity of 80%, specificity of 38.7%, positive predictive value of 8.4%, and negative predictive value of 96.5%. The cut-off value of 8.3 μ g/ml on postoperative day 7 yielded a sensitivity of 71.4%, specificity of 44.4%, positive predictive value of 6.3%, and negative predictive value of 96.8%. Accuracy of D-dimer is too low to use screening of DVT after THA.

Abstract no.: 33000

POPLITEOFASCICULAR INJURY

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Popliteofascicular injury had been proposed as the possible cause of unstable lateral meniscus. Meniscal repair at popliteal hiatus area during lateral meniscal allograft transplantation had not been described in literature. In this report, a case of unstable lateral meniscus after allograft transplantation surgery had been described. Arthroscopic meniscal repair at popliteal hiatus are resolved the mechanical symptom.

Abstract no.: 33002

INTERNAL FIXATION OF COMMINUTED FRACTURES OF PATELLAR APEX WITH BASKET PLATE: LONG TERM FUNCTIONAL RESULTS

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Introduction: Patellar fractures comprise 1-2% of all fractures and interfere with the knee extension system. Comminuted fracture of the patellar apex are treated with partial patellectomy with different results. The aim of this study is to evaluate long term results of internal fixation of comminuted fractures of the patellar apex. Methods: In the period from 1988. to 2010. 155 patients were treated with basket plate osteosynthesis. Only 83 patients were available for late functional evaluation. For functional outcome evaluation we used Cincinnati knee rating system. Results: The results were excellent in 63 patients, good in 15 patients and satisfactory in 5 patients. Conclusion: Internal fixation with basket plate allows early unrestricted knee joint movement and full weight bearing which provides later excellent functional result.

Abstract no.: 33008

SURGICAL RESULTS OF THE GIANT CELL TUMOR OF THE TENDON SHEATH. A PROSPECTIVE COHORT STUDY.

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Introduction: Giant cell tumors of the tendon sheath (GCTTS) are the second most common tumor of the hand. The surgical results are compared with the findings in the current literature. Methods: From 2004 to 2009, 64 patients with GCTTS were surgically treated. Both men and women were included in this research, with no age limit and with a follow-up of 36 months. Parametric and non-parametric tests were used to determine statistical significance. Results: There were forty females (62.5%) and twenty-four males (37.5%) ($p=0.04$). The female age averaged 34 years (range 10-68 years) and male 31 years (range 11-64 years) ($p=0.66$). Fifty-two patients were white (81.2%) and twelve were black (18.8%) ($p<0.001$). The right hand was involved in thirty-six patients (56.2%) and the left side in twenty-eight (43.8%) ($p=0.31$). Tumors were located on the palmar side of the hand in forty-two patients (65.6%) and at dorsal in twenty-two (34.4%) ($p=0.01$). The index finger was involved in twenty-one patients (32.8%), thumb in twenty-two (34.3%), third finger in eight (12.5%), fourth finger in nine (14.1%) and fifth finger in four patients (6.3%) ($p<0.001$). Thirty-one lesions occurred at the DIP (48.4%), eleven at the PIP (IP thumb included) (17.2%) and twenty-two at the phalanges diaphysis (34.4%) ($p=0.009$). Tumors' recurrence was reported in three patients (4.7%). Conclusion: From this experience, the authors conclude that there is a tumor preference for white women, palmar side of the hand and radial fingers. There were no statistical contribution concerning to age neither hand's side.

Abstract no.: 33015

ANGULAR DEFORMITY OF THE ANKLE WITH SPARING

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Progressive angular deformity of an extremity due to differential physal arrest is the most common late orthopaedic sequelae following meningococcal septicaemia in childhood. 10 patients (14 ankles) with distal physal arrest as a sequelae of meningococcal septicaemia have been reviewed. Radiographic analysis of their ankles has demonstrated a distinct pattern of deformity. In 13 out of 14 cases we have found that the distal fibula physis is completely unaffected and that continued distal fibula growth contributed to a varus deformity. We recommend that planning of surgical management should take in to account of this consistent finding during correction of these deformities.

Abstract no.: 33021

FOR YOUR PATIENT RATHER THAN TO YOUR PATIENT, WIRING THE GLOBE HEALTHCARE

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Background: As 17th December, 2010 remarks the intention for building a global entity relates the patients' benefits, healthcare system and the market. The perfect storm is almost there! Rising in medical care costs, quality concerns in the provided one and accessibility borders hindering medicine are the most striking powers now. Moving towards more proactive roles in providing healthcare formulates the golden standard for each medical procedure conducted nowadays. On the other hand, empowering people to take action in improving their health status is an essential attribute for a successful medical intervention. Objectives: Exploring the utility of World Health Bank (WHB) initiative in the Osteoporosis, patient-interaction settings. Methods: In-depth literature review was carried out using the keywords; Osteoporosis, Electronic Medical Records (EMR), Internet Technology. Results: * Relating the benefits of different stakeholders in the osteoporosis settings mandates structured channels for exchanging information, processing it and driving outcomes. * Active contribution of patients in formulating a treatment plan as a health partner, while keeping his/her interest in the heart of it, guarantees its fruitful outcomes. * A user-friendly interface, for the information technology field, with its efficient and security capabilities, represents a beneficial influence on the already established health's backbone. Conclusions: World Health Bank (WHB) represents a possible approach for delivering best health's practices in Osteoporosis through its creation of a highly collaborative culture across the globe.

Abstract no.: 33022

POSSIBLE FACTORS LEADING TO THE FORMATION OF A PEDESTAL AT THE TIP OF A MODULAR FEMORAL STEM IN METAL-ON-METAL TOTAL HIP ARTHROPLASTY

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INTRODUCTION: This study aims in investigating the factors affecting the formation of a pedestal at the tip of a modular stem in Metal-on-Metal THA. **METHODS:** Between 2006-2007, 62 patients (44 female-18 male), mean age 62y (range 27-78y), a total of 65 hips, have undergone Metal-on-Metal THA with the Profemur-E® stem, which utilizes six neck geometries. Dorr's bone quality, canal fill in stem tip and stem alignment were assessed on pre- and postoperative radiograms. The formation of a pedestal was recorded at follow-up. Concomitantly, a cadaveric femur and a Profemur-E stem were digitized, leading to a three-dimensional Finite Elements (FE) model. While changing neck geometry, strains were calculated, focusing on two profile lines, along the medial and lateral femoral sides respectively. **RESULTS:** The patients completed at least two years of follow-up. 21 hips (32%) developed a pedestal, while 44 (68%) didn't. No statistical correlation between bone quality, stem alignment, canal fill and the formation of a pedestal was revealed. Similarly, neck geometry was found to have no effect. However, among neck types, pedestals developed twice more frequently when anteverted rather than straight necks were used. The FE analysis revealed that laterally at the tip area, the use of an anteverted neck invoked the largest increase (224%) in strain; similar values were recorded for all neck types at the medial side. **CONCLUSION:** The performed FE analysis has shown that neck geometry may play a role in the formation of a pedestal. However, a larger case series study is needed to confirm this estimation.

Abstract no.: 33025

SUPRACONDYLAR NON-FOCAL DOME OSTEOTOMY FOR ACUTE CORRECTION OF FEMORAL FRONTAL PLANE DEFORMITY.

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Introduction: Dome osteotomy long described by Coventry was first used in the tibia. Supracondylar wedge osteotomy has been extensively described. Dome osteotomy of the distal femur is described here for correction of coronal plane deformity. Methods: Six patients with distal femoral coronal plane deformity (four valgus and two varus) were treated. Average age was 27.5 years, range (17-38), 4 males and 2 females. The metaphyseo-diaphyseal junction was selected as the osteotomy site. Osteotomy was created using multiple drill holes, completed using a curved osteotome. Hip-knee-ankle axis line under image intensifier allowed intraoperative correction of limb alignment. Fixation was achieved using a contoured distal femoral buttress plate in 5 cases and a T plate in the sixth. Bone graft was not used in any case. Postoperative CT scanogram showed realignment of mechanical axis, without creating secondary deformity. Results: Desired correction was achieved acutely intra-operatively. Mean correction was 18 degrees. Buttress plates afforded stable internal fixation, allowed early range of motion, and avoided muscle wasting. Union was achieved in all cases by 12-14 weeks. Lateral knee pain occurred in 33 %. All patients were satisfied. Conclusion: Non-focal dome osteotomy is versatile and can be used to correct varus or valgus deformity. Rotation along the osteotomy arc produces correction without limb length alterations. Done in the supracondylar area, union was achieved easily. Acute and full correction ensures patient satisfaction. Keywords: femoral dome, supracondylar osteotomy, coronal deformity, non-focal.

Abstract no.: 33028

DOES AGEING RESULT IN MORE COMPLICATIONS IN INTERNALLY FIXED DISTAL RADIUS FRACTURES WITH VOLAR FIXED ANGLE LOCKING PLATES?

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Introduction: There is a trend to perform more open reduction and internal fixations of distal radius fractures for all age groups including elderly patients. Objectives: To test the null hypothesis that there is no difference between age groups in complication rates following DVR volar plating of distal radius fractures and to compare complication rates with published literature. Methods: A total of 137 patients aged 55 years and above with distal radial fractures treated with a DVR volar locking plate between November 2008 and February 2010 had data collected retrospectively from patient notes. A total of 131 patients met the inclusion criteria and had a minimum of 6 weeks follow up. Patients were divided into three age groups according to age; G1 included patients aged between 55-65 years, G2 included patients aged between 66-75 years of age and G3 included patients more than 75 years of age. Results: The average age was 67 years and 86% were female. The average interval between the fracture and operation was 9 days (0-28). There were 70 patients in G1, 40 patients in G2 and 27 in G3. Nerve injury rate was 8.8% and there was no statistical significance between groups ($P=0.13$), CRPS occurred in 8% of cases and there was a non-significant difference between groups ($P=0.08$), tendon injury occurred in 2%, a superficial infection occurred in one case and there was blistering in one patient. Conclusion: There are no increase complication rates with fixing distal radial fracture in elderly patients with good functional demands.

Abstract no.: 33031

BIOMECHANICAL COMPARISON OF ANTERIOR SCREW FIXATION TECHNIQUES FOR TYPE II ODONTOID FRACTURES: 1 VERSUS 2 SCREW TECHNIQUE

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The type II odontoid fracture is the most common type of odontoid fracture, it is inherently unstable. Anterior screw fixation is the best treatment. Both one- and two-screw techniques have their own merits and demerits. The objective the study is to compare the stability between 1+2-screw fixation. 14 fresh cadaver axes were randomly divided into two groups and fixed with one- or two-screw respectively. The stiffness of intact specimens and after screw fixation in six directions was tested on the universal mechanical testing machine and the corresponding data compared with each other. The results showed that the torque load transmitted to the odontoid by ligaments is around 1/3 ($0.53 \pm 0.38 \text{Nm}$) of the maximum physiological load (1.5Nm) in axial rotation. The torque acting on the occipito-altanto-axial complexes is dominated by the odontoid at smaller rotational angles. At larger rotational angles, the other ligaments that do not attach to the odontoid will join in and react against the torque more. The bone mineral density has statistical significant correlation with shear stiffness loading from anterior and posterior, torsional stiffness loading from left and right of intact specimen. Both one and two-screw fixation can gain the same shear and torsional stiffness. The result indicates that anterior odontoid fixation with one- or two-screw offers similar stability. Both the techniques cannot restore the normal shear and torsional stiffness. The stiffness of the odontoid after one- or two-FCS fixation is much less than that of normal.

Abstract no.: 33032

BIOPOLYMER AUGMENTATION OF THE LAG SCREW IN THE TREATMENT OF FEMORAL NECK FRACTURES--A BIOMECHANICAL IN-VITRO STUDY.

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The cut-out of the sliding screw is one of the most common complications in the treatment of intertrochanteric fractures. The aim of this study was to reproduce the cut-out event biomechanically and to evaluate the possible prevention of this event by the use of a biopolymer augmentation of the hip screw. The polyurethane foam Lumoltan 200 with a compression force of 3.3 Mpa and a density of 0.192 g/cm(3) was used to reproduce the osteoporotic bone. A cylinder of 50 mm of length and 50 mm of width was produced by a rotary splint raising procedure with planar contact. During the tests the implants reached a critical changing point from stable to unstable with an increased load progression of steps of 50 Newton. This unstable point was characterized by an increased migration speed in millimeters. This peak of the migration curve served as an indicator for the change of the hip screw position in the simulated bone material. In the augmented implant we found that the mean force at the failure point was 1987 Newton . This difference was statistically significant. Conclusion, the bone density is a significant factor for the stability of the hip screw implant. The osteosynthesis with screws in material with low density increases the chance for cut-out. A biopolymer augmented hip screw could significantly improve the stability of the fixation. Our study results indicate, that a decrease of failure in terms of cut-out can be achieved with polymer augmentation of hip screws in osteoporotic bones.

Abstract no.: 33036

RESULTS OF ARTHROSCOPIC DOUBLE BUNDLE ACL RECONSTRUCTION IN ANTERIOR CRUCIATE LIGAMENT DEFICIENT KNEE

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Introduction: Single-bundle ACL reconstruction techniques provide satisfactory subjective results and restores anteroposterior stability in the vast majority of patients. However, residual minimal rotatory instability is still present in 20% of cases independent of the graft, surgical technique, and choice of fixation device. Methods: From February 2008 to December 2009, a prospective study was undertaken to evaluate the results of arthroscopic anterior cruciate ligament (ACL) reconstruction using the double-tunnel technique (two tibial tunnels and two femoral tunnels). Fifty patients with torn ACL were operated upon at El-Hadra University Hospital. Results: All patients were analyzed using the modified International Knee Documentation Committee (IKDC) evaluation form. Preoperatively, of the fifty patients, there were 2 evaluated as abnormal and 48 as severely abnormal. Postoperatively, 40 patients became normal and 10 were nearly normal. Conclusion: Anatomic double-bundle ACL reconstruction has succeeded to replicate ACL function and anatomy and restore normal knee kinematics and patient activity level.

Abstract no.: 33037

THE HISTOPATHOLOGICAL STUDY OF CONCURRENT USE OF AUTOGENOUS GREATER OMENTUM WITH PERSIAN GOLF CORAL ON BONE HEALING IN DOG

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Introduction There is a continuing search for bone substitutes to avoid or minimize the need for autogenous bone grafts. Hydroxyapatite (HAp), a crystalline phase of calcium phosphate found naturally in bone minerals, has shown tremendous promise as a graft material. Coral a crystalline phase of calcium sulphated is an osteoconductive material used as a bone graft extender. It has long been recognized that the greater omentum has great ability in revascularization of tissue and promote angiogenic activity in adjacent structures to which it is applied. The reestablishment of vascularity is an early event in fracture healing; and the process of bone development and repair depends on the adequate formation of new capillaries from existing blood vessels. This study examined the effect of free greater omentum flap and Persian Gulf coral on osteogenesis in vivo using dog model bone healing. **Methods** A critical size defect of 10 mm elongation was created in a radial diaphysis of 16 dogs and either supplied with omentum (n=4), coral (n=4), coral-omentum (n=4) and left empty (n=4, control group). Radiographs of each forelimb were taken postoperatively on first postoperative month and then at the 2th month of post injury to evaluate bone formation, union and remodeling of the defect. The operated radiuses were removed on 58th postoperative day and were histopathologically evaluated. **results** This study demonstrated that both coral and coral-omentum showed significantly more bone formation than omentum and the negative control (empty defect) at 8 weeks post-injury.

Abstract no.: 33038

IS MORTALITY OF HIP FRACTURES RELATED TO EARLY ORTHOGERIATRIC ASSESSMENT WITHIN 48 HOURS FROM ADMISSION IN A DEPARTMENT WITH STRICT PROTOCOLS ?

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Introduction: In our institution, introducing the Orthogeriatric service has significantly improved outcomes for neck of femur fracture patients. Orthogeriatricians actively participate in the daily trauma meetings and are involved in delivering teaching to junior and middle-grade doctors in the Orthopaedic department. All patients are assessed by the Orthogeriatricians during normal working hours in week days and are classified according to the Swindon Complexity Classification to stratify care. This service is not available on weekends. Aim: Assess if patient outcomes are affected if the day of admission is over a weekend. Methods: Data entered and stratified by the Complexity Classification (C0-C3) prospectively onto our database over a 12-month period (2008- 2009). We admitted 273 consecutive patients. Day of admission, admission to theatre time, length of acute stay and 30-day and one year mortalities were reviewed as outcome measures. Results: Mean age was 81.3 years, 4:1 female to males and overall 30-day mortality of 4.4% and 1-year mortality of 20%. There was no statistically significant difference in the 30-day or 1-year mortality rates between groups admitted in weekdays as opposed to weekends ($P=0.43$ and $P=0.88$ retrospectively). Difference in one-year mortality between all stratified groups was statistically significant ($P < 0.001$). Conclusion: Setting a strict protocol for the management of Neck of femur fractures does not require extra Orthogeriatric medical cover over the weekends to improve outcomes.

Abstract no.: 33043

EFFICACY OF EPIDURAL ANALGESIA ALONE VERSUS COMBINED EPIDURAL-SINGLE DOSE INTRAOPERATIVE PERIARTICULAR ROPIVACAINE INFILTRATION IN TOTAL KNEE ARTHROPLASTY- PILOT STUDY

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The recent development of perioperative multimodal high dose wound infiltration analgesia using ropivacaine via intraarticular epidural catheters has significantly improved pain relief and walking ability following total hip and total knee arthroplasty. The risk of infection with the use of continuous injection through a catheter in hip and knee arthroplasty, still remains unknown, although may be comparable to the use of drains. This has caused anxiety amongst surgeons using or considering this technique. We conducted a pilot study (n=24) to compare the efficacy of combined epidural-single dose periarticular ropivacaine (80mg) infiltration (R group, 62.5%) versus epidural analgesia (E group, 37.5%) for providing postoperative pain relief and early mobilisation following total knee arthroplasty. Ten patients (41.66%) achieved 80 degrees knee bending on 'Zero' postoperative day, 12 patients (50%) on 'first' postoperative day and two patients (8.33%) had delayed knee bending (both E group). Seven patients (46.6%) of R group achieved 80 degrees knee bending on (Zero) postoperative day and the rest (53.4%) on the first postoperative day. Three patients (33.33%) of E group achieved 80 degrees knee bending on 'zero' postoperative day, four (44.44%) on first postoperative day and 2 cases (22.22%) had delay beyond first day. All patients of R group were ambulant on first postoperative day (100%). Seven patients (77.77%) in the E group were ambulant on first postoperative day. Combined epidural analgesia with single dose intraoperative periarticular ropivacaine infiltration is more efficacious than epidural analgesia alone for pain relief and early mobilisation in patients undergoing total knee arthroplasty.

Abstract no.: 33047

SURGERY FOR THE 5TH METATARSAL FRACTURES

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Surgery for the 5th metatarsal fractures are frequently suggested in the literature. Despite it is a common injury surgery was performed in Hamad Hospital in only 31 cases in the years 2000 to 2010. Three second procedures were done. This is a retrospective study analysing outcome of these procedures.

Abstract no.: 33048

MENISCAL BEARING IN UNICOMPARTMENTAL KNEE ARTHROPLASTY (UKA)

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The role of arthroscopic diagnosis of polyethylene wear after total knee arthroplasty have been reported previously. In this report, we demonstrate diagnosis of wear of meniscal bearing in unicompartmental knee arthroplasty (UKA) which resulted in recurrent meniscal bearing subluxation. Direct diagnosis using arthroscopy may have its role in preventing unnecessary component exchange in UKA.

Abstract no.: 33053

CHARACTERISTICS OF PATIENTS WITH UNUSUAL NON-SPINAL LESIONS REFERRED TO A UNIVERSITY SPINE CLINIC

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Introduction: Many patients complain low back pain without definable spinal pathologies and part of those cases present serious non-spinal lesions, which primary physicians should be aware of. The purpose of this study was to investigate the characteristics of patients with unusual presentation of non-spinal lesions who visited our tertiary university spine clinic. Methods: Non-spinal lesions with unusual presentations were defined as pain at lumbar spine, buttock, and/or lower extremities without X-ray/CT/MRI lesions at spine level. Non-organic symptoms, false-localizing signs from above thoracic-cervical spine, hip-knee-related symptoms were excluded because of frequent presentation at our clinic. Results: During 2008-2010, there were 8 cases among 1080 newly-referred patients (0.7%). Final diagnoses (suspected) varied; rectal abscess (spinal infection), obturator herniation (disc hernia), fibroid (spinal canal stenosis), Basedow disease (central stenosis), hematogenous neoplasm and unusual metastasis to perisacral and paraspinal lymph nodes. Myriad modalities including enhanced MRI/CT at suspected areas, blood tests, and incisional biopsies were used for differential diagnosis. Time from first visit to final diagnosis averaged 102 days. All the patients responded to proper treatment and showed clinical recovery. Conclusions: Low back pain is the most frequent complaint for hospital visit in many part of the world, and there were 0.7% incidence of unusual causes which should not be misdiagnosed. Rest pain or non-mechanical symptoms were most helpful red-flag signs which warranted check-ups and further referral.

Abstract no.: 33056

SURGICAL TREATMENT OF DEEP PERIPROSTHETIC INFECTION OF HIP JOINT.

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Aim: To improve the surgical treatment results in patients with periprosthetic infection of hip joint. **Materials & Methods:** From 1995-2011, data of 70 patients with periprosthetic infection of knee joint was analyzed. In 41 patients, we performed resection arthroplasty for deep infection of the endoprosthetic bed with instability of prosthetic components. These patients had no possibility for revisional endoprosthesis. 2 stage surgical treatment was performed with cement spacer in 19 patients. Surgical curettage was done in 10 patients, who had stable endoprosthesis without any clinical and radiological signs of instability. **Results:** Outcome of resection arthroplasty characterized by suppression of the inflammatory process, partial or full weight bearing extremities. The average limb length shortening was 5-6 cm, which was compensated by orthopedic foot wear. In young patients, the gait was recovered with the help of cane. In 19 patients, we didn't observe the residual infection, after the 2 stage surgical treatment with cemented spacer,. One patient has the temporary spacer with good functional results for 5 years who refused to do revision. We didn't observe residual infection during 3 years after surgical curettage. **Summary:** Differential approach allows us to get suppression of the inflammatory process up to 98.7%.

Abstract no.: 33062

ANALYSIS OF THE PREVALENCE AND DISTRIBUTION OF CERVICAL AND THORACIC COMPRESSIVE LESIONS

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Of the various complications resulting from spinal surgery, unexpected neurological deterioration is one that surgeons and patients hope to avoid. However, there are few reports on missed compressive lesions of the spinal cord at the cervical or thoracic level in lumbar degenerative disease. A total of 145 consecutive patients with symptomatic lumbar degenerative disease were evaluated. Before lumbar surgery, image data were obtained using whole-spine postmyelographic CT. The following parameters at the cervical and thoracic levels were analyzed: compressive lesion from the anterior parts (disc herniation, osteophyte), compressive lesion from the anterior and posterior parts (hypertrophy of the ligamentum flavum), ossification of the ligamentum flavum (OLF), ossification of the posterior longitudinal ligament (OPLL), and spinal cord tumor. Compressive lesions from the anterior parts were observed in 34 cases (23.4%) and mainly were located at the C5-6 level. Compressive lesions from the anterior and posterior parts were observed in 34 cases (23.4%) and also primarily were located at the C5-6 level. Lesions of OLF were observed in 45 cases (31.0%); lesions of OPLL were observed in 15 cases (10.3%). Spinal cord tumor was not observed. Cervical and thoracic compressive lesions of the spinal cord from various causes in lumbar degenerative disease were observed in 89 cases (61.4%). Although we typically do not consider surgery for nonsymptomatic compressive lesions, they can cause symptoms after surgery. A survey of compressive lesions at the cervical or thoracic level in lumbar degenerative disease is important for preventing unexpected neurological deterioration after lumbar surgery.

Abstract no.: 33065

A CASE REPORT: OPEN REDUCTION AND INTERNAL FIXATION OF MEDIAL END OF CLAVICLE WITH FUSION OF ANTERIOR DISLOCATION OF STERNO-CLAVICULAR JOINT.

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Fractures to medial end of clavicle are uncommon, representing around 3 percent of all fractures. We report a 17 year old male patient, who was involved in a road traffic accident, attended our clinic 10 days after injury. Clinical examination indicated a mal-alignment of the left sternoclavicular joint along with tenderness over the clavicle. Left shoulder movements were very restricted. There was no neurovascular deficit. Xrays and CT scan confirmed a fracture of medial clavicle with anterior dislocation of sternoclavicular joint and vertically displaced medial fragment of the clavicle. Open reduction and internal fixation of clavicle was performed. Intra-operatively medial clavicle was found detached of soft tissues and lying vertically. The articular disc of left sternoclavicular joint was disrupted. The disc was excised and clavicle reduced and fixed with a dynamic compression plate. The articular surfaces of the left sternoclavicular joint were removed and filled with bone allograft with an intention to fuse the joint. The sternoclavicular joint was stabilized with trans-articular No. 5 ethibond bone sutures. Post operatively patient recovered without and neurovascular deifict. Post operative Xrays shows satisfactory reduction of the clavicle and the left sternoclavicular joint. It is only 3 weeks post operative period and patient is still under follow-up. Our recommendation is that with fractures of medial end of clavicle with anterior dislocation of sternoclavicular joint, it is reasonably safe to proceed with stabilization with bone sutures rather than to use metallic wires, pins etc which have a considerable risk of migration and damaging important structures.

Abstract no.: 33067

CASE REPORT OF PRIMARY ANEURYSMAL BONE CYST OF THE PATELLA WITH 4 YEARS FOLLOW UP

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The Aneurysmal Bone Cyst is thought to be rare, its incidence is only 1-6% of all primary bone tumours and the Patella is affected in less than 1% of all cases of ABC. Pubmed search revealed only 15 reported cases. We report a case of stage II primary aneurysmal bone cyst of the right patella in a 22 years old man with up to 4 years clinical and radiological follow up. Clinical examination, plain film radiographs and MRI scan established the presence of a primary aneurysmal bone cyst. The condition was treated by surgical curettage and autogenous bone grafting. Histopathology report confirmed the diagnosis and ruled out malignancy. One year and three years follow up MRI scans detected chondromalacia Patellae with successful bone graft incorporation and no recurrence of the aneurysmal cyst. Arthroscopic debridement was performed for the chondromalacia patellae followed by physiotherapy and hydrotherapy. Four years postoperatively patient symptoms markedly improved with infrequent use of analgesic tablets. This report is followed by literature review of the previous 15 published reports with review of current treatment practice.

Abstract no.: 33070

WHAT FACTORS INFLUENCE SURGICAL TREATMENT OF OSTEOSYNTHESIS FOR FEMORAL NECK FRACTURE?

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Introduction: Osteosynthesis for surgical treatment of femoral neck fracture (FNF) is a standard method. The purpose is to clarify the factors that influence treatment results of osteosynthesis for FNF. Methods: 54 patients (55 hips) with a minimum follow-up of 1.0 year were reviewed. All patients (16 males, 38 females) with an average age of 70.7 years underwent osteosynthesis for FNF. Radiographic parameters included Garden's classification (stage I-IV), Garden alignment index (GAI) in lateral view, existence of late segmental collapse (LSC) and bony fusion. Stage I and II were taken as the non-displacement type, and Stage III and IV were the displacement type. Results: In preoperative Garden's classification, non-displacement type involved 17 hips with stage I and 19 hips with stage II, and displacement type involved 11 hips with stage III and 8 hips with stage IV. The average preoperative, postoperative and follow-up GAI were 161.9 degrees, 171.7 degrees and 169.3 degrees respectively. 28 hips had compression hip screw (CHS), 23 hips Harnson pin and 4 hips cannulated cancellous screw. 74.5% hips had bony fusion, and 27.3% had LSC. Fusion rate of hips with 172 degrees or more of postoperative GAI was 86.2%, and fusion rate with 171 degrees or less was 61.5%. There was no significant difference in the fusion rate and incidence of LSC between non-displacement type and displacement type. Conclusion: In osteosynthesis for FNF, postoperative reduction position in lateral view is very important. Even in cases with displacement type, osteosynthesis should be indicated when sufficient reduction is obtained.

Abstract no.: 33077

THE USE OF A HOOK-PLATE IN THE MANAGEMENT OF ACROMIOCLAVICULAR INJURIES (REPORT OF TEN CASES)

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Introduction : Surgical treatment is indicated for fixation of acromioclavicular joint dislocation and distal clavicular fracture when there is significant displacement. Once the coracoclavicular ligament is torn, the reduction of the distal clavicle is difficult to maintain. We attempted in the current report to assess the value of the hook-plate in the treatment of acromioclavicular injuries. Methods: The hook-plate was used in 10 patients (4 male) with a mean age of 30 years, all patients had grade three or above acromioclavicular joint dislocation, the main indications for surgery were disturbance of shoulder function and cosmetic problems. The operation was carried out through a sabre shoulder incision under general anesthesia. Results: Satisfactory results were obtained in all patients; the deformity disappeared, full pain-free shoulder movement was regained with no motor weakness. Our patients returned early to work and sports activities (mean period of three months). Discussion: There are many methods for the fixation of acromioclavicular dislocations; there are some concerns using any of the implants available. The hook-plate is a relatively new implant that has been in the market only for few years. As yet there is only one comparative study comparing the hook plate with the Bosworth screw; no significant difference was found between the Bosworth screw or the Wolter hook-plate. Conclusion : In conclusion, the hook-plate is a useful device to treat unstable injuries in the acromioclavicular region.

Abstract no.: 33086

TREATMENT OF ATHLETIC INJURIES OF THE POSTERIOR STERNOCLAVICULAR DISLOCATIONS

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Posterior sternoclavicular dislocations are a rare injury among scapular injury. We experienced three cases of the posterior sternoclavicular dislocations that occurred by athletic injuries. For either case, the proximal of clavicle transposed from sternoclavicular joint dorsad. Two cases were posterior sternoclavicular dislocations and one case was epiphyseal separation of the proximal clavicle. For one of the posterior sternoclavicular dislocations case, we applied only closed reduction, and for another case, we performed open reduction. After reposition, we applied only a clavicular band fixation because it was stable. For a case of proximal clavicular epiphyseal separation, we applied open reduction and added extra suturation consolidation to the dehiscence part. The patients recovered to play their sport without any problems after injury three months later. Proper reposition shall be needed when a clavicle transposes backward because it may cause serious complications such as mediastinal pressure and neurologic vascular injury. For posterior sternoclavicular dislocations, manipulative reduction is available in many cases, and the restored bones are generally believed to be stabilized afterwards. On the other hand, manipulative reduction generally fails in treating epiphysis separation, for which open reduction is necessary. While differentiating a sternoclavicular joint dislocation from epiphysis separation is normally very difficult, CT images of epiphyseal separations sometimes show irregularities in the shape of dislocated proximal end of the clavicle or residual epiphyseal nucleus. These observations may be crucial view in differentiating between sternoclavicular joint dislocation and epiphyseal separation.

Abstract no.: 33087

TREATMENT OF TIBIAL DEFECTS BY ILIZAROV EXTERNAL FIXATOR

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Segmental bone defects have been treated by various methods including cancellous bone grafting, Papineau-type open cancellous bone grafting, vascularized fibular grafts and internal bone transport with an external fixator. The disadvantages of former techniques are infection secondary to insufficient debridement, bridging refracture, length limitations of the transfer and donor site morbidity. We evaluate the usefulness of the Ilizarov technique for the management of bone defects. 23 patients with tibial defects were treated by internal bone transport using Ilizarov method. There were 20 males and 3 female and the mean age was 34.6 years (range 7-60). The average length of defect was 5.3 cm. (range 3-14 cm.). The results were divided into bone and functional categories, according to the classification of the Association for the Study and Application of the Method of Ilizarov (ASAMI). The average time follow-up was 5.5 years (range 1-10 years). Bone union is obtained in every patient. The mean time of treatment was 8 months (3.5-15 months). The bone results were rated as excellent in 20 patients and good in 3 patients. The functional results were rated as excellent in 19 patients and good in 4 patients. Superficial pin tract infection was the most common complication and treated by oral antibiotics. The Ilizarov method addresses the bone defect, soft tissue loss, infection, deformity and leg length discrepancy simultaneously. We believe that bone transport is the simplest and safest method for the successful management of diaphyseal bone defects.

Abstract no.: 33088

DOES LOCAL KYPHOSIS OF CERVICAL SPINE AFFECT THE MORPHOLOGY OF EXPANDED LAMINAE AFTER BILATERAL OPEN DOOR LAMINOPLASTY?

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Purpose: To discuss whether the local kyphosis of cervical spine affects the morphology of expanded lamina after bilateral open-door laminoplasty (LAP). **Material and Method:** Seventeen patients with CSM who have undergone LAP and postoperative CT scan of cervical spine were available included in this study (mean age: 67.6 yrs, mean follow-up: 52 mos). The patients were divided into two groups: (A) lordotic alignment of cervical spine, (B) cervical spine with local kyphosis. The angle of the expanded lamina was measured at each level on the postoperative CT scan. Clinical results were evaluated using the Japanese Orthopaedic Association Scoring System (JOAS). **Results:** Mean preoperative lordotic angle of C2-7 was 24.8° (11°-42°) in (A) group and 3.8° (-12°-16°) in (B) group. Mean local kyphotic angle was 7.2° (-1° to 13°) in (B) group. A comparison of angles between two groups showed no significant difference at each level; (C3: p=0.19, C4: p=0.39, C5: p=0.37, C6: p=0.12). Neither preoperative JOA scores (A: 9.5, B: 9.5) nor postoperative JOA score (A: 13.3, B: 13.1) at the follow-up point of two groups had significant difference. **Conclusions:** Kyphotic alignment is thought to be at risk of expansion loss because a resultant force of paravertebral muscle pressure might play a role of closing force to expanded laminae. The result of similar morphology in both groups might suggest that mild degree of local kyphosis like current subjects does not influence the angle of lamina. The number of patients was small therefore, further investigation is necessary in a large sample.

Abstract no.: 33092

EARLY POST OPERATIVE COMPLICATIONS IN UNILATERAL AND BILATERAL TOTAL KNEE ARTHROPLASTY

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Study type: Retrospective review of medical records. Objectives: to evaluate the incidence and types of complications in the 1st 6 weeks post operatively in patients who underwent unilateral and bilateral total knee arthroplasty (TKA). Methods: all patients who had TKA in our center from January 2009 till December 2011 were included (total 98). The average age was 64 years (range 48-84). There were 59 female and 61 bilateral TKA. The factors which were evaluated are acute medical and surgical complications, hospital stay, blood transfusion requirements and operative time. Results: there were 44 episodes in 28 patients (46.3%). The most serious complications are one death. The most frequent ones are persistent fever 8 (18%), transient renal function derangement 8 (18%) and cellulites 6 (13%). Complications among Bilateral TKA represented 31% compared to 26.5% in the unilateral cases. There was no significant difference in blood loss. The average drop in hemoglobin is 2.3 g/dl in both groups. The hospital stay average was 12 days for unilateral (range 4-51) and 11 days for bilateral (range 5-33). Conclusion: the sample size is comparatively small but serves as pilot study. However, given the patient selection and post op care facilities, bilateral TKA is safe, efficient and cost effective in terms of utilization of hospital resources.

Abstract no.: 33097

CAN MAGNETIC RESONANCE IMAGING PREDICT THE PROGNOSIS OF OSTEOPOROTIC VERTEBRAL FRACTURE?

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Purpose: The purpose of the present study was to predict the prognosis of osteoporotic vertebral fractures using magnetic resonance imaging (MRI) at an early stage after injury. **Methods:** 61 senile osteoporotic patients (78 vertebral body), who had been examined for low back pain and had been found to have osteoporotic vertebral fractures using low intensity on T1-weighted MRI, with minimum of 4-month follow-up were included in this study. They comprised 16 men and 45 women with an average age of 79 years (range 65-95 years). The initial MRI was performed within 3 weeks from onset. The intensity changes and regions of the fractured vertebrae in MRI were classified into six types based on T1WI, which was reported by Kanchiku et al, and four types based on T2-weighted sagittal images (T2WI), which was reported by Nakamura et al. We investigated the types of MRI classification that influence residual low back pain, vertebral collapses and intervertebral cleft formation. **Results:** 58% had low intensity mainly in the vertebral body on T1WI (T1-total type). 18% had low intensity mainly in the vertebral body on T2WI (T2-low, total type). 17 patients had the residual low back pain and 11 (65%) of them showed T2-low, total type with T1-total type. 12 vertebral bodies had vertebral collapses or intervertebral cleft formation and 8 (67%) of them showed T2-low, total type. **Conclusion:** These results suggest that we can predict the prognosis of osteoporotic vertebral fracture using both T1WI and T2WI in MRI.

Abstract no.: 33098

RELIABILITY OF CLINICAL EXAMINATION IN DIAGNOSIS OF MENISCAL LESIONS (ABOUT 110 CASES)

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INTRODUCTION: Meniscal lesions are the most common lesions of young athletes. Clinical diagnosis of these lesions is difficult and requires some experience of the examiner.**METHODS:** We reviewed 110 cases with a mean age of 30.7 years. All the patients were examined searching meniscal lesions. According to data from the clinical examination patients were divided into group A or group with typical meniscal syndrome and group B or group of atypical meniscal syndrome. All the patients had a Therapeutics arthroscopy. **RESULTS:** Group A consisted of 83 patients. Positive predictive value of clinical examination in this group was 75.4% for the internal meniscus and 78.6% for the external meniscus. Group B Contained 27 patients, meniscal lesions predominated at the level of the posterior horn of internal meniscus and the middle segment of the lateral meniscus. Positive predictive value of clinical examination in this group was 47% for the internal meniscus and 70% for the external meniscus. This difference in positive predictive value between the two groups was statistically significant. We compared the positive predictive value of clinical examination in patients under and over 40 years. We found that the positive predictive value was significantly higher in patients under 40 years. **CONCLUSION:** In conclusion we found that by patients under 40 years with a typical meniscal syndrome, the clinical examination is reliable enough to make the diagnosis of meniscal lesions and to indicate the arthroscopy. Excepting this association, clinical examination remains insufficient for the diagnosis of meniscal lesions, and requires additional examination.

Abstract no.: 33105

SHORT TERM EXPERIENCE IN CLUBFOOT TREATMENT WITH PONSETI METHOD

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The purpose of this work was to evaluate the early results of Clubfoot treatment. More than 100,000 babies are born worldwide each year with congenital clubfoot. Around 80% of the cases occur in developing nations. We treated 224 feet in 157 children (123 males, 34 females) by the Ponseti method from February 2007 to February 2011 . Scoring of each foot was done according to the Dimeglio score. After two months of treatment the Dimeglio score was reduced under 7 for all patients. A simple percutaneous tenotomy of the Achilles tendon was done with local anesthesia in the largest part of babies. Than we used the Denis Browne splint to maintain the correction which is gained. Low socio-economic status and illiteracy prevailing in developing nations increases the prevalence of neglected clubfoot that is still harder to correct. More extensive surgical treatment can be avoided and in others, delayed. Integration in proper use of Ponseti method can decrease neglected clubfoot and improve chances of successful and timely correction of deformity. Bracing constitutes an important part of treatment and proper motivation and education of the parents mitigates the chances of losing correction. The Ponseti method of correcting clubfoot is especially important in developing countries, where operative facilities are not available in the remote areas and well-trained physicians and personnel can manage the cases effectively with cast treatment only.

Abstract no.: 33106

THE RESULT OF INTRA DURAL SPINAL CORD TUMOR SURGERY

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Introduction Most spinal surgical procedures are extradural and only few procedures require intradural exploration. Spinal tumors are rare and intradural tumors are extremely rare. The author is sharing his experience of intradural tumors surgery. **Aims** The aim of this study is to evaluate the results of surgical removal of intradural tumors. **Materials and Methods** This is a study of 14 patients who presented with signs and symptoms of myelopathy. Eight patients were female and 6 male. Their age ranged from 4 to 65 years (average age 34 years). Dura was opened in midline from above downwards. The tumor was identified, separated from surrounding tissue and removed completely in all patients except one. **Result:** All the cases, except one case of astrocytoma, recovered completely. Last follow up did not reveal any evidence of recurrence. All but one patient regained all their pre-tumor activities. **Discussion** Clinically, the patients with intradural tumors present first with a gait disturbance. The intradural tumors are best seen in MRI. The tissue manipulation is significantly different for intradural procedures than that of extradural procedures. **Conclusion** Almost all these tumors can be cured surgically. However, only well trained and well experienced spine surgeons should attempt intradural surgeries.

Abstract no.: 33108

WHAT MAKES A GOOD CLINICAL MEDICAL TEACHER?

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The current literature does not study the opinions of both medical students and clinical teachers in the same paper. It is hard to make direct comparisons between the two groups due to differing methods of the studies. Thus the qualities that constitute a good medical teacher from the perspective of both staff and students is not known. This study uses a modified Delphi technique to assess the qualities fifty final year medical students and fifty clinical academic medical teachers believe make a good clinical medical teacher. The study showed that students perceive personal qualities as the most important. The top responses were being enthusiastic and approachable. Staff felt technical qualities were most important and perceived having good communication skills and being enthusiastic as being most important. Clinical teachers must be aware that students perceive personal qualities as being more important than technical ones. A good teacher adapts their style to suit the group they are teaching and must incorporate these qualities into their teaching style.

Abstract no.: 33113

IATROGENIC DIAPHYSEAL FRACTURE OF THE HUMERUS AFTER K-WIRE PINNING

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Introduction: Despite being an easy choice and technically not demanding, the K-wire pinning still has its pitfalls. Attention should be paid not to cause an iatrogenic injury of some kind. The simplicity of the technique is only a catch as it might lead to serious complications if applied without special care to the underlying soft tissues and the bone, surprisingly. Methods: A 10 years old boy had two 1.6 mm K-wires, securing the reduction of a proximal humeral fracture - one placed intramedullary trough the radial condyle and the other one trough the lateral cortex, distal to the fracture site. It wasn't earlier than the fifth attempt before the second pin was successfully engaged in the proximal humeral epiphysis. Results: Uneventful healing followed the initial pinning and the pins were pulled out 35 days later. Full range of movements and functional activity were recorded. Another month later the child had a fall and while pressing on the same outstretched arm, the humerus broke again - this time it was a long spiral diaphyseal fracture, starting just distally from the entry point of the previously described "difficult" K-wire. Bracing the arm for another month led to full healing - again uneventful. Discussion: The cortical weakening following the multiple attempts to obliquely cross the lateral cortex acted as a stress point for the second fracture to occur. Was it the K-wire diameter, the thermal necrosis or the cortical substrate loss from the drillings is not clear, but it was an iatrogenic fracture

Abstract no.: 33120

ARTHROSCOPIC CAPSULAR RELEASE WITH SUBACROMIAL DECOMPRESSION IN RESISTANT FROZEN SHOULDER

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Frozen shoulder is a progressive disabling problem characterized by stiffness of the glenohumeral joint and pain. While early experiences in arthroscopic treatment of resistant frozen shoulder were rather disappointing, recently, arthroscopic capsular release of the glenohumeral joint has become popular. However, most of the published studies focused on the release of the intra-articular pathology without dealing with the concomitant subacromial pathology which may leave a source of pain with subsequent treatment failure. The aim of our study was to evaluate the effectiveness of capsular release with subacromial decompression in resistant frozen shoulder. Twenty patients with resistant frozen shoulder underwent arthroscopic circumferential capsular release with subacromial decompression. Patients were followed up postoperatively using the Constant score. Results: associated adhesions in the subacromial space were encountered in all cases. At the end of follow up, twelve patients had excellent results, seven patients had good results and one patient had satisfactory results. There was a significant increase in the overall Constant score ($p < 0.0001$) with significant improvement in both pain and shoulder range of motion. Conclusions: arthroscopic capsular release with subacromial decompression achieves dramatic pain and motion improvement allowing early postoperative rehabilitation.

Abstract no.: 33121

THE TRANSCUTENOUS SUTURE OF ACHILLES TENDON. RESULTS 5 YEARS AFTER THE SUTURE, ANALYZED CLINICALLY, ECOGRAPHICALLY

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INTRODUCTION: As is known in the literature, the surgical treatment of the traumatic tears of the Achilles tendon is difficult because of the poor vascularization of the tegument which is applied directly on the affected tendon. Moreover, the tensions created by the surgical reconstruction of Achilles tendon lead to necrosis of the wound tegument which are hard to fix even through plastic or reparatory surgery. **OBJECTIVES:** 1. The validity of treatment method 2. The comparative analysis sutured tendon-normal tendon at 5 years using clinical examination, echographic examination and MRI. **METHODS:** 1. Clinical examination sutured tendon-normal tendon; 2. Echographic examination sutured tendon-normal tendon; 3. MRI examination sutured tendon-normal tendon; 4. The comparative analysis sutured tendon-normal tendon **RESULTS:** The first results have been published at EFORT Congress in Austria, Vienna, 2009 and at ECOSEP Congress in London, UK 2010. The immediate results have been completely satisfactory. We now have under observations patients operated 5 years ago. We have examined them clinically, ecographically and through MRI; the results of our examinations have shown a good recovery of the Achillean tendon. The treated patients are able to perform the entire range of motions accessible to a healthy patient, including even the practice of sports with a high solicitation of the Achilles tendon. **CONCLUSION:** The transcutaneous suture technique is a mini invasive method with good results in the traitment of the Achilles tendon. The clinical and echographic comparative analysis show a quasinormal recovery.

Abstract no.: 33129

CEMENTED VS HA COATED UN-CEMENTED BIPOLAR HEMIARTHROPLASTY OF HIP: MORBIDITY MORTALITY AND OUTCOME AT TWO YEARS

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Introduction The literature is unclear about the use of cement in hemiarthroplasty for the treatment of displaced intracapsular fracture neck of femur. Recent Cochrane reviews done on the similar comparison are inconclusive. We compared the morbidity mortality and functional outcome data of cemented Vs uncemented hemiarthroplasty for fracture neck of femur. **Material and Methods** Retrospective study was conducted to analyze morbidity mortality and functional outcome data of cemented and uncemented hemiarthroplasty done in a single institution. The clinical, demographic and radiological data was collected. Telephonic consultation was performed to assess the functional outcome and survivability of the patients. **Results** A cohort of 326 heimarthroplasty was reviewed done from June 2006-july 2007. JRI LOL cemented bipolar hemiarthoplasty and JRI HA coated Bipolar hemiarthroplasty were used in this study. Patients in both groups were matched to age, sex ratio and ASA classification. 19 patients (9%) of the patients had periprosthetic fracture in the uncemented group as compared to zero in the cemented group. This was statistically significant. There was no significant difference in the peri-operative and post operative morbidity and mortality in the two groups. **Discussion** The complication rate was found to be much less in the cemented group as compared to the un-cemented group. Despite the limitations of a retrospective study our data suggests that cemented hemiarthroplasty is much safe option in the elderly population requiring treatment for neck of femur fractures with regard to periprosthetic fractures, middle- to long-term mortality, overall complications, need for revision.

Abstract no.: 33131

TWO CLINICAL CASES OF FRACTURE OF THE SCAPHOID BONE ASSOCIATED WITH THE DISLOCATION OF THE LUNATE BONE SOLVED

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INTRODUCTION: The treatment for the lunate bone fracture has totalized several procedures that have evolved from the extirpation of the fractured fragment of the bone with the smallest dimension, to the osteosynthesis of the fractured fragments by various implantation methods. Moreover, most of the times, the dislocation of the lunate bone has determined traumatologists to proceed to extirpate this bone. The results obtained were not very satisfying. In the clinical cases that we present, it was necessary, due to conditions concerning the age of the fracture and dislocation which in both cases was more than three weeks, to extirpate not only the proximal fragment of the scaphoid bone, but also the lunate bone. **METHODS:** In the clinical cases that we present, it was necessary, due to conditions concerning the age of the fracture and dislocation which in both cases was more than three weeks, to extirpate not only the proximal fragment of the scaphoid bone, but also the lunate bone. After surgical intervention it was preceded to immobilization in a plaster brachiopalmar splint for three weeks and recovery afterwards for two more weeks. The surgical extirpation of the lunate bone and partially of the scaphoid bone. **RESULTS:** - the physical aspect of the radio-carpal region did not modify being similar to the radio-carpal region of the superior healthy member; - the moves of the radio-carpal joint were completely recovered; - the effort resistance of the radio-carpal joint was totally regained

Abstract no.: 33134

VANCOUVER TYPE B1 PERIPROSTHETIC FEMORAL FRACTURES IN TOTAL HIP ARTHROPLASTY: RESULTS OF TREATMENT OF 11 CONSECUTIVE FRACTURES

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INTRODUCTION: While the treatment for the other categories of the Vancouver classification for postoperative periprosthetic fractures (PPFs) has been defined, the optimal method of fixation for Type B1 fractures around or at the tip of well-fixed femoral prostheses remains a source of controversy. This study aims in presenting the results of the treatment of a series of this type of PPFs from a team of experienced hip revision surgeons with sound trauma skills. **METHODS:** Between 2007-2010, 11 patients (2 male-9 female), mean age 77y (range 54y-90y) have been treated with open reduction and internal fixation for Vancouver type B1 PPFs. In three cases single lateral locking compression plates (LCPs), without use of wires or cables, have been used. Cable plate systems have been used in another six patients. Finally, in two cases double plating with two titanium plates has been used. These plates were applied perpendicular to each other at the lateral and anterior femoral cortices and stabilized only with two broad cerclage bands. **RESULTS:** Retrospective study of this case series has shown that 3 out of 11 constructs (27%) have failed leading to revision of the osteosyntheses. Two of these failures involved locking fixations (plate pull-out) and were attributed to technical errors in application of the LCP plates. **CONCLUSION:** High failure rate of different modes of internal fixation in this series of PPFs reflect the inherently unstable pattern of Vancouver type B1 fractures. Solitary LCP fixation may be proved unsuccessful, if application principles are not strictly followed.

Abstract no.: 33135

**IM NAILING FOR UNSTABLE PROXIMAL FEMUR FRACTURES -
STANDARD CHOICE**

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Introduction: The implant choice in proximal femoral fractures is mostly defined by the preference and the experience of the surgeon, though the anatomy of these fractures and the mechanics of the fixation is the important factors, rather than the subjective appreciation of the surgeon. Materials and methods: In 4 years period 75 patients needed fixation because of a proximal femoral fracture. Stratification was performed according to the implant, age, sex, stability of the fracture, mean operative time, blood loss, blood units needed for transfusion post-op and X-ray exposure time. Intramedullary nails and plate/screw systems were compared as well. All patients were followed-up for a year after the surgery at regular intervals. Thromboprophylaxis was a routine in all cases. Results: In 45 patients(60%) IM nails were used - all AO 31A-2 and 31A-3 cases. In this group the mean operative time was shorter (54 min compared to 1h10 min for the plate/screw systems), the blood loss was significantly less and no blood transfusions were necessary as well. The X-ray time was slightly longer in the IM group. Discussion: The unstable pertrochanteric fractures are often mistreated with plate/screw systems, which mostly leads to complications - cut trough screws, bending, lateralization of the head. The mechanical stability, closer to the real anatomy force distribution when using an intramedullary nail clearly demonstrates the advantages of this implant system when treating unstable pertrochanteric fractures. Additional benefits are the reduced operative time, significant reduction in blood transfusion needs.

Abstract no.: 33136

TITANIUM ELASTIC STABLE INTRAMEDULLARY NAILING OF DISPLACED MIDSHAFT CLAVICLE FRACTURES - A REVIEW OF 38 CASES

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Clavicle fractures accounting for 3-5% of all adult fractures are usually treated non-operatively. There is an increasing trend towards their surgical fixation. The aim of our study was to investigate the outcome following titanium elastic stable intramedullary nailing (ESIN) for midshaft non-comminuted clavicle fractures with >20mm shortening/displacement. 38 patients, which met inclusion criteria, were reviewed retrospectively. There were 32 males and 6 females. The mean age was 27.6 years. The patients were assessed for clinical/radiological union and by Oxford Shoulder and QuickDASH scores. 71% patients required open reduction. 100% union was achieved at average of 11.3 weeks. The average follow-up was 12 months. The average Oxford Shoulder and QuickDASH scores were 45.6 and 6.7 respectively. 47% patients had nail removal. One patient had lateral nail protrusion while other required its medial trimming. In our hands, ESIN is safe and minimally invasive with good patient satisfaction, cosmetic appearance and overall outcome.

Abstract no.: 33137

STAGED SOFT TISSUE, BONY AND ILIZAROV PROCEDURES FOR CORRECTION OF LEG AND FOOT DEFORMITIES IN TIBIAL HEMIMELIA

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The material of this study included 12 patients with tibial hemimelia (Jones type 2). Eight were boys and 4 girls. The average age of the patients at the time of the first operation was 8.5 months and the average follow up period was 28 months. Right leg was the affected side in 7 while 4 patients had left sided tibial hemimelia and one patient was bilaterally affected. Operative steps: Soft tissue release and centralization of the fibula in the ankle was done at the age of 6 to 12 months in 9 patients. Tibiofibular fusion between the proximal tibia and the fibula (side to end) at the age of 3 to 3.5 years in all patients followed by orthosis till the age of five. Ilizarov distraction at the age of 5 years to pull the fibula down and then continue lengthening to equalize limb length inequality. Results: All the patients showed full correction of the leg and ankle deformities with residual deformities in 4 patients without affection of the final results. Limb length inequality was fully corrected in 7 patients with residual shortening (1-3 cm) in 5 patients, and all patients showed full satisfaction of their parents. Conclusion: Early Soft tissue correction, tibiofibular fusion followed by Ilizarov distraction gave satisfactory results in cases of tibial hemimelia (Jones type 2) which were difficult to be treated by the conventional methods. But longer follow up is needed to assess the achieved correction and to detect any recurrence of the deformity by time.

Abstract no.: 33138

ARTHROSCOPIC NEEDLE-KNIFE SURGICAL DEVICE (ANKSD) PROTOTYPE.

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Background: It is common, safer and precise arthroscopic technique to use a needle before a cutting knife to help targeting the correct entry point. It avoids damaging healthy structures. Iatrogenic arthroscopic entry points damages is an undesired and evitable complication. It may be not a minor complication. It is a bad result, affecting the patient's quality of life. Objective: Development of an Arthroscopic Needle-Knife Surgical Device (ANKSD) prototype. Method: An ANKD prototype was developed by using a 1,20x40 needle (18g 11/2) and a 10 cc syringe. 100 knees were arthroscopically operated by using the prototype ANKSD. On the lateral portal the ANKSD's technique were used and for the medial portal, standard knife was used. All the portals healed well. There were no cases of painful scars in both portals so far. The comparison between both portals were uneventfully. Based on this results a prototype was designed. Discussion: With the ANKSD method it is possible to precise more the entry portals, avoid soft tissue damage and avoid cutaneous nerve damage. As it is two instruments in one, time and cost are saving by this method. Conclusion: The prototype ANKSD is a safe, cost effective and efficient method. In vivo test needs to be performed.

Abstract no.: 33141

LIMB RECONSTRUCTION IN PATIENTS WITH COMPLETE FIBULAR DEFICIENCY

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Fibular hemimelia is the most common deficiency of long bones (Achterman- Kalamchi classification). Generally, there is leg-length discrepancy with equinovalgus deformity of the foot, flexion contracture of the knee, femoral shortening, instability of the knee and ankle, and absent lateral rays. Recently there has been growing interest in limb salvage and reconstruction for patients with fibular hemimelia. The claimed advantages are: preservation of the foot, and normal proprioceptive feedback mechanism. Patients and methods: Twelve legs in 11 patients with fibular hemimelia (type II) were treated by Ilizarov external fixator. The average age of the patients at the time of the first operation was 15.4 months and the average follow up period was 15.5 months. Soft tissue release with ankle centralization was done in all patients with correction of the tibial bowing followed by Ilizarov application for lengthening and correction of the residual deformities. The average time of fixator applications was 5.1 months. Results: Out of 12 limbs, 2 (16.7%) were rated as excellent, 6 (50%) as good, 3 (25%) as fair and one limb (8.3%) had poor outcome. Excellent and good results (66.7%) were considered as satisfactory. While fair and poor results (33.3%) were considered as unsatisfactory. Pin tract infections occurred in all patients and treated by local care and antibiotics. Skin sloughing occurred in one 2 cases and treated conservatively. Conclusion: Ilizarov technique gave satisfactory results in cases of fibular hemimelia which were difficult to be treated by the conventional methods. Although many complications have been encountered, most of the results were satisfactory to the patients and their parents

Abstract no.: 33142

SIMULTANEOUS DISTAL PERI-ARTICULAR FEMORAL OSTEOTOMY WITH TOTAL KNEE ARTHROPLASTY FOR TREATMENT OF OSTEOARTHRITIS ASSOCIATED WITH A SEVERE VALGUS DEFORMITY OF >45°

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Primary total knee arthroplasty for a severe valgus deformity is challenging for many surgeons. Approximately 10% of patients requiring total knee arthroplasty have a valgus deformity. We report a case of a simultaneous distal peri-articular femoral osteotomy and a total knee arthroplasty for a symptomatic severe valgus knee of >45°. A 76 year old woman presented with a painful, valgus right knee. On clinical examination she had a valgus deformity of 49°. Her range of motion was 5° to 100° and she had an extensor lag of 15°. The deformity was not correctable. She proceeded to have a simultaneous distal peri-articular femoral osteotomy and total knee arthroplasty. The alignment improved from 45° of valgus to 7° of valgus. Clinically she improved and at 1 year follow up had no problems and markedly improved scores. Her part 1 KSS improved from 23 to 90 and her part 2 KSS improved from 20 to 70. Her total WOMAC score improved from 15.9 to 81.3. Her physical SF score improved from 34 to 57 and her mental SF score improved from 23 to 57 and there was a marked improvement in her VAS scores. In the literature to date there hasn't been a report or case of a simultaneous distal peri-articular femoral osteotomy and total knee arthroplasty for a severe arthritic valgus knee as we have described here. Sometimes bone cuts and soft tissue correction in severe valgus knees is not enough and the addition of an osteotomy achieves the desired outcome.

Abstract no.: 33143

**USE OF HIP BRACE AFTER DISLOCATION OF HIP ARTHROPLASTY:
MYTH OR REALITY**

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Introduction Dislocation of hip arthroplasty is multi-factorial and is associated with significant patients' morbidity. The main stay of treatment in the acute phase involves closed reduction and application of hip-abduction brace. However, the benefits of using abduction braces to prevent dislocation remain controversial. We present our clinical experience in managing patients with dislocation following hip arthroplasty, both in elective and trauma settings, to establish the effectiveness of hip abduction brace following closed hip manipulation. **Methods** Patients with dislocated hip, total or hemiarthroplasty, treated with abduction hip brace over a 2 period at a tertiary centre were analysed. Mean follow up was 12 months. The recurrence of dislocation with or without abduction brace insitu, patient compliance, length of stay and endpoint of treating arthroplasty dislocation and Re-dislocation was identified as failure of treatment **Results** 51 patients were identified with mean age of 84.9 years. Dislocation following THA was identified in 29 patients and post hemiarthroplasty was noted in 22 patients. There were 28 patients first time dislocators and 23 were observed to be recurrent dislocator. Only 32 patients were compliant with wearing the hip brace. Revision THA was performed in 24 Patients and Girdlestone's arthroplasty in 9 patients. **Conclusions** Recurrence rate of dislocation of THA was observed in 38% of patients with primary THA, 48% of patient who underwent revision THA and in 100% patient who had hemiarthroplasty. Hip Brace failed to prevent further dislocation in majority of patients and compliance remained an issue.

Abstract no.: 33152

CLINICAL RESULTS AND SURVIVORSHIP OF THE NAVIGATED COLUMBUS TOTAL KNEE ARTHROPLASTY AT FIVE YEAR FOLLOW-UP.

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Introduction: The navigated Columbus knee is a relatively new implant with a few published medium results. Its extensive use within our dedicated arthroplasty centre led to this five-year clinical and radiological review. Materials and Methods: This was a retrospective cohort study between March 2005 and December 2006 using the image free navigation system. The following data were collected from the five-year follow-up appointment: range of motion (ROM), patient satisfaction, Oxford knee score (OKS), KSS and radiological outcome. All complications, re-admission and revision surgeries were identified. For the survival data hospital records and the national PACS were used to identify the last known date when the patient was alive and the prosthesis was still in place. Descriptive statistics were used to describe the cohort and Kaplan-Meier analysis was used for the survival data. Results: The study cohort was 219 knees in 205 patients. 87 were lost to follow-up. ROM was 100° (SD 10.2°, range 60° to 120°). OKS was 23.4 (SD 9.2). KSS was 87 and KSS function score was 90. 96.4% were satisfied with their operation. Fifteen patients had a radiolucent line. Twenty-one had a complication. Four revisions for late infection and one due to aseptic loosening. The Kaplan-Meier survival analysis showed that the implant survival at 5.05 years was 96.2%. Discussion: The revision rate in our department (2.3%) is similar to that cited by the 2011 UK National Joint Registry report (2.5%) with a very low revision rate (0.5%) for reasons other than infection (1.83%).

Abstract no.: 33155

A CASE REPORT OF VOLAR CORONAL UNICONDYLAR FRACTURE OF INDEX FINGER PROXIMAL PHALANX

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Introduction: We report a unique case of displaced volar coronal unicondylar fracture of proximal phalanx without joint dislocation treated successfully with open reduction and internal fixation. Case report: 26 year old healthy male accountant presented our trauma clinic with a two weeks old injury to his dominant right index finger. He is an amateur cricket player and sustained the injury during a cricket game when he was trying to catch the cricket ball. Clinically he had a swollen, bruised finger with stiff proximal proximal interphalangeal (PIP) joint with no rotational deformity. Radiographs showed displaced volar coronal ulnar unicondylar fracture of proximal phalanx without PIP joint dislocation. He underwent open reduction and internal fixation through a volar approach using Brunner incision under general anaesthesia. A3 pulley was released on the ulnar side for fracture reduction. The fragment was only a shell of bone and hence was stabilised with a 1.2 K wire passed volar to dorsal. The K wire was trimmed short and buried under the skin. PIP joint range of movement exercises were started after de-bulking the dressing in couple of days time. The wound healed well and he has regained good finger movements. The K wire was removed 4 weeks post-op under local anaesthesia. At 6 weeks follow up the fracture has united clinically and radiologically in a satisfactory position with full range of finger movements. Discussion: Our case report illustrates the successful treatment of a rare and difficult finger fracture using a simple technique.

Abstract no.: 33164

THE LEARNING CURVE FOR MINIMALLY INVASIVE CHEVRON OSTEOTOMY FOR HALLUX VALGUS: REVIEW OF THE FIRST 20 CASES PERFORMED IN A DGH SETTING.

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Introduction: Minimally invasive foot surgery for hallux valgus correction is a new technique with promising results. Enthusiasts of this procedure advocate better deformity correction, with early mobilisation, better functional outcomes and a better cosmetic effect with minimal scarring. Scepticals suggest caution with these techniques as one of the most common complications is the likelihood of deformity recurrence. This is likely a direct consequence of incorrect selection of the procedure, incorrect surgical technique, or underestimated healing time of the osteotomy. **Aim:** To present the early results of the first consecutive 20 cases of minimally invasive chevron osteotomy for hallux valgus correction performed at a district general hospital and to assess the learning curve of the procedure. **Methods:** The first 20 cases of minimally invasive chevron osteotomies for hallux valgus correction performed by our foot and ankle surgeon at a DGH setting were assessed with patient satisfaction questionnaires, the AOFAS score, the MOXFQ score and radiologically for shortening of the first metatarsal, the intermetatarsal angle and bunion angle. **Results:** Overall, patients are very satisfied with this procedure, scoring high for both AOFAS and MOXFQ scores, and achieve good correction both clinically and radiologically. **Conclusion:** Minimally invasive chevron osteotomy for hallux valgus correction provides excellent patient satisfaction even quite early on the learning curve of the procedure.

Abstract no.: 33183

CLINICAL RESULTS IN TIBIOTALAR ARTHRODESIS: A COMPARATIVE STUDY OF HISTORICAL COHORT.

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Critical analysis of the results of tibiotalar arthrodesis performed in our hospital between 2005 and 2010. Historical cohort study of patients operated on tibiotalar arthrodesis between January 2005 and June 2010. We studied 82 patients operated on in this period. Review was conducted of clinical history, imaging studies and postoperative clinical assessment of all patients. Multivariable analysis was performed on age, sex, year of surgery, cause of the arthrodesis, surgical technique, surgical approach, postoperative infection, nonunion, AOFAS scale and length of hospital stay. Mean age 50.68 years (+/-16.05), 78% of patients were male, post-traumatic arthrodesis represent 63.4% of the causes of arthrodesis, arthrodesis by open technique and fixation by cannulated screws was performed in 65.9%, the lateral transperoneal approach was performed in 75.6%, 16 patients (19.5%) had postoperative infection (13 superficial wound infections and 3 deep infections), the incidence of nonunion was 19.5%, mean hospital stay 7.54 days (+/-6.99), AOFAS mean score 84.53 pts (+/-9.837). Patients operated for post traumatic and degenerative causes showed the best functional results ($p = 0.046$). Four out of five of our patients show functional outcomes Good / Excellent according to the AOFAS scale, the incidence of complications (nonunion and postoperative infection) is similar to that recorded in the current literature. Arthroscopic arthrodesis is currently considered the treatment of choice for patients with minimal deformity, and although we have little casuistic using this technique, we have observed so far no complications, hospital stay is low and functional results are good-Excellent.

Abstract no.: 33185

BILATERAL TIBIAL BENIGN INTRAOSSEUS FIBROUS HISTIOCYTOMA

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Intraosseous Benign fibrous histiocytoma is a benign lesion of bone composed of spindle-shaped fibroblasts, arranged in a storiform pattern, with a variable admixture of small, multinucleated osteoclast-like giant cells. Is a rare lesion, with less than 100 reported cases. Patients have ranged in age from 6 to 74 years at diagnosis, 60% being older than age 20 years with a slight female prevalence. 40% occur in the epiphysis or diaphysis of the long bones, with femur and tibia most frequently involved. Although some patients (15%) are asymptomatic, in most (65%) the lesion causes pain which may be present for days up to several years. Occasional patients present because of pathological fracture. Case Report: We report a rare case of a 68 years old woman diagnosed with a bilateral benign fibrous histiocytoma on both tibial metaphysis, who complained of pain in both knees of several years of evolution. The patient was submitted to open biopsy in both knees and subsequently, lesion curettage and local instillation of fenol was performed and filling up the defect with demineralized bone matrix and hydroxyapatite gel. The evolution of the patient is good, no pain or tumor recurrence after five months of follow-up. Discussion: Although rare, benign fibrous histiocytoma should be taken into consideration when a primary lytic lesion is observed in the long bones. The prognosis is excellent, surgical curettage / resection and filling up the defect with bone graft and/or cement usually being curative, with a rate of recurrence between 10% to 35%.

Abstract no.: 33188

NATURAL HISTORY OF GENU RECURVATUM VERSUS FIXED FLEXION DEFORMITY AFTER TOTAL KNEE ARTHROPLASY - ARE WE CORRECTING ENOUGH?

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One of the goals of total knee arthroplasty is to provide a neutral knee alignment at full extension. Post-surgery the knee can either end up in genu recurvatum (GR) or with a fixed flexion deformity (FFD). The aim of the study was to provide knowledge to the surgeon regarding on-table alignment for a better long term outcome. We retrospectively reviewed all primary total knee arthroplasties done at a single centre between 2004 and 2008. Patient bio-data, pre-operative alignment, post-operative alignment at 6 months and 2 years were analysed. We assumed that at 6 months the knee alignment was equal to the alignment at the time of surgery. 3150 primary total knee arthroplasties were done between 2004 and 2008. Pre Operatively 239 patients were in GR while 1878 and 1038 patients were in FFD and neutral respectively. The mean angle of alignment pre-operative, post-operative 6 months, post-operative 2 years were -5.59, 0.95 and -1.92 in the GR group. The respective values were 11.06, 5.12 and 2.37 in the FFD group. There was a significance of 0.0001 when we compared the angle of correction post-operatively in the two groups. Even though neutral alignment was achieved on-table, GR knees tend to readapt GR over the follow-up period. The FFD knees demonstrated difficulty in achieving neutral alignment on-table but they tend to move towards neutral alignment over the follow-up period. We recommend on-table over correction of the GR deformity to achieve a long term neutral alignment and a better clinical outcome.

Abstract no.: 33189

OUTCOME OF THA IN SICKLE CELL DISEASE A 2-5 YRS RESULT

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38 patients with sickle cell disease underwent uncemented THA. The mean age was 31 yrs of age, 26 males, 12 females. Patients were prospectively followed up for a minimum of 2 yrs, (range 24-60 months). The functional outcome was measured by using standardized, validated, scores, SF-36 physical & mental (generic) Oxford hip Score (Joint specific) and WOMAC Pain and Function (Disease specific). At a minimum of 2 yrs, there was a significant improvement noted in all scores ($P < 0.05$). WOMAC Pain scores were the slowest to show improvement. We found inverse correlation between the frequency of vasoocclusive crises and the WOMAC pain scores. Patients with SCD did not tolerate lengthening of their affected/operated lower limb of more than 0.5 cm, as evidenced by lower WOMAC pain score in that subgroup.

Abstract no.: 33195

NECK NARROWING IN RESURFACING HIP ARTHROPLASTY – A VASCULAR INSULT?

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Recent reports show increased failure rates in hip resurfacings that display >10% neck narrowing. The aetiology of neck narrowing remains unknown. We assessed 80 hip resurfacings at mean 3.5 years follow up. The overall rate of significant narrowing was 11.25%. Neck narrowing occurred in 4% of patients using an anterolateral approach and 23.3% using a posterior approach ($p=0.019$). Logistic regression showed that both surgical approach and cup inclination angle were the most important risk factors for development of narrowing with the odds of the presence of narrowing increasing for every degree increase in cup abduction angle ($p=0.021$). There was no significant association with age, sex, pre-operative diagnosis, pre and post-operative SF-36 scores, neck shaft angle, femoral or acetabular component sizes. A vascular insult resulting from damage to the medial circumflex femoral artery through a posterior approach is implicated in this process.