

Abstract no.: 36413

PATHOLOGICAL INFLUENCES OF CONNECTIVE TISSUES DYSPLASTIC DISORDERS ON SURGICAL TREATMENT RESULTS OF PECTUS EXCAVATUM IN CHILDREN

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Recently, several complications associating with the instability of the installed bar, PC deformity occurrence and the PE relapse have been occurred in more than 20% after surgery. Purpose was the determination of the role of the connective tissues dysplastic disorders for remodeling processes of the anterior chest wall in children with PE in post-operative periods. Investigation performed on 40 children, who underwent operative treatment by the D. Nuss procedure in Clinic of SRITO RUz, with PE. Genetic assessment was carried out by the T. Milkovska-Dmitrova and A. Karakeshev classification (1985). Good results were obtained in 35 cases in the nearest postoperative periods, 5 cases were with the severe pain and in long-term periods was occurred the PC deformity in 2 cases, secondary atypical deformation in 1, the relapse of PE till I degree in 1 and in 1 case was saved the neuralgic pain. The connective tissues dysplasia is a congenital character genesis, characterized by metabolic disorders in the stroma tissues and several enzymopathy. The osseo-cartilaginous structural system growth processes were not behavioral in the necessary age norm of locomotors apparatus and with the delaying of ossification processes also in the adolescent's age and the sterno-costal complex became most pliable. These changes complicated the correction method of PE, extended the period of immobilization. It is hard to determine the outcome operative results of the patients with severe degrees of conjunctive tissues dysplasia.

Abstract no.: 36416

EPIPHYSEAL OSTEOMYELITIS: A REPORT OF THREE CASES AND REVIEW OF LITERATURE.

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Haematogenous osteomyelitis has classically been associated with the metaphysis or the diaphysis involvement. Involvement of the epiphysis is rare entity which poses a diagnostic and management dilemma. The differential diagnosis include chondroblastoma, chondromyxoid fibroma, enchondroma, osteoid osteoma, eosinophilic granuloma, foreign body granuloma. Treatment in the literature remains controversial. Here we present three cases:. Cases 1 presented as chronic pain in the knee with a radiologic picture of radiolucency in the distal femoral epiphysis. The diagnosis was confirmed in MRI and she underwent a curettage of the lesion. Case 2 1yr infant presented with a septic knee, at that point of time the x ray did not show any bony abnormality. He underwent an arthrotomy and after 6 weeks of parental therapy he developed an osteolytic lesion, but the knee was asymptomatic hence we continued conservative management. The patient was doing well till the last follow up. Case 3: 3 yr toddler presented with history of tying a holy thread around the wrist 6 months back. Few days later due to swelling the thread got buried in the subcutaneous tissues cutting through the skin which was partially removed. X ray pictures showed a lucent area adjacent to the distal radial physis. He was managed conservatively but the sinuses persisted hence a curettage was planned. The sinus tracts were curetted and the remaining thread was removed. Patient is doing well till the last follow up. The last case classically demonstrates the foreign body granuloma presenting as epiphyseal osteomyelitis.

Abstract no.: 36417

THE INCIDENCE OF SYNDESMOTIC INJURY

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Introduction: Injury to the tibio-fibular syndesmosis can occur with ankle sprain or fracture. The incidence of syndesmotic injury has not been specifically sought at a population level. Methods: Data on syndesmotic injury was obtained from the Healthcare Cost and Utilization Project (HCUP), a federal-state-private partnership. It is administered by the Agency for Health care Research and Quality (AHRQ), a division of the United States Department of Health and Human Services (HHS). Two HCUP databases were queried for eight states: the State Inpatient Database (SID) and the State Emergency Department Database (SEDD). The first six ICD-9 code diagnoses were searched for codes that are used for syndesmotic injury (i.e. 845.03). These data, along with data from the 2010 US Census, were used to yield incidence rates for syndesmosis injury, as well as for various demographic groups. National estimates of injury totals were also calculated. Results: In the eight states there were a total of 1,821 syndesmotic injuries. Given the population of these states, the incidence rate of syndesmotic injury was 2.09 syndesmotic injuries per 100,000 person years. This incidence correlates to an estimated 6,445 syndesmotic injuries per year in the US. Conclusions: This data provides some baseline numbers as to the incidence of syndesmotic injury in the US. Although the incidence was low relative to some other injuries, the fact that syndesmotic injuries tend to occur in younger patients may have greater impact in terms of productive years of life lost.

Abstract no.: 36420

CLINICAL CHARACTERISTICS OF ATYPICAL FEMORAL FRACTURES IN PATIENTS WITH OSTEOPOROSIS TREATMENT

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Background: We investigated the relationship between taking bisphosphonate and clinical characteristics of atypical femoral fracture throughout Korean multicenter studies. Object and Method: We retrospectively analyzed the bone mineral density, prodromal symptoms before femoral fracture, medication history of osteoporosis and union period of femoral fracture in 76 cases of atypical femoral fracture. Result The mean age of cases is 71.4 years old. The mean follow up period was 24.5 months. The mean BMD of femur is -1.9 ± 1.4 (range, -4.8 - 2.3). Prodromal symptoms including thigh pain before femoral fracture appeared in 28.9%. The period of taking bisphosphonate before fracture is 36.8 months. The delayed union is developed in 43 (56.5 %) of 76 patients. The group of taking osteoporosis medication more than three years showed relatively longer union period compared to those for a short period medication group ($p=0.017$). The delayed union was developed in 43(56.5%) of 76 patient and in group with long term therapy showed significantly high incidence. ($p=0.021$) The bilateral femoral fracture was developed in 23 (30.2%) of 76 patients and in groups with medicated more than three years showed high incidence. ($p=0.039$). Conclusion Medical and surgical strategy should be considered in the clinical setting for the acceleration of fracture healing, especially in patients on long term bisphosphonate therapy who present with atypical femoral fracture. Careful observation is required for contralateral femur due to high incidence of bilateral femoral fracture.

Abstract no.: 36421

THE EFFECT OF ORTHOPAEDIC SURGERY ON THE INTRINSIC PROPERTIES OF SURGICAL GLOVES

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Introduction: Surgical gloves function as a mechanical barrier that reduces transmission of body fluids and pathogens. The effectiveness of this barrier is dependent upon the integrity of the glove. Methods: A total of 20 unused sterile surgical gloves (neoprene and latex) were exposed to blood, bone shavings and cement over 15, 30 and 60 minute intervals. Following each time point, the palmar surface and finger tips of each glove was analyzed under the scanning electron microscope (SEM), and were tested for changes in contact angle and tensile properties. Results: Exposure to cement caused a significant increase in both the neoprene and latex glove porosities at 15 min but no significant further changes at any later time points. The latex gloves had a greater increase in pore diameter than the neoprene gloves. Exposure to cement for 15 min duration significantly decreased the tensile strength of both latex and neoprene gloves. Exposure to either blood or bone shavings did not cause any significant changes in the latex or neoprene glove properties. Conclusions: This study provides evidence that exposure to cement, a common orthopaedic material, can disrupt the intrinsic properties of the surgical gloves worn in the operating theatre.

Abstract no.: 36423

CHILDHOOD OBESITY AS A RISK FACTOR FOR UPPER EXTREMITY FRACTURES

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Introduction: to investigate the relationship between BMI and upper extremity fractures in children and adolescents of different ages and genders. Methods: We prospectively collected data on 280 children and adolescents between 2 to 19 years of age who presented to hospital with upper extremity trauma. We determined BMI and BMI-for-age percentiles for each patient. Fracture types were classified and the management was recorded. The associations among the BMI class and specific upper extremity fractures were estimated using multiple logistic regression models and expressed with odds ratios (ORs) and 95% confidence intervals (CIs) using multivariate analysis to adjust for patient demographic variables. Results: Children of both genders with a BMI above the 85th percentile for their age group had an increased OR of an upper extremity fractures (OR, 1.24, with 95% CI, 1.11-1.34) compared to children of the same age below the 85th percentile. The association was strongest in boys between the ages of 5- to 13-year-old. Boys with raised BMI were more likely to require operative management than their normal weight peers ($P < .05$). Conclusions: children with a BMI above the 85th percentile for their age were at increased risk of a more severe upper extremity fracture & needed more operative management.

Abstract no.: 36426

THE ROLE OF MRI IN 'SUSPECTED' SCAPHOID FRACTURES

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Introduction: A missed scaphoid fracture has the potential for non-union which can adversely affect the wrist function. Methods: If the x-rays reveal a scaphoid fracture they are treated in below elbow plaster cast. If there is no radiological confirmation, patients are given futuro splint and reviewed in upper limb clinic in ten days time. If the scaphoid tenderness had subsided, then the patients are discharged. However, if the tenderness persists an urgent MRI scan is done. Results: Emergency notes, clinic letters and x-rays and MRI Scans were reviewed in 44 patients with an age range of 13-79 years (mean age – 33.07 years). 12 of these patients had confirmed fracture while 32 had a suspected scaphoid fracture. Out of the 32 patients, 10 had no tenderness on clinic visit and were discharged. 4 patients were lost to follow-up. Out of the 18 patients with persistent tenderness 10 of them underwent MRI scan. The MRI scan ruled out scaphoid fracture in 7 patients who were discharged. 3 patients with confirmed scaphoid fracture on MRI were treated for this fracture. In conclusion the pathway was followed in 22 out of 28 patients (78.57%) with suspected scaphoid fractures (4 were lost to follow-up). Conclusions: MRI is helpful in confirming the diagnosis in all patients who underwent MRI for suspected scaphoid fracture. Hence unnecessary treatment, potential loss of resources and sickness with employment costs can be avoided.

Abstract no.: 36429

TREATMENT PATTERNS IN SELECTED MID-SHAFT CLAVICLE FRACTURES AMONG SURGEONS WITH DIFFERENT SURGICAL EXPERIENCE - A SURVEY AT AN INTERNATIONAL AO COURSE.

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Introduction: Midshaft clavicle fractures are common. There has previously been a trend to treat these non-operatively however this pattern of treatment is changing towards operative fixation. McKee et al. (JBJS Am 2007) showed that patients undergoing operative treatment may have better functional outcomes with lower non-union rates however recently this has not been supported by Robinson et al (JBJS Am 2013). Methods: Surgeons taking part in an international AO course were invited to participate in a survey to assess the management modalities used to treat a simple shortened midshaft clavicle fracture and also a segmental midshaft clavicle fracture. Results: Fifty-six surgeons participated, 18 inexperienced (<3 years) and 38 experienced (>3 years). For simple midshaft clavicle fractures, 4 would treat non-operatively and remaining 14 surgically in the inexperienced group. In the experienced group, three would treat non-operatively and 35 would treat surgically with 6 opting for a nail and the remaining 29 using a plate. For a segmental midshaft clavicle fracture, in the inexperienced group, 4 would treat non-operatively and 14 operatively. In the experienced group, 13 would treat non-operatively and 25 would treat surgically. Conclusions: There is a trend towards operative fixation of simple midshaft clavicle fractures with 77% inexperienced and 92% experienced opting for this. The contrary is true for segmental fractures. In the inexperienced group, 77% would perform operative fixation but only 65% in the experienced group of surgeons.

Abstract no.: 36430

THE LIVERPOOL PROXIMAL REPLACEMENT: A MEAN 2.5 YEAR FOLLOW-UP OF 61 HIPS WITH A SHORT METAPHYSEAL LOADING FEMORAL COMPONENT.

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Introduction: The use of a short metaphyseal loading femoral implant allows preservation of bone, achieves proximal load transfer, durable fixation and allows a high level of patient function. Method: Prospective data was collected on 61 hydroxyapatite-coated uncemented short femoral components inserted into 50 patients between December 2006 and July 2011. Harris Hip Scores were used pre and post operatively and digital radiographs for stem migration. Results: The pre-operative diagnoses was osteoarthritis in 27, avascular necrosis in 17, traumatic in 5 and 12 had other diagnoses. The mean age of the patient was 51 years (21 to 78), 34 were right sided, 27 left and 11 bilateral. The mean follow up was 2.5 years (1 to 6 years). Harris Hip Scores improved from 57.63 (23 – 86.02) pre-operatively to 91.98 (52.86 – 100) at final follow-up. Distal migration was 0.93 mm (SD +/- 1.2 mm) at six months and 1.05 mm (SD +/- 1.1 mm) at two years. Post operatively one patient had a sciatic nerve palsy, which resolved and one developed a femoral vein thrombosis. One hip was revised due to adverse reaction to metal debris (ARMD). Three patients were lost to follow-up at final review. Conclusion: The results are comparable to other series and shortening of the implant does not decrease implant stability or compromise clinical results.

Abstract no.: 36433

VARIATIONS OF TREATMENT IN SELECTED PROXIMAL FEMUR FRACTURES AMONG SURGEONS WITH DIFFERENT SURGICAL EXPERIENCE - A SURVEY AT AN INTERNATIONAL AO COURSE

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Introduction: Randomised trials have shown the advantages and disadvantages of differing modalities of treatment for displaced subcapital non-impacted and pertrochanteric femoral fractures, however treatment modalities may differ due to local policy and surgeon experience. Methods: Surgeons taking part in an international AO course were invited to participate in a survey to assess treatment for pertrochanteric (AO/OTA 31-A2) and a subcapital displaced non-impacted fracture (AO/OTA 31-B3) in a 35 and 85 year-old patient. Results: Fifty-two surgeons participated, 18 inexperienced (<3years) and 34 experienced (>3years). For pertrochanteric fracture operative fixation were inexperienced group; screw fixation 1, gamma-nailing 17 and Experienced group; screw fixation 1, gamma-nailing 19, DHS 3, ORIF 1. For the displaced subcapital fracture in a 35 year old screw fixation was the dominant treatment option however in the experienced surgeon group one opted for a cemented THR. For the displaced subcapital fracture in an 85 year-old no reconstruction was favoured by any surgeon. The operative options were in the Inexperienced group; 2 uncemented bipolar hemiarthroplasty, 10 cemented bipolar hemiarthroplasty, 5 cemented THR and in the Experienced group; 9 uncemented bipolar hemiarthroplasty, 20 cemented bipolar hemiarthroplasty, 7 cemented THR. Conclusions: For pertrochanteric fractures, a prospective randomized trial has shown the DHS to be the implant of choice however this is not considered in the inexperienced group of surgeons and in only 38% of experienced surgeons. There is a general consensus in femoral head conserving surgery in young patients with displaced subcapital fractures, even in the light of high avascular necrosis risk.

Abstract no.: 36434

A NEW MODEL OF CARE. REDUCTION OF LENGTH OF STAY IN HIP FRACTURE PATIENTS USING THE EASTBOURNE TRAUMA ASSISTED DISCHARGE SCHEME (TADS).

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Introduction: The Trauma Assisted Discharge Scheme (TADS) was set up as a new model of post-operative care for patients, following a fractured hip. TADS provides a 7-day streamlined service for patients from A&E, back to their own homes. Early discharge prevents post-operative complications, reduces the average hospital stay, which in turn leads to financial savings. Method: Prospective data collection of hip fractures during December 2010 to December 2011. Length of stay (LoS) from hospital records and a patient satisfaction questionnaire used. Innovative use of staff within existing budgets helped create a Trauma Assisted Discharge team using a link nurse to provide a seamless transition from acute to community services with early discharge planning. Results: 116 patients followed the TADS pathway, the majority aged 80-89 years. Almost half lived alone at home and the majority were independent prior to their fall. 35 patients underwent DHS; 55 hemiarthroplasty, 11 THR and 11 cannulated screw fixation. 88% of patients were fully weight bearing on discharge and 90% were seen the following day. Average length of in-hospital stay was 8.6 nights, whilst the overall LoS for all hip fracture patients was 16.89 days. Conclusions: TADS scheme reduced the average LoS by 4.78 days. Through collaborative working TADS provides high quality care using resources efficiently and effectively to deliver the right care, in the right place at the right time. TADS has the potential to be used as a model of care in other specialities and easily transferable to the wider NHS.

Abstract no.: 36436

LIMB LENGTHENING

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Material & Methods: Nineteen (19) achondroplastic patients, 12 males and 7 females, aged 19-38 years (mean 27,3 y) who have undergone tibia and femur lengthening, using the Ilizarov method, at the age of 9-19 years (mean 12,6 y), were evaluated 5-19 years (mean 10,1 y) after their last surgery, using standardized long lower limb anteroposterior and lateral standing radiographs. Tibial and femoral lengthening gain was measured. A comparison was made between the achondroplastic patients at follow up and healthy population standards concerning– at the frontal plane- LPFA (lateral proximal femoral angle), LDFA (lateral distal femoral angle), MPTA (medial proximal tibial angle), LDTA (lateral distal tibial angle) and MAD (mechanical axis deviation) and – at the sagittal plane- PDFA (posterior distal femoral angle), PPTA (posterior proximal tibial angle) and ADTA (anterior distal tibial angle). **Results:** Mean tibial and femoral lengthening gain was 14,1 and 9,8 cm respectively. Mean angle values were: LPFA $118 \pm 8,2$, LDFA $95,5 \pm 7,1$, MPTA $87,8 \pm 5,7$, LDTA $93 \pm 7,4$, PDFA $85,1 \pm 6,8$, PPTA 84 ± 7 , ADTA $88,3 \pm 6$ while MAD mean value was 28 ± 13 . LPFA, LDFA, LDTA, PPTA, ADTA as well as MAD were statistically significant different ($p < 0,05$) between achondroplastic patients and normal population. **Conclusion:** The use of the Ilizarov method for lower limb deformity correction, in achondroplastic patients, provides a functional length gain, it is substantially correcting the three-dimensional deformities of the disease but, it does not restore the radiological image into the normal range.

Abstract no.: 36437

ISCHEMIC NECROSIS OF THE LEG ASSOCIATED WITH OCCLUSION OF FEMORAL ARTERY CAUSING BUTTERFLY FRAGMENT OF COMMINUTED FEMORAL FRACTURE -A CASE REPORT-

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A 46-years-old male admitted by a left comminuted femoral distal 1/3 fracture and ipsilateral proximal 1/3 tibial open fracture cause by out-car accident. We performed emergency operation. For his femoral fracture, a closed reduction with intramedullary nail fixation was performed, and for his tibial fracture, a closed reduction with the Ilizarov apparatus fixation was performed. Three days after the surgery, necrosis of anterolateral compartment in the left lower leg progressed, and it was formed to abscess. We diagnosed compartment syndrome of left lower leg, and performed irrigation and debridement. Then, angiography using computed tomography was performed to confirm the circulation. At the femoral fracture level, it was found occlusion of the left femoral artery caused by compression of the butterfly fracture fragment. Using intervention procedure, the artery balloon angioplasty and stent insertion was performed to improve the blood circulation. After that, necrosis did not progress anymore. To resolve the soft tissue defect in left lower leg, anterolateral thigh free flap was performed. After healing the wound, Ilizarov apparatus was converted to intramedullary nail. Two years after last surgery, left femoral and tibial fractures gained bony union. But the patient could not dorsiflex left ankle and left all toes because of antelolateral compartment necrosis of left lower leg. Through this case, in patients with comminuted fracture of the extremities, it show that ischemic necrosis possibly occurs when the blood flow was compressed directly by a fracture bone fragment.

Abstract no.: 36438

A PROSPECTIVE RANDOMIZED COMPARATIVE STUDY OF PLIF VS TLIF IN THE MANAGEMENT OF SPONDYLOLISTHESIS- AN INDIAN EXPERIENCE

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Introduction: Degenerative disease of the lumbar spine is commonly encountered with advancing age and causes disturbing back pain with radicular symptoms, thereby lowering quality of life. Several fusion techniques are in vogue today and we report our comparative results of treating low grade spondylolisthesis with pedicle screw fixation, bone grafting and cage fixation via. the PLIF and TLIF approaches. Methods: 70 patients (23 males, 47 females) with low grade spondylolisthesis(Meyerding grade 1 & 2) and radiculopathy; failed conservative treatment for >3 months, treated from May 2010 to December 2013, in the mean age 48.5 (30-65) years formed the study group. PLIF and TLIF were done using standard approaches with morsellized local bone grafting and cage fixation in all cases. Patients were evaluated clinically (Visual Analogue pain Scale) and radiologically (X-rays and MRI) and followed up for a mean duration of 20.5 (12-31) months. Results: The mean VAS for PLIF decreased from 7.6+/-0.8 to 2.9+/-0.6 and for TLIF from 7.3+/- 0.6 to 1.7+/- 0.8. The average disc and foramen height in PLIF improved from 6.4+/-0.5 and 13.8+/-0.4 to 12.2+/-1.3 and 19.4+/-0.6 respectively and for TLIF from 0.4+/-0.5 and 13.5+/-0.6 to 12.3+/-0.6 and 18.7+/-0.8 post-operatively. No complications were encountered in the TLIF group whereas in the PLIF group, three cases had dural tear with CSF leakage. Conclusion: Both techniques provide a good clinico-radiological outcome but TLIF is simpler, technically less demanding and associated with fewer complications, thereby scoring over and offering a useful alternative to the more traditional PLIF procedure.

Abstract no.: 36447

POSTOPERATIVE PAIN SYNDROME IN SURGICAL TREATMENT OF KEELED CHEST

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Actuality In patients with the severe and advanced cases of pigeon chest an enormous psycho-emotional harm is made to the patient as well as physical damage. When the anomaly is noticeable and cannot be hidden with outerwear children are prone to avoid the company, become unsociable that eventually leads to the formation of a stable inferiority complex. Along with the above-mentioned preoperative problems there are post-operative issues as well: soreness and a secondary local deformation of the resected ribs may be highlighted among them. **Materials and Methods** Preoperatively, the majority of patients have a cosmetic defect, were revealed cardiac dysfunctions in 75%, lung dysfunctions, as a: restrictive, obstructive-restrictive changes in 86%, reduced immune status in 35%, genetic abnormalities in 26% of patients. There was pain with the several of intensity in 5 cases (19.2%) out of 26 operated patients during the first 3 to 7 months after operation. While 4 people (15,4%) endured secondary local deformation. Pain intensity measured on LANSS scale and most of the patients belonged to group with middle intensity pain (3 patients). Pain sensitivity in two cases eliminated independently after 6 months under strict orthopedic cure and in three cases analgesics (dipyrone tablets) were used during 2 weeks. **Conclusion** Thus, postoperative pain in patients is curable with the help of corrected treatment as well as non-drug treatment like compliance of strict orthopedic regime. In the cases of more intense pain the first generation analgesics (dipyrone tablets) are seen as being enough in eliminating post-operative pain.

Abstract no.: 36448

THE EFFECT OF EPINEUROTOMY ON THE MEDIAN NERVE VOLUME AFTER THE CARPAL TUNNEL RELEASE: A PROSPECTIVE RANDOMIZED DOUBLE-BLIND CONTROLLED TRIAL

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Introduction: The aim of this study was to evaluate the effects of epineurotomy on the post-surgical median nerve volume and clinical outcomes in the carpal tunnel syndrome patients with a prominent nerve narrowing. **Patients and methods:** Prospective, randomized, double-blind controlled trial. Patients (n=50) were randomized (1:1) to open-field surgical carpal tunnel release followed by a longitudinal epineurotomy of the nerve (Test), or to open-field release without epineurotomy (Control). **Results:** In both groups, the nerve volume was higher 90 days post-surgery than before the surgery. With adjustment for the pre-surgery value, age, sex and whether the affected hand was a dominant one, the increase was somewhat higher in the Test group (mean 9.9 mm³ in the ITT and 10.5 mm³ in the PP set, p<0.001 respectively) than in the Control group (7.2 mm³ in both ITT and PP sets, p=0.002). At 180 days, the volume increased further, and the adjusted difference vs. the pre-surgery value was somewhat lower in the Test (mean 13.3 and 13.7 mm³ for ITT and PP data, respectively, p<0.001) than in the Control group (mean 14.6 and 14.7 mm³ for ITT and PP data, respectively, p<0.001). No relevant electrophysiological or clinical difference between groups and no effect of the nerve volume was observed. The subjective pain reduction was slightly more prominent in the Control group at 180 days. **Conclusions:** Even in selected carpal tunnel syndrome patients, longitudinal epineurotomy confers no benefit regarding the nerve volume or clinical outcomes over a simple carpal tunnel release.

Abstract no.: 36449

ANALYSES FOR RECURRENCES OF HALLUX VALGUS DEFORMITY AFTER IMPLANT SURGERY IN RHEUMATOID ARTHRITIS

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We analyzed the incidence of the recurrence of hallux valgus deformity after Swanson implant surgery for rheumatoid arthritis, then analyzed for the factors which affect the recurrence of the hallux valgus. Post-operative radiological results with the minimum follow-up of 12 months after surgery were analyzed in 54 cases, 87 joints. The mean age at the time of surgery was 67.7 years (53~84). The mean duration after surgery was 40.8 months (12~93). Hallux valgus angle (HVA) was analyzed at pre-, immediate after surgery, 6 months after surgery, and final follow-up. The change of HVA between immediate after surgery and final follow-up was calculated. The toe lengths of hallux including soft tissue shadow were divided into 3 groups as follows; Type 1 (hallux length is 3 mm longer than 2nd toe), Type 3 (hallux length is 3 mm shorter than 2nd toe), and Type 2 (hallux length is within 3 mm of 2nd toe). There were no statistical correlation between the changes of HVA and follow-up period, pre-operative HVA, and HVA at immediate after surgery. Type 3 showed significantly less changes of HVA when compared to Type 1. Also, with the shortening of the length of hallux by toe lengths type, the HVA at the final follow-up was significantly decreased. Our result clearly showed that the shorter the lengths of hallux, significantly less changes of HVA and HVA at the final follow-up, that may reflect better surgical results of hallux valgus deformity.

Abstract no.: 36451

**BONE BIOPSY DURING AN INTRAMEDULLARY FIXATION OF A
PATHOLOGICAL FEMORAL FRACTURE - TECHNICAL NOTE**

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The femur is the third most common site, after spine and pelvis, where a bone metastasis can be found. Pathological fractures of the lower extremities can significantly impact on the quality of life. The benefit of a surgical fixation of a pathological fracture is in lowering the patient's pain, restoration of the patient's mobility and facilitation of daily care. we used 3 mm wide endoscopic forceps, which are also used for laparoscopic surgeries at our department, to gather the biopsy samples through the intramedullary canal. This method is simple, it does not require extra skills and it gives adequate results.

Abstract no.: 36452

CLOSED REDUCTION AND PERCUTANEOUS SCREW FIXATION FOR TWO-PART AND THREE-PART PROXIMAL HUMERAL FRACTURES: PRELIMINARY RESULTS OF A NEW TECHNIQUE.

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The management of proximal humeral fractures remains controversial. We treated seven patients (five males and two females) with an average age of 48 (range: 25-70) years with closed reduction and percutaneous fixation using 4-mm partially threaded cannulated screws. The mechanism of injury was a fall on the arm in 6 patients and a motor car accident in one patient. Associated fractures were present in three cases. Closed reduction was achieved in all cases without open procedures. Union occurred in all fractures after a mean time of seven weeks. The average Constant-Murley shoulder score was 88 (range 50-100) points with four excellent, two good and one fair result after a mean follow-up period was 18 months. No cases of non-union, screw migration, osteonecrosis or infection were seen. Percutaneous screw fixation may offer a minimally invasive way of osteosynthesis for proximal humeral fractures with satisfactory results in most cases. However, further studies with a large number of fractures are needed to draw statistical significance.

Abstract no.: 36453

THE RESULTS OF TOTAL HIP PROSTHESIS IN PATIENTS WITH RHEUMATOID ARTHRITIS ACCORDING TO THE RECEIVED THERAPY.

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Relevance. Total hip prosthesis (THP) is an effective method of relieving pain and improving function the hip in patients with rheumatoid arthritis (RA). Topical drug therapy remains the question of RA therapy in perioperative period. Methods. THP was used on 36 RA patients. High disease activity by DAS28 was observed in 10 patients, moderate - in 19, low - in 7 patients, the mean DAS28 4,5. At the time of surgery, 66.7% of the patients continued to take basic anti-rheumatic drugs (DMARDs), 16.6% patients received biological therapy, 52.8% - steroids, of which, in combination with DMARDs - 19.4%. Results. For 6 months after surgery VAS decreased by 2.5 times to 31,7 ($p < 0.05$), disease activity decreased (high - 4, moderate 17, low -15), Δ DAS28 = 1,1, HAQ index decreased from 1,63 to 1,04 ($p < 0.05$). VAS in patients receiving steroids alone ($n = 12$) was - 24,9, steroids + DMARD ($n = 7$) - 29,1, only DMARDs ($n = 11$) 34,8 mm, biological therapy + DMARD ($n = 6$) 37,4. Activity decreasing - Δ DAS28 – did not depend from treatment. Functional capacity in patients in the group ($n = 17$), receiving DMARDs with or without biological therapy (Δ HAQ = -0,69) compared to patients receiving steroids without basic therapy ($n = 12$) - Δ HAQ = -0,48 was significantly better improved ($p < 0.05$). Functional ability after surgery is higher in patients using DMARDs continuously and receiving biological therapy compared to patients receiving steroids.

Abstract no.: 36455

PERCUTANEOUS SALVAGE SURGERY FOR WEIL METATARSAL OSTEOTOMIES

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Metatarsalgia is one of the most common reasons for orthopedic surgery consultations. Open surgery using Weil osteotomy techniques is widely accepted to treat metatarsalgia when orthopedic management fails. However, the presence of the osteosynthesis screw and the distal position of the osteotomy significantly complicates salvage procedures. We present a series of patients in whom persistent postoperative metatarsalgia was resolved by percutaneous osteotomies.

Abstract no.: 36456

CHEVRON PERCUTANEOUS OSTEOTOMY WITHOUT INTERNAL FIXATION IN HALLUX VALGUS MILD TO SERIOUS HALLUX VALGUS DEFORMITY

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Background: Chevron osteotomy of the first metatarsal is indicated for the surgical treatment of mild-to-moderate hallux valgus deformity. The aim of this study was to evaluate the results of percutaneous Chevron osteotomy without internal fixation of the first metatarsal in mild-to-serious hallux valgus deformity. Methods: From 2007 to 2008, 37 consecutive percutaneous Chevron osteotomies without internal fixation of the first metatarsal were performed for the treatment of painful mild-to-serious hallux valgus in 17 patients. The patients were assessed with a clinical and radiographic protocol at a mean of 4.1 months postoperatively. The American Orthopaedic Foot and Ankle Society (AOFAS) hallux-metatarsophalangeal-interphalangeal scale was used for the clinical assessment. Results: The mean score on the AOFAS scale was 94.58 points. The postoperative radiographic assessments showed a change compared with the preoperative values, in the mean hallux valgus angle, first intermetatarsal angle, proximal metatarsal articular angle and sesamoid position and did not develop any infection. Conclusions: The Chevron percutaneous technique without internal fixation is enough stable and appears to be reliable for the correct execution of a distal linear osteotomy of the first metatarsal for the correction of a painful mild-to-serious hallux valgus deformity. In some cases the improvement of symptoms is given by the reduction in the intermetatarsal angle and correct position of sesamoid rather proximal metatarsal articular angle.

Abstract no.: 36457

SYNBIOTIC AND POSTOPERATIVE INFECTION IN TRAUMA SURGERY

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Probiotics have been shown to be effective in reducing the prevalence of infections. We explored the effectiveness of probiotics in reducing the prevalence of infections in subjects undergoing surgery for hip fractures. Fifty-one patients admitted for surgical treatment of hip fractures were divided randomly into two groups: Synbiotic 2000 Forte and placebo. The occurrence of infection was closely observed. Additionally, the patients' tolerance to Synbiotic 2000 Forte was established using subjective (self-reported problems) and objective means. Infection was confirmed in 4 patients in each group. Urinary tract infection was noted in 7 subjects and a local wound infection in 1 patient. Tolerance to Synbiotic 2000 Forte was lower in patients undergoing placebo treatment. Synbiotic 2000 Forte did not reduce the number of postoperative infections. Further studies are needed to confirm these findings.

Abstract no.: 36458

TRAUMATIC ATLANTO-OCCIPITAL DISLOCATION WITH SURVIVAL - A RARE INJURY? REVIEW OF 3 CASES TREATED IN 2013

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Introduction: Traumatic atlanto-occipital dislocation (AOD) is an injury which results in 15% of deaths due to spinal injury; survival, however, is very rare. More than 50% of AOD is primarily overlooked. Methods: Authors present 3 cases treated in a level-1 trauma center in 2013; all of them as a result of high energy polytraumas. The first patient sustained concurrent atlanto-occipital and atlanto-axial instability of the upper cervical spine, which he suffered after a fall from a great height. The second patient sustained AOD combined with contingent C2-C3 disco-ligamentous instability. The third patient sustained AOD combined with bilateral occipital condyle fracture. All of them sustained intracranial haematoma and other injuries. The first two cases were diagnosed after a delay of 24 hours. Results: Dorsal occipito-cervical fusion was performed in all patients. The first one fully recovered, the second one suffers a deficit of cognitive functions and epileptiform attacks, the third one has diplopia and bilateral VI. head nerve lesion, all due to the head trauma. All of them can walk independently. Conclusion: AOD may not be as rare as presented. Proper diagnostics has to be done in high energy trauma with concomitant injuries as head trauma, subarachnoidal bleeding close to the cervico-cranial junction and mandible fracture as a result of hyperextension injury.

Abstract no.: 36461

A COMPARATIVE STUDY BETWEEN 2- OCTYL-CYANOACRYLATE AND STAPLES FOR WOUND CLOSURE OF SPINAL SURGERY ON SURGICAL SITE INFECTION

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Background Surgical site infection (SSI) after spinal surgery is a devastating complication. Various methods of skin closure are used in spinal surgery, but the optimal skin-closure method remains unclear. A recent report recommended against the use of metal staples for skin closure in orthopedic surgery. 2-Octyl-cyanoacrylate has been widely applied for wound closure in various surgeries. In this cohort study, we assessed the rate of SSI in spinal surgery using metal staples and 2-octyl-cyanoacrylate for wound closure. **Methods** This study enrolled 609 consecutive patients undergoing spinal surgery in our hospital. From April 2007 to March 2010 surgical wounds were closed with metal staples (group 1, n=294). From April 2010 to February 2012 skin closure was performed using 2-octyl-cyanoacrylate (group 2, n=315). We assessed the rate of SSI using these two different methods of wound closure. Prospective study of the time and cost evaluation of wound closure was performed between two groups. **Results** Patients in the 2-octyl-cyanoacrylate group had more risk factors for SSI than those in the metal-staple group. Nonetheless, eight patients in the metal-staple group compared with none in the 2-octyl-cyanoacrylate group acquired SSIs ($p < 0.01$). The closure of the wound in length of 10cm with 2-octyl-cyanoacrylate could save 28 seconds and \$13.5. **Conclusions** This study reveals that in spinal surgery, wound closure using 2-octyl-cyanoacrylate was associated with a lower rate of SSI than wound closure with staples. Moreover its use has a more time saving and cost-effectiveness.

Abstract no.: 36467

**TOTAL KNEE ARTHROPLASTY WITH ANTERIOR-POSTERIOR GLIDE
LCS MOBILE-BEARING SYSTEM**

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Objectives: 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 5 years. The mean follow up period was 68 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 postoperative complications. **Results:** The average range of motion of the knee joint was 107.9°(70°~135°) preoperatively and 125.2°(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 femoro-tibial angle changed from varus 10.1° preoperatively to valgus 3.3° at the last follow up. The radiolucency rate was observed at 14% of all cases. There were 1 case of traumatic dislocation of the polyethylene liner, 1 case of aseptic loosening and 6 cases of posterior instability because of PCL insufficiency. **Conclusion:** Total knee arthroplasty with APG LCS mobile bearing system demonstrated relatively good results in short term clinical and radiologic results. However further considerations of posterior instability due to PCL insufficiency are needed.

Abstract no.: 36468

**TREATMENT OF PERIPROSTHETIC FEMORAL FRACTURES
FOLLOWING TOTAL KNEE ARTHROPLASTY**

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Purpose: The purpose of this study is to compare the treatment results of fracture fixation using two minimal invasive techniques in patients with periprosthetic femoral fractures following total knee arthroplasty. **Materials and Methods:** We reviewed 36 patients (5 males, 31 females) of periprosthetic femoral fractures treated surgically between January 2005 and January 2011. Mean patient age was 68.9 (range, 43~81) years and follow up averaged 41 (range, 18~72) months. 19 patients were treated with minimal invasive locking plate fixation (Group I) and 17 patients with retrograde intramedullary nailing (Group II). Clinical and radiologic outcomes in each group were comparatively analyzed. **Results:** Successful bone union occurred in all patients and the mean time to bone union was 3.7 months in group I and 4.2 months in group II. There were no statistical difference between two groups in mean operative time and mean intraoperative blood loss. There were no statistical difference between two group in clinical outcomes but valgus deformity was apparent in group II and radiologic outcomes reveal significant difference between two groups. **Conclusion:** In the treatment of periprosthetic femoral fractures after total knee arthroplasty, two minimal invasive techniques showed good results in the clinical results. However, minimal invasive plate fixation showed better results in alignments radiologically.

Abstract no.: 36469

CLINICAL AND RADIOLOGICAL OUTCOME AFTER PERIACETABULAR OSTEOTOMY. A CROSS-SECTIONAL STUDY OF 127 HIPS OPERATED ON IN 1999-2008.

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The aim of the present paper was to analyse clinical and radiographic outcome, survival of the hip joint and risk factors of early conversion to total hip arthroplasty(THA) in patients with periacetabular osteotomy(PAO). In the period 1999 – 2008, 93 patients (127 hips, median patient age 31, range 13-49 years) were operated on with PAO. Median follow up was 7 (SD 2.1) years. Analyses of clinical and radiographic examinations, including WOMAC, were performed. Osteoarthritis was measured using Tönnis grade. Survival was assessed by the Kaplan-Meier method and predictors of conversion to THA were calculated using Cox regression analysis with THA as defined endpoint. Center Edge Angle improved significantly with a mean of 8.7 (95%CI: 7.1; 10.3) preoperatively to a mean of 24.6 (95%CI: 22.6; 26.6) at follow up. Likewise the acetabular roof obliquity angle improved significantly with a mean of 21.2 (95%CI: 19.7; 22.6) preoperatively to 8.7 (95%CI: 7.1; 10.4) at follow-up. Eleven out of 127 hips had conversion to THA. The 11.7 years cumulated hip joint survival rate was 85% (95%CI: 0.753; 0.945). Significant predictors of converting to THA were preoperative high grade of OA and postoperative high degree of acetabular roof obliquity angle. An improvement was found in Harris Hip Score pain score after receiving a PAO (p=0.01). Our results with almost 12 years survival data are comparable with the literature. PAO is considered as an effective treatment for young adults with painful hip dysplasia. Especially when preoperative criteria for conversion to THA are illuminated.

Abstract no.: 36471

AN ORTHOPAEDIC EMERGENCY! STAPHYLOCOCCUS AUREUS PANTON-VALENTINE LEUKOCIDIN (STAPH PVL) INFECTION: A CASE SERIES REPORT OF THREE PATIENTS

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Introduction: Pantan-Valentine leukocidin (PVL) is a cytotoxin which is associated with increased virulence in certain strains of Staphylococcus aureus. Increased awareness of the rapid onset and devastating consequences of musculoskeletal infection is essential. Objectives: Three paediatric case reports illustrate the management strategies and the devastating functional effects on bone loss. Methods: Three Staph PVL cases were identified over a 12 month period. Results: Case-1 A 2 year old boy who was admitted following a fall and injury to his left arm. He was admitted with septic shock with associated osteo-articular infection of the proximal humerus. This patient went on to develop segmental bone loss with gap non-union. Case-2 A 2 month old girl was admitted with left thigh swelling and associated septic shock. She developed pyomyositis of her left thigh and osteomyelitis of the femur, and subsequently had a spontaneous fracture with distal physeal dissociation. Case-3 A 10 year old boy presented with osteomyelitis of the distal femur and a pathological fracture which required excision of the distal third of the diaphyseal femoral segment, proximal osteotomy and bone transport. Conclusions: The association of PVL with toxic shock syndrome and cardiovascular compromise demonstrates the emerging danger of this infection and should be considered in patients presenting in this way. Physicians should have a low threshold for further imaging to locate a source, with early orthopaedic involvement if required. Patients often go on to develop devastating long term complications of joint destruction and bone loss, requiring prolonged orthopaedic follow up.

Abstract no.: 36475

SURGICAL AND NON-SURGICAL TREATMENT OF FROZEN SHOULDER; A SURVEY ON SURGEONS TREATMENT PREFERENCES

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Aim: To determine current trends in the management of frozen shoulder amongst surgical members of the British Elbow and Shoulder Society (BESS). Methods: A single electronic questionnaire was emailed to surgical members of the BESS. Participants were asked about their surgical and non-surgical treatments of choice and the reasoning behind that, as well as which components of arthroscopic arthrolysis they favoured. Results: 87 BESS members completed the questioner. The majority of respondents used physiotherapy as their preferred means of non-surgical management while arthroscopic arthrolysis was the most frequently used surgical intervention. A substantial proportion of surgeons based their choice on personal experience and training rather than published evidence. Conclusions: Management of frozen shoulder amongst surgeons varies substantially and is highly based on personal experience and training rather than strong evidence. Arthroscopic arthrolysis is a heterogeneous procedure with a wide variation in the use of its various components. Our results highlight the need for high quality clinical trials to compare the management options available.

Abstract no.: 36480

FRACTURES OF SACRUM IN THE STRUCTURE OF PELVIC RING INJURIES

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INTRODUCTION. Isolated sacrum fractures in the structure of bone fractures are rare. They are often combined with pelvic fractures. It is not difficult to diagnose pelvis fractures with significant displacement through anterior-posterior radiography, and fractures without displacement are rarely determined, sometimes even not diagnosed. OBJECTIVES. To determine the frequency of sacrum fractures at pelvic ring injuries. METHODS. During 2004-2013, 606 radiographs of patients with pelvic ring injuries have been analysed. RESULTS. Sacrum fracture was diagnosed in 286 cases among 606 patients with pelvic ring injuries. In 135 cases the fracture of sacrum was on the same side, where there was damage to anterior ring. In other cases, the sacrum fracture was observed on the opposite side. Cause of sacrum fracture is high-energy trauma. Fractures of sacrum were characterized under classification of Denis. Fractures of sacrum wing were recorded in 234 cases. Transforaminal fracture is rare (45 cases), however, it is often complicated by damage to nerve roots. Fracture through sacral canal occurred in 7 cases. CONCLUSION. Fractures of anterior pelvis ring is combined with damage the posterior ring. Therefore, if the fracture of sacrum is not detected on review radiography of the pelvis, then oblique views should be conducted. Using oblique views of pelvis allowed to increase the diagnosis of fractures of sacrum by 49.2%. Computed tomography is widely used with radiography in diagnosis of fractures of sacrum, because the degree of instability of the pelvic ring, respectively, the volume of treatment shall be determined depending on severity of injury.

Abstract no.: 36488

IMPACT ASSESSMENT OF IMPLANTS WITH COATINGS BASED ON SUPERHARD COMPOUNDS ON BLOOD MORPHOLOGY AND BONE DENSITY OF RATS IN EXPERIMENTAL OSTEOSYNTHESIS

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Introduction: In traumatology it is often necessary to use implants. The main disadvantage of metal implants: they are susceptible to corrosion due to which the mechanical strength of the implant reduces and the body is poisoned by metal ions. Potentially promising are coatings containing hafnium nitride which are characterized by chemical inertness. The aim of the present study was to investigate the effects of implants made of copper, steel, steel coated with titanium and hafnium nitrides, steel coated with titanium and zirconium nitrides on morphological parameters of blood and local changes in bone tissue of experimental rats. **Methods:** Experiments were performed on male albino rats, weighing 250-300 g. Depending on the implanted material animals were divided into 4 groups with 20 rats in each group : 2 controls: group with implants made of steel + group with implants made of copper, 2 experimental: group with implants made of steel coated with titanium and hafnium nitrides+ group with implants made of steel coated with titanium and zirconium nitrides. The implantation was performed in aseptic and antiseptic conditions under potentiated general anesthesia. The implants were administered to rats in the middle third of the tibia after reaming. **Results:** changes in the blood morphological composition of the rats were less pronounced in the group with implants made of steel coated with nitrides of titanium and hafnium. In the same group, the results of computed tomography showed that the value of bone density did not differ from the bone density of intact rats.

Abstract no.: 36489

ASSESSMENT OF LOCAL AND SYSTEMIC EFFECTS OF IMPLANTS ON ORGANISM IN EXPERIMENTAL OSTEOSYNTHESIS

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Introduction: The favourable outcome of treatment bone fractures depends on the quality of the implants. Implant coatings containing titanium and hafnium nitrides differ from others by their biocompatibility that provides adequate osseointegration and prevention from autoimmune aggression from the organism. Purpose of research: to study the impact of implants coated with titanium and hafnium nitrides on the state of regional lymphatic nodes and osteoregeneration processes. Materials and Methods: Intramedullary osteosynthesis was performed on 40 rabbits after experimental osteoclasia. In the experimental group wires made of medical steel coated with titanium and hafnium nitrides were used. In the control group wires without a coating were used. On 10th, 30th, 60th, 180th days after surgery studies of the popliteal lymphatic nodes were carried out and regenerate bone density was measured by computed tomography. Results: Changes concerning the transformation of structural and functional zones of the lymphatic nodes of the animals of the experimental group were less pronounced. Scan by computed tomography has shown that reconstruction of bone tissue in the formed regenerate zone in animals with the tested coating occurred at an earlier date (on 90th days in the experimental group, in control group- on 120th days) as opposed to the control group and this was determined by the density of periosteal callus and by the uniformity of regenerate structure (the bone density value in the experimental group was of 15% significantly higher than value of bone density in control group).

Abstract no.: 36490

A NEW CAPSULLORAPHY TECHNIQUE AFTER OPEN REDUCTION OF DEVELOPMENTAL DYSPLASIA OF THE HIP (DDH).

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Background: Capsulloraphy is considered as the single most important step in open reduction of developmental dysplasia of the hip (DDH). In neglected cases of DDH after the walking age, the capsule is adherent to the outer table of the iliac bone and is difficult to be exposed. Furthermore, in high-riding dislocations, it is not always an easy task to plan and perform an adequate capsulloraphy. Patients & Methods: We have designed a new capsulloraphy technique, that was performed in 309 DDH hips, whom first presented after the walking age. A minimum period of two-year follow-up post-operatively was an inclusion criterion in this study. Results: In all, except 5 hips, a good primary stabilization and stable concentric reduction during the follow-up period was achieved. Redislocation took place in only five cases. The need for another surgery was considered a failure and a revision was done. Significance: The new technique provided adequate, stable, and simple closure of the capsule and maintained the head at the reduced position with a significantly reduced complication rate.

Abstract no.: 36497

RETROGRADE SINGLE ELASTIC INTRAMEDULLARY NAIL IN CLOSED SIMPLE DIAPHYSEAL HUMERAL SHAFT FRACTURES IN CHILDREN.

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Patients and methods: Between January 2011 to January 2012, there was 23 patients whom suffered from closed middle third fractures of the humerus. There were 19 males and 4 females. In 15 cases the right side was affected, while in remaining 8 cases the left side was fractured. The age of the patients at time of injury ranged from 7 to 12 years, with a mean of 10 years. All the included patients were treated using a retrograde single elastic Nancy nail. There were 9 patients with transverse fractures, 8 cases with an oblique fracture line and only 6 cases with a spiral fracture line. All the included patients presented with closed fractures and children with open fractures were excluded from this study. A minimum follow-up period of 12 month was an inclusion criterion in this study. **Results:** The mean follow up period was 23 month with a range from 12 to 34 month. Radiographically, bone healing took place in all the studied cases. The duration of bone healing till solid union ranged from 5 to 10 weeks, with a mean of 8 weeks. At the final follow-up visit all the cases showed satisfactory clinical and functional results of the affected side and was compared to the healthy side. **Conclusions:** Based on the final clinical and radiological outcomes of this study at the final follow-up examination, it was found that single elastic intramedullary nail fixation of middle third simple humeral shaft fractures is an adequate technique.

Abstract no.: 36506

RESULTS OF DUCKBILL FRACTURES AFTER SCREW FIXATION

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Introduction The aim of the study was to evaluate clinical and radiological results of duckbill fractures (extra-articular fractures of the calcaneus) after surgical treatment. **Material und Methods** In a retrospective study all patients treated surgically with a duckbill fracture from 2007 to 2012 were included. At follow up clinical measurements including range of motion, pain, swelling and wound healing were assessed. Control X-rays were screened concerning fracture healing. **Results** The study group consisted of ten patients (6 males, 4 females, mean age 53.7 years). The mean time from accident to surgery was 2.7 days. Seven patients were treated by open and three patients by closed reduction and screw fixation. Postoperatively three patients developed skin necrosis. Two of them had to be treated with split skin graft. Mean follow up was 6.5 months. At follow-up all fractures were healed and the patients showed full range of motion. Three patients reported mild pain and suffered from chronic swelling. **Conclusion** In 70% of the cases no clinical problems were evident. Skin necrosis accounted for 30%, all of these patients underwent delayed surgery. The results show that screw fixation has very good clinical and radiological results in the treatment of duckbill fractures. Therefore, immediate reduction and fixation have to be carried out any time of the day in order to prevent pressure skin necrosis caused by displaced fragments.

Abstract no.: 36512

BIOCHEMICAL INDEXES OF POSTTRAUMATIC OSTEOPOROSIS IN EXPERIMENTAL CONDITION

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Biochemical markers of osteoporosis as considered, allows giving characteristics to bone quality disturbance and it needs of further refinement and study. Purpose of research: To study indexes of alkaline phosphatase and total blood calcium at posttraumatic osteoporosis with using Chitosan and Active calcium in experimental conditions. In the seventh day of experiment was performed a blood sample at rabbits of control and experimental (with the use Chitosan and Active calcium) groups in the rate of 5.0 ml from cardiac ventricle and performed biochemical studies aimed to determine alkaline phosphatase and total calcium. In the experimental group (Chitosan and Active calcium) at the seventh study day average indications for alkaline phosphatase and total calcium were lower than in the control (alkaline phosphatase – 4.88 ± 0.2 , total calcium – 1.1 ± 0.1), which gives indication of bone resorption. On 14-th study day experienced increase alkaline phosphatase content (average 6.1 ± 0.1) and approximation of the total blood calcium rate to the same in control (average 2.41 ± 0.1). Observation on 21 day, there are further increasing indications of alkaline phosphatase and total blood calcium, which indicates reparative regeneration beginning. On 30-th day, was observed a rapidly increase indications of alkaline phosphatase average before 17.1 ± 0.57 (8.1 ± 0.1 in control) and further indication growth of total blood calcium content (2.82 ± 0.1 , 2.4 ± 0.4 in control). All this is evidence of activation of reparative processes of bone tissue. Based on the foregoing, we obtained biochemical evidence lifting tempo osteogenesis when applying the Modified Chitosan with Active calcium.

Abstract no.: 36522

RESULT OF COMPARTMENT SYNDROME FOR 5-YEAR

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Introduction: Compartment syndrome is not rare with trauma. When we suspect compartment, we measure compartment pressure. But when the patient is under sedation and unconsciousness and look without carefully, we will overlook it. If Delay fasciotomy, muscle, nerve and tissue will be necrosis. We reported our results that we manage compartment syndrome. Method: We researched all patient who underwent patient of compartment syndrome. We compared age, sex, pressure of compartment, time to treatment, outcome at discharge, length of stay from 2009 to 2013. Result: 7 patients (6 males and one female), age was 24 to 84 (average 59) The patients are burn (3), severe trauma(1), hypothermia(1), carbon monoxide poisoning(1), cervical infarction(1.). Compartment pressure were measured in 4 patients and all patients had at least one compartment with a pressure >30mmHg. We operated 6patients. The average time from injury to fasciotomy was 4.5hr. Dead of disease are 2 patients, Amputation is 1 patients. 1 patients refuse operation. So we manage to rehabilitation and after 2 year we operate him. We operated. Conclusion: Fast diagnosis and fasciotomy turn patient with compartment good course. But one patient who refuse first operation will need operation and remain weakness of foot and numbness.

Abstract no.: 36523

SURGICAL TREATMENT OF VALGUS ROTATION OF FIRST TOE

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Objective: To analyze the results of surgical treatment of patients with SERI osteotomy of patients with valgus rotation of first toe. Since 2012 we have implemented and tested minimally invasive technology «SERI» (Simple, Effective, Rapid, Inexpensive) on 60 feet. This method of treatment is simple to perform, less traumatic (postoperative scar less is than 1 cm) and has a cosmetic effect. After skin incision to 1.0 cm, osteotomy is carried out along medial surface of head of metatarsal bone in the metatarsal neck using oscillating saw. Osteotomy choice depends on the desired effect: lengthening, shortening, perpendicular. After elimination of varus of first ray, K-wire fixation is performed on the outer surface of the phalanges finger through the soft tissue and intramedullary canal proximal to the base of the metatarsal bone. Postoperatively, on the next day patients can be activated in special shoe ""Baruk"", which are used up to 2 months. Spoke is removed without technical problems in dressing room after 1 month. Employability is restored after 4 months. Long-term results of surgical treatment were assessed by standard international scale criterion Groulier after 1 year, excellent and good results were obtained in 57 (95%) cases, poor in 3 (5%) cases. Thus, minimally invasive technology SERI allows to maximum early activate patients, to reduce duration of postoperative rehabilitation, and to eliminate the possibility of recurrence of iatrogenic complications.

Abstract no.: 36526

TREATMENT OF ACHILLES TENDON RUPTURE LONG TERM EVALUATION

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Introduction: We have a 30 year long experience in treatment of a large number of patients with Achilles tendon ruptures. We introduced modification to the percutaneous reconstruction of the ruptured Achilles tendon, which yielded better results, extremely low medical costs and shortened hospital stay. Methods: From 1982 to 2012, a total of 2313 with Achilles tendon ruptures were treated at our hospital. 2128 (92%) patients were treated operatively and 185 (8%) patients were treated non-operatively. In operated group, 1316 (62%) were treated by plastic reconstruction surgery with triceps surae tip over graft and 812 (38%) patients were treated using our percutaneous modified procedure under local anesthesia, introduced 2001. There were 208 (9%) female and 2105 (91%) ranging in age from 18-65. The follow up ranged from 1-15 years. Results: 185 patients were treated non-operatively due to high anesthesia-related risk. After immobilization in the cast these patients had muscle atrophy, long-term weakness, joint stiffness, and DVT. Patients treated with open surgery returned to previous work after 4-6 months and had a few complications. The percutaneous group recovered after 3 months and had no complications due to our strict criteria to avoid sural nerve damage. Conclusions: Complications were rare in the open surgery group related to the surgical technique. Patients treated by our modified percutaneous method developed no complications and had no re-ruptures or sural nerve injury. The recovery was quick as compared to the open and non-operative method. The conservative method yielded poor results due to long period of immobilization.

Abstract no.: 36527

EVALUATION OF COMMINUTED DISPLACED FRACTURES OF THE PATELLA APEX TREATED OPERATIVELY

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Materials and methods: In a 10 year period a total of 112 patients with comminuted displaced fractures of the patella apex were treated operatively using two methods: internal fixation (tension band technique and modified tension band technique with screws) and partial patellectomy. There were 88 males and 24 females with mean age of 40 years. The mean follow up period was 5 years. Results: In the first group treated by internal fixation there were 60 patients (39%) with excellent results, 20 (33%) with good results, 14 (23%) with satisfactory results and 3 (5%) with poor results. In the second group treated with partial patellectomy there were 52 patients (37%) with excellent results , 17 (32%) with good results, 13 (25%) with satisfactory results and 3 patients (6%) with poor results. 42 patients (38%) out of 112 patients returned to their previous jobs and activities before the injury. Conclusion: A) successful reduction and internal fixation optimized and allowed early joint motion. B) Partial patellectomy is indicated when comminuted and extensive fragment can't be reconstructed and when patella should be salvaged as much as possible. C) Patellofemoral arthritis developed in both groups of patients, 33% and 32% respectively.

Abstract no.: 36528

A PROSPECTIVE STUDY OF PROXIMAL FEMORAL LOCKING COMPRESSION PLATE IN EXTRACAPSULAR FRACTURE NECK OF FEMUR

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BACKGROUND: To study the efficiency and outcome of extracapsular fracture neck of femur treated with Proximal Femoral Locking Compression Plate. **METHODOLOGY:** 21 cases of Extracapsular fracture neck of femur admitted to A.V.medical college and hospital between September 2012 and Jan 2014 treated with Proximal Femoral Locking Compression Plate. **RESULTS:** Of 21 cases, 13 cases were intertrochanteric fracture and remaining 8 were sub trochanteric fracture with the mean age was 51.47 years. Minimum age was 19 years and maximum age was 85 years. 14 patients (67%) were males and 7 patients (33%) were females. The average duration of stay in the hospital was 25.31 days. The average follow up was 18 months [11-23 months]. The functional results were graded according to Harris Hip Scoring. In our study, 10 patients (48%) had excellent results, 8 patients (38%) had good results, 2 patients (10%) had poor result, and 1 failed case (5%). **CONCLUSION:** In conclusion the potentiality of the Proximal Femoral Locking Compression Plate in varied indications shows its versatility. Although not free of complications our study has demonstrated excellent results. The procedure offers faster mobilization, rapid return to activities of daily living, improves the quality of life and gave a long term solution in patients with extracapsular fracture neck of femur. Larger studies with longer follow up will further validate the procedure. **KEY WORDS:** Intertrochanteric fractures, subtrochanteric fracture, proximal femoral locking compression plate, Harris Hip Score

Abstract no.: 36529

ADVANTAGES OF MODIFIED TRANSFEMORAL APPROACH IN REVISION HIP SURGERY. THREE YEARS FOLLOW-UP.

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Introduction: There are many options in revision femoral component depending on surgeon experience. During the last years the modified transfemoral approach become more popular and modular uncemented stems implanted gave predictable results. Material and Methods: Between 2000 and 2010 we performed in our department 189-revision hip surgeries. We analyzed retrospectively 75 revision which were done with modular curved cementless stem Revitan implanted using modified transfemoral approach. They were followed clinically and radiological for mean of three years. One year after the operation, the osteotomy showed bony consolidation in all but three cases (96%). Osseous defects were classified according to Paprosky. Subsidence was measured using the technique of Callaghan. The femoral score of Barnett and Nordin was calculated immediately postoperatively and at the 2-year follow up to analyze postoperative bone formation of the proximal femur. Results: We have observed subsidence in six cases (8%) and one of these stem became loose and has to be revised with a longer stem with distal locked screws. In all of these cases of subsidence the circular fixation zone of the stem in the isthmus of the femur was less than 4 cm. The Harris hip score improved continuously from $38 \pm 16,2$ points preoperatively to $82 \pm 15,2$ points 24 months post-operatively. Conclusions: Revision femoral component with curved modular stem implanted through modified transfemoral approach showed reproducible results. The union of the femoral flap should not be a concern and also the stem subsidence as long as there is a distal circular press fit of 4cm.

Abstract no.: 36530

ARTHROSCOPIC REPAIR OF FULL THICKNESS KNEE CARTILAGE DEFECTS USING THE AMIC TECHNIQUE (AUTOLOGUS MATRIX INDUCED CHONDROGENESIS)

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Mesenchymal bone marrow cells were introduced in clinical practice due to their ability to differentiate in other cell-types. The AMIC technique (autologus matrix induced chondrogenesis) combines micro fractures with collagen membranes as a scaffold for mesenchymal cells, resulting cartilage repair. **MATERIALS AND METHODS:**We had a 52y old patient presenting a grade IV Outerbridge cartilage defect on the medial femoral condyle, 2,5 cm² in size. The patellofemoral joint was normal, with mild degenerative lesions of medial meniscus, mechanical axis of the lower limb was normal, IKDC score of 48. First step is diagnostic arthroscopy. After debridement, of the chondral lesion and stabilizing the peripheric margins, micro fractures of 3mm are being made in dry conditions. It is necessary to use dry conditions so that mesenchimal cells adhere to the defect without being flushed away. Collagen matrix is then cut and circles are placed on the defect size and stabilised with fibrin glue. After 5 mins, 10-15 flexion-extension cycles are done , and the joint is finally inspected to test the stability of the matrix. **RESULTS:**After 6 months, IKDC score was 71, the knee was pain-free. The MRI showed cartilage continuity on the medial femoral condyle, with a high patient satisfaction level. **CONCLUSIONS:**The arthroscopic technique is indicated in all full-thickness cartilage lesions with no bony defects. It's a single step arthroscopic procedure originating from the open AMIC procedure. Up to date, there aren't any clinical randomized studies recommanding it as a standard procedure for full thickness cartilage defects.

Abstract no.: 36531

REVISION COMPONENTS IN PRIMARY KNEE ARTHROPLASTY.

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Introduction There are some advanced primary osteoarthritis neglect or secondary to fractures which may lead to important bone defects or ligaments insufficiency. These cannot be addressed just with a primary prosthesis. **Material and Methods.** Between 2002 – 2012 years, 584 total knee arthroplasty were performed in our department. 35 patients had a varus alignment of the knee more than 25° and 10 patients had a valgus alignment more than 25°. For replacement we have used a postero-stabilised prosthesis and an antero-medial approach. In 22 cases we have used revision knee implants for primary replacement according to bone deficiency. For bony reconstruction we have used a metal medial or lateral wedge protected with a stem. If we had residual ligament insufficiency we have used also a revision femoral component. The follow-up of the all patients is two years. All the cases were followed radiographically and clinically with KSS score **Results.** Postoperatively, the functional score improved from 33 to 88 points. The results were excellent in 80% of the cases and good in 20% of the cases. The postoperative range of motion was 95° (85°-110°). The height of joint line was restored and there was 2 cases of patella baja. **Conclusions.** Revision knee prosthesis in primary arthroplasty and the technique of modular tibial metal augmentations should be considered as an effective solution in severe proximal tibial bony deficiencies.

Abstract no.: 36532

INTRA-ARTICULAR TRANEXAMIC ACID REDUCED BLOOD LOSS IN TOTAL KNEE ARTHROPLASTY.

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Introduction: Tranexamic acid (TEA), after intravenous administration has been proven that reduces blood loss after total knee replacement. There are a lot of controversies regarding the dosage and timing of administration of drug during surgery. There is a concern regarding the side effects of this drug when is administered systemically, therefore intra-articular administration becomes very attractive. Material is Method: Between 2010-2012 we have done a prospective study to examine the blood-saving effect of TEA in 100 total knee replacements. We injected intra-articular at closure, a total of 3,000 mg/30 ml TXA + 60ml saline solution into the knee joint through a closed suction drain and then we release the tourniquet. Then the drain was closed for 6 hours and then became active. Total blood loss was calculated from the maximum loss of hemoglobin. We have analyzed post-operative hemoglobin levels, volumes from drainage, D-dimer and needs for transfusion. All patients were followed clinically for the presence of venous thromboembolism. We have measure also pre-and post-operatively leg diameters. RESULTS: The results revealed that post-operative decrease in Hb level was significantly reduced after tranexamic injection. The need for postoperatively blood transfusion decrease with 90%. The mean Hb levels decreased with 1,7 unit. The mean postoperatively blood loss in drainage was 150ml (50ml-325ml). Knee joint swelling after operation was significantly reduced. There wasn't any systemic reaction or clinically symptoms of DVT. CONCLUSIONS: Intra-articular administration of TXA decreased the blood loss in TKA and also joint swelling. The procedure is safe there are no systemic reaction or septic complication.

Abstract no.: 36537

CHANGES IN LUMBAR SAGITTAL ALIGNMENT FOLLOWING MINIMALLY INVASIVE BILATERAL TRANSFORAMINAL LUMBAR INTERBODY FUSION FOR DEGENERATIVE SPONDYLOLISTHESIS

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Introduction: Minimally invasive interbody fusion for degenerative lumbar conditions had some benefits compared with conventional techniques. But it is more difficult to realign the lumbar spine in minimally invasive surgery than open methods. During 9 years reduction techniques and type of interbody fusion cages were changed. Purpose of this study is to determine how lumbar sagittal alignment is affected by surgical techniques and implants. Methods: 71 patients with degenerative spondylolisthesis underwent minimally invasive bilateral TLIF at single-level. Interbody fusion was performed by the old reduction technique in 26 patients and by the new technique in 45 patients. Two types of fusion cages were used. As radiological study, standing lateral digitized X-rays were taken preoperatively and 2 weeks postoperatively. Percent slip, slip angle, reduction rate and lumbar lordosis (LL) were measured as parameters. Results: The preoperative percent slip was 20.6% and significantly reduced to 5.8% postoperatively ($P<0.0001$). The reduction rate drastically improved with the change of the techniques, as that rate in old technique group/new technique group was 51.0%/88.1% ($P<0.0001$). The slip angle also improved from 3.7 to 6.9 degrees ($p<0.0001$). The postoperative slip angle with square-shaped cages was 6.5 degrees and that with boomerang cages was 10.5 degrees ($P=0.0003$). LL significantly increased from 35.1 to 38.1 degrees postoperatively ($p=0.0008$). Especially postoperative LL with boomerang cages was 44.2 degrees and that with square-shaped cages was 37.3 degrees ($P=0.05$). Conclusions: In MI-TLIF, new reduction technique and boomerang interbody fusion cage brought high reduction rate, high slip angle and adequate lumbar lordosis.

Abstract no.: 36538

MALE INFERTILITY AFTER CHEMOTHERAPY FOR HIGH GRADE BONE AND SOFT TISSUE TUMOR

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Introduction:The purpose of the present study was to investigate marriage and fertility of long-survivor with high-grade bone and soft tissue tumor after chemotherapy. **Methods:** We reviewed the issues related to fertility of 47 patients treated with chemotherapy, including marriage rate (number of married patients / number of all patients), fertility rate (number of patients having babies / number of patients), total fertility ratio (number of total babies / number of patients having babies), interval of first delivery after last chemotherapy, delivery style, congenital deformity of new baby, and relationship between cumulative dose of each chemotherapeutic agents and childbirth. **Results:**The overall marriage rate and fertility rate after treatment were 23.4% (11/47) and 21.3% (10/47). 15 babies were born from 10 patients. Total fertility ratio was 1.5 (15/10). The fertility rate of male patient was lower than that of female. The interval from last chemotherapy to first delivery was 7.0 ± 4.8 years. Delivery styles were 6 normal transvaginal deliveries and 3 caesarean sections, because of medical termination for metastatic lung lesion, infectious amniotic fluid caused by myoma uteri, and abnormal rotation of baby. No congenital deformities were found in all new born babies. Male patients having their babies received smaller amount of cumulative chemotherapeutic agent dose, especially ifosfamide, comparing to those having no babies, but there was no specific trend in female patients. **Discussion:**Infertility was observed in young male patients treated after intensified chemotherapy. Every patient should be counseled regarding the potential risk of infertility before cancer treatment.

Abstract no.: 36539

A CASE REPORT OF SECONDARY OSTEOSARCOMA WITHOUT RADIATION THERAPY IN SEVEN YEAR INTERVAL AFTER TREATMENT OF PELVIC EWING SARCOMA

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Introduction: Secondary osteosarcoma after treatment of Ewing sarcoma in the same patients is an extremely rare event. In this report, we present a case who subsequently presented with a high-grade osteosarcoma of the distal femur, 7 years after treatment for pelvic Ewing sarcoma. Case report: A 6-year-old woman presented with a painful mass in the left buttock with high fever. A plain film radiograph revealed an osteolytic lesion of the left ilium. Pathological diagnosis of biopsy material was Ewing sarcoma. The patient preoperatively received high dose intensive chemotherapy, according to the European Ewing tumor Working Initiative of National Groups 1999 protocol. Wide resection of pelvic tumor was carried out. Postoperatively, she underwent PBSCT without radiation therapy. 7 years after the previous surgery, she noted gradually increasing pain in her knee joint. Radiologically, periosteal reaction and lytic lesion with ossification and calcification were pointed out in the right femur. Pathological diagnosis of biopsy specimen was osteoblastic osteosarcoma. Some chemotherapies consisted of cisplatin and doxorubicin was done, however, tumor growing speed growth speed was so rapid that disarticulation from the right hip was inevitable. Then, combinations of multi-drugs were added. At the last follow up, she passed away, due to the lung metastases. Discussion: Secondary malignancy after Ewing sarcoma was found in 3-5%, and secondary osteosarcoma was detected in approximately 0.3 %. Alkylating agents for childhood cancer increase the subsequent risk of secondary tumor. It is impossible to clarify the risk of secondary malignancy and chemotherapy, but the possibility should be considered.

Abstract no.: 36546

DISTRACTION METHOD IN TREATMENT OF HIGH STANDING TROCHANTER MAJOR IN ADOLESCENTS

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Introduction: High standing trochanter major progresses cause of abnormal development of hip dysplasia or hip arthritis. Clinical manifestations of this disease are lameness, relative shortening of legs and dysfunction of the gluteal muscles. On radiographs, the tip of the trochanter major is located above the center of rotation of hip joint, which is the main cause of biomechanical disorders of joint function. As the surgical treatment of this disease, many orthopedists offer operation method, disposition of the trochanter major. However, this technique does not eliminate the limb shortening and lameness. Materials and methods: Basis of this method roots from Ilizarov treatment experience of 8 patients with high standing of the trochanter major. Age median of patients is from 12 to 16 years. Operation technique: external - front access with longitudinally conducted intertrochanteric osteotomy of the femur without splitting the trochanter major. Pelvis and femoral fragments were fixed to the Ilizarov apparatus. After the operation, we began to distract distally and laterally until achieving complete elimination of relative limb shortening. Apparatus was removed after the formation of bone regeneration in the area of distraction. Mean duration of distraction was 30 days. Results: Idea of this method is to downgrade entirely all hips, contrasting to the technique, where downgrades isolated fragment of the femur. As a result, it was eliminated shortening legs, reached relegated trochanter major below the center of rotation of the hip joint with its immediate lateralization. In 6 patients we achieved good anatomical and functional outcome.

Abstract no.: 36554

DENTAL PULP-DERIVED STEM CELLS EXHIBIT A HIGHER OSTEOGENIC POTENCY THAN BONE MARROW-DERIVED STROMAL CELLS IN VITRO AND IN A PORCINE CRITICAL-SIZE BONE DEFECT MODEL

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The osteogenic differentiation potential of bone marrow-derived mesenchymal stromal cells (BMSCs) was compared with dental pulp-derived ecto-mesenchymal stem cells (DPSCs) both in vitro and in a pig calvaria critical size bone defect model. BMSCs and DPSCs were extracted from tibia bone marrow and molar teeth of each pig, respectively. BMSCs and DPSCs were cultured in monolayer and on a three-dimensional (3D) polycaprolactone (PCL) - hyaluronic acid - tricalcium phosphate (HT-PCL) scaffold. Population doubling (PD), alkaline phosphatase (ALP) activity, and calcium deposition were measured in monolayer. In the 3D culture ALP activity, DNA content, and calcium deposition were evaluated. The critical size bone defect was made in the calvaria of 14 pigs. 6 non-penetrating defects were made in each calvarium. Three paired sub-studies were made: 1) empty defects vs. HT-PCL scaffolds; 2) PCL scaffolds vs. HT-PCL scaffolds; and 3) autologous BMSCs on HT-PCL scaffolds vs. autologous DPSCs on HT-PCL scaffolds. The observation time was 5 weeks. Bone volume fractions (BV/TV) were assessed with μ CT and histomorphometry. The results from the in vitro study revealed a higher ALP activity and calcium deposition of the DPSC cultures compared with BMSC cultures in both monolayer and 3D culture. The animal experiment revealed that significantly more bone was present in the HT-PCL group than in the pure PCL scaffold group and empty defect group. DPSCs generated more bone than BMSCs when seeded on HT-PCL. In conclusion, DPSCs exhibited a higher osteogenic potential compared with BMSCs both in vitro and in vivo.

Abstract no.: 36555

MEDICAL SUPPORT FOR PROFESSIONAL FOOTBALL PLAYERS.

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【Purpose】 The purpose of this study is to evaluate medical support for professional football players. 【Methods】 I have worked in a Japanese Professional Football League (J-League) club from Feb. 2001 to Jan. 2003. I have made medical support for Professional Football players. There were about 30 players through a year in the club, many Japanese and some Brazilians. 【Results】 My works in the club were medical check, injury control, training camp, anti-doping education, condition check, etc. 【Discussion】 Many injuries happen with football. As I had supported professional football players for 3 years, many injuries and disorders happened. Some players had been operated for fractures, ACL ruptures, meniscal tears. Further, I made individual training menu for the rehabilitation after injured and/or operated players. In Japan, few doctors work as a team doctor in professional football clubs. Many players saw me because of trauma, disorder, fever up, flu, etc. Furthermore, some players had been injured before being in the club, I had to take care and manage them. I made effort to take care all the problems in the Medical Room of the club, while I also consulted Hospitals to examine and/or treat players, if needed. I had to discuss coaches to evaluate condition of each player twice a day and decided next their training menu or keeping rest individually. 【Conclusion】 It is very important for medical support of professional football players to closely contact with their Coaches.

Abstract no.: 36562

COMPARATIVE STUDY BETWEEN ONE STAGE VERSUS TWO STAGES STRATEGIES IN THE MANAGEMENT OF FEMORAL INFECTED NON UNION

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Infected nonunion of femur is one of the most challenging complications, there are several treatment modalities but none of them was considered the gold standard. In our study we retrospectively reviewed thirty patients with femoral infected non union divided in two groups; sixteen patients were treated by single stage strategy and fourteen cases with two stage strategy and we compared between the two groups as regard: range of motion of nearby joints, time till full union, number of operations and associated complications.

Abstract no.: 36568

FLEXIBLE INTRAMEDULLARY NAILING FOR HUMERAL SHAFT FRACTURES IN ADULTS.

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Introduction: Elastic nails are widely used in treatment of paediatric long bones fractures. This technique is not as popular with adult fractures. Methods: Prospective study of 62 patients with displaced humeral shaft fractures treated with retrograde flexible intramedullary nailing. There were 43 males and 19 females with a mean age of 42.85 years. Fractures were middle third in 47 patients, upper third in 9 and distal third in 6. Conservative treatment was attempted using humeral braces but maintained acceptable reduction was not achieved. Two titanium elastic nails of similar diameter were used in a retrograde fashion through medial and lateral distal humeral entry points. Studied parameters were radiological findings, time to union, complications, and clinical and functional outcomes. Mean follow up period was 16 months. Results: Radiological union was achieved at an average of 10.35 weeks. Mean operative time was 46.5 minutes. Non-union occurred in 1 patient who later underwent compression plating with bone grafting. Proximal migration of nail occurred in 1 patient. Nails were removed after union was achieved at an average of 6.4 months. Stewart and Hundley's scoring system was used to assess outcomes at final follow up. Results were excellent in 40 patients (64.5%), good in 17 patients (27.5%), fair in 3 (4.8%) and poor in 2 (3.2%). Conclusion: Conservative management remains the gold standard and should always be attempted first. Flexible intramedullary nailing is a minimally invasive technique with evidence of satisfactory outcomes and we recommend the use of this technique when conservative measures fail.

Abstract no.: 36573

BISPHOSPHONATE-RELATED ATYPICAL FEMORAL FRACTURE (BRAf) WITH BONE METASTASIS OF BREAST CANCER.

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Introduction: Bisphosphonates (BPs) are generally used for osteoporosis. Whereas intravenous zoledronate (ZOL) has been used against bone metastases of several kinds of cancer. Although many studies on BP-related atypical fractures (BRAf) have been reported, few reports on BRAf arising as a complication of the long-term ZOL use for bone metastasis are available. Methods: Three patients with BRAf related to metastatic bone disease from breast cancer were consulted between 2008 and 2013. The series included all 3 females, with average age of 67 (range, 62 to 77). We retrospectively investigated the duration of breast cancer and ZOL use, the mode of fracture, and histological findings. Results: The duration between the surgery of breast cancer and the diagnosis of bone metastases was 0-4.6 years, and the duration of ZOL use were 4-5.8 years. All three cases showed atypical femoral fracture of the subtrochanteric region, and intramedullary nail fixation was performed in all cases. Histologically, there was no evidence of metastatic bone tumor in two cases, and the aggregation of cancer cells surrounded by conspicuous lamellar bone formation in one case. Conclusions: The effect of ZOL is exerted via inhibition of osteoclast activity, used for bone metastases of solid tumors. But, clinical oncologists should carefully consider the risk of BRAf as well as osteonecrosis of the jaw in cases where the duration of ZOL administration is prolonged. And orthopaedic surgeons should acquaint themselves with the hard fixation and bone union in cases of BRAf, because of the osteosclerotic changes and depressed bone turnover.

Abstract no.: 36584

A SIMPLE NOVEL METHOD ALLOWING RIGID FIXATION OF AN AMPUTATED LOWER LIMB TO THE FRACTURE TABLE

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Introduction: We describe a simple novel technique allowing rigid fixation of an amputated lower limb to a fracture table, providing accurate rotational control in case of proximal or diaphyseal femoral fractures. **Methods:** A 88 yo patient with previous below the knee amputation and total hip replacement on the left side presented with a Vancouver C periprosthetic femoral shaft fracture on the same side. Internal fixation was indicated. The patient was positioned on a fracture table. A supracondylar femoral Steinmann pin was inserted. The pin was coupled to a Hoffmann II external fixator construct, which was in turn fixed to the traction device of the fracture table. This provided a precise control of the traction and of the amount of rotation through the rigidity of the frame connecting the supracondylar pin to the traction device. Surgery was then carried out, using a 4.5/5.0 variable angle locking compression plate and cerclage wires. **Results:** Proper positioning and precise fracture reduction were obtained, especially with regard to rotation, which may be difficult to control when the limb is not rigidly attached to the traction device (e.g. when the supracondylar pin is fixed to the traction device with a simple rope). There was no postoperative infection, the fracture healed uneventfully, and the scars related to the insertion of the Steinmann pin did not prevent the patient from comfortably using the prosthesis. **Conclusion:** This simple novel technique is efficient to obtain stable reduction and precise rotational control of a proximal or diaphyseal femoral fracture.

Abstract no.: 36586

EVALUATION OF ACUTE COMPARTMENT SYNDROME OF EXTREMITIES IN EMERGENCY ROOM: A CASE SERIES OF 32 CHILDREN

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Background: The trauma related acute compartment syndrome of extremities is a well known complication presenting in emergency room, but only few studies related with acute compartment syndrome in children, are available. The aim of this study was to analyse the clinical signs of diagnosis, treatment and follow up of paediatric population presenting with acute compartment syndrome at emergency room at Institutional Level II trauma center. **Method and Materials:** Total 32 children presenting with clinically suspected with acute compartment syndrome were studied. These were divided in two age related groups: Group A (children < 14 years) comprising of 12 children and Group B (14 or > to 18 years) comprised of 20 children. Patients' demography, diagnosis, treatment, followup and complications were analysed. **Observations and Results:** All children in both groups were having traumatic fractures as a cause of acute compartment syndrome. All cases were diagnosed by clinical signs only. Based on clinical diagnosis, single incision open fasciotomy was performed in all cases. Most common anatomical site was forearm in group A and leg in group B. Mean followup was 16.9 months. Superficial wound infection was most common complication (43.7 percent), followed by chronic contractures in 18.7 percent cases. **Conclusion:** Acute compartment syndrome represents a surgical emergency. The clinical signs predict and corroborate with acute increase in compartment pressure effectively.

Abstract no.: 36587

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

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Background- The Sequelae of paediatric hip septic arthritis is complex and diverse. 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 of right hips during infancy. All were treated earlier elsewhere with incision drainage of abscess around affected hips. All were presented with difficulty in walking with limb shortening. On examination, all hips were unstable with proximally migrated greater trochanters and painless range of movements. 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. 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 children. No excisional arthroplasty with or without subtrochantric femoral osteotomy was performed. No avascular necrosis occurred in any of the hip. Both abduction (>) adduction movements were present in all children and all were able to squat with little difficulty. Conclusion - Our procedure was able to provide satisfactory and acceptable hips in all three cases of Choi type IIIB Sequelae of Septic Arthritis of Paediatric Hips. Longer follow up is required in more cases to establish this procedure.

Abstract no.: 36589

MODERN CEMENTED FURLONG HEMIARTHROPLASTY: ARE DISLOCATIONS RATES BETTER?

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Introduction Dislocation following hip hemiarthroplasty is a major complication with increased mortality and morbidity. Data looking at dislocation following contemporary bipolar stems are lacking in literature. We report associative factors in hip dislocation following “modern” cemented bipolar hemiarthroplasties and compares it to traditional hemiarthroplasties. **Material and Methods:** Retrospective review of our prospective national hip fracture database was done from June 2010 to June 2012. Group I comprised of consecutive patients receiving bipolar Furlong prosthesis (N222) while Group II was made up of a historical cohort (uncemented; N254). Data was analysed using SpSS. **Results:** Following 476 hemiarthroplasties performed during the study period, 12 (2.5%) dislocations were reported (8 in Group I; 4 in Group II). There was no significant difference in dislocation rates (3.6% vs 1.6%) between groups (Chi (1)=1.984, p=0.159). The average time to dislocation was 17.25 days in Group I and 18.25 days in Group II. The average number of dislocations was 1.6 in Group I and 2.25 in Group II. Subgroup analysis of Group I demonstrated a significant difference in dislocations with Furlong cemented (6%) as compared with Furlong uncemented (0%) hemiarthroplasties (chi (1)=5.0123, p=0.024). Closed reduction although difficult was achieved in all cases. Following dislocation, death rates increased to 8.3% from 1.7% in both groups. **Conclusion:** There is a statistically significant increase in dislocation rate following use of cemented Furlong prosthesis when compared to similar uncemented prosthesis at the same treatment period. However, when compared to traditional uncemented prosthesis, there is no difference in dislocation rates.

Abstract no.: 36591

EARLY RESULTS OF PRIMARY TOTAL HIP REPLACEMENT IN OSTEOARTHRITIS USING THE HMAX-S AND DELTA PF (LIMA CORPORATE) COMPARED TO CORAIL STEM AND PINNACLE CUP (DEPUY, WARSAW) IN A SINGLE CENTRE IN UK.

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Introduction: H-MAX S/ Delta PF cup combination is similar in concept to Corail/Pinnacle cup (Depuy, Warsaw). Objectives: compare outcomes of initial experience over two years. Methods: We reviewed 205 patients with a mean age of 59.7 years. Studied parameters included Oxford and Harris Hip scores (pre and post-operative), operative and post-operative complications. Patients were followed- up clinically and radiologically for a period of 6 to 12 months. A similar cohort of our Corail/ Pinnacle patients were compared. Results: PROMS data revealed a total EQ-5D index of 161 and a total postoperative Oxford Hip score of 173. Mean Oxford hip score increased from 16 pre-op to 41 at latest follow- up. During postoperative period 4 patients had superficial wound infection. There was one dislocation treated with closed reduction. There were two cases of stem subsidence. Results were comparable to Corail/ Pinnacle cohort. Conclusions: Uncemented hip arthroplasty using a combination of H-MAX S stem and DELTA-PF cup provides excellent results in short term comparable to results for this surgeon with Corail and Pinnacle. A change to a new stem requires additional learning even in experienced hands. Outcomes are not affected for patients and satisfaction was high. Early results encourage continued use.

Abstract no.: 36592

USING INDIVIDUAL IMPLANTS AND MODULAR REPLACEMENT SYSTEMS IN ORGAN-SAVING SURGERY FOR OSTEOSARCOMA

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Restoration of certain functions of a limb, long bone defect replacement, with minimal complications after extensive resection of bone sarcomas is possible with organ-saving operations. Good functional results can be achieved using individual implants, modular replacement or arthrodesis of the bone joint. This paper provides the analysis of treatment of 60 patients with osteogenic sarcoma in the II stage after high-dose cisplatin-doxorubicin- methotrexate chemotherapy and operation. The rate of saving surgery was 90,6%. Knee joint endoprosthesis was performed in 66% patients. Thigh bone resections with autoplasty made up 16%. Endoprosthesis of shoulder, elbow, ankle joints was carried out more rarely and occurred in 3-6% patients. Local tumor progression was ascertained in 9% patients. Number of local recurrence amounted 12.5%. Apparent therapeutic pathomorphosis after chemotherapy was observed in 76.7% patients. Comparison of operations results after arthroplasty using individual and modular systems with osteoplastic arthrodesis of joints on the number of complications (12% and 28%), duration of the postoperative period ($2,8 \pm 1,4$ months, and $5,3 \pm 1,2$ months) indicates greater effectiveness of arthroplasty. Function results of the operated limb were defined by W. F. Ennekinga system: after arthroplasty the function of the operated limb was $82 \pm 5,4\%$, at resection and autoplasty it amounted $69,5 \pm 3,1\%$. Life quality of patients according to EORTC questionnaire differed depending on performed operation: arthroplasty ($85 \pm 5,2$ points), resection and autoplasty ($60 \pm 4,5$ points), amputation ($56 \pm 3,2$ points), $p < 0,05$. Osteoplastic operations can be performed only after tumor removal of distal tibia, proximal humerus and distal radius.

Abstract no.: 36595

BHOPAL EXPERIENCE OF TUBERCULOSIS OF ANKLE AND FOOT

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Tuberculosis of bones around ankle and foot are not so uncommon .In last 30 years Of my practice of orthopaedics in city of Bhopal I have documented more than 350 Cases of Osteo articular TB. Out of which 2% are involving ankle and foot bones. Their clinical and radiological pictures were recorded and difficulties in management Specially medical management will be highlighted in this presentation.

Abstract no.: 36601

LONG TERM FOLLOW-UP OF DEGA ACETABULOPLASTY FOR THE MANAGEMENT OF DDH IN WALKING CHILDREN BETWEEN 2 TO 6 YEARS.

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Aim The aim of this study was to evaluate acetabular remodeling, clinical and radiographic, long-term follow-up results of the use of Dega osteotomy in walking DDH patients, with high dislocation grades, between 2 and 6 years. **Patients & methods** Between Jan. 1990 and May. 2011, there were 48 patients, 38 unilateral, and 10 bilateral cases, with a total number of 58 treated hips. Inclusion criteria included; patients 2-6 years of age, no previous hip surgery, Tonnis grade III or IV hips only included. A minimal period of post-operative follow-up of 2 years was a must for inclusion. Femoral shortening was performed in 50 hips. **Results** The post-operative follow-up period ranged from 8 years to 21 years, with a mean of 15 years . Favorable clinical outcome, (excellent or good), were obtained in 75.3% of the cases at the final follow-up visit, while unfavorable results took place in 24.7%. There was a statistical difference between the final clinical and radiographic outcomes. Acetabular remodeling was monitored by the acetabular index and improved in all the cases with favorable results. Major complications encountered including; progressive pain, avascular necrosis, residual acetabular dysplasia, redislocation, limb length discrepancy, and the need for another surgery in 8 patients during the follow-up period. **Conclusion** Dega osteotomy when indicated, and adequately performed in DDH patients after open reduction and capsulorraphy in walking children, 2-6 years of age, leads to favorable results in the majority of cases.

Abstract no.: 36605

RHABDOMYOSARCOMA OF THE EXTREMITIES; A REPORT OF 20 PATIENTS

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Introduction: Although responsiveness of rhabdomyosarcoma to chemotherapy varies greatly with different primary sites and different histologic features, overall results of chemotherapy have been more impressive than in any other form of soft-tissue sarcoma in childhood. **Methods:** The authors treated twenty patients diagnosed with intramuscular rhabdomyosarcoma from 1987 to 2008. They were 13 males and 7 females with an average age of 26 years. Six patients were aged less than ten years while 14 above. average follow up was 53 months (3 months - 20 years). Eleven patients presented with localized disease (M0N0), five patients had distant metastasis without nodal involvement (M1N0), three patients had nodal involvement without distant metastasis (M0N1), and one patient was presented with both distant metastasis and nodal metastasis (M1N1). **Results:** All nine patients who presented with metastasis died, while six of eleven patients with a localized disease died of disease, and remaining five patients are alive. Among five survivors, four were aged below 10 years and had an embryonal rhabdomyosarcoma, and all of them had a wide margin surgical procedure. Local recurrence developed in four of seventeen surgically treated patients. At end of follow up, survival rate of patients was as follow 64 % for M0N0, 0% for M1N0, M0N1 and M1N1, 66% for patients younger than 10 years, and 25 % for all twenty patients. **Conclusion:** age, status at presentation are the most influencing factors regarding prognosis followed by surgical margin. Histological subtype, use of chemotherapy or radiotherapy did not influence prognosis.

Abstract no.: 36606

PASTEURIZED OSTEOARTICULAR AUTOLOGOUS GRAFT FOR RECONSTRUCTION OF THE PROXIMAL HUMERUS AFTER RESECTION OF OSTEOSARCOMA

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Introduction: For skeletal reconstruction in surgery for bone tumors, pasteurization of bone has been used with favorable results over other methods of recycling. **Methods:** Ten patients with osteosarcoma of the proximal humerus were treated by wide margin resection and reconstruction with pasteurized osteo-articular autologous bone graft. They were 7 females and three males, between 7 and 30 years of age who were followed up for at least 3 years (mean, 42 months). The International Society of Limb Salvage graft evaluation method was used for evaluation of the radiographs. **Results:** Eight patients (80%) had complete incorporation of the graft and two patients (20%) had partial incorporation. Viability of the grafts was evaluated by bone scintigraphy. Of 10 patients evaluated, uptake was detected in 7 patients from approximately 6 months postoperatively after which it increased gradually. The functional results were assessed by the system of the Musculoskeletal Tumor Society, and the mean functional rating was 86%. Seven patients have been disease free and three have died of disease. Resorption of the graft was seen in a single, seven years old patient (10%), no fracture or infection were seen. No local recurrence was detected. **Conclusions:** These results indicate that pasteurization of bone may be a useful option for reconstruction after resection of osteosarcoma of the proximal humerus. The advantages of extracorporeal pasteurization include convenience of use, avoidance of intraspecies infection and allogenic reactions, and satisfactory bone remodeling.

Abstract no.: 36607

EXTENDED CURETTAGE, BONE GRAFTING AND SPANNING EXTERNAL FIXATION FOR THE TREATMENT OF GIANT CELL TUMOR OF BONE AROUND THE KNEE.

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Background : Treatment of juxta-articular giant cell tumor of bone around knee remains a dilemma. Many authors recommend cementing, others grafting after extended curettage and others resect and replace by a modular prosthesis. Biological reconstruction remains the corner stone of our believe in treatment of GCT. Methods: A retrospective review was conducted of giant cell tumor around the knee treated between 1998 and 2008 using the technique of extended curettage through a large bone window ISP, followed by bone grafting and spanning external fixation. Fifteen patients with a mean follow-up time of 46 months (range, 24–120 months) were identified. Results: All 15 patients are continuously free of disease and there is no local recurrence. Functional evaluation was performed by ISOLS criteria. The average functional score was 90% (77–100%). None of the patients complained of pain and none of the patients demonstrated serious instability of the knee joint. All the patients showed union starting from 2 months after surgery with full consolidation 6 months after surgery. The fixator was removed at 5-12 months after surgery. Osteoarthritis of the knee joint was not seen in any of our patients. Five patients had intraarticular fracture of the distal femur at presentation, all healed eventually and did not affect the final results. No stress fracture was seen in any of the patients. Conclusion: Extended curettage,ISP bone grafting and spanning external fixation is a safe and effective procedure for the treatment of juxta articular giant cell tumor of bone around the knee.

Abstract no.: 36618

PYOGENIC SPONDYLITIS

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The pyogenic spondylitis develops in the compromised host, such as aged people. Since the Japanese society is aging further, the opportunity for confronting pyogenic spondylitis is increasing in routine medical care. Between 2007 and 2013, we treated sixty patients, diagnosed with pyogenic spondylitis. We analyzed the primary site of infection, the affected vertebral level, the causative organisms, the duration of increased inflammation parameters (the number of leukocytes, C-reactive protein, and erythrocyte segmentation rate), the change of the local sagittal alignment, and so on. Almost all the cases were diagnosed by computed tomography (CT) scans or magnetic resonance imaging (MRI) scans, although the mean delay between the first symptoms and the diagnosis was approximately two weeks. In most cases, causative organisms were identified by needle or open biopsy, blood culture, or culture from the primary site of infection, which enabled us to use effective antibiotics. We were successfully able to manage almost all the pyogenic spondylitis with nonoperative treatment, but a few cases were surgically treated due to the appearance of neurological deficits, the findings of continuous inflammation in laboratory data, the complaints of persistent back pain, or the formation of abscess beyond control. Surgical treatment included anterior debridement with or without strut bone graft, posterior instrumented fusion, or combined procedure. We will report the detailed analysis of sixty cases.

Abstract no.: 36624

**A COMPARISON OF THE FINDING OF WRIST ARTHROSCOPY AND
MAGNETIC RESONANCE IMAGING IN THE INVESTIGATION OF
CHRONIC WRIST PAIN .**

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in some cases , the etiology of chronic wrist pain is not obvious and a diagnostic problem arises . This study assesses the sensitivity and specificity of mri compared with arthroscopy for detection of intrinsic wrist ligament tears , triangular fibrocartilage complex tear , articular cartilage pathology and or synovial pathology . this study was conducted on 25 patients with chronic wrist pain , 14 females and 11 males . their age ranged from 13 - 46 years old . the interval between mri and arthroscopy ranged from 1 to 24 months . the mri was reviewed by 2 musculoskeletal radiologists . the surgeons were blinded to prospective mri interpretations before the patients underwent arthroscopy . when mri reports were correlated with arthroscopy results , it was concluded that mri shows high sensitivity and specificity in detection of wrist articular cartilage pathology , moderate sensitivity and specificity in detection of intrinsic wrist ligaments tears and high sensitivity but low specificity in detection of wrist synovial lesions

Abstract no.: 36625

USEFULNESS OF A NEW FIXATION TECHNIQUE FOR UNSTABLE SACROILIAC DISLOCATION AND DISPLACED SACRAL FRACTURE - APPLIED USE OF THE SCREW-GALVESTON TECHNIQUE-

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Unstable pelvic ring fracture with sacroiliac dislocation often leads to high functional impairment . Precise reduction and rigid fixation is required for early ambulation but frequently technically-demanding. We will report two cases of sacroiliac and sacral fracture-dislocations that we succeeded in managing by utilizing the spinal instrumentation technique. Case 1: 39 y.o. male. Unstable pelvic ring fracture including bilateral pubic fractures and left sacral fracture with vertical displacement of 8 cm . Bilateral L4,5 pedicle screws and left iliac screw were inserted after fixing ipsilateral femoral fracture. The sacral displacement was reduced by connecting the screw heads with rods and applying reduction force on the vertical axis. Early ambulation was achieved and the reduction was retained after the implant removal. Case 2: 38 y.o. male Bilateral sacroiliac fracture-dislocation. The sacrum itself dislocated ventrally in relation to bilateral iliac bones and showed severe instability. L4,5 pedicle screws and two iliac screws were inserted bilaterally. The dislocated sacrum was reduced dorsally by correcting the ventro-dorsal gap between the pedicle and iliac screw heads. He was able to walk without aide early after the operation. Many surgeons have treated the sacroiliac fracture-dislocation with various plates or iliosacral screws. Optimal reduction, however, was often difficult because of its complicated anatomy. To resolve this difficulty, we utilized the screw-Galveston technique. Connecting lumbar pedicle and iliac screw heads with rods facilitated applying reduction forces to dislocated sacroiliac joint. Good radiological and clinical results were obtained.

Abstract no.: 36634

COMPLICATIONS OF MUSCULOSKELETAL INJURIES TREATED BY TRADITIONAL BONESETTERS IN A DEVELOPING COUNTRY

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Introduction: Traditional bone setting is a well recognized and age long practice in Nigeria. This treatment often leads to severe complications. **Aim** of this study is to evaluate the complications seen in patients previously treated by traditional bonesetters (TBS) and to assess the reasons for the patronage and the factors that predispose to these complications. **Materials and methods:** This was a one-year prospective study involving 72 consecutive patients presenting with complications related to treatment of their musculoskeletal injuries by bonesetters. The data obtained include: demography, details of initial injury, reasons for patronage of TBS, method of treatment by TBS, duration of the treatment, the mode of treatment, the number of TBS visited and the complications at presentation. Data were analyzed by SPSS (Version 17), P value < 0.05 was significant. **Results:** 108 complications from 93 musculoskeletal injuries were seen in 72 patients; 50 (69.4%) were male and 22 (30.6%) were female. The age range was 3 - 80 years (mean 36.8 years). The commonest complications were joint stiffness 29 (26.9%) and malunion 17 (15.7%). The major reasons for TBS patronage were advice of relatives and friends 25 (34.7%) and cheaper cost in 24 (33.3%) patients. The use of local splints was the commonest method of treatment, and the average duration of treatment was 94.5 days. **Conclusion:** TBS treatment is associated with severe complications. There was a significant association between the complications and the methods of treatment. Training and licensing of bonesetters may help to control this menace.

Abstract no.: 36636

PREVENTION OF SURGICAL SITE INFECTION USING IODINE-SUPPORTED INSTRUMENTS FOR SPINE TUMOR SURGERY

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Introduction: Surgical site infection (SSI) associated with metallic implants remains a serious complication. It is very important to know the risk factors for SSI in order to prevent it. Recently, we developed a new procedure for the anodization of iodine-containing surfaces that can be directly supported to existing titanium implants. The object of this study was to evaluate the incidence of SSI after spine tumor surgery using iodine-supported instruments. Methods: One hundred nineteen patients who underwent total en bloc spondylectomy (TES) for spinal tumor were evaluated. The patients were divided into two groups: TES with iodine-supported instruments (Group I2, 66 patients,); TES with conventional titanium instruments (Group C, 53 patients). We compared the incidence of SSI and evaluated the potential risk factors. Results: The incidence of SSI was 1.5 % (1/66) in Group I2 and 11.3 % (6/53) in Group C, and Group I2 was significantly less. All cases were classified as deep SSI. Four of the 6 patients in Group C underwent revision surgery because of no effect by intravenous antibiotics. On the other hand, in Group I2, one patient with SSI was cured by intravenous antibiotic alone. By multivariate logistic regression, combined anterior and posterior approach and the use of conventional titanium instruments were associated with an increased risk of SSI. Abnormalities of thyroid gland function were not detected. Conclusions: Iodine-supported instruments were effective for prevention of SSI. In addition, there were no cytotoxicity and adverse effects detected.

Abstract no.: 36637

TOTAL HIP ARTHROPLASTY AFTER FAILED FRACTURE FIXATION OF PROXIMAL FEMUR

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Background: When fixation of a proximal femur fracture fails, conversion to total hip arthroplasty can be challenging. Aim: The purpose of this study was to analyse the results of total hip arthroplasty after failed fracture fixation of proximal femur. Material and methods: 27 patients (27 hips) with complications after failed fracture fixation of proximal femur were analysed. Average age was 64 years (43 – 82), there were 15 female and 12 male patients. 22 patients had nonunion and 5 had unacceptable implant position. 16 patients were treated for femoral neck fracture, 10 for intertrochanteric fracture and 1 for subtrochanteric fracture of proximal femur. Uncemented total hip arthroplasty performed in 17 cases, cemented in 9 cases and hybrid in 1 patient. Results: The average medium duration of follow up was 3,5 years (range 2 to 6 years). The Harris Hip Score rose from 32 to 85. There were no instances of component migration. There were 2 dislocations and one avulsion of the greater trochanter postoperatively. There was one superficial infection. Conclusion: Total hip arthroplasty is an effective salvage procedure after failed fracture fixation of proximal femur. Long term follow-up is on going.

Abstract no.: 36638

SPONTANEOUS RESORPTION OF EXTENSIVE CERVICOTHORACIC PNEUMORRHACHIS

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Introduction: Pneumorrhachis (PR), the phenomenon of intraspinal air, is an exceptional imaging finding caused by various, mainly traumatic and iatrogenic aetiologies. The condition is usually asymptomatic, does not tend to migrate to other areas, and reabsorbs spontaneously and completely with the air being passed directly into the blood over several days. Therefore, patients with pneumorrhachis of a limited nature usually are managed conservatively. We present a compelling interesting case that showed spontaneous resorption of an extensive amount of pneumorrhachis from cervical to thoracic spine during wound care by chronic osteomyelitis and soft tissue defects by bed sore after surgery in traumatic complete cord injury. Case Report: A 48-year-old man who undertook a combined anterior/ posterior fixation/fusion on C5-C7 due to a traumatic complete cord injury suffered 15 years ago. A sagittal and axial CT images showed an extensive amount of gas formation in C7 to T9 levels, as well as a small amount of gas formation in both the T9 and L4-5 area. The Sagittal T2 MRI shows extensive gas formation, cord atrophy, and infective spondylodiscitis in the L4 and L5 body. Due to bronchopneumonia and infective spondylodiscitis by MRSA, vancomycin had been imitated for 2 months. Five months later, follow-up sagittal CT shows no intraspinal gas and complete spontaneous resorption of extensive cervicothoracic pneumorrhachis. CONCLUSIONS: Although extensive gas formation may develop in the spinal canal, if related neurological symptoms do not develop, we can manage the condition with conservative treatment because it can be resorbed spontaneously and completely.

Abstract no.: 36641

CYCLIC TENSILE STRAIN STIMULATES TGF- β -SMAD3-DEPENDENT EXPRESSION OF CCN2 AND COL2A1 IN CHONDROCYTIC CELLS

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Physiologic mechanical stress stimulates expression of chondrogenic genes, such as multifunctional growth factor CYR61/CTGF/NOV (CCN) 2 and α 1(II) collagen (COL2A1), and maintains cartilage homeostasis. In our previous studies, cyclic tensile strain (CTS) induces nuclear translocation of transforming growth factor (TGF)- β receptor-regulated Smad2/3 and the master chondrogenic transcription factor Sry-type HMG box (SOX) 9. However, the precise mechanism of stretch-mediated Smad activation remains unclear in transcriptional regulation of CCN2 and COL2A1. Here we hypothesized that CTS may induce TGF- β 1 release and stimulate Smad-dependent chondrogenic gene expression in human chondrocytic SW1353 cells. Uni-axial CTS (0.5 Hz, 5% strain) stimulated gene expression of CCN2 and COL2A1 in SW1353 cells, and induced TGF- β 1 secretion. CCN2 synthesis and nuclear translocalization of Smad2/3 and SOX9 were stimulated by CTS. In addition, CTS increased the complex formation between phosphorylated Smad2/3 and SOX9. The CCN2 promoter activity was cooperatively enhanced by CTS and Smad3 in luciferase reporter assay. Chromatin immunoprecipitation revealed that CTS increased Smad2/3 interaction with the CCN2 promoter and the COL2A1 enhancer. Our results suggest that CTS epigenetically stimulates CCN2 transcription via TGF- β 1 release associated with Smad2/3 activation and enhances COL2A1 expression through the complex formation between SOX9 and Smad2/3.

Abstract no.: 36642

IS CT ANGIOGRAPHY A RELIABLE TOOL FOR DIAGNOSIS OF TRAUMATIC VESSEL INJURY IN THE LOWER EXTREMITIES?

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Introduction: Computed tomographic (CT) angiography is the first choice of diagnosis in traumatic vessel injury in the lower extremities, replacing angiography. The purpose of this study was to investigate the clinical reliability of CT angiography through a retrospective study. Methods: Seventeen patients underwent CT angiography before surgery for traumatic vessel injury in the lower extremities from 2011 to 2013, and a comparative analysis of operative findings in all patients with a positive predictive value and sensitivity were measured. Results: In all patients, 16 artery ruptures and 1 compartment syndrome occurred. In 15 artery ruptures, preoperative findings of CT angiography and surgical findings were consistent, and the positive predictive value was 93.8%. One patient with posterior tibial artery rupture was revealed as normal in CT angiography; thus, sensitivity was 93.8% (15/16 patients), and the accuracy rate was 88.2% (15/17 patients). Conclusion: Though CT angiography is a reliable tool for diagnosis in traumatic vessel injury in the lower extremities, a more invasive test will be needed, especially peripheral angiography or diagnostic exploration, in cases of relatively small vessel injuries around the ankle or compartment syndrome because of low accuracy.

Abstract no.: 36643

**CLINICAL ANALYSIS OF LOWER CERVICAL SPINE INJURY
ACCORDING TO**

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Introduction: The purpose of this study is to analyze the incidence and treatment outcomes of lower cervical spine injury because there is no long term Korean data. **Methods:** We analyzed 277 patients with lower cervical spine injury who underwent surgical treatments from May 1994 to October 2008. The injury types are based on Allen's classification, and neurologic injury was classified as complete, incomplete cord injury, root injury and no neurologic status. We analyzed postoperative complications, neurologic recovery and the relief of pain. **Results:** Distractive-extension injury occurs most commonly in 140 patients (50.5%). Neurologic injury was detected in 232 cases (83.8%); 46 (16.6%) complete cord injury; 154 (55.6%) incomplete cord injury; and 32 (11.6%) root injury. Incomplete cord injury of distractive extension injury was poorly recovered. Clinical outcomes demonstrated improvement compared with the preoperative values in mean VAS and mean NDI. Complications were respiratory failure, neurogenic bladder, urinary tract infection and gastritis. **Conclusion:** This study shows the highest incidence of distractive extension injury and neurologic injury contrary to previous studies. This result is caused by a use of plain radiograph to establish Allen's classification in past. Therefore, we suggest a use of MRI for evaluating soft tissue injury with Allen's classification to achieve accurate assessment.

Abstract no.: 36644

COMPARISON OF THE OSTEOGENIC POTENTIAL OF BONE DUST AND ILIAC BONE CHIP

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INTRODUCTION: The purpose of this study is to compare the osteogenic potential of three sizes of bone dust with iliac bone chips and to determine whether bone dusts can be used as a bone graft substitute. **METHODS :** Bone chips were harvested from PSIS and bone dust from the vertebrae of 15 patients who underwent spinal fracture surgery. Bone dust was divided into three groups: small (3 mm), middle (4 mm) and large (5 mm) according to the size of the burr tip. A comparison was made using a cell proliferation assay, ALP activity, the degree of mineralization in an in vitro model, and radiographic and histological studies (the change of absorbable area and tissue density) after implantation of the various materials into back muscles of nude mice. **RESULTS :** Although all three bone dust groups were less active with regards to cell proliferation, ALP activity and the degree of mineralization, than were bone chips, they still exhibited osteogenic potential. Furthermore, there was no significant difference between three bone dust groups. The three bone dust groups did show greater absorbable area and change of the tissue density than did the iliac bone chip group. **CONCLUSION:** The osteogenic potential of bone dust is lower than that of iliac bone chips and the absorption speed of bone dust in vivo is faster than that of iliac bone chips. Therefore, caution needs to be used when surgeons employ bone dust as a bone graft substitute.

Abstract no.: 36645

UNILATERAL BLINDNESS AFTER POSTERIOR CERVICAL SPINAL SURGERY

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The purpose of this study is to report a patient who developed an unusual combination of central retinal artery occlusion with ophthalmoplegia following spinal surgery in the prone position. A 69-year-old man underwent a cervical spinal surgery in the prone position. He could not open his right eye in the recovery room due to ocular swelling. Upon ophthalmological examination, we determined that he had a central retinal artery occlusion with total ophthalmoplegia. Despite medical treatment, optic atrophy was still present at the following examination. Ptosis and the afferent pupillary defect disappeared and ocular motility was recovered, but visual loss persisted until the last follow-up. A prolonged prone position during spinal surgery can cause external compression of the eye, causing serious and irreversible injury to the orbital structures. Therefore, if the patient shows postoperative signs of orbital swelling after spinal surgery the condition should be immediately evaluated and treated.

Abstract no.: 36646

**SUBTROCHANTERIC FRACTURE AS THE COMPLICATION OF
INTRAMEDULLARY NAILING FOR ATYPICAL DIAPHYSEAL FRACTURE
IN A LONG-TERM BISPHOSPHONATE USER**

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Recent reports have found a relationship between long-term bisphosphonate therapy and the occurrence of low-energy subtrochanteric or diaphyseal atypical femoral fractures. These fractures usually occur at only one site in the same bone. We report a rare case of a patient with sequential atypical femoral fractures (first, a diaphyseal fracture, and second, an ipsilateral subtrochanteric fracture) after low-energy trauma. We present the clinical and operative findings and discuss how to prevent subsequent atypical femoral fractures. This case indicates that an atypical subtrochanteric femoral fracture can occur after an atypical diaphyseal fracture in a long-term bisphosphonate user. Surgeons should be aware of the possibility of a second fracture and explain the risk to the patient.

Abstract no.: 36650

**DOES THE MANDATORY PRESENCE OF A TRAUMA CONSULTANT
LEAD TO AN IMPROVEMENT IN TIP-APEX DISTANCE?**

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Introduction: A high Tip Apex Distance (TAD) is associated with screw cut and failure in Dynamic Hip Screw (DHS) surgery for intertrochanteric fractures. When used as a surrogate measure of quality of surgery, it has been shown to be subject to the Hawthorne Effect. A policy was recently introduced in our department whereby the trauma list could not start without Consultant presence (although DHS procedures were still routinely performed by junior surgeons). This study therefore aimed to assess the effect on TAD when the work of junior surgeons is directly scrutinised by a Consultant. Methods: 73 cases of DHS surgery have been performed since policy implementation (Group A). TAD was calculated according to the technique originally described by Baumgaertner et al. and compared with 73 unmatched cases from prior to policy implementation (Group B). Results: In Group A, average TAD was 15.1mm (range 5.5 – 32.2) and 90% were <25mm. In Group B, average TAD was 17.0mm (range 5.0 – 41.6) and 84% were <25mm. Kolmogorov-Smirnoff testing demonstrated the data to lack normal distribution so Mann Whitney U test was used to compare the data sets. TAD was significantly lower with Consultant supervision ($p = 0.02$). Conclusion: This study suggests that junior surgeons perform a higher quality of surgery when directly supervised by a Consultant.

Abstract no.: 36653

ARTHROSCOPIC ASSESSMENT OF MEDIAL MALLEOLAR REDUCTION

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Ankle fractures treated with open reduction internal fixation are fixed in order to reestablish anatomic alignment, thereby diminishing the risk of post-traumatic arthritis. For a medial malleolar fracture, an articular step-off is likely more related to the risk of post-traumatic arthritis than is a cortical step-off. Arthroscopy has been used in articular fractures as an aid to diagnosis and treatment. The current study prospectively assessed the quality of medial malleolar reduction on the articular side using arthroscopy and the adequacy of using cortical cues to guide the articular reduction. Twelve consecutive patients were enrolled in this prospective diagnostic study. All patients had medial malleolar fractures that required fixation. The outcome variables of interest were extra-articular fracture displacement and articular surface displacement. After reduction and provisional fixation, ten of the 12 patients had an anatomic reduction based on cortical cues. On arthroscopy seven of the 12 patients had an anatomic reduction. Four of the patients had a slight gap (<1mm) at the anterior edge of the fracture. The last patient had an anterior gap just under 2mm. Two patients had impaction of the medial malleolus that made reduction difficult and was recognized during arthroscopy after obtaining a reduction based on cortical cues. The cortical reduction of the medial malleolus often matched up with the articular reduction. However in some patients, impaction of the medial malleolus made it so that the two did not match up. There are some cases in which extra-articular cues are insufficient to evaluate for intra-articular reduction.

Abstract no.: 36654

CHALLENGES OF OSTEOLYTIC AROUND SHOULDER

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:- In my last 30 Years of Practice of Orthopedic Oncology .I have faced Challenging Situations of Benign & Malignant lesions . Around Shoulder in our .Cancer Hospital Bhopal . I am Presenting 10 Such Cases .Where Management was .By wide Exusion or Custom Mega Prosthesis or By Simple Bone Grafting and after long follow –up some of them have Complications .Which Were Managed By Team of Oncological Setup.

Abstract no.: 36655

MODERN RADIATION ASSESSMENT OF THE KNEE OSTEOARTHRITIS

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We used digital radiographic and sonographic research in 130 women with osteoarthritis of the knee joint of the Uzbek population after 40 years in menopausal period. Degenerative changes were identified in all segments of the joint differently and in varying degrees. In most women the changes were more pronounced in the inner segment (78 women – 60%), in the lateral (13 women – 10%) and central (39 women – 30%) departments. At advanced stages of the disease changes were seen in all parts of the joint in the form of marginal osteophytosis, uneven medial joint space narrowing, subchondral sclerosis. Changes were often combined with meniscopaty. Meniskopatiya of internal meniscus was observed in 58 (41,5 %), lateral meniscus in 24 (18 %) women. Also compaction and change in the structure or the presence of cracks and breaks, sometimes thinning and flattening of the meniscus are pointed. The combination of radiographic and sonographic criteria depending on the stage of osteoarthritis was studied. Applied both diagnostic methods helped to determine the status of the joint elements and they complemented each other. Statistical and correlation analysis showed that in women in the menopausal age of Uzbek population the combination of degenerative changes in the bones and meniscus positively correlated highly with age and weight. Such a condition was more observed in patients aged 55-65 years. Correlation of severity of the degenerative process is positive with lesion of the medial segment of the joint.

Abstract no.: 36659

POLY TRAUMA EPIDYMOLOGY IN LIBYA , EL-HADBA KHADRA HOSPITAL EXPERIENCE

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In this paper we studied the epidymiology and effect of poly trauma including Road Traffic Accidents and Gun shot injuries in Libya. The Incidence of poly trauma: 12000 - 18.000 / y. It was the Leading cause of death in patients < 40 y of age Mortality approximately 15% , Sex ratio m : f = 7 : 1 with Economic burden of Approximately 300 Million. Lib Din. We compare the Early Total Care (ETC) against Damage Control Orthopaedics (DCO) of three phases. ETC, After the admission of a polytrauma patient to the hospital, Immediate, definitive operative treatment of all fractures including im-nailing of femoral fractures or other long bones. DCO, After the admission of a polytrauma patient to the hospital , Acute external fixation of long bone fractures with secondary, conversion osteosynthesis after patient has been (physiologically) stabilized . Method; A total number of 75 patients with 135 fractures from April till Sept. 2012 for the blood loss against operating time, the advantage and disadvantages of both ETC and DCO. Results; DCO leads to: Reduced additional immunoinflammatory response during first and reduced response in second definitive surgery. Is not associated with a higher complication rate. Patient has to undergo 2nd surgery. ETC; Quiker, Early fracture stabilization and mechanical ventilation, higher rate of survivors. Less days on ICU ,less complication such as ,Thromboembolism, fat embolism syndrome. Pressure sores and Muscle wasting, Decreased incidences of ARDS, MOF and early discharge from hospitals.

Abstract no.: 36661

LUNATE REVASCULARIZATION IN KIENBÖCK DISEASE

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Robert Kienböck, an Austrian radiologist, first described X-rays changes of the lunate in 1910. There are various biomechanical procedures for the treatment of Kienböck disease in the literature. Few published articles discuss the possible revascularization of the lunate. We used the dorsal carpal or metacarpal vascular bundle implantation technique to treat Lichtman stages I, II and IIIa of Kienböck's disease. We treated eight patients with Kienböck disease using this technique. All revascularization procedures were associated with joint levelling procedures. QDASH scores, hand grip measurement, wrist flexion and extension range of motion and analogue pain score were used for clinical evaluation of the results. Plan x-ray were used for radiological follow up. The mean follow up duration was 4.7 (range, 3.5-6) years. All patients had significant improvement in their pain. The mean hand grip improved from 17.9 N preoperative to 30.1 N postoperative. The mean QDASH scores improved from 24.7 preoperative to 6.5 postoperative. The mean flexion and extension range improved from 45 and 37.5 degrees respectively to 76.8 and 67.5 degrees respectively. All the differences were statistically significant. All the patient showed improved radiological appearance of the lunate. One patient with Lichtman stage IIIa showed complete normalisation of the radiological appearance of the lunate at final follow up. Vascular bundle implantation can be a helpful method in early stages of Kienböck's disease, helping to stop the progression of the disease and may even reverse it.

Abstract no.: 36662

CORRECTION OF NEGLECTED CTEV USING THE ILIZAROV TECHNIQUE

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There are many disadvantages of using open surgical methods for the treatment of neglected CTEV, like the increased risk of neurovascular injury, soft-tissue injury, and the shortening of the foot. Ilizarov technique is an alternative approach that can eliminate these problems. 16 patients (20 feet) with a mean age of 5.2 (4 to 7) years with severe deformities and stiff feet associated with neglected clubfoot were studied. Progressive correction of the deformities was achieved through a standard setting of the Ilizarov external fixator. The device was removed after a mean time of 14.3 weeks, and after removal a short-leg walking cast was used for an additional 6 weeks. The final outcome was scored as good (complete correction and no pain); fair (partial correction with plantigrade foot and occasional pain); or poor (nonplantigrade foot and continuous pain during walking). After a mean follow up of 26 (range 16 to 36) months, the results were good in 10 feet (73%); fair in one foot (17%); and no poor cases. Pin-tract problems were observed in all cases. Other complications were toe contractures in two feet, metatarsophalangeal subluxation from flexor tendon contractures in one foot, incomplete osteotomy in one foot, residual deformity in two feet, and recurrence of deformity in one foot. Our results indicate that the Ilizarov method is an effective alternative means of correcting complex foot deformities, especially in feet that previously have undergone surgery.

Abstract no.: 36663

MINIMALLY INVASIVE ELASTIC INTRAMEDULLARY NAILING FOR PEDIATRIC LOWER LIMB LONG BONE FRACTURES: EXPERIENCE WITH 200 FRACTURES

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The purpose of our study is to evaluate the results of intramedullary fixation of the lower limb long bones shaft fractures in children using the Titanium elastic stable intramedullary nails. We reviewed 200 children who underwent fixation using titanium elastic nails for long bones fractures. The average age of the patients was 9.2 years, and mean follow-up was 30.4 months. There were 156 femoral and 44 tibial fractures. All patients achieved complete healing at a mean of 6.6 weeks. Complications were recorded in 18 (%) patients and included: one neuropraxia, 17 entry site skin irritations, six protrusions of the wires through the skin and two skin infections at the entry site. According to Fleyenn et al. TEN outcome scoring system, 184 (92%) cases had excellent results and 16 (8%) cases had satisfactory results. There were not poor results. The implants were removed at a mean time of 4.3 months postoperative. We think that Elastic Titanium Intra-medullary Nailing is the method of choice for the pediatric lower limb shaft fractures, because it is minimally invasive and shows very good functional outcome.

Abstract no.: 36665

MALIGNANT FINDINGS OF SUPERFICIAL SOFT TISSUE TUMORS ON MRI

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background:Magnetic resonance imaging (MRI) is one of the useful methods for preoperative evaluation for soft tissue tumors, but soft tissue tumors often display non-specific findings. In this study, we focused on the superficial soft tissue tumor and investigated the specific signal of malignant tumor. Methods:The clinical data of 22 patients (men 10 women 12) with superficial soft tissue tumors, treated from Jan 2013 to Dec 2013 in our institution was collected. The median age at the time of diagnosis was 54.5 years (range 16-84). Malignant histological types were high grade liposarcoma in 2, low grade fibromyxoid sarcoma in 2, malignant fibrous histiocytoma, GIST, myxofibrosarcoma, and epithelioid sarcoma in one, respectively. Benign histological types were lipoma in 4, giant cell tumor of tendon sheath in 5, schwannoma and angiolipoma in 2, synovitis and dermatofibroma in one, respectively. The following parameters on MRI of tumor margin (clear or unclear), lobulation, intratumoral bleeding, necrosis inside the tumor and the relationship between the tumor and fascia(Galan classification). We examined whether these findings are related to the malignancy or not. Results:Tumor margin (clear or unclear) proved to be a significant factor in distinguishing benign and malignant tumor. And other factors were not significant. Discussion:Previous articles suggested that the size >5cm and depth were related to the malignant tumor. But present study indicated that tumor margin was a significant factor. More investigation is necessary for exploring significant factor.

Abstract no.: 36667

MANAGEMENT OF FEMORAL NECK FRACTURES IN ELDERLY PATIENTS USING PRIMARY CEMENTED TOTAL HIP VERSUS CEMENTED BIPOLAR

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In the period between January 2011 and January 2014, a prospective study was conducted on 60 cases in El Helal Hospital in Cairo who having femoral neck fracture. The patients are randomized into two groups. Group I who underwent cemented THR and group II who underwent cemented bipolar. There were 36 males and 24 females with average age 65.72 years. The follow up of the patients ranged from 18 months to 48 months with a mean period of an average of 38 months. All hips were assessed clinically and radiologically at day 1, 6 weeks, 3 months, 6 months and 1 year post operative then every six months. Harris hip score were excellent in 37 hips (22 in group I and 15 in group II), good in 16 hips (7 in group I and 9 in group II), fair in 6 hips (1 in group I and 5 in group II) and no poor results. Three hips required revision two of them due to dislocation in group II and one from group I needed debridement due to infection. Two patients had DVT (one patient from every group). Radiologically, There were signs of acetabular loosening in one patient from group I and 3 hips have acetabular erosion from group II. From the current study we can conclude that the use of primary cemented total hip arthroplasty has better clinical and radiological results than that of cemented bipolar in spite of the fact that the mean operative time in THA was more than that of bipolar.

Abstract no.: 36675

REVERSE NON-CONTACT BRIDGING PLATE: A NOVEL TECHNIQUE FOR COMPLEX PROXIMAL FEMUR FRACTURES

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Management of complex proximal femur subtrochanteric fractures has remained difficult, despite various implants and methods throughout the years. Reverse Less Invasive Stabilization System (LISS) has been described as an effective method in the management of such fracture. In this consecutive case series, we describe 5 cases, which involved minimally invasive fixation of complex proximal femur fractures with reversed non-contact bridging (NCBTM) plate, designed for the distal femur. The surgical fixations were done from July 2013 to January 2014 by a single surgeon in a tertiary orthopaedic center. Short-term outcome was assessed in terms of pain, time to full weight bearing, bony union, varus deformity, limb length discrepancy, implant failure and duration of surgery. All patients were able to ambulate without assistance at an average time of 4 months after surgery. Pain score was minimal in all cases. Radiological follow up and analysis of the radiographs showed union without any residual varus alignment in 4 cases and one patient is currently under follow up. We conclude, that reverse NCB distal femur plate provides a good alternative in complex proximal femur fractures where intramedullary nailing insertion would not be possible due to fracture configuration, and patient factors like polytrauma with head injury or chest injury. The benefits of the NCB compared to LISS plating would be that of a variable angle screw placement, which could be potentially useful in these complex fractures but yet behaves as a fixed angle device.

Abstract no.: 36687

**HIGH GRADE INFECTIVE SPONDYLOLISTHESIS OF CERVICAL SPINE
SECONDARY TO TUBERCULOSIS - A RARE CASE.**

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Spondylolisthesis coexisting with tuberculosis is rarely reported. Few cases of pathological spondylolisthesis secondary to tuberculous spondylodiscitis have been reported in lumbar and lumbosacral spine. All cases presented as antero listhesis except one case of postero listhesis in lumbar spine. Spondylolisthesis in cervical spine is mainly degenerative and traumatic. Spondylolisthesis due to tuberculosis is not reported in lower cervical spine. We report a rare case of high grade pathological postero listhesis of lower cervical spine due to tubercular spondylodiscitis in a 67 years old lady. She presented with neck pain and restriction of movement with no neurodeficit. MRI revealed destruction of C5 and C6 vertebral body with prevertebral abscess. CT scan revealed postero listhesis of C5 over C6. Anterior debridement and stabilisation was done. Diagnosis of tuberculosis was confirmed on histopathology. Postoperative antituberculous chemotherapy was given for 18 month. At completion of treatment patient was symptom free and MRI showed healed disease. Thus tuberculous postero listhesis of lower cervical spine is rare presentation. Early and adequate treatment prevents neurological complication and deformity.

Abstract no.: 36689

POST PREGNANCY SEVERE SPINAL OSTEOPOROSIS WITH MULTIPLE VERTEBRAL FRACTURES AND KYPHOSCOLIOSIS IN A MULTIGRAVIDA- A RARE CASE WITH MANAGEMENT

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Osteoporosis associated with pregnancy and lactation is a less commonly known and often overlooked. The prevalence, exact aetiology and its pathogenesis are unknown. It is commonly seen in first three months after delivery in primigravida. It is often undiagnosed because of lack of suspicion and avoidance of x-rays and densitometry during pregnancy and lactation. If missed, it can lead to osteoporotic fractures and disability. We report a case of 24 year old multigravida 4 months after pregnancy with multiple vertebral compression fractures and kyphoscoliosis. Her metabolic workup was normal but bone densitometry revealed severe osteoporosis of dorso-lumbar spine. Immediate weaning and antiresorptives like bisphosphonates and teriparatide are used as first line drugs for management of post pregnancy spinal osteoporosis. Our patient presented at 4month lactation and was not keen for weaning, so was treated with total contact orthosis with vitamin D and calcium. The pain was relieved within 3 months but there was no improvement in bone densitometry. After weaning at eight months, she was treated with teriparatide. At one year of teriparatide therapy, there were no new fractures and improved densitometry scores.

Abstract no.: 36690

**A NOVEL LEVERING TECHNIQUE USING FOUR PARALLEL RODS FOR
OPEN REDUCTION OF HIGH -GRADE THORACOLUMBAR
DISLOCATIONS: CASE SERIES OF ELEVEN PATIENTS WITH
TECHNICAL NOTE**

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Dorso-lumbar vertebral dislocations, with or without associated fractures, occur secondary to very high velocity trauma .The reduction procedures and techniques, which may be adopted in these situations, have been multifariously discussed in the literature. The current article discusses a novel reduction maneuver, which we have employed in these circumstances to achieve precise sagittal balance as well as accurate vertebral alignment with minimal soft tissue damage.The study includes a total of 11 cases of thoraco-lumbar dislocations, who had presented to our emergency spine services following high velocity trauma. After appropriate systemic stabilization and necesssary investigations, all patients were surgically treated using the described technique. There were no surgical complications at 1 year follow up.We believe that this technique is an excellent means of achieving safer, easier and accurate reduction for restoration of sagittal balance and alignment in high grade thoraco-lumbar dislocations.

Abstract no.: 36691

TECHNICAL FAULT IN PROXIMAL FEMORAL NAIL USED IN FIXATION OF PERITROCHANTERIC FRACTURE

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seven men their age range from 23 years to 70 presented with peritrochanteric fracture fixed by long version prox fem nail. hospital stay mean 10 days, cause of fracture was rta in 3, fd in other 3 and one case presented with h/o direct trauma during fighting. two cases were diabetic . one case had contralateral acetabulum #, other one had contralateral iliac bone # and third one had maxillofacial #. technical fault that had occurred loss of connection between nail and hip screw superior position of anti-rotation screw improper application of distal locking screw wrong entry point of nail in proximal fragment patients still under follow up and final score still not assessed

Abstract no.: 36695

PROXIMAL JUNCTIONAL PROBLEMS IN SURGICAL TREATMENT OF LUMBAR DEGENERATIVE SAGITTAL IMBALANCE PATIENTS AND RELEVANT RISK FACTORS

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Study Design: Retrospective study. Objectives: We analysis the incidence and risk factor for proximal junctional problem after surgical treatment of lumbar degenerative sagittal imbalance, and contribute to reduce the junctional problem of surgical treatment of lumbar degenerative sagittal imbalance. Summary of Literature Review: Surgery of degenerative spinal deformity has been increased. Rigid fixation was risk factor of degenerative change of adjacent segment and failure, and it remains challenge of junctional problem of surgical treatment. However, researches about correlation with risk factors are rare. Materials and Methods: Forty four patients (mean age 65.8; range, 50-74) who had surgery due to lumbar degenerative sagittal imbalance were evaluated by risk factor associated with junctional problems from January 2005 to December 2011. Risk factors were analyzed by surgical factor and patient factor. Results: Junctional problems were occurred 18 patients (41%) in 44 patients. There were 10 cases of fractures, 8 cases of junctional kyphosis, 4 cases of proximal screw pull out. Only the correction or undercorrection of lumbar lordosis compared with pelvic incidence was statistically significant. Other surgical factors and patient factors were not statistically significant. Conclusions: Junctional problems after surgical treatment of lumbar degenerative sagittal imbalance were common. However, we could not know exact risk factor of junctional problems except the degree of correction of lumbar lordosis compared with pelvic incidence because other risk factors were not statistically significant. Further evaluations of risk factor of lumbar degenerative sagittal imbalance are required.

Abstract no.: 36698

USE OF LOCKED PLATES IN TREATMENT OF TROCHANTERIC FRACTURES

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Abstract Background: It accounts for 10-34% of all hip fractures, it has bi-modal incidence: young patients following high energy trauma which results in a significant fracture with comminution, older patients after low velocity trauma & 2nd to osteoporosis or metastatic pathological lesions. We use the AO classification of trochanteric fractures, indications, advantages and disadvantages of locked plate for treatment of trochanteric fractures. **Patients and Methods:** This work was done at Seuz Canal University Hospitals at January 2009 till January 2013 on fifty patients, aged 20 to 80 years old, 15 females 35 male. The diagnosis was clinical and radiological. The treatment by using the types of locked plates: proximal femoral locking plate for per-trochanteric fractures, proximal femoral locking Plate for sub-trochanteric fracture (hooked) and reverse “upside down” LISS (less invasive stabilization system. Comparing the Locked Plates with other methods of fixation as intramedullary fixation, Dynamic Compression Plate (DHS) and angular blade plate **Results:** Good results in all cases with no infections or complications. **Conclusion:** The use of locked plates can be a feasible alternative for treatment of inter-trochanteric & sub-trochanteric fractures. The complication rates of the locked plates implant are lower than many traditional implants described in previous studies. However, we must carefully choose the implant for treatment of per-trochanteric fractures based on: individual patient assessment, experience of operational team and biomechanical studies on the calcar femoral. **Keyword:** The locked plates, trochanteric fractures, less invasive stabilization system, DHS.

Abstract no.: 36702

**ILIZAROV FRAME MANAGEMENT OF LISFRANC FRACTURE
DISLOCATION WITH SEVERE SOFT TISSUE INJURY : A NEW
TECHNIQUE : STAGED TREATMENT**

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Background : Lisfranc injuries are significant injury requiring anatomical reduction and stable fixation. Most injuries are high energy with soft tissue compromise. Various methods have been described including K wires, percutaneous screws, uniplanar external fixator. We describe a new technique of temporary circular frame fixation to reduce Lisfranc injury with severe soft tissue injury. History: 69 year old gentleman presented with severe crush injury to left foot when a heritage tractor run over his foot. Had extensive soft tissue swelling, full thickness skin necrosis and divergent lisfranc injury. No evidence of compartment syndrome. We used a Circular frame technique to reduce the Lisfranc injury. Forefoot metatarsal fixation was achieved with 2 olive wires and half ring arches. Hindfoot calcaneal fixation was achieved with 2 half pins and an olive wire onto a half ring. Threaded rods bridged the the forefoot to hindfoot and used to achieve final reduction. This was confirmed on CT scan. Once soft tissue recovered medial column was plated and percutaneous screws applied to 2-3 TMT joints to achieve anatomical reduction avoiding areas of full thickness skin necrosis. K wire stabilization to 4-5 TMT joints. No soft tissue complication and good clinical outcome achieved. Conclusion: Ilizarov technique can achieve anatomical reduction in these severe injuries either as a temporary or permanent method of treatment. A staged treatment with initial good reduction and soft tissue care is vital in achieving good outcome.

Abstract no.: 36703

SURGICAL TREATMENT OF LISFRANC INJURY USING BRIDGE PLATE TECHNIQUE

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Introduction: Lis franc injuries are devastating and unstable injuries. Stabilisation of the tarso metatarsal joints is advocated to prevent long-term morbidity. Various methods have been used including cross screws, k wires, external fixators and plates. We used a bridge plating technique to achieve absolute stability without damage to the articular cartilage of tarso metatarsal joints. Objectives: Aim: To present a bridge plate technique in management of Lisfranc injury and to assess the outcome. Methods: We present 10 patients operated between Jan. 2013 and October 2013 with Lis franc injury. There were 6 males and 4 females with an average age of 46years(range20-69). According to Myersons classification 4 were type A, 3 were B2 and 2 were C1 types. All patients had CT scan pre operatively. Once open reduction and absolute stability was achieved with plates and screws in involved unstable 1st to 3rd tarso metatarsal joints and 4th -5th tarso metatarsal joints stabilized by k wires. Temporary Ilizarov frame external fixator was applied in one case to allow soft tissue to settle due to severe crush injury. Metal work was removed at 5-6 months. Results: Mean time of follow up was 5 months. At last follow up all patients had anatomical and radiological reduction of the mid foot joints. All patients were able to mobilized full weight bearing and back to normal activities and work. Conclusions: Bridge plate technique achieves absolute stability across tarso metatarsal joint while preserving the joint with good clinical outcome.

Abstract no.: 36709

PATHOMORPHOLOGICAL CHARACTERISTIC OF DIABETIC NEUROPATHY

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The basis of this research is the study of surgical specimens of the peripheral nervous system of lower limbs amputated at different levels in 60 patients with diabetic foot syndrome. The mean age was 65.7 ± 0.74 (46 - 78) years. Pathomorphological study of the material was carried out by the conventional histological method for studying soft tissues. Sections were stained with H & E, Van Gieson, MSB, Kluwer-Barerr, silvering on Foot's method, Grosse and IHC for S-100, NSE, Synaptophysin, Neurofilament protein. The results of our pathomorphological study of peripheral nerve trunks in diabetes, show a wide range and variety of pathological processes that characterize the disease: severe degenerative, atrophic, sclerotic and inflammatory changes, as well as damage to Schwann shells, the destruction or severe fragmentation of myelin, proliferation lemmocytes and fibroblasts, axonal injury with loss of nerve fibers and vacant of the fibrosis and liposis. Small vessels within the peripheral nervous system were expressed by dystrophic and sclerotic changes. These symptoms are observed in all layers of the nerve trunks: endo-, peri-and epineural. Depending on the severity and duration of the disease, they can be both reversible and irreversible. Depth pathomorphological study and comparison with clinical manifestations is important in developing criteria to an earlier diagnosis and treatment of diabetic foot.

Abstract no.: 36710

DIAGNOSIS OF TUMORS OF THE FOOT

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Diagnosis of tumors of the foot presents certain difficulties due to the nature and variety of anatomical pathology in this area. The purpose of this research is to study the clinical, radiological and morphological characteristics diagnosis of tumors of the foot. Material studies served as the medical history, X-ray images, CT-scan, MRI, and operating soft and bone tissue in patients with tumors of the foot. In order to pathomorphological investigation of tumor tissue after fixation and demineralization, stained with H & E, and Van Gieson, PAS, alcian blue and IHC-method to the S-100, EMA, CK, Vim, ki-67, CD34 and Desmin. In this paper we compared the clinical and radiological manifestations and morphological structure of the 228 patients with tumors of the foot. Of these patients, benign tumors were observed in 195 patients, primary malignant - in 26, metastatic - in 7 patients. Often tumor affects the heel bone, talus, metatarsals and proximal phalanges. From benign prevailed: bone cyst- 28 cases, giant cell tumor - 14 cases, chondroma - 10 cases. Subungual exostosis (63 cases) were located in the most nail phalanx of the first toe, hitting nail bone comb. Among the primary malignant dominated synovial sarcoma (10), and osteosarcoma (7). Chondrosarcoma and fibrosarcoma - each of them on two occasions. In 5 cases of metastatic tumors were located in the heel bone. They were urogenital and colorectal origin. Establish criteria of aggressiveness for each form of the tumor. Described criterion for the different diagnosis of benign, malignant, metastatic tumors.

Abstract no.: 36711

MORPHOLOGICAL CHARACTERISTICS OF CHORDOMA

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Over the past 10 years, 11 cases of notochordal tumours diagnosed and operated on in the Republican Scientific and Practical Center of Traumatology and Orthopedics. All patients were older than 50 years, including 10 men and one woman. In all cases the tumor was located in the spine and growing infiltration. In 2 cases, the tumor was localized in the neck, in the 3 - to thoracic, 5 - in the lumbar, and 1 - in the sacrum. In 4 patients had tumor recurrence and reoperation. In order to pathomorphological investigation of tumor tissue after fixation and demineralization, stained with H & E, and Van Gieson, PAS, alcian blue and IHC-method to the S-100, EMA, CK, Vim, and Desmin. Chordoma had different localization in the spine: C2-3, C3-5, Th1-5, Th1-5, Th3-5, Th10, L1-3, L2, L3-5, L5, S2. In one case there was recurrence of tumor after surgery. Chordoma microscopically had lobular structure. Tumor lobules were separated by thin fibrovascular bands with lymphocytic infiltration. The tumour cells are arranged in sheets, cords or float singly within an abundant myxoid stroma. Cells form a solid field of relatively monomorphic cells with vacuolated cytoplasm ""physaliphorous cells"". The cytoplasm of some vacuolated cells was defined PAS-positive content. In the matrix of mucinous tumors was also made the contents of which positively stained alcian blue. Immunohistochemically in tumor cells detected antigens S-100 protein, EMA, CK, and Vimentin.

Abstract no.: 36712

TIBIAL POSITION OF ANTERIOR CRUCIATE LIGAMENT: AN MRI BASED MORPHOMETRIC STUDY IN INDIAN PATIENTS.

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Aim: To establish normal values for anterior cruciate ligament (ACL) tibial footprint morphology and the position of its insertion on tibia. **Methodology:** Knee MRI of 55 patients (mean age -36 years) obtained. Measurements made of antero-posterior (AP) and medial-lateral (ML) width of ACL tibial footprint. Anterior, posterior most points and medial, lateral most points of ACL tibial insertion were measured. **Results:** The mean AP and ML width of ACL tibial footprint was 14.57 ± 1.59 mm and 13.13 ± 1.93 mm. The anterior and posterior insertion of ACL was located at a mean of 13.6 ± 2.2 mm ($29.2 \pm 3.5\%$) and 28.3 ± 3 mm ($60.7 \pm 3.6\%$) respectively, from the anterior tibial articular margin. The medial and lateral insertion of ACL was located at a mean of 28 ± 2.5 mm ($40.1 \pm 1.9\%$) and 41.2 ± 3.9 mm ($58.9 \pm 2.8\%$) respectively, from the medial tibial margin. The tibial insertion of the ACL is located between 29.2 and 60.7 % of the total AP depth of tibia, and between 40.1% and 58.9% of the total ML width of tibia. The difference in ACL footprint width was statistically significant when compared between men and women; however, difference was insignificant in terms of tibial position of ACL. **Conclusions:** This study provides the baseline information in Indian patients which can be used to guide the tibial tunnel placement during primary anatomic ACL reconstruction, revision ACL surgery, and to evaluate ACL-reconstructed patients.

Abstract no.: 36717

CONSECUTIVE TWO LEVELS CERVICAL FORAMINOTOMY IN THE TREATMENT OF CERVICAL RADICULOPATHY

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Introduction: The purpose of this study was to detail the surgical technique of consecutive two-level cervical foraminotomy (tandem keyhole foraminotomy; TKF) and clinical outcomes in patients with radiculopathy. Methods: Thirty two cases who suffered radiculopathy were treated by a single surgeon using TKF. Clinical symptoms, data of physical examinations, pathology and clinical outcomes were detailed and discussed about this surgical method. Results: TKF was performed from C4 to C6 in six patients (18.8 %); from C5 to C7 in 23 patients (71.9 %); and from C6 to T1 in three patients (9.4 %). Mean operative duration was 97.8 min (range, 68–168 min). Mean estimated blood loss was 53.6 g (range, 0–200 g). At final follow-up, radicular pain was relieved in 88% of patients (29/32) within 3 months and in 97% of patients (31/32) with cervical disc herniation (CDH) (19/32) and cervical spondylotic radiculopathy (CSR) (13/32). Sixty-six percent of patients showed a greater than 20% deficit in grip weakness on the affected side compared with the normal side. After pain was relieved, grip strength improved by more than 15%. Conclusions: TKF is a safe and highly effective procedure for patients with cervical radiculopathy and does not require invasive preoperative examinations.

Abstract no.: 36718

NEUROPHYSIOLOGICAL DIAGNOSTICS OF FUNCTIONAL DISORDERS OF THE SPINAL CORD AND ITS ROOTS WHILE DEGENERATIVE DISEASE OF THE SPINE

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It is possible to conduct quantitative evaluation of the function of deep-lying neural structures with the help of modern neurophysiological diagnostics. Methods: transcranial magnetic stimulation; stimulating electromyography based on the registration of the M-response and F-wave; color duplex sonography. 18 patients with degenerative stenosis of the lower thoracic and 50 with stenosis of the lumbar-sacral spinal canal were examined. Two types of electrophysiological pattern were distinguished. The first was characterized by a firm increase of the central motor conduction time of the spinal cord and the higher value of the peak linear velocity of blood flow in the vessels of the thigh. This type was determined in patients with clinical and radiological signs of compression of the spinal cord's lumbar segments. The second type showed a firm increase of time of the peripheral motor conduction in spinal nerves L2-L4, L5-S1 and increase of the linear speed of the blood flow in the vessels of the legs. This type was detected in patients with lesions of the lumbar-sacral roots. F-wave and M-response showed a reduction of the speed of efferent conduct of the impulse on peripheral nerves to 35.4 ± 2.9 m/s (control 42.6 ± 2.4 m/s) and increase the value of the L5-S1 roots' delay to 5.8 ± 4.1 ms (control 2.6 ± 1.5 ms). Mixed type was detected in 7 patients. Conclusion: neurophysiological diagnostics of degenerative disease of the lower thoracic and lumbar-sacral spine segments allows to differentiate injury of the spinal cord and functions of its roots, appraise the degree and provide functional forecasts.

Abstract no.: 36725

**USAGE OF DYNAMIC FIXATOR WITH NEW CONSRUCTION IN
TREATMENT OF DAMAGED SYNDESMOSIS.**

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Introduction: fractures of distal part of forefoot bones are commonly followed by damage of syndesmosis. It is known that shown damage is met in 12-27 % from all damages of ankle joint. Wherein, the reconstruction of tibiofibular connection is usually done without restoring its tightly flexible properties and physiological type of movement which can turn to development of synostosis or contrariwise instability which is followed by the development of degenerative-deforming processes. Methods: our observations let us determine physiological options of movement of tibiofibular syndesmosis that provide its optimal functioning. This data made the base for developing the new fixators for tibiofibular syndesmosis. In particular, we proposed the fundamentally new dynamic fixator that let us combine the stability of fixation of bones on the level of syndesmosis with the optimal parameters of physiological mobility in 3 axes. However, further observations has shown us that given fixator doesn't save mobility in tibiofibular syndesmosis in full volume, in particular, the vertical movements in forefoot bones which gain 4,2 mm in maximum amplitude in flexion-extension. This is why a need of changing the construction has appeared. Results: thus, our developed changes of dynamic fixator's construction let us restore damaged syndesmosis with saving its mobility, which are closer to physiological, and in future will positively react on the function of ankle joint.

Abstract no.: 36730

INTRAOSSEOUS PRESSURE DURING TOTAL HIP REPLACEMENT

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Aim. To study changes of intraosseous pressure during stages of implantation of femoral component of new hip prosthesis. **Methods.** Intraosseous pressure of distal femur was measured in 44 patients, 19 men and 25 women with a mean age of 49.7 ± 7.3 , at six time points during the surgery with RAUMEDICR device. **Results.** The average values of intraosseous pressure were 62.6 ± 14.8 (95% CI 58.2-67.0) mm before surgery, after osteotomy of femoral head and neck was 61.3 ± 6.5 (95% CI 59.3-63.3) mm Hg, while opening the medullary canal with fenestrated tool was 64.5 ± 7.6 (95% CI 62.1-66.9) mm Hg, while introducing and processing with reamer – 56.3 ± 12.6 (95% CI 52.3-60.3) mm Hg, when using new rasp in medullary canal – 76.2 ± 13.1 (95% CI 72.2-80.2) mm Hg, when fixing a new stem of prosthesis – 69.3 ± 14.1 (95% CI 72.2-80.2) mm Hg. **Conclusions.** According to the results of our clinical studies it is observed that new femoral prosthesis reduces the intraosseous pressure during implantation, and thereby, reduces the risk of fatty embolism during surgery.

Abstract no.: 36733

COMPLIANCE OF LOW-INTENSITY PULSED ULTRASOUND FOR FRESH FRACTURES

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Introduction: The great majority of clinical data that have been reported are related to the effect of low-intensity pulsed ultrasound (LIPUS) on the healing of fresh fractures. Purpose: We investigated the compliance of LIPUS treatment for fresh fractures. Methods: The subjects were 94 patients (mean age, 56.4 years) who had been treated operatively for fresh fractures and underwent the LIPUS postoperatively between 2008 and 2013. We have defined the LIPUS execution rate as "Number of days was actually irradiated the LIPUS/ Number of days rented the LIPUS×100". We divided the patients by the LIPUS execution rate into two groups, which were the good group ($\geq 80\%$) and the poor group ($< 80\%$), and compared the age, the number of days rented the LIPUS and the fracture site between 2 groups. Results: Average LIPUS execution rate was 79%. The bone union rate was 97.8%. The average age was significantly higher the poor group (60.8 years) than the good group (50.6 years) ($p < 0.05$). There was a statistically significant difference on the number of days rented the LIPUS ($P < 0.05$) between the good group (119.2 days) and poor group (164.5 days). There was a significant correlation between the LIPUS execution rate and fracture site. The good group consisted of more radius and tibia fractures, whereas, the poor group consisted of more femur and humerus fractures. Conclusion: The present study suggests that compliance of LIPUS for fresh fractures was influenced by age, the number of days rented the LIPUS and fracture site.

Abstract no.: 36746

DOES FACTOR XA INHIBITOR TREATMENT HAVE A POSITIVE EFFECT ON TENDON HEALING? A COMPARATIVE STUDY BETWEEN NARDOPARIN CALCIUM AND RIVAROXABAN FOR THE TREATMENT OF RAT ACHILLES TENDON RUPTURES

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The purpose of this study is to analyze the effects of Nardoparin Calcium and Rivaroxaban on healing of Rat Achilles tendons and to compare if any difference between these Factor Xa inhibitors in regard to application methods and histopathologic outcomes. Achilles tendon ruptures were created in a total of 24 Wistar Albino rats and then primarily repaired with Modified Kessler technique. After the repair, the rats were randomly divided into three equal study groups. Group 1: Control group with no Factor Xa inhibitor treatment. Group 2: 3mg/kg/day oral Rivaroxaban administered group for 4 weeks. Group 3: 3mg/kg/day subcutaneous Nardoparin Calcium administered group for 4 weeks. After 4 weeks, the rats were killed, their repaired tendons were microscopically evaluated according to the Curtis criteria and finally, the results were statistically compared between study groups. In histologic evaluation, there was no statistically significant difference between study groups in regard to neovascularization and fibroblastic cell concentration. On contrary, group 2 and 3 had significantly more inflammation and mature fibrosis compared with the control group. There was no statistically significant difference between Nardoparin Calcium and Rivaroxaban in regard to microscopic findings. In conclusion, Factor Xa treatment had a significant positive effect on tendon healing but there was no significant difference between oral (Rivaroxaban) and subcutaneous (Nardoparin Calcium) application methods.

Abstract no.: 36747

INCIDENCE AND FUNCTIONAL RESULTS OF LEG LENGTH DISCREPANCY AND PELVIC OBLIQUITY FOLLOWING TOTAL HIP ARTHROPLASTY IN DYSPLASTIC HIP DISORDER

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The clinical importance of leg length discrepancy (LLD) and pelvic obliquity following total hip arthroplasty (THA) in Dysplastic hip Disorder (DDH) remains controversial. This study was undertaken to determine the effects of LLD and pelvic obliquity on clinical outcomes at up to 5 years follow-up. Forty one cases of THA after DDH were studied (forty six hips). Femoral osteotomy were done in 32 hips (22 distal and 10 proximal), in other cases there were soft tissue release (10 hips) and high hip center (4 hips) . There were 10 cases of bilateral THA .In unilateral group, mean LLD was 1.5 centimeters (0 to 2 cm) and Harris Hip Score (HHS) was excellent in 88%. In bilateral cases, the mean LLD was 0.5 but HHS was excellent in 75%. This shows in unilateral cases , equal limbs cannot be reconstructed always but have better functional results than in bilateral cases. In femoral osteotomies, LLD were less than 1 centimeter . Maximum LLD was seen in high hip centers (3 cm).

Abstract no.: 36750

NOSE OR KNEE? - MORPHOLOGICAL ANALYSIS OF ARTICULAR AND NASAL SEPTUM CARTILAGE HARVESTED FOR BIOREACTOR-BASED TISSUE ENGINEERING

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The purpose of this study was to analyse morphological features of the articular and nasal septum cartilage harvested from sheep. The nasal septum cartilage could be a promising alternative source of chondrocytes for cartilage tissue engineering in orthopedics. Cartilage samples from both knee femoral condyle and nasal septum were harvested from 3 healthy sheep under general anaesthesia and immediately immersed in 4% buffered paraformaldehyde (PFA) for light microscopy and in 2,5% buffered glutaraldehyde (GA) for transmission electron microscopy (TEM). For histology analysis, 5 µm thick sections were stained with hematoxylin-eosin (HE), Safranin O and Picrosirius Red. Immunofluorescence (IF) was performed against collagen type II. Semi-thin sections (1 µm) were stained with toluidine blue. Results HE, Safranin O and Picrosirius Red staining revealed similar morphology of the cartilage originating from the two locations. Safranin O staining was more intensive in territory of the nasal cartilage compared to the articular cartilage indicating higher content of glycosaminoglycans. Picrosirius Red and IF showed that matrix of both cartilages contains thin, collagen type II fibrils. Ultra-thin sections on TEM revealed the difference in extracellular matrix between these two cartilages. Volume density of collagen fibrils in the articular cartilage was 55% compared to 10% in nasal cartilage. This study demonstrated hyaline nature of the nasal septum cartilage. There are some fine differences in the morphology between these two cartilages but high GAG content, collagen II and abundance of chondrocytes makes nasal septum cartilage a fine candidate for tissue engineering experiments in sheep.

Abstract no.: 36752

MRI FEATURES OF PSOAS MAJOR MUSCLES IN PATIENTS WITH PARASPINAL MUSCLE ATROPHY

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Introduction: We have already reported that the cross-sectional area (CSA) of paraspinal muscles tends to decrease with age, that our new index (the T-back value: depth of the groove between paraspinal muscles relative to the length of the body of the muscles at the attachment to the spinous processes) is strongly correlated with the CSA of paraspinal muscles, and that the CSAs of paraspinal and psoas muscles show a similar decreasing trend with age, but fat infiltration of paraspinal muscles was markedly more severe than that of psoas muscles in the elderly. Therefore, we consider paraspinal muscles to be more prone to atrophy than psoas muscles with aging. The aim of this study was to investigate the CSA and fat infiltration of psoas muscles in patients with paraspinal muscle atrophy by MRI and to compare the findings with those in patients showing less muscle degeneration. **Methods:** We considered patients with the T-back value ≥ 0 to have atrophy of paraspinal muscles. Of a total of 704 patients who underwent MRI of the lumbar spine at our hospital during 2010, 45 males and 80 females with T-back values ≥ 0 were included in this study. Axial T2-weighted MRI was employed to measure CSA and fat infiltration of paraspinal muscles and psoas muscles at the intervertebral disc levels from L1/2 to L4/5. We compared their data with previous findings in patients who had less degeneration. **Results:** The CSA and fat infiltration of psoas muscles were similar to those in patients with less degeneration.

Abstract no.: 36755

THE MANAGEMENT OF FAILED BACK SPINE SURGERY ASSISTED MINIMAL INVASIVE ENDOSCOPIC PHILOSOPHY

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The Definition of FBSS is simply that is to create a pain generator on spine by surgical way. Poor selection for surgery and the patient have had a psychological profile or pathophysiology, Improper selection and misdiagnosis, inadequate preoperative evaluation and diagnostic work-up, improper or inadequate surgery. Evaluate responsible reason of FBSS mechanic and neurologic compromise and to find pain generators and prospect of eliminating the pain and to improve function Method: 50 patients were included prospective study, 34 females 16 males, Main age 58, Follow up 18 m (range 3-48 months) 24 patients are treated single miss way, 26 patients combined with open surgery In ten cases, there was a single miss procedure, such as percutaneous foraminoplasty and/or epiduroscopy performed in 40 additional cases, two surgical procedure have been performed, 12 patient remove hardware and limited decompression without fusion and if it is necessary combined with epiduroscopy, 2 patient have fusion surgery because of recurrent spondylolisthesis after one level discectomy, 4 patient had extremely spinal stenosis, and hardware occupation c-spinal canal, excessive decompression and posterior short fusion. Key Surgery consist of different stages; remove If there is hardware asap, debridement, minimal decompression Results The first VAS and Questionnaire score had been taken respectively high before surgery. These two scores (pre and post) were then used to provide absolute difference more than 50 percent. Conclusion: MISS is an option which is significantly reduced pain in almost all patients. P MISS should be considered as a potential treatment option for FBSS.

Abstract no.: 36756

PATIENT'S WAITING TIME IN FRACTURE CLINIC

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Introduction: The Department of Health Patients charter United Kingdom states that “you will be given a specific appointment time and be seen within 30 minutes of that time”. There has been lot of effort put in by hospitals to reduce the time spent by inpatients in the hospital. However there is not much literature available regarding waiting time for patients in outpatient clinics. Patient waiting time in outpatient clinics is often the major reason for patients' complaints. Material and Method: This is a retrospective study in which we looked into the time spent by patient in the fracture clinic. Also noted was the number of patient to doctor ratio. A total of 914 patient's records were included in the study. Results: Average time taken from appointment to be seen by health care professional was 46 minute which ranged from 0 minutes to 3 hours. Average time taken from appointment to leaving the clinic was 1 hour and ranged from 0 min to 4 hours. Average time taken from Patient being seen by clinician to leaving the clinic was 20 minutes and ranged from Range: 0 min to 3 hours. Conclusion: Bottle neck is from appointment to clinician seeing the patient. Once seen by clinicians in fracture clinic patients don't have to wait long. Recommendation: Staggering appointment time. Doctor patient ratio should be not more than 20:1 in a 210 minute fracture clinic.

Abstract no.: 36757

SLIPPED CAPITAL FEMORAL EPIPHYSIS - DOES HLA MATTER?

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Background: Slipped capital femoral epiphysis (SCFE) is a well-known disorder of the hip in adolescents. Multiple theories have been proposed for the aetiology of idiopathic slipped capital femoral epiphysis, and it is likely a result of both biomechanical and biochemical factors. The association between HLA and certain rheumatic diseases is well established. The quest to find similar markers have fuelled the suggestion that SCFE may be linked to the presence of a specific HLA antigen. Method: We present a case report of identical twin presenting with slipped capital femoral epiphysis along with HLA class 1 and II analysis. Eleven year old girl presented with pain in her hip for last few days and difficulty in mobilising. X-ray showed SCFE which was fixed in situ with one screw. Eighteen months later her twin sister presented with pain in hip and limp of three weeks duration with no precedent history of trauma. X-ray showed SCFE which was fixed in situ with one screw. Both sisters have made full recovery with no pain or residual limp. Results: HLA typing of the twins showed variations between diseases and HLA phenotype in different population groups. Discussion: This is fifth case of identical twins presenting with SCFE with HLA class-I analysis and only second case report with both HLA class-I and Class-II analysis. Our case report further emphasises finding from previous studies that there is no relationship between SCFE and a specific HLA class I or class II antigen. Level of Evidence: Level V

Abstract no.: 36758

**THROMBOPROPHYLAXIS IN AMBULATORY TRAUMA PATIENTS
REQUIRING TEMPORARY LOWER LIMB IMMOBILISATION FOR
MANAGEMENT OF FOOT AND ANKLE FRACTURES- A PROSPECTIVE
STUDY OF 150 PATIENTS USING NOVEL SCORING SYSTEM**

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Background: Relationship between temporary limb immobilisation and venous thromboembolism (VTE) has been documented since 1944. Lower-limb immobilisation has been implicated as an aetiological factor in approximately 1.5 -3% of all VTE events. The actual incidence of VTE in patients with temporary plaster immobilisation is estimated anywhere between 5 - 39%. Guidelines from various health advisory boards across the globe including NICE, SIGN and CEM are not clear. However Cochrane Library Meta-analysis advises administration of LMWH during the entire period of immobilization of the lower extremity. Material and Method: In our DGH a scoring system has been developed for ambulatory patients with foot and ankle fracture being managed as outpatients by temporary lower limb immobilisation. Patients are classed either high or low risk for developing VTE event and high risk patients are offered LMWH after assessing bleeding risk. This is a prospective study in which 150 patients (68 ankle fractures, 66 metatarsal fractures and 16 hind foot fractures) with foot and ankle fractures being managed as out-patient with lower limb immobilisation were assessed and given thromboprophylaxis with LMWH accordingly. Blood test was done before starting treatment and at one week after starting treatment for early diagnosis of heparin induced thrombocytopenia (HIT). These patients were followed up to three months following injury. Three patients (i.e. 2%) developed symptomatic VTE. Conclusion: This scoring system works in significantly reducing the incidence of VTE in patients with foot and ankle fracture. More patients need to be assessed before arriving at a definite conclusion.

Abstract no.: 36764

HOW TO MAKE ANTEGRADE CLOSED FEMORAL NAILING A SAFER AND EASIER PROCEDURE

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Closed, antegrade and interlocking femoral nailing remains the operation of choice in diaphyseal fractures of the femur. But locating the piriform fossa and advancing an awl to access the femoral canal remains a difficult and challenging technique especially in obese patients. It is often a blind procedure fraught with dangers of damage to the neck of the femur, adjoining neurovascular structures as well as cortical penetration of the proximal femoral shaft. This paper addresses these concerns and discusses various innovations and tools which can be used to make this a safer and easier procedure. Patient and C-arm positioning is crucial. Incision placement and understanding the detailed anatomy of the proximal femur is also critical. The direction and the shape of the awl are very important. The authors also discuss their own innovation, a specially designed tool to make access to the femoral canal safer. Other important techniques described are methods to obtain a closed reduction as well as a guide to simplify distal locking in a free hand technique.

Abstract no.: 36776

DON'T CLEAN THE TENDON FROM MUSCLE TISSUE IN ACL RECONSTRUCTIONS

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Tendon to bone healing within the tunnels in ACL reconstruction can be enhanced by muscle tissue which is rich with mesenchymal stem cells (MSC). The purpose of this research is to enable and stimulate differentiation of the MSCs isolated from the muscles and tendons harvested as an autograft. Further objective is to enhance tendon ingrowths in the bone tunnels with the use of MSCs gained from muscle tissue that is usually treated as waste after harvesting. At the time of surgery both tendons are separated from residual muscle tissue and sized to 22 cm in length. The remaining length of the muscles is being processed within the study. Four study groups are formed: gracilis muscle tissue, gracilis tendon tissue, semitendinosus muscle tissue and semitendinosus tendon tissue. Osteogenic potential of both tissues (muscle and tendon) was measured first day after harvesting and 14 days afterwards. Tissue cultures were stained histochemically for ALP and mineralized matrix was visualized with von Koss method. Activity of ALP was measured 14 days after beginning of differentiation of mesenchymal stem cells isolated from semitendinosus and gracilis muscles, semitendinosus and gracilis tendons. Purple intense color was gained in cells differed from muscle tissue which shows significantly larger activity of ALP comparing to the cells differed from tendons. Visualization of mineralized matrix with von Koss citochemic method showed more intense black color gained in cells differed from muscle tissue comparing to the differed from tendons. The obtained results will be tested in an animal study and then clinically.

Abstract no.: 36780

A PROSPECTIVE STUDY OF MINIMALLY INVASIVE PLATE OSTEOSYNTHESIS OF TIBIAL PLATEAU FRACTURES: AN INDIAN EXPERIENCE

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INTRODUCTION: Proximal tibial fractures are difficult lesions to treat because of the involvement of the articular surface, the often occurring comminution, and the precarious condition of the soft tissues, especially following high-energy trauma. Aim of the treatment is to restore the congruence of the articular surface supporting the tibial plateau cartilage which is usually depressed; to fix the fracture with a stable device; to allow early rehabilitation. **METHODS:** 50 patients (30 males and 20 females) underwent minimally invasive plate osteosynthesis for displaced tibial plateau fractures between the period of May 2012 and May 2013. The clinical, radiological and functional results were analyzed and patients were followed up every month during the first four months and every two months in the first year (mean follow up 9 months). **RESULTS:** fractures were classified based on OTA/AO classification system. Functional outcomes were based on knee scoring system, HSS and Rasmussen anatomic and functional scoring system. Complications occurred in the form of superficial infection in 2 cases and postoperative knee stiffness in 3 cases. **CONCLUSION:** MIPO for tibial plateau fractures achieved good outcome with minimal soft-tissue complications. Older age was the predictor of unacceptable outcome.

Abstract no.: 36792

DIFFERING TREND IN THE PATTERN OF PRESENTATION OF PATIENTS FOR TOTAL KNEE REPLACEMENT SURGERY IN A TERTIARY INSTITUTION IN NIGERIA

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Pattern of presentation of patients with knee deformity requiring Total Knee Replacement (TKR) at the National Orthopaedic Hospital Enugu (NOHE) has not been consistent with reports involving Caucasian populations. Present study investigates the pattern of presentation of the TKR patients in NOHE which is the major tertiary institution covering South East Nigeria. A six year retrospective review of all the patients that had TKR at NOHE was done manually and vital health data were collated using SPSS version 17. Collated information include bio data, duration of pain, knee(s) involved, documented deformity, body mass index and pre-operative knee society scores. A total of 52 knees in 42 patients were replaced in 35 females and 7 males with 10 bilateral TKR's. Their ages ranged from 41-85 years with a mean age of 61.96. The right knee was involved in 32 (61.5%) and the left knee in 20 (38.5%). 53.8% of the patients presented with valgus knees compared to 46.2% with varus deformity. The average duration of symptoms before presenting to the hospital is 11.5 years with low knee scores. The average body mass index was 31.26. Valgus knee deformity appears to be the commonest deformity in patients presenting for TKR in South East Nigeria and thus needs further investigations on the likely reasons. Obesity was a common index. Most patients had low knee scores, probably due to late presentation with complex knee deformities. Multi centered study will be needed to collaborate this result on a national scale.

Abstract no.: 36794

HUMAN IMMUNODEFICIENCY VIRUS SEROPOSITIVITY IN NATIONAL ORTHOPAEDIC HOSPITAL ENUGU

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Surgeons are at a risk of contacting the Human Immunodeficiency Virus (HIV) infection in areas where it is prevalent and the risk rises with increasing prevalence. This study aims to review the pattern of HIV in National Orthopaedic Hospital Enugu which is a specialist hospital for Trauma and Orthopaedics, Plastic and Reconstructive surgery in south eastern part of Nigeria in order to weigh the surgeons risk based on prevalence of HIV. Following ethical clearance, a 10 year retrospective study of records of individuals tested for HIV using three different rapid tests was done. The study collated information on biodata and HIV screening result. Those with indeterminate test results were excluded from the study. A total of 15,743 results from patients met the inclusion criteria. Male to female ratio was 1.4:1, 40.7% were requests from the clinical departments while 59.3% were prospective blood donors. The seropositivity for the referred patients and the prospective donors were 5.23% and 2.6% respectively. Total HIV prevalence rate in hospital was 3.66%. Surgical patients at our centre have twice higher HIV seropositive rate compared to apparently healthy blood donors so the risk of HIV infection to the surgeon is thus appreciable. Institutional efforts should be made to ensure that surgeons and other health workers adhere to universal precautions.

Abstract no.: 36801

THE TWO-IN-ONE PROCEDURE"- A VERY NEW METHOD, FOR THE TREATMENT OF CONGENITAL RADIAL HEAD DISLOCATION

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Background: Congenital dislocation of the radial head of the elbow is rare. About two thirds are posterior, with the remainder being either anterior or lateral. The natural history of the condition is that symptoms are relatively benign, with only some limitation of motion and deformity. Treatment either involves early attempts at reconstruction or delayed intervention at skeletal maturity with radial head excision. We evaluated the radiographic and functional results of a "two-in-one procedure" (radial shortening and open reduction) in the treatment of congenital dislocation of the radial head of a thirteen year old boy. Objective: To evaluate the "two-in-one procedure" for easy reduction and maintenance of normal radiocapitellar joint anatomy. Method: The very new method "the two-in-one procedure" was used in this case. In this approach the first incision for the radial shortening and the second for the open reduction of the radiocapitellar joint. Results: At one year follow up, the elbow is stable with no valgus or fixed flexion deformity. An X-ray showed reformation of the radial head with good congruity of the radiocapitellar joint. Conclusion: This paper describes this new technique performed treatment of congenital dislocation of the radial head of a thirteen year old boy. This technique is found to be very useful for the easy reduction maintenance of normal radiocapitellar joint anatomy.

Abstract no.: 36806

A RARE CASE OF POSTTRAUMATIC INCARCERATION OF MEDIAL COLLATERAL LIGAMENT INTO KNEE JOINT WITH ANTERIOR CRUCIATE LIGAMENT INJURY.

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Medial collateral ligament of the knee is an important coronal stabiliser and often injured in isolation or as combination of injuries. The article reports a case of incarcerated medial collateral ligament injury in combination with Anterior cruciate ligament injury in 20 year old male who presented to us 3 weeks after injury. Clinical examination and MRI was corelated to complete ACL tear with torn distal MCL and incarceration into the joint. Patient was taken up for ACL Hamstring graft reconstucton with miniarthrotomy and repair of the torn MCL. Patient was followed up with dedicated rehabilitation protocol with good functional results at 1 year followup. This article highlights the rare pattern of MCL tear as reported and also reviews the literature on this pattern of injury.

Abstract no.: 36817

MINIMALLY INVASIVE OSTEOSYTHESIS OF TROCHANTERIC FEMUR FRACTURES

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Purpose of this work is to study the results of treating the patients with trochanteric fractures of the femur using PFN. Materials and methods. Closed technology osteosynthesis PFN was performed in 448 patients with trochanteric fractures of femur. The age of the studied patients was ranged from 27 to 103 years old, 85,3% of them were older than 60 years old. There were 136 men and 312 women. The health of patients was assessed according to the criteria of the American Association of anesthetists: 35 (7,8%) patients had an excellent health, 62 (13,8%) patients were in a good health, 108 (24,2%) patients had a satisfactory health, 178 (39,7%) patients had a moderate health, and 65 (14,5%) – a bad health. Fractures were distributed: A1 (stable)- 123 (27,5%), A2 (unstable)- 223 (49,8%), A3 (intertrochanteric)- 102 (22,7%). Results and discussion. Results in a period from 1 to 3 years were studied in 257 (57,3%) patients. Excellent treatment results were seen in 165 (64,2%) patients. With a good result there were 68 (26,4%) patients, 21 (8,2%) patients had satisfactory results, 3 (1,2%) patients had unsatisfactory results. In-hospital mortality was 1,5% , which is much lower than in the conservative treatment process. The analysis of the treatment outcome with the use of PFN has shown that more than 90% of the patients had good or excellent results. Conclusions. The use of minimally invasive osteosynthesis is allowed expanding the indicators to a surgery in elderly and senile age, thus, getting positive results in 98% of cases.

Abstract no.: 36820

RARE CASE OF LATERAL CORTEX BLOWOUT DURING PFNA BLADE INSERTION IN A SUBTROCHANTERIC FRACTURE -SHOULD BONE QUALITY DETERMINE THE TYPE OF NAIL USED?

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Subtrochanteric fractures pose therapeutic challenge to the operating surgeon. With the advent of proximal femoral nails, most of the cases are treated with nailing. Newer nails like PFNA requires the blade to be directly hammered in bone compared to nail where the screws are drilled and tapped before insertion. We report one such case in a middle aged female that had intraoperative lateral cortex blowout during PFNA blade insertion in a sclerotic bone. This occurrence to the best of our knowledge is unreported in literature. It is therefore imperative to consider the quality of bone before a decision is made on the implant chosen. Keywords Subtrochanteric, PFNA, sclerotic, cortex blowout

Abstract no.: 36824

**SPONTANEOUS SUBCAPITAL FEMORAL NECK INSUFFICIENCY
FRACTURE AFTER HEALED INTERTROCHANTERIC FRACTURE
TREATED BY PROXIMAL FEMORAL NAIL ANTI-ROTATION**

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A spontaneous subcapital femoral nail fracture is a rare complication of a healed intertrochanteric hip fracture. Here we present, 78-year-old woman sustained intertrochanteric femur fracture of the right hip, after a fall. She underwent closed reduction and internal fixation with a proximal femoral nail antirotation. There were no complications during the operation and thereafter. At fourth month postoperatively, she had no complaint and she could walk without crutches. Six months after operation, she complained of a sudden onset of right hip pain, not associated with any trauma. Severe restriction of ROM of the hip joint was observed at the physical examination. She was unable to walk due to the pain at her right hip. Radiographs revealed a displaced subcapital femoral neck insufficiency fracture and healed intertrochanteric fracture. Her Singh's index grading was grade 2. She hospitalized and after the preoperative preparation nail was removed and cemented hemiarthroplasty was applied. Technical errors may cause subcapital fractures when the fixation device is inserted short of the bone. In the literature, there is a correlation between the degree of osteoporosis and the occurrence of spontaneous subcapital femur fractures after the intertrochanteric fracture healed. Our patient had severe osteoporosis whose Singh's index was 2 and it could be cause of the subcapital fracture.

Abstract no.: 36827

**LOCKED INTRAMEDULLARY FEMORAL NAILING WITHOUT FRACTURE
TABLE OR IMAGE INTENSIFIER**

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The present study aims to evaluate the outcome in 41 patients of femoral shaft fractures, who had closed intramedullary nailing in lateral decubitus position without fracture table or image intensifier. Mean age was 33.2 years. According to Winquist-Hansen classification 20 fractures were type I; 11 were type II; four were type III; six were type IV. The patient's pelvis was stabilized in exact lateral position with the help of padded posts at two anterior superior iliac spines and at sacrum. The cannulated reamer in proximal fragment (as intramedullary joystick) and Schanz screw in distal fragment (as percutaneous joystick) were simultaneously used to assist closed reduction of the fracture without the use of image intensifier. Nail over nail technique was used for distal locking. Closed reduction was successful in 38 patients. Open reduction was required in 3 patients. Schanz screw was used for closed reduction in 12 patients. Distal locking was achieved successfully in 37 patients and the technique failed in 4 patients. Average number of intra-operative radiographic exposures was 4.4. Two patients had exchange nailing using large diameter nails. One patient had nonunion. Angular and rotatory malalignments were observed in seven patients. We believe that the present technique is a safe and reliable alternative to achieve closed locked intramedullary nailing while minimizing the radiation exposure and is best suited to stable, less comminuted (Winquist-Hansen type I & II) diaphyseal femoral fractures. The technique can be used in situations when image intensifier is not available or goes out of order per-operatively.

Abstract no.: 36828

A SOLITARY BONE CYST OF THE DORSAL SPINE:- AN UNUSUAL PRESENTATION

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Solitary bone cyst are common benign fluid filled cystic lesions that occur mostly in the metaphysis of long bones and rarely found in the vertebra. In spine, solitary bone cyst commonly involves the neural arch either involving the spinous process, lamina or pedicle, We report a 28 year female patient with upper back pain with no history of radiating pain since 1 month ray dorsal spine was normal. On further evaluation with MRI dorsal spine revealed a lesion in the posterior elements of the 3rd dorsal vertebra. On surgical treatment the biopsy revealed solitary bone cyst. The patient symptoms were relieved postoperatively and returned to normal activities within 4 weeks. Since already there a very few cases of solitary bone cyst of spine reported in literature and we did not find any upper dorsal spine being involved, thought would be an unusual presentation.

Abstract no.: 36829

36829.

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INTRODUCTION. Ankle injuries are a common cause of morbidity and a leading cause of chronic debilitating traumatic arthritis. We document the management of ankle injuries at our hospital. METHODS. We retrospectively reviewed the cases of ankle injuries managed over a period of four years from 2009 to 2012. Cases of neglected injuries and previous visits to Traditional bone setters were excluded. Data obtained from the case folders included age, sex, mechanism, site and nature of injury, treatment offered; follow up as well as complications. RESULTS. Nineteen cases of ankle injuries were managed in sixteen patients. The age range was 17 to 60 years and mean age was 37.3 years. The male female ratio was 4.3:1. Motorcycle -Car collision was the commonest mechanism of injury in eleven patients (69%) while three patients sustained injuries from car crashes and two from domestic accidents. The right ankle was involve in 9 cases while the left in 10. Bilateral ankle injuries were present in three patients. Twelve injuries (63%) were open (Gustillo Anderson 1(5), 11(4) and 111b (4)). Wound irrigation and cast application was done in 10 ankles (53%), ankle reconstruction with plates, k wires in 6 (32%) and primary ankle arthrodesis in 3 cases. Average follow up was 24 months with complications of wound infection and arthritis present in 4 and 2 patients respectively. CONCLUSION. Ankle injuries were mainly open and from motorcycle car crashes. Prompt debridement and cast application was the main stay of management.

Abstract no.: 36833

AUGMENTED PROXIMAL FEMORAL NAIL ANTI-ROTATION (PFNA) TO TREAT PERITROCHANTERIC FRACTURES IN ELDERLY PATIENTS : A PRELIMINARY REPORT.

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Introduction: The treatment of peritrochanteric fractures in elderly patients with osteoporosis due to the difficulty of obtaining and maintaining stable fixation is still matter of discussion. Blade cut-out remains a significant problem, especially with less stable fracture patterns. Aim: As augmentation is reported to enhance implant anchorage, the aim of our study was to investigate the effect of bone cement augmentation on the preliminary clinical results and the cut-out resistance of the PFNA blade. Materials and Methods: We present 16 consecutive peritrochanteric fractures treated with augmented proximal femoral nail anti-rotation (PFNA). Average patient age was 87.7 years (range, 81-94 years); average follow-up was 11.1 months (range, 6 to 19 months). The inclusion criteria for patient selection were as follows: mobile and independent elderly (>80 years) patients, mental competence (a standardised mini-mental state examination score of "30–20'), patients with isolated and displaced closed peritrochanteric fractures and surgeries that were performed in a lateral decubitus position. Results: All of the fractures healed. There were no cut-out, blade migration, implant loosening and implant breakage. 62.5% of the patients returned to their pre-injury activity levels. Conclusions: Cement augmentation using the perforated PFNA blade might be one treatment choice to solve the mechanical problems associated with these fractures because of its improved fixation strength. However, these impressions should be proven by a randomised trial comparing the PFNA with and without augmentation.

Abstract no.: 36835

THE GRIP STRENGTH AND LEVINE SCORE CHANGES AFTER CARPAL TUNNEL RELEASE WITH STANDART MINI OPEN INCISION

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Objective of the study was to examine changes in functional statuses and grip strengths of patients with carpal tunnel syndrome to whom standard mini incision and decompression was applied. In the study, 32 patients, to whom release by way of standard mini incision was applied due to carpal tunnel syndrome, were retrospectively evaluated. Average age was 57 (range 33 to 70). Patients were evaluated in terms of improvement in pain and numbness complaints, and pain and sensitivity in scar tissue. Operated hand and healthy hand were compared in terms of rough grip strength, and differences in lateral and terminal pinch strength. Boston carpal tunnel questionnaire was applied in pre- and post-operation periods and results were compared for subjective functional evaluation of patients. Average follow-up period was 10.5 months (range 6 to 15). It was observed that none of the patients had more nocturnal pain and numbness complaints. It was determined that paresthesia complaints, although milder, still continued in 2 patients. 5 patients had complaints of pain and numbness in operated area and such complaints continued for 2,8 months on average. While mean values of post-operation Boston carpal tunnel questionnaire scores were compared top re-operation values, the difference was statistically significant ($p<0.001$). Mean rough grip strength difference was -2.5 kg, lateral pinch difference was -0.8 kg, and terminal pinch difference was -1.2 kg between operated hand and healthy hand. Standard mini open incision is considered to be a surgical method that can be used safely in releasing carpal tunnel.

Abstract no.: 36836

INTRAMEDULLARY NAILING VERSUS PLATING OF CALCANEAL FRACTURES - THE BIOMECHANICAL STUDY

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The authors compare the results within the axial stress by nailing of the calcaneal fractures with the C-NAIL and plating of the calcaneal fractures. In their presentation the authors describe the process of this test and explain the results in detail. Pursuant to this results the authors describe the advantages and indication for the minimal-invasive operation and explain in detail the surgical procedure using calcaneal nail (C-NAIL). Calcaneal nail (C-NAIL) allows for a minimal-invasive approach and high stability with low risk of infection. The calcaneal plate is necessary to introduce by a long Seattle approach, which is relative risk of infection.

Abstract no.: 36842

TIPS AND TRICKS IN AVULSION PCL FIXATION

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Traumatic PCL tibial avulsion is challenging to treat through extensive posterior approach we are presenting 20 patients having traumatic PCL tibial avulsion treated through minimal invasive approach in Rashed hospital in Dubai tips and tricks of the procedure, post operative rehabilitation and patients outcome is to be discussed

Abstract no.: 36843

PSI IN TKA CT VERSUS MRI

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one of the evolving technologies in Total knee replacement is surface matching guides(patient specific instrumentations PSI) and although the debate around this topic it is still gaining more popularity and usage we are presenting 20 patient in which half of the group was operated through MRI based PSI and the other half by CT based PSI we are comparing intraoperative differences and postoperative outliers in both techniques and patient outcome

Abstract no.: 36844

NEUROVASCULAR INJURIES ASSOCIATED WITH SUPRACONDYLAR HUMERUS FRACTURES IN CHILDREN

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Introduction: Supracondylar humerus fractures are the most common elbow fractures in children. With these fractures, attention must be paid regarding neurovascular injuries, as this complication rate is relatively high. The purpose of this study was to assess complications associated with supracondylar humerus fractures in children. Methods: Children with displaced supracondylar humerus fractures who were treated by closed reduction and percutaneous K-wire fixation at our hospital and some associated hospitals were retrospectively reviewed. A total of 136 patients were available for follow-up. Results: A total of 25 patients had complications. Neurological disorders were observed in 21 of 136 patients (15.4%), and 10 patients had immediate nerve explorations. All these patients had improved by 6 months after surgery, including patients without explorations. Circulatory disorders were observed in 11 of 136 patients (8%), and 7 patients had a “pulseless pink hand” with no or a weak radial artery pulse. 9 of 11 patients had an immediate vascular exploration, and 2 patients had this exploration later. Finally, all patients had vascular explorations and had vascular injuries of the brachial artery. Discussion: It is not necessary to immediately perform a nerve exploration for children with supracondylar humerus fractures, as neurological disorders often improve after observation. However, neurolysis should be considered if a neurological disorder remains until 2 to 3 months after this injury. A vascular exploration to restore brachial artery patency should be performed as soon as possible, even if there is a state of “pulseless pink hand.”

Abstract no.: 36846

STAPHYLOCOCCAL VERTEBRAL OSTEOMYELITIS WITH PRE-VERTEBRAL COLLECTION CAUSING ADJACENT INFERIOR VENA CAVA THROMBOSIS: A CASE REPORT

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Introduction: Thrombosis is a recognised sequelae of sepsis, mediated via activation of systemic coagulation pathways. Less clear is the association of osteomyelitis with inflammation of local vasculature leading to adjacent thrombus. A limited number of cases have been reported of long bone osteomyelitis causing thrombosis in adjacent deep veins, and these are almost exclusively in pediatric patients. We present the first case of an adult with inferior vena cava (IVC) thrombus directly adjacent to osteomyelitis of the lumbar vertebrae with an associated pre-vertebral collection. Case Report: A 51 year old female presented to our institution with lumbar pain, clinical signs of sepsis, and elevated serum inflammatory markers. Computed Tomography and Magnetic Resonance Imaging revealed osteomyelitis of the second lumbar (L2) vertebra with a pre-vertebral collection extending from L1 to L3 and the right psoas muscle. A filling defect in the adjacent IVC was seen, without evidence of extrinsic compression. Aspiration and culture confirmed staphylococcus aureus infection. Treatment with 3 months of intravenous daptomycin, an IVC filter, and 6 months of anticoagulation was successful. Discussion: This case demonstrates a rare but potentially fatal complication of osteomyelitis, presumable due to local inflammation of the vessel wall promoting the occurrence of thrombus.

Abstract no.: 36847

SHORT-TERM RESULTS OF SURGICAL TREATMENT WITH INTRAMEDULLARY HIP NAILS FOR BASICERVICAL PROXIMAL FEMORAL FRACTURES

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The definition and treatment of basicervical femoral fractures are debateable. There are different opinions regarding whether basicervical fractures are neck fractures or intertrochanteric fractures. Since the definition of basicervical fractures between proximal femoral fractures is not certain, different treatment methods using various implants have been applied up to now. In this study 42 patients who had basicervical fractures and treated with PFN (proximal femoral nail) in our clinic were examined retrospectively. 28 patients were included in the study and the efficiency of IMN (intramedullary nail) treatment in surgical treatment of basicervical fractures was examined. Fracture healing was observed at last control of all patients who were followed-up at least for 6 months. Deformity development was not noticed at anyone during bone healing process. While average radiologic fracture healing duration was about 10,5 (8-14) weeks, average clinical fracture healing was 6 (5-9) weeks. Screw cut-out, femur fracture or surgical wound infection were not detected at any patient. Severe collapse (>10%) was not noticed at any patient. Slight collapse (<10%) was observed at 25 (89,3%) of patients, while at 3 (10.7%) of patients collapse was not detected. Postoperative mean Harris hip score of the patients was 81.2±21.3, while mean modified Barthel index was 81.1±26.0. Osteosynthesis application with a proximal femoral nail in basicervical proximal femur fractures is a surgical treatment which can be applied by minimal invasive techniques without open surgery. This is a rapid, sound and easy treatment method with low mortality.

Abstract no.: 36850

AGREEMENT BETWEEN CLINICAL NURSE SPECIALIST AND PHYSICIAN'S INTERVENTIONS IN THE MANAGEMENT OF FRAGILITY FRACTURES.

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Introduction: A substantial care gap exists in the management of osteoporosis even when acknowledging the important prevalence of fragility fractures (FF). We aimed to validate the role of the clinical nurse specialist (CNS) as the main actor in a FF management program (FFMP). Methods: We collected data from 543 patients enrolled in our FFMP. Two independent physicians with expertise in osteoporosis assessed the CNS's clinical decisions, referrals and initiation of treatment. The level of agreement between CNS and physician's interventions was based on clinical evaluation and Osteoporosis Canada guidelines (2010). Results: The CNS was in charge of all recruited patients and was able to manage 73.3% of all cases. Only 26.7% of patients were referred to a physician because of complex co-morbidities or osteoporosis treatment failure (no unnecessary referrals observed, Type 2 error = 0). Only 13/543 patients should've been referred to a physician, none for undiagnosed health-threatening or death-threatening disorders. Agreement between evaluators and CNS was >97% for both referrals and clinical management decisions. Agreement between the evaluators was >96% (p=0.000). Conclusion: There was an excellent level of agreement in the decision making process between the CNS and assessing physicians. The CNS was able to manage 73.3% of FF patients that were seen in a typical fracture clinic. Nurses are able to safely and efficiently manage FF. This should have a major impact on health care accessibility and on closing the care gap in osteoporosis.

Abstract no.: 36851

NOVEL WHOLE BLOOD BIOCOMPATIBLE DEVICE OSTEOGROW - BMP6

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Purpose: The purpose of this study was to explore the mechanism of action and efficacy of low BMP6 doses in a novel whole blood biocompatible device OSTEOGROW. **Methods:** BMP6 function has been assessed in Bmp6^{-/-} mice by μ CT and skeletal histology, and has also been examined in mesenchymal stem cells (MSC), hematopoietic stem cells (HSC) and osteoclasts. Safety and efficacy of OSTEOGROW have been assessed in rats and rabbits. **Results:** OSTEOGROW required small amounts of BMP6, applied in a biocompatible blood coagulum carrier, for stimulating differentiation of MSCs and accelerated healing of critical size bone defects in animals, without bone resorption and inflammation. BMP6 decreased the number of osteoclasts derived from HSC, while BMP2 and BMP7 increased their number. **Conclusions:** Current issues and challenges with commercial bone devices may be resolved by using novel BMP6 biocompatible device OSTEOGROW, which will be clinically tested in metaphyseal bone fractures, compartments where BMP2 and BMP7 have not been effective.

Abstract no.: 36852

A ONE YEAR FUNCTIONAL OUTCOME OF ARTHROSCOPIC REPAIR OF BANKARTS LESION

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Introduction : A Bankart lesion is an injury of the antero -inferior glenoid labrum of the shoulder due to repeated anterior shoulder dislocation. This causes recurrent shoulder instability while doing overhead activities such as throwing. Aim: This is a study to evaluate the postoperative results and functional clinical outcome of patients who had undergone Arthroscopic repair of Bankarts lesion. Materials and methods: Retrospective case series analysis of 93 patients was performed to evaluate the results of arthroscopic repair of Bankart lesion over 5 years. Results were evaluated using Rowe score at 1 year. The procedure is done under General Anesthesia, beach chair position and under hypotensive anesthesia. Depending on the extent of the lesion 2 to 4 anchors are used from 5' 30 to 12`0 clock position. Generally, 2.7mm preloaded anchors are used. Post-operatively the shoulder is immobilized for 4 weeks, followed by a shoulder strengthening and mobilization regime. Results: 93 Bankarts repairs were performed in 93 patients between 2007 and 2012.Of these, 88 patients were available for follow-up evaluation at the time of this review. The mean Rowe score of all shoulders involved was 92.The Rowe score was taken only once after one year following surgery. 95.45% patients showed excellent results according to the Rowe scoring system. There was no case of re- dislocation after surgery in any of the cases . Conclusion: This study shows that patients treated with this arthroscopic Bankarts lesion repair technique have maintained excellent clinical outcomes at one year assessment

Abstract no.: 36860

VTE IN HAND-TRAUMA; DO ASSESSMENTS AND PROPHYLACTIC TREATMENT ALIGN?

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This study was undertaken to determine whether appropriate VTE pre-operative risk assessment and treatment was undertaken in hand trauma patients. Retrospective analysis of hand trauma patients' clinical data was undertaken to determine whether patients were correctly assessed as being at risk of VTE and if this was managed appropriately. Incidence of post-operative VTE was determined by imaging analysis. Data from 47 patients was available. 90% (42) of patients were risk assessed on day one. One patient's risk assessment was completed 7days post admission and 4days post procedure. 19 (40%) patients were identified as being at risk of VTE. 17 (89%) of these were treated in accordance with hospital guidance (mechanical and pharmacological prophylaxis), one patient received LMWH alone and one received TEDS. 28 patients were assessed as being at low risk for VTE and therefore, according to guidelines, should have received no prophylaxis. However 15 (54%) of these received chemical and mechanical prophylaxis. 9 (32%) should have been identified as high-risk due to combined operating and anaesthetic time >90 minutes; 2 of these patients did not receive LMWH. 1 patient >60 having minor surgery was misidentified as low-risk. 3 (6%) patients were identified as having a post-surgical VTE. VTE is potentially life-threatening; failure to assess all patients on day one is unacceptable. Patients' risk factors are not always identified whilst prophylactic treatment is inconsistent and, worryingly, sometimes inadequate. Guideline driven education regarding VTE, its assessment and management must play a part in improving the care hand trauma patients receive.

Abstract no.: 36861

TOTAL ENBLOC SPONDYLECTOMY WITHOUT SPECIAL INSTRUMENTS; AN EXPERIENCE IN A SINGLE INSTITUTION.

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Total Enbloc spondylectomy is widely except as a standard option for treatment of primary aggressive sarcoma of the spine as well as metastatic spinal tumor. This technique provides surgical advantage as it could remove the vertebral body Enbloc, thus the tumor contamination is minimize and the chance of tumor recurrence is low. However, the original description of this technique required special instruments to be performed the operation and these instruments are not available in Thailand. We modify the surgical technique to achieve the goal of the Enbloc spondylectomy surgery without using special instruments and was successfully performed this operation in 5 cases; 1 metastatic carcinoma, 3 metastatic sarcomas and 1 primary sarcoma. The aims of this report are to demonstrate of our modification techniques and report the surgical outcomes.

Abstract no.: 36862

LUMBOPELVIC ALIGNMENT ON STANDING LATERAL RADIOGRAPH OF ADULT VOLUNTEERS AND THE CLASSIFICATION IN THE SAGITTAL ALIGNMENT OF LUMBAR SPINE.

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Introduction: Uniqueness of lumbo-pelvic alignment (LPA) was established but revealed variability among individuals. This study was aimed to 1) determine the lumbar sagittal alignment and pelvic orientation 2) simplify the data for LPA classification and 3) clarify the correlation between the classification and individual personal parameters. Methods: Radiographic measurements of 100 standing lateral radiographs were carried out using pelvic radius technique. Data were analyzed for the mean and correlations. The pelvic morphology was classified and correlated with individual personal parameters; body mass index (BMI), age and sex. Results: Relationships between the parameters were as follow; PA showed negative correlation to PR-S1 and regional lumbopelvic lordosis, but not T12-S1, and revealed positive correlation to HA-S1. PR-S1 demonstrated positive correlation to regional lumbopelvic lordosis, but revealed negative correlation to T12-S1. The average value of PR-S1 was 35°-45°. T12-S1 was significantly increased when PR-S1 was lesser than average and was significantly decreased when PR-S1 was above the average. PR-L4 and PR-L5 were significantly reduced when PR-S1 was smaller than average, and only PR-L5 was significantly increased when PR-S1 was above the average value. PR-L2 remained constant even with the changed of PR-S1. The LPA was classified in to 3 types according to PR-S1. Each LPA type was associated with sex but not BMI and age. Conclusion: The results from this study supported that lumbar spine and pelvis working together in order to maintain lumbo-pelvic balance. LPA demonstrates differences between male and female, not influence by body weight and remained constant in adults.

Abstract no.: 36863

EFFICACY OF LOW-DOSE INTRA-ARTICULAR TRANEXAMIC ACID IN TOTAL KNEE REPLACEMENT; A PROSPECTIVE TRIPLE-BLINDED RANDOMIZED CONTROLLED TRIAL

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Studies using intra-articular application of tranexamic acid (IA-TXA), with different dosage and techniques, successfully reduced postoperative blood loss in total knee replacement (TKR). However, best of our knowledge, the very low dose of IA-TXA with drain clamping technique in conventional TKR has not been yet studied. This study aimed to evaluate the effectiveness and dose-response effect of two low-dose IA-TXA regimens in conventional TKR on blood loss and blood transfusion. Method: A triple-blinded randomized controlled study was conducted in 135 patients undergoing conventional TKR. The patients were allocated into three groups: Control group (physiologic saline), TXA-250 group (TXA 250 mg), and TXA-500 group (TXA 500 mg). The solution was injected after wound closure followed by drain clamping for 2 hours. Blood loss and transfusion were recorded. Duplex ultrasound was performed. Functional outcome and complication were followed for one year. Result: The mean total hemoglobin loss was 2.9 g/dL in control group compared with 2.2 g/dL in both TXA groups ($p > 0.001$). Ten patients (22%, control), six patients (13%, TXA-250) and none (TXA-500) required transfusion ($p = 0.005$). Thromboembolic events were detected in 7 patients (4 controls, 1 TXA-250, and 2 TXA-500). Functional outcome were non-significant difference between groups. Conclusions: Combined low-dose IA-TXA, as 500 mg, with 2-hour clamp drain is effective for reducing postoperative blood loss and transfusion in conventional TKR without significant difference in postoperative knee function or complication.

Abstract no.: 36865

"ALIGNMENT IN TOTAL KNEE ARTHROPLASTY"- COMPARISON OF PATIENT SPECIFIC GUIDES WITH NAVIGATION SURGERY

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Restoring mechanical alignment post-operatively has been shown to improve the outcome and longevity of a TKA. Our study aimed to compare patient specific guides versus Navigation in TKA with outcomes measures in relation to postoperative mechanical alignment and functional outcome of knee at 1 year followup. 202 patients (217 knees) were enlisted in the PSI and 148 patients (157 knees) in the navigation group. Preoperatively 171 patients had a varus and 46 had valgus deformity in the PSI group. Likewise 125 patients had a varus and 32 patients had a valgus deformity in the Navigation group. Preoperative flexion averaged 101.2° and average extension loss was 5.4° (range, 0°-30°) in the PSI group. Preoperative flexion averaged 102.4° and average extension loss was 5.1° in the navigation group. Postoperative average mechanical axis was 1.82 deg of neutral in the PSI group and 1.64 deg in the navigation group with no significant statistical difference. The coronal axis was restored to within 3° of neutral in 189 of 217 knees (87.1%) in the PSI group and in 139 of 157 knees (88.5%) in the navigation group. Femoral component malposition was higher compared to tibial component in both the groups. There was no statistical difference in the range of motion and knee scores at 1 year follow up among both the groups. We conclude that the Patient specific instrumentation gives comparable results to the navigation in total knee arthroplasty with respect to coronal limb alignment and short term functional outcome. Keywords- patient specific instrumentation, navigation, coronal alignment

Abstract no.: 36867

CLINICAL AND RADIOLOGICAL EVALUATION OF SACRAL INSUFFICIENCY FRACTURES

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〔Introduction〕 The spontaneous osteoporotic fracture of the sacrum, known as a sacral insufficiency fracture (SIF) was first described as a recognized syndrome of the elderly by Laurie, in 1982. The aim of this study is to evaluate clinical and radiological features of SIF. 〔Methods〕 We describe 11 patients with SIF diagnosed by MR imaging and bone scintigram. MR imaging revealed low signal intensity in the sacrum on T1-weighted image, and bone scintigram revealed H-shaped sign. The mean age of the patients was 87 years (range, 79-93 years) All patients had no neurological deficit and were treated conservatively. We evaluated the site of pain, association of other pelvic fracture and prognosis. 〔Results〕 The site of pain included low back in six cases, buttock region in nine cases, sacral region in three cases, thigh in five cases and leg in five cases. Five pubic fractures, three ischial fractures and one iliac fracture were associated. At final follow-up, the fractures had healed completely and the symptoms caused by SIF had resolved. 〔Conclusion〕 SIF is rare disease and is often misdiagnosed as low back pain or sciatica of unknown origin. The clinical features of SIF are similar to those of osteoporotic lumbar vertebral fractures and lumbar spinal stenosis. For this reason MR imaging are certainly ordered in these cases. If we recognize SIF and pay attention low signal intensity on T1-weighted image in the sacrum, we never misdiagnose SIF as other lumbar disease.

Abstract no.: 36870

EXTRACORPOREAL SHOCK WAVE THERAPY (ESWT) FOR PLANTAR FASCITIS , TRIPOLI EXPERIENCE

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A prospective study was made in the Physiotherapy Dept. of Hadba Khadra Hospital Tripoli March 2012-Feb.2013. Sixty two patients were followed up for one year for the effect of shockwave therapy (ECSWT) with plantar fasciitis mostly due to calcaneal spur. There were 49 women and 13 men with an average age of 42 years. Each patient was treated with 1000 impulses of shockwave at 14 kV to the affected heel. A 100-point scoring system was used for evaluation including 70 points for pain and 30 points for function. The intensity of pain was based on a visual analogue scale from 0 to 10. The overall results were 65.8% complaint-free, 28.9% significantly better, 10.3% slightly better and none unchanged or worse. The effect of shockwave therapy seemed cumulative and was time-dependent. The recurrence rate was 7%. There were no device-related problems, systemic or local complications. Shockwave therapy is a safe and effective modality in the treatment of patients with plantar fasciitis.

Abstract no.: 36872

THE NOVEL THR APPROACH.

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Introduction . Minimally invasive technique in THA had the intensive development due to the limited soft tissue damage, providing better hip function. MIS anterolateral approach leaves muscular attachment intact but provides less surgical observation. Direct lateral approach provides excellent observation, but needs the muscular detachment. Materials and Methods. We have proposed the intermediate variant of mentioned above approaches and called it a modified Mueller approach (MMA). The main features of MMA are cut off from 1 to 2 cm distal edge of the lower front portion of the gluteus minimus and lower limb movement posterior to the patient. From November 2010 and March 2013 we have performed 125 primary THR using MMA. We have checked HHS, VAS, the components positioning, analyzed the general parameters of the operation—the surgical time, blood loss, complications. Results. Mean operative time was $90,9 \pm 13,9$ minutes (65-120 min.). Intraoperative blood loss was $340 \pm 120,6$ ml (150-700) . Patients were allowed to walk with one crutch, cane - 10 days after surgery. Harris hip score after 10 days, 1.5 , 3 and 12 months was $46,3 \pm 4,1$, $69,3 \pm 3,5$, $85,2 \pm 4,8$ and $93 \pm 6,3$ points, respectively. VAS assessment 10 days after surgery was 3.6 . Component positioning analyze revealed the mean lateral inclination of the acetabular component of 51° . anteversion - 21° . Conclusions. Hip arthroplasty using MMA allows the reduction of the rehabilitation and improvement of functional outcomes.

Abstract no.: 36873

FROZEN SHOULDER, EFFECT OF MUA AS A CONSERVATIVE MEASURES

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A prospective study has been made of 66 patients with the frozen shoulder syndrome (as distinct from tendinitis, calcific deposits and frozen shoulders occurring with diabetes, post traumatic stiffness follow up for 18 months , always to their greatest recovery. There were three consecutive stages: pain, stiffness, and recovery. The stiffness stage was usually related to the duration of the recovery stage. A finding of, the longer the stiffness stage is, the longer is the recovery stage. In 19 patient's manipulation under general anesthesia (MUA) and intra-articular injection 20.cc of 5% normal saline were performed to accelerate the recovery followed by intensive course of physiotherapy. The second shoulder in 12 patients became similarly affected, within 6 months after the first, and followed a similar time sequence to the first. After recovery, slight restriction of movement was found in 24 patients, but in only 3, all of long duration, was the restriction is very problematic. MRI, carried out on both shoulders in the 24 patients during the recovery stage, showed in the affected shoulder fewer rotator cuff defects than expected at this age. The duration of diabetes and the duration of shoulder symptoms were correlated.

Abstract no.: 36879**36879**

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Introduction: There is limited evidence of efficiency of lumbar supports for primary prevention of low back pain (LBP) for the workers in the various jobs. The aim of this study is to investigate the effects of a lumbar belt on static standing workers with LBP. Methods: 12 subjects who had LBP within a month were enrolled and filled out two questionnaires, Oswestry Disability Index (ODI) and Japanese Orthopaedic Association Back Pain Evaluation Questionnaire (JOABPEQ), in advance. We used the plantar pressure measurement device embedded in a shoe insole to evaluate the motion and posture of the subjects. During standing works for two hours, the subjects pushed the pain-recording button, when they felt LBP. The examination was performed pre- and post-intervention using a lumbar belt. First appearance time of LBP (FAT), total number of LBP (TNL) and frequency of LBP in the period between the first appearance of LBP and the end of the examination (FL) were evaluated. Result: It was revealed that all subjects had static standing posture in 98% of the period by the analysis of the device. Also, FAT, TNL and FL significantly correlated with ODI (respectively, $r^2 = 0.635$, $P < 0.01$, $r^2 = 0.491$, $P < 0.05$, $r^2 = 0.378$, $P < 0.05$), but not JOABPEQ. Moreover, after the intervention, FAT was significantly prolonged ($P < 0.05$) and TNL and FL were significantly reduced ($P < 0.01$, $P < 0.05$). Conclusion: The result of this study showed that the use of a lumbar belt for the static standing workers was obviously effective in reducing LBP.

Abstract no.: 36880

**CLINICAL SERITONIN ASSESSMENT OF FIBROMYALGIA RHEUMATICA
IN EGYPT**

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low levels of serotonin have been associated with several disorders, notably clinical depression, migraine, irritable bowel syndrome, tinnitus and fibromyalgia. The aim of this study was to study the serotonin level with clinical evaluation among the Egyptian patients who suffered from primary Fibromyalgia. Sixty persons were included in the present study, which was carried out from 2009 to 2011. primary fibromyalgia represent group1 and thirty volunteers free from any Rheumatological neurological and systemic disorders, represent group 2 our study demonstrated that a statistical significant lower mean serum serotonin level 134.633 ± 113.25 was noted among group1 in relation to group2. The results of the above study suggest that meaning serum serotonin level can help in diagnosis and early detection of cases of primary fibromyalgia.

Abstract no.: 36882

**FEMORAL HEAD BLOOD FLOW AFTER FEMORAL NECK FRACTURE.
CLASSIFICATION UPDATE.**

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Introduction: Revision ratios after internal fixation of the femoral neck fracture remain high even with improvement in diagnostics and surgical techniques. Femoral head blood flow after femoral neck fracture could be an important indicator for prediction of femoral head avascular necrosis and fracture healing. Objective: The aim of the study was to find out predictive significance of relative reduction of blood flow in fractured femoral head based on the threshold value. The new classification system was proposed. Methods: 55 patients were enrolled into the study. Dynamic magnetic resonance imaging using contrast agent and internal fixation with three cannulated screws was performed within 36 hours after fracture. Relative values were calculated according to the relative blood flow reduction compared to healthy side. Patients were evaluated after 4, 6 and 12 months after injury. Conversion to a hip arthroplasty due to any reason was defined as a bad outcome. Results: Predominant blood flow type according to Konishiike classification was B (30 to 70% reduction) what was observed in 53% of cases. No significant difference between revision ratio's found comparing B and C (reduction >70%) type fractures. No revisions were performed in the patient group with remaining blood flow higher than 55% (p=0.034). Conclusions: We have proposed the update of the femoral head blood flow after femoral neck fractures classification according to the remaining blood flow threshold value. Acknowledgement: This research was funded by a grant (No. MIP- 032/2013) from the Research Council of Lithuania.

Abstract no.: 36885

SOLID ANEURYSMAL BONE CYST, FOLLOW UP OF 9 CASES AND REVIEW OF THE LITERATURE

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Solid aneurismal bone cyst or reparative granuloma of bone is a rare tumor like condition that primarily affects the bone. It was first prescribed by Jaffe et al 1953 as a non neoplastic giant cell reparative granuloma of bone. Patients and methods; This study included nine patients , five were males. Age ranged from 6 to 34 year old at presentation with mean age of 15.5 year. Femur was affected in three patients two of them was in the trochanteric region and the third was a recurrent distal femoral lesion, followed by distal tibia in two cases one of them also was a recurrent lesion.and single cases affected in proximal tibia ,distal ulna, clavicle and pelvis. All cases were histologically diagnosed either by incisional biopsy (5 cases), or after final treatment. Some cases had radiological and pathological differential diagnosis such as giant cell tumor, hyperparathyroidism and osteosarcoma. Seven cases were treated by through curettage , hydrogen peroxide lavage with or without autologous non vascularized fibula(2 cases). 2 cases were managed by enbolc excision. Follow up period ranged from 18 to 50 months with mean follow up of 33.6 months. Results; all curetted cases healed completely without local recurrence . All cases had excellent functional outcome. Conclusions; solid aneurysmal bone cyst is slightly different from ordinary type as it has wider age incidence, and it might have serious differential diagnosis as osteosarcoma but it is treated almost the same way.

Abstract no.: 36889

ORTHOPAEDIC SURGEONS AND ANAESTHETISTS: EQUALLY GOOD AT ESTIMATING FLUID VOLUMES (AND AT CHANGING LIGHT BULBS) BUT EQUALLY POOR AT ESTIMATING PROCEDURE TIMES. RESULTS OF AN EXPERIMENT

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Introduction: There are perennial disagreements between anaesthetists and surgeons regarding the estimated blood loss during surgery, and the estimated time that their surgery will take to complete. **Objectives:** We designed this study to compare the ability of orthopaedic surgeons and anaesthetists to 1) estimate fluid volumes, 2) estimate procedural times. **Methods:** Participants from 3 hospitals were randomly invited to participate in the study. They had to either be a specialist in anaesthesia or orthopaedic surgery, or a trainee in that specialty with a minimum of 2 years experience. 3 different fluid specimens were used for volume estimation. 2 videos of different lengths (150sec and 180sec) showing suturing of a banana skin were used for procedural time estimation. **Results:** 30 male anaesthetists and trainees (mean age 43 years, mean 15 years of experience) and 31 male orthopaedic surgeons and trainees participated. Orthopaedic surgeons and anaesthetists underestimated the 3 volumes by 11.2% and 16% respectively. There was no difference ($p= 0.925$) in estimating the fluid volumes between surgeons and anaesthetists. Anaesthetists overestimated the 2 procedure lengths by 21% compared to orthopaedic surgeons overestimating by 43%. **Conclusion:** In an experimental environment, orthopaedic surgeons are as good as anaesthetists in estimating fluid volumes in commonly seen surgical specimens. Both groups are poor at estimating procedure times. An orthopaedic surgeon's estimate of fluid loss during surgery should not be discounted by their anaesthetic colleagues.

Abstract no.: 36894

PATIENT-SPECIFIC POSITIONING GUIDES (PSPG) IN TOTAL KNEE ARTHROPLASTY (TKA) - IS ALIGNMENT IMPROVED?

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The key to durability in TKA is knee axis restoration with balanced flexion/extension gaps. This study compares alignment difference between conventional TKAs and PSPG TKAs. 80 PSPG TKAs performed by one surgeon were matched retrospectively to 80 randomly selected conventional TKAs performed by the same surgeon. The guides are fabricated using rapid prototyping technology based on the patient's specific anatomy obtained by MRI. Cemented, cruciate-retaining, single design components were used in all TKAs. Standard standing AP radiographs were evaluated via PACS. Outliers were defined as $>3^\circ$ from goal. The average operative time (59min/71min; $p=0.02$) and perioperative bleeding (315mL/490mL; $p=0.01$) were significantly reduced with the PSPG group. At one-year the PSPG group achieved a statistically better femoro-tibial axis alignment ($4.2^\circ/3.3^\circ$; $p=0.02$), coronal femoral component angle ($93^\circ/91^\circ$; $p=0.01$), lateral femoral component angle alignment ($86^\circ/84^\circ$; $p=0.04$) and tibial-component slope ($88^\circ/89^\circ$; $p=0.04$) with a respective significant smaller number of outliers when compared to conventional group (4.9%/21%; $p=0.03$. 7%/25%; $p=0.01$. 32%/57%; $p=0.01$. 37%/52%; $p=0.02$). No statistical differences were observed in the coronal tibial component alignment between the two groups ($91^\circ/92^\circ$; $p=0.1$). From preoperatively to post operatively the average Knee Society Score (39 to 91/38 to 92) and KS function score (35 to 90/32 to 90) respectively improved in both PSPG and control groups. No medio-lateral instability, AP instability or extensor lag were observed. PSPG improve accuracy of alignment in TKA, offer reduction in blood loss and in operating time, but the fraction of outliers remains relatively high. Larger studies are necessary to evaluate this technology.

Abstract no.: 36895

A NEW PREDICTIVE INDEX FOR BACK MUSCLE DEGENERATION AND SAGITTAL ALIGNMENT ASSOCIATED WITH AGING

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Introduction: We have already reported that the cross-sectional area (CSA) of a paraspinal muscle tends to decrease with age. Our new index, referred to as the T-back value, strongly correlated with CSA of a paraspinal muscle (K. Takayama et al. Eurospine 2011). The aim of this study was to determine the rate of occurrence of T-back values ≤ 0 and to evaluate the imaging features in patients showing these T-back values. **Methods:** A total of 704 patients who underwent an MRI of the lumbar spine at our hospital during 2010 were included. Sagittal T2-weighted MRI was used to measure lumbar lordosis (L1-S1 angle). Axial T2-weighted MRI was used to measure 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 the muscle to the attachment of the spinous process, was also measured. We then determined the rate of occurrence of T-back values ≤ 0 with age and evaluated the imaging features of them. **Results:** Of the 704 patients, 45 male (13%) and 80 female (22%) had T-back values ≤ 0 , and their mean age was 68 years. The occurrence of T-back values ≤ 0 increased markedly in individuals over 60 years of age. Their mean lumbar lordosis was 19.5 degrees. CSA of the paraspinal muscle decreased and fat infiltration increased to a greater extent in elderly patients than in patients with good sagittal balance.

Abstract no.: 36898

THE RESULTS OF CT BASED CUSTOM-MADE CEMENTLESS STEMS AFTER INTERTROCHANTERIC FEMORAL OSTEOTOMY

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Introduction: To obtain strong early fixation and proximal fixation, we used CT based custom-made stems for femora after intertrochanteric femoral osteotomy in Total Hip Arthroplasty. **Methods:** Forty hips of 36 patients were reviewed. The average age at surgery was 63 years (range, 29 to 77 years), and the average follow-up period was 8.5 years (range, 2 to 16 years). The underlying etiology was secondary osteoarthritis in 38, CDH in 1 and post traumatic osteoarthritis in 1. Intertrochanteric varus osteotomy was performed in 20 hips and intertrochanteric valgus osteotomy in 19. The Ti-6Al-4V stems designed with CT data (Kyocera Medical Corporation, Osaka) were inserted using individual rasps and CT based navigation system. Harris hip score was used for evaluation of clinical symptoms. **Results:** The average preoperative Harris hip score was 50 points (range, 19 to 74 points). At the most recent follow-up, the score was 82 points (range, 51 to 97). Thirty-nine stems were evaluated as bone-ingrown fixation and one stem as stable fibrous fixation by Engh's criteria. Five femora were evaluated as severe stress shielding by Engh's criteria. Stress shielding was observed in femora with extensive porous coating. **Discussion and Conclusions:** In conclusion, the results of a custom-made cementless stem after intertrochanteric femoral osteotomy were excellent, but stress shielding is still problem.

Abstract no.: 36899

COMPARATIVE STUDY BETWEEN BANKART REPAIR USING METAL ANCHORS AND HANDMADE GRAND KNOT ANCHORS

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purpose: The purpose of this study was to compare the clinical outcome of arthroscopic Bankart repair with metal anchor and our new technique using grand knot anchor.

*Methods: Arthroscopic Bankart repair was performed in 80 patients with complete anterior glenoid labrum tear. They were divided into 2 groups of 40 patients each, according to type of anchor used: metal anchors in group one. And our new grand knot anchor in group 2. Results were evaluated by use of the DASH score

* Results: two patients (2.5%) were lost to follow up. Comparison between groups did not show significant differences for each variable considered. Over all, according to the results, the average age was 21, all patients were done one month after injury, two cases had redislocation after surgery one in each group, external rotation lag average 5 degree in group 1 & 6 degree in group 2 the mean DASH score were ninety five points in group 1 ninety four points in group 2. ROW score was excellent in both groups. Differences between groups 1 and 2 were not significant.

*conclusion: At a short-term follow up, differences between bankart repair with metal anchor and our new grand knot technique were not significant and both effective & safe techniques for treating traumatic shoulder instability with bankart lesion.

Abstract no.: 36901

RETROSPECTIVE ANALYSIS OF SURGICAL TREATMENT OF FRACTURES OF THE DISTAL RADIUS USING LOCKED HYBRID PEEK / METAL PLATE.

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Objectives: Locked plates are new implants useful in the treatment of shaft fractures. Interest of these plates for epiphyseal fractures needs to be demonstrated . Method: 22 patients, mean age 55.7 years were reviewed. There were fractures of the distal radius type B and C according to AO classification. Treatment used a locked DRV hybrid PEEK / metal plate (Biotech International Salon de Provence. France). The average follow-up was 29 months (7-68). Results: Consolidation was acquired for all fractures. The mean postoperative outcome PRWE score was 12.6 ± 10.3 . The mean DASH score was 6.7 ± 5.4 . Range of motion averaged 68.3° for flexion and 60.7° for extension with 77° of supination and 80° of pronation. The average of the grasp strenght was 82% of the opposite healthy side. The loss of radial tilt was $3 \pm 1^\circ$, the inclination of palmar $4 \pm 1^\circ$, the shortening of the radius of 1 ± 0.5 mm in comparison with the opposite side. There are complications such as 1 Sudeck syndrom, 2 flexor tendon tenosynovitis , 1 rupture of the EPL. Conclusion : Hybrid plate DRV is an original biomechanical concept . The combination of metal and PEEK allows the device to present several advances like variable position for epiphyseal screw locking or radiolucency to check epiphyseal consolidation.

Abstract no.: 36902

SCAPHOLUNATE LIGAMENT IMPLANT DESIGN: ANATOMICAL AND SURGICAL CONSTRAINTS.

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ScaphoLunate Interosseous Ligament (SLIL) lesion can occur after a falling on an outstretched wrist. This lesion can lead to carpal instability. If the SLIL tears are detected early, it is possible to repair the ligament. If the ligament is left untreated, the SLIL instability can evolve into carpal arthristis called ScaphoLunate Advanced Collapse (SLAC). To prevent SLAC, partial bone fusion such are well known. But these techniques modify carpal kinematics and involve a Range of Motion (ROM) loss. Different prostheses were proposed for patients with arthritis. However, most part of these prostheses does not match an acceptable compromise between ROM allowed and their mechanical strength. This paper presents an implant to replace SLIL dorsal part when the ligament is no more repairable and before apparition of SLAC. The implant has to restore normal carpal kinematics and mechanical behavior of the carpus. Kinematic constraints of the implant were derived of measured bones displacements. Using 3D best-fit method, their mean values and uncertainties were determined. Mechanical behavior of the implant was defined by stiffness and elongation of the SLIL. Strain energy of native ligament was a relevant characteristic to specify the implant behavior. Finite Element Analysis of the most critical case of kinematic constraints was performed to validate the implant design. Moreover, surgical and anatomical constraints led to a small spatial requirement to avoid dorsal impingement. Using an index of material capability, choice of a suitable material was discussed. Finally, implant design and its method are presented satisfying all previous constraints.

Abstract no.: 36904

A SHORT-TAPERED FEMORAL STEM IS MORE PRONE TO SAGITTAL MAL-POSITIONING

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Introduction: The use of short-tapered femoral stems in total hip arthroplasty is increasing. However, few data have been published regarding the risk of sagittal mal-alignment of these stems. Our hypothesis was that a short-tapered stem is more prone to sagittal mal-positioning than a standard tapered femoral stems. A secondary aim was to assess the cause of this malalignment. **Methods:** We retrospectively reviewed the immediate post-operative radiographs of 190 hips (95 on each group) who underwent a total hip arthroplasty by a single surgeon through a direct lateral approach. A standard tapered femoral stem (Corial, Depuy Synthes) or short-tapered stem (Tri-Lock BPS, Depuy Synthes) was inserted on either group. The femoral stem position was assessed in the sagittal view using the computer-assisted EBRA-FCA (EinzelBildRontgenAnalyse-Femoral Component Analysis) method. All radiographic measurements were performed twice with a time interval of at least 3 weeks by a single independent observer who was not involved in the management of these cases. **Results:** There was a significant difference between the two stems in the sagittal stem orientation ($p=0.01$). The short stem was significantly more prone to sagittal mal-alignment. This possibly was due to the loss of guiding effect of the femoral shaft when using a short stem. **Conclusion:** Our results illustrate that a neutral stem tip position in THA is significantly more difficult to obtain with a short tapered stem, when compared to a long standard tapered stem. Further studies are required to assess any effect on the functional outcomes and survival of these stems.

Abstract no.: 36905

THE USE OF A CUSTOM STEM -EXTENSION FOR THE MANAGEMENT OF PERIPROSTHETIC FEMORAL NONUNION

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Periprosthetic femoral nonunion associated with total hip arthroplasty is an infrequent complication. However, the increasing worldwide incidence of periprosthetic fractures is expected to result in a higher number of complications, including fracture nonunion. A periprosthetic fracture around a well-fixed stem (e.g., Vancouver type B1)³ is a difficult complication to manage, and it often requires both an arthroplasty and the skills of a trauma surgeon. Nonunion fractures are even more challenging; they have a high rate of complications and relatively poor functional outcomes. We present two cases of periprosthetic femoral nonunion around a stable cylindrical stem. The first nonunion occurred following an intraoperative periprosthetic fracture, and the second nonunion occurred following a postoperative fracture, after which a custom stem extension had been added to the conventional fixation method. After this combination of intramedullary and extramedullary or hybrid fixation, stability was achieved at the nonunion site, and healing was obtained in both patients. To our knowledge, the use of this type of custom made porous-coated prosthesis has not been previously reported. In conclusion, the custom stem extensions provided the advantages of long-stem revision while allowing retention of the well-fixed femoral stem. Hybrid fixation utilizing a custom made stem extension was safe and effective, and it allowed stable fixation and early mobilization in our patients. We recommend use of this technique in cases of periprosthetic femoral nonunion in the setting of a well-fixed cylindrical stem when conventional fixation methods alone have failed to obtain union.

Abstract no.: 36907

METALLOSIS-INDUCED ILIOPSOAS BURSAL CYST CAUSING VENOUS OBSTRUCTION AND LOWER-LIMB SWELLING AFTER METAL-ON-METAL THA

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The formation of iliopsoas bursal cystic lesions after total hip arthroplasty is an infrequently reported condition. This article describes an unusual complication of a current-generation metal-on-metal total hip arthroplasty. A woman presented with unilateral spontaneous lower-limb swelling that developed 5 years postoperatively. It has occurred secondary to venous obstruction by a metallosis-induced iliopsoas bursal cyst associated with markedly elevated intralesional cobalt and chromium levels. Metal artifact reduction sequence magnetic resonance imaging showed that the bursal cyst was communicating with the hip joint and that it severely compressed the common femoral vein. Based on the findings of high local tissue metal ions and vertical cup positioning causing edge loading, the authors proposed an inflammatory reaction to metal debris that tracked into the iliopsoas bursa and formed a cyst. The patient underwent revision of the excessively vertical acetabular component and conversion to a ceramic-on-ceramic bearing interface, drainage of the bursal cyst, and synovectomy. No signs existed of local recurrence at 1-year follow-up. To our knowledge, the occurrence of metallosis-induced iliopsoas bursitis with secondary pressure effects after contemporary metal-on-metal total hip arthroplasty has not been reported. When treating hip dysplasia, one must avoid maximizing cup-host bone contact at the risk of oververticalization. Iliopsoas bursal cystic lesions can lead to severe vascular compressive symptoms with no ominous radiographic findings. Physicians and orthopedic surgeons should be aware of the possibility of this complication in patients with unexplained unilateral lower-limb swelling.

Abstract no.: 36909

GRAFT POSITION AFTER ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION USING A FREE-HAND DRILLED TRANSTIBIAL TECHNIQUE: A RADIOGRAPHIC STUDY

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Objective: Femoral tunnel positioning during single-bundle ACL reconstruction can be performed through a transtibial or anteromedial portal techniques. The transtibial technique carries the theoretical risk of vertical placement of the femoral tunnel in the intercondylar notch. The aim of the study was to assess the efficacy of a free-hand drilled-transtibial technique in achieving optimal graft positioning. To our knowledge, this technique has never been described. Methods: We analyzed a retrospective series of postoperative knee radiographs in 52 consecutive patients who underwent a single-bundle ACL reconstruction by a single surgeon using this transtibial method, from June 2009 through January 2010. Tunnel positioning was radiographically assessed by an independent single observer. The graft inclination angle, the coronal and the sagittal femoral and tibial tunnel placements were evaluated. Results: Postoperative radiographs of 40 patients (40 knees) were retrospectively evaluated for femoral and tibial tunnel positioning. In the coronal plane, the mean graft inclination angle was 21°, the femoral tunnel was positioned at a mean of 43% lateral to the lateral femoral condyle and the tibial tunnel at a mean of 46% lateral to the medial border of the medial tibial plateau. In the sagittal plane, the femoral tunnel was placed at 84% posteriorly across Blumensaat's line and the tibial tunnel at a mean of 43% along the length of the tibial plateau. The results were consistent with optimal tunnel positioning according to anatomic and clinical studies. Conclusion: The transtibial technique described our report can achieve optimal tunnel positioning for single-bundle ACL reconstruction.

Abstract no.: 36912

OUR RESULTS OF ASR-TOTAL HIP REPLACEMENT AT MID-TERM FOLLOW UP

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We report the outcome of ASR-total hip replacement in 16 patients which was performed by the same surgeon between February 2004 and February 2010. Of the 16 hips, 12 hips were revised for failed resurfacings and 4 hips were primaries. The mean length of follow-up was five years (2 to 10). There were no deaths and none of the patients was lost to follow-up. None of the hips underwent any further revision. Functional Harris hip scores, radiological assessment using the EBRA method and metal ions were recorded. The results of the total hip group were compared with those of a control group of age matched patients. In the latter group there were 500 resurfacings performed during the same period by the same surgeon. The outcome of the hybrid group was comparable with that of the resurfacing group. Long-term follow-up is advocated to monitor the outcome of these cases.

Abstract no.: 36923

TO EVALUATE THE ROLE OF PLATELET RICH PLASMA IN BIOLOGIC ENHANCEMENT OF HEALING OF ACUTE FRACTURES OF FEMUR

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Aims: To evaluate the role of platelet rich plasma (PRP) in healing of acute fractures of femur stabilized with interlocking nails. **Methods:** Seventy two patients of traumatic fracture shaft of femur operated with femoral interlocking nails (closed or open) were included in this prospective, randomized, controlled study. Patients were divided into 4 groups: group A (n=14) operated with closed intramedullary nailing and PRP injection at the fracture site under radiological control; group B (n=19) operated with open intramedullary nailing and PRP gel application at the fracture site; group C (n=16) operated with closed intramedullary nailing; and group D (n=23) operated with open intramedullary nailing. Clinical assessment was done according to Calori criteria and radiological assessment was done by monthly cortex to callus ratio measurement till 6 months. **Results:** No significant difference was observed (p value >0.05) in the clinical improvement of the patients in 4 groups on the basis of Calori criteria. Significant difference was observed in cortex to callus ratio on comparing group B (ORIF with PRP) with group D (ORIF without PRP) in third month of follow up (p value<0.05). Group B (ORIF) was having no significant difference when compared to group A & C (CRIF). **Conclusion:** We conclude that PRP does have an osteogenic potential in the early stages of bone healing especially in patients operated with open technique. The cocktail of growth factors of PRP and matrix scaffold provided by fibrin membrane can provide an artificial hematoma effect in fracture in these patients.

Abstract no.: 36925

CORRELATION OF MRA/MRI SCANS FINDINGS WITH THAT OF SHOULDER ARTHROSCOPY GAUTAM REDDY, J CASALETTO. SHOULDER UNIT, ARROWE PARK HOSPITAL, WIRRAL UNIVERSITY TEACHING HOSPITAL NHS TRUST, WIRRAL, CH49 5PE, UNITED KINGDOM.

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Aim: To look at the accuracy of MRA/MRI reporting by comparing with shoulder arthroscopic findings. Background: MRA and MRI are the most commonly done investigation. Though MRA being more sensitive and specific compared to MRI, Arthroscopy remained the gold standard. Methodology: Retrospective study for a period of 7 months. 86 patients had shoulder arthroscopic procedures. These were performed by four experienced shoulder surgeons and the MRA/MRI was reported by two experienced musculoskeletal radiologists. Results: Among the 86 patients 15 patients had MRA, 20 patients had MRI, 4 patients had US and 2 patients had CT scan. 52% patients had no scans before the operation and this showed good number of patients pathology was diagnosed clinically. MRA had 100% sensitivity and 100% specificity for labral/SLAP lesions whereas MRI had 75% sensitivity and 100% specificity. MRI had 87.5% sensitivity and 83.3% specificity for rotatory-cuff lesions. MRA was able to pick up Chondral surface damage in 1 out of 2 cases, whereas MRI was unable to pick up in all the 3 cases. MRI was able to pick up synovitis in 1 out of 6 cases, whereas MRA was unable to pick up in all the 4 cases. Conclusion: 1. MRA had high sensitivity and specificity for labral pathology and for cuff injuries MRI had better results. 2. Partial thickness tears of cuff are causing false positive & negatives on MRI scans. 3. Synovitis is difficult to pick up on MRA/MRI. 4. Both MRA & MRI were poor in detecting Articular cartilage damages.

Abstract no.: 36926

TOTAL KNEE ARTHROPLASTY USING PATIENT SPECIFIC GUIDES IN OBESE PATIENTS- OUR EXPERIENCE IN 105 KNEES

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Purpose Total Knee Arthroplasty (TKA) is a challenging procedure in patients with patients with a high BMI. Appreciation of normal anatomy is difficult and large soft tissue bulk may interfere with proper placement of standard jigs, leading to abnormal mechanical alignment. The aim of study was to assess the outcome and accuracy of restoration of mechanical alignment in TKA using Patient specific guides involving patients with high BMI. **Materials and Methods** Patients with BMI of 30 or over were enrolled in the study. Total knee arthroplasty was planned after a preoperative MRI and long leg films using Customized patient specific guides (PSG) (Visionaire: Smith & Nephew). **Results** Of the 105 patients in the study, average BMI was 35.22 (30-56). 19 pts (18%) had class III obesity (≥ 40 Kg/m²). The average blood loss and operative times were 236.1 ml and 93.8 min. The average postoperative mechanical axis was noted to be 1.98° (range 0-9). 90 patients (86.7%) had mechanical alignment within 3 degrees of neutral. 1 patient had deep infection that required a two stage revision. The average postop ROM at 1 year follow up was 108.20. **Conclusion** PSG technology reliably restores the mechanical axis, reduces bleeding and operative time in patients with high BMI. Intraoperative, immediate postoperative and early results at 1 year follow up in our series is no different to the normal population. Surgeons should use these customized jigs as a guide and adjust the size of components, alignment and rotation according to normal surgical principles. **Keywords** - Patient specific, Obesity, Knee arthroplasty

Abstract no.: 36933

NEGLECTED LOWER POLE FRACTURE OF THE PATELLA: SURGICAL TREATMENT WITH ANCHOR SUTURE AND PATELLOTIBIAL CERCLAGE WIRING: A CASE REPORT

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For neglected fractures of the patella presented late it is technically difficult to achieve anatomic reduction and stable fixation. A 58 year-old male was referred to our hospital following a fall onto the left knee before 40 days. A six centimeters gap was observed at the lower pole of patella on clinical examination, he couldn't extend his left knee actively. A longitudinal midline incision was made from 5 cm above the superior pole of the patella to the tibial tubercle. The fibrous tissue between the fracture ends was cleared and the ends were freshened. In the proximal fragment of the patella, three suture anchors were inserted horizontally at intervals of approximately 10 mm. and at a 45° angle to the patella horizontally 3 longitudinal drill holes were performed in the distal patellar fragment and sutures of the anchors were passed distally through these holes and sutured to the patellar tendon. To prevent anchor pull-out, or failure, an additional patellotibial cerclage wiring was performed to neutralize the bending-distraction forces. Controlled range of motion exercises and full weightbearing were allowed. There was no postoperative complication (Anchor pullout, cerclage wire breakage, post-operative pain, infection). At three month follow-up, the knee was painless with full range of motion, the patient was advised to resume his normal activities. After achieving accurate reduction and stable fixation with anchor sutures and an additional patellotibial cerclage wiring, good functional results can be obtained without complication for the surgical management of neglected lower pole fracture of the patella.

Abstract no.: 36935

**RUPTURE OF COMMON FEMORAL ARTERY DURING TOTAL HIP
ARTHROPLASTY FOR PYOGENIC ARTHRITIS SEQUELAE OF THE HIP:
A CASE REPORT**

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Vascular injury is a rare but serious complication following primary or revision hip arthroplasty. It may occur in cases of hip dysplasia or infectious arthritis sequelae due to distortion of the normal anatomy of bone and soft tissues around the hip joint. We present a case of rupture of the common femoral artery during total hip arthroplasty (THA) for pyogenic arthritis sequelae of the hip in an adult. The case highlights the timing of prosthesis insertion extracted following the vascular injury as well as the need for an angiogram prior to surgery especially in situations dealing with chronic conditions around the hip.

Abstract no.: 36940

THE ARCHITECT OF COLUMNAR RECONSTRUCTION IN COMPLEX TIBIAL PLATEAU FRACTURES

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Introduction: Early range of motion after stable fixation is the target during management of complex tibial plateau fractures. The three column theory represents an aid in the awareness of fracture pattern. Specific column fixation is crucial to improve the functional outcome as well as anatomical reduction of the articular surface. Materials and methods: In the period between September 2009 and December 2013, a prospective study including forty-three patients with Schatzker grade V and VI was conducted. Patients were sub-grouped according to the CT based three column classification. Two staged protocol was done for all patients (spanning external fixation followed by definitive open reduction and internal fixation) with average time between the two stages is nine days. Combination of the antero-lateral, postero-medial, postero-lateral and antero-medial approaches was utilized in the definitive surgery. Locking plates, 3.5 mm T-plates and raft technique screws were used for fixation. Results: The minimal follow up period was 20 months. All cases had a satisfactory reduction for the affected columns with preservation of the mechanical axes. The functional outcome at the last follow up using the HSS was 87 and the range of motion was average from 0 to 124. We had four cases of superficial infection and one case with common peroneal injury (improved two months after surgery). Conclusion: Authors recommend application of the CT based three column classification as the reconstruction of affected columns with preservation of the mechanical axis is the most important predictive factor in management of complex tibial plateau fractures.

Abstract no.: 36941

THE REFINED 3 R APPROACH- RESECTION , RECONSTRUCTION AND REHABILITATION FOR CONGENITAL PSEUDOARTHROSIS OF TIBIA.

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The biological defect and deformity, makes Congenital pseudoarthrosis of tibia (CPT) one of the most difficult to treat orthopedic disorder & poses huge challenge towards desirable results. The tendency to deform & re-fracture is also threatening. The treatment mostly consists of resection of pathological part of bone and reconstruction with bone grafts (including vascularized), or bone transport/ lengthening . Common problem associated are precarious soft tissue , lack of availability for autologous grafts , resultant shortening, late re-fracture and recurrence of deformity. We discuss in this Paper an integrated refined 3 R- approach which includes “Resection” with preservation of local biology & vascularity through minimal invasiveness. A 3 step “Reconstruction” :a. stabilization with intramedullary implants, b. autologous bone graft engineered in-situ from the pseudoarthrosis part of bone & preserved with local vascularity additionally reinforced with infiltration of bone marrow aspirate / plasma rich platelets and c. application of Ilizarov external fixator to overcome shortening and control the deformity, utilizing the principles of distraction histogenesis ,hence promoting increased blood supply to the local bone. And “Rehabilitation” till normalcy, including protection with weight bearing knee -ankle Orthosis , occupational and psychological support. We analyze 7 such cases with detail observations , results including complications and reasons for failures . It is concluded that for an effective solution a holistic refined approach such as 3R (resection , reconstruction , rehabilitation) aimed towards preservation of every little thing , resolves CPT towards favorable & predictable outcome.

Abstract no.: 36942

"WITCH-DEFORMITY OF BILATERAL FEET"

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A teenaged girl suffering from extreme deformity of both feet , secondary to neurological (operated myelo-meningocoele) involvement, is reported. Her both feet were turned backwards (toes) and ankle faced forward . She was walking mainly on ankles, with two stick support. She had trophical ulcers and diminished sensation on dorsal aspect . She suffered from severe Psychological depression and was facing very awkward social behavior at her village. She had been offered amputation previously but refused . A single stage reconstruction was planned with tibia-ankle-talus (anterior wedge) resection, fusion and Ilizarov external fixator stabilization. Functional correction was achieved and dorsal ulcers healed in due time . A cast support was given to her later, which was replaced by suitable orthosis. Though there was a huge threat to the vascularity in acute correction , a well planned procedure minimized it and no vascular defects developed ; the surgical scar healed well. Coincidentally she reported recovery of sensations in both the feet .She has a short height due to loss of length of both the legs, secondary to resection and fusion. It was planned to do leg lengthening in second phase but she does not wish to have so now. She is an independent walker and have recovered Psychologically. In India, it is popular belief "Witches" have such feet which are totally reversed leading to huge social discrimination of such girls. Educating through such treated cases would help in rebuilding the faith in such child & society.

Abstract no.: 36945

EFFECT OF THIGH MUSCLE STRENGTH ON THE MANAGEMENT OF PATIENTS WITH OSTEOARTHRITIS OF THE KNEE

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Lower limb strengthening exercises are an important component of the treatment regimen for osteoarthritis (OA) of the knee. Strengthening the hip abductor and adductor muscles may influence joint loading and/or OA-related symptoms. The objective of the present study was to examine the effect of hip muscle strength on OA of the knee. The present study included 20 patients ranging in age from 45 to 60 years with a body mass index $<30 \text{ kg/m}^2$. This group underwent hip abduction and adduction strengthening exercises in addition to receiving a traditional exercise program in the form of stretching exercises for the hamstring and calf muscles, and strengthening exercises for the quadriceps and hamstring muscles. The treatment regimen was applied three times per week for a period of six weeks. Outcome measures included pain severity assessed by visual analogue scale; range of motion (ROM) assessed by universal goniometer; and functional activity level assessed by the Western Ontario and McMaster Universities Osteoarthritis (WOMAC) index scale. Measurements were performed pre- and post-treatment. Statistical analysis of the results revealed significant differences with respect to pain assessed by visual analogue scale ($P<0.001$); ROM of active flexion ($P<0.001$); ROM of passive flexion ($P<0.001$); ROM of active extension ($P<0.001$); and ROM of passive extension ($P<0.001$). Significant differences were also found using the WOMAC scale for measures of pain ($P<0.001$), stiffness ($P<0.001$) and physical function ($P<0.001$). Strengthening exercises targeting the abductor and adductor hip muscles proved to be beneficial in the treatment of patients with knee OA.

Abstract no.: 36946

TRANSIENT MOTOR WEAKNESS OF THE LOWER LIMBS FOLLOWING LUMBAR FUSION

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Introduction: Motor weakness of the lower limbs is sometimes seen following lumbar fusion. We investigated whether postoperative changes in spinal alignment caused the motor weakness. Methods: The subject was 92 patients who underwent lumbar fusion. Their mean age at surgery was 71 years old. The mean follow up period was 15 months. These patients were divided into 2 groups; the patients with postoperative motor weakness (group P) or those without it (group N). Cobb's angle in antero-posterior (A-P) and lateral view of preoperative X-rays, and the change of Cobb's angle in A-P and lateral view of X-rays by surgery were compared between the groups. In the group P, the course was researched. Results: Group P had 7 cases of 92 patients at 1 month after surgery. No difference was seen in preoperative Cobb's angle and the change of Cobb's angle in lateral view between the groups. The preoperative Cobb's angle and the change of Cobb's angle in A-P view in P group was significantly greater than those in N groups ($p=0.017$, 0.002). In 6 cases of group P, muscle strength recovered to the initial value within 6 months. Conclusion: Motor weakness was seen in cases with larger preoperative Cobb's angle and larger surgical correction in the coronal plane. We suspected that excessive correction of scoliosis and traumatic handling of the nerve root might stretch the nerve roots and induce transient motor weakness. It is important to understand the mechanism and the course of motor weakness.

Abstract no.: 36947

FUNCTIONAL OUTCOMES OF NAVIGATION-ASSISTED TOTAL KNEE ARTHROPLASTY AT MID-TERM FOLLOW UP

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Aim. The aim of this study is to investigate the functional outcomes of navigation-assisted total knee arthroplasty (TKA) after an average follow up of 2.5 years. **Method.** Between December 2004 and December 2009, a total of 151TKAs in 97 patients were performed by the same surgeon at a single institution. Of the 151 procedures, 78 were navigation-assisted and were compared with the remaining 76 conventional TKAs. Hospital for Special Surgery (HSS) knee score and radiographic measurements of all patients in both groups were recorded preoperatively and for a minimum duration of 1-year-follow up. **Results.** The survivorship of all knees was 99.3%. Only, one patient required revision due to deep infection. No statistically significant difference was noted for HSS scores in both groups; however, TKAs performed using navigation-assistance consistently results in good outcomes with low variance. **Conclusion.** Navigation-assisted TKA produces good clinical outcomes comparable to conventional TKA that are consistent and reproducible. Further studies with longer follow up are required to assess functional outcomes of navigation-assistance in TKAs.

Abstract no.: 36949

ANALYSIS OF SUBSIDENCE OF INTERVERTEBRAL SPACERS AFTER POSTERIOR LUMBAR INTERBODY FUSION

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Introduction: Many intervertebral spacers have been used for PLIF. However, few reports have examined the subsidence. We determined whether the subsidence affected clinical outcome, and identified factors that influenced subsidence. Methods: We reviewed 40 patients who underwent PLIF using Prospace™. The mean postoperative follow-up period was 18.1 months. Clinical outcome was evaluated in patients with subsidence of spacers (group S, n=7) and those without subsidence (group N, n=33) by the recovery rate of JOA score. The following parameters were compared between the groups: gender, BMI, disc height in the anterior and posterior border of the vertebral body and the intervertebral angles in flexion and extension positions in preoperative X-rays. Results: Of 83 spacers, 14 (7 patients, 8 intervertebral spaces) subsided during postoperative follow-up. No significant difference was seen in the recovery rate of JOA score. Of the 7 cases in group S, 6 were females. Although the mean BMI in group S tended to be larger, the difference was not significant ($p=0.13$). Preoperative disc heights in group S were smaller than in group N in both the anterior and posterior border ($p=0.0006$, $p=0.0001$). The mean preoperative intervertebral angles in the flexion position did not differ significantly, but this angle in the extension position was smaller in group S ($p=0.01$). Conclusions: Intervertebral spacers tended to subside in female and overweight patients, but subsidence of spacers did not affect clinical outcome. In cases with smaller preoperative disc heights and intervertebral angle in extension, spacers tend to subside into the vertebral endplate.

Abstract no.: 36953

"SEARCH FOR THE SUBTLE REASONS FOR FAILURE OF UNION AFTER INTERLOCK NAILING."

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This retrospective study was undertaken to find out the subtle causes for failure to unite, after the stabilization with Interlock nailing of fractures of long bones of lower limb at our center during last 5 years. A total of 258 case with followup of more than 18 months are analyzed towards the outcomes. Out of this 32 cases have failed to unite. The observations and statistical outcome of the same are done. In 69% cases static locking had been performed. The main reasons identified are small gap of less than 5 mm at the fracture site, breaking / bending / loosening of interlocking screws, late infections specially at the interlocking screws site , and breaking of nail due to early weight bearing on thin nails I (less than 10mm) . In cases of dynamically interlocked nail , chief cause happen to be wrong selection of dynamization end , failed dynamization and persistent instability; intact other bone(fibula). Interestingly too long and too short nailing also seemed to be a reason for failure despite adequate reduction. It is concluded that despite the reductions looking acceptable, and fixed well , the Interlock nailing per se, specially the static one can lead to failure to unite . If not done appropriately, small omissions such as above predisposes to non / delayed unions.

Abstract no.: 36955

LUMBARPELVIC TRANSPEDICULAR FIXATION. THE RESULTS OF OUR 12-TH YEARS" EXPERIENCE.

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We traced follow-up results of treatment of patients, who underwent lumbarpelvic transpedicular fixation. In our hospital within the period from 2002 to 2013 12 patients were operated, 5 men and 7 women among them; their age varied from 17 to 47 years. Clinical manifestation varied from pain and radicular syndromes to pareses and paralyses. Patients had the following pathology: 7 cases of pelvis fractures, 3 cases of dysplastic spondylolisthesis of 3-4 grade; 1 operation was made in case of tubercular spondylitis, and 1 – after resection of the 5-th lumbar vertebra because of chordoma. Patients with instable pathology of lumbar spine underwent second stage of surgery – ventral spondylodesis with bone grafts. Short-term (before 1 year) results were traced in all patients; for those, who had undergone operative treatment before 2009 year, we traced follow-up results in terms from 3 to 7 years. In all patients we managed to achieve positive results – early verticalization (5-10 days after operation); liquidation of pain syndrome and regress of neurological disorders; returning of the ability of self-service during the 1-st month after operation. Within 6-12 months after operation we observed formation of fusion. There was 1 case of superficial, and 1 of deep wound infection. The first patient recovered without operation, in the second case transpedicular fixator finally was removed, without loss of correction. The analysis of results showed, that interior lumbarpelvic transpedicular fixation allows to achieve stable fixation of operated segment, start early patients rehabilitation and reduce hospitalization terms with minimum complications.

Abstract no.: 36956

EXTRAORDINARY COMPLICATION OF HELICAL BLADE: ESCAPE AND MIGRATION WHICH CAUSED SCIATIC NERVE PALSY

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Cut-out complication can occur after the fixation of intertrochanteric fractures with proximal femoral nail antirotation (PFN-A). We represent a case with a cut-out complication that had caused sciatic nerve palsy. 70 years old male patient was hospitalised for Evans type 3 left intertrochanteric femur fracture (figure 1). In his medical history; he had lumbar stenosis and hearing impairment. The fracture was fixed with PFN-A. On postoperative radiograph; tip-apex distance was 22 millimeters, the helical blade was in center-posterior quadrant and the obtained collodiaphyseal angle was 132° . The reduction that had been obtained was; Ikuta subtype N and good according to Herman. After falling on his left lower extremity he was admitted to the hospital with cut-out complication and sciatic nerve palsy at postoperatively 1 month. A cementless unipolar hemiarthroplasty was performed as a salvage procedure. Sciatic nerve was intact when it was explored. After 6 months his sciatic nerve palsy was resolved completely. Cut-out complication can occur after management of intertrochanteric fractures especially if the head-neck fixing device is implanted inappropriately. In our case the position of the helical blade is in an appropriate position. Interestingly the cut-out complication had occurred and caused sciatic nerve palsy. In our knowledge sciatic nerve palsy is not reported in the literature as a result of cut-out complication.

Abstract no.: 36957

CAN INTERTROCHANTERIC FEMUR FRACTURES BE NAILED PROPERLY IN LATERAL DECUBITUS POSITION WITHOUT TRACTION TABLE: RETROSPECTIVE ANALYSIS OF 207 PATIENTS

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The purpose of this study is to evaluate if intertrochanteric femur fractures can be reduced and nailed properly in lateral decubitus position without traction table by using PFNA as a fixing device. 207 patients were enrolled in this study (81 male and 126 female). All of the procedures were performed in lateral decubitus position. On the basis of Evans Classification; there were 7 type 1, 40 type 2, 33 type 3, 38 type 4, 61 type 5 and 28 reverse oblique fractures. The mean age was 75 (22-95 years). On the immediate postoperative radiographs; Baumgaertner tip-apex distance (TAD) and the quadrant of the helical blade according to Cleveland and Bosworth, Ikuta's reduction subgroup, collodiaphyseal angle and reduction gaps were measured. Mean follow-up time was 20.4 months (6-38). According to Ikuta's classification; the number of reduced fractures in Subtype N was 176 (85%), 15 (7.3%) in Subtype P and 16 (7.7%) in Subtype A. We obtained 99% good or acceptable reduction according to Herman criteria. Mean Baumgaertner TAD was 29.2 millimeters. The mean operation time was 57.2 minutes. Optimal blade position (center-center or inferior-center) had been achieved in 53.5% of the patients and only in 2.4% of the patients this localization was superior-posterior quadrants. Cut-out complication occurred in nine patients (4.3%). Although the ideal values of quadrant placement and TAD have not been provided by nailing of the intertrochanteric fractures in lateral decubitus position, the results are encouraging probably because of excellent stability that is provided by PFNA.

Abstract no.: 36971

OUTCOME OF HAND MANIPULATION UNDER GENERAL ANAESTHESIA FOR POST OPERATIVE HAND STIFFNESS

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Post operative hand stiffness is a grave problem causing significant functional disability in the patient. It is indicated that manipulation of the digits under general anesthesia helps regain hand function. The present study aimed at assessing outcome of hand manipulation under short total intra-venous general anaesthesia for post operative hand stiffness. We selected a sample of 25 patient, presenting with post operative hand stiffness at Dr. R.N. Cooper hospital after satisfying certain inclusion and exclusion criteria. Patients were assessed on Sollerman Hand function test before intervention and after intervention to assess outcome. Manipulation was done under General anaesthesia for post operative hand stiffness. To obtain a homogenous sample similar anaesthetic procedure was adopted in each patient. Jebsen hand function test was used to analyze the result of the study. RESULTS: Hand function improved significantly after hand manipulation as per Sollerman hand function score and reduced the temporary and the permanant disability which can arise a a resuolt of such injuries.

Abstract no.: 36976

EVALUATING THE ROLE OF VERTEBROPLASTY IN TRAUMATIC SPINAL FRACTURES

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Introduction:Conservative treatment of stable spinal fractures involves bed rest for prolonged period and related morbidity. Therefore there is increased interest towards use of minimally invasive methods like vertebroplasty to facilitate early rehabilitation. Vertebroplasty is being commonly used for treatment of osteoporotic and neoplastic compression fracture. However its role in traumatic fractures is controversial.In this study we intend to prove the efficacy of vertebroplasty in stable traumatic spinal fractures. **Materials and methods:** 30 patients with stable traumatic spinal fractures were treated with vertebroplasty. The average age of intervention was 24 years. The average time of intervention was 8 days. Patients were evaluated with VAS score and Roland-Morris Disability Questionnaire (RDQ) scores and also for amount of medication required for pain relief. **Results:** VAS and RDQ scores improved considerably and amount of medication required for pain relief also decreased. **Conclusion:** Vertebroplasty does improve the pain and disability in patients with stable traumatic fracture. It is a good minimally invasive technique to relieve pain and bridge the gap between conservative methods and extensive surgeries.

Abstract no.: 36977

**TOTAL HIP ARTHROPLASTY WITH A HIGHLY CROSS-LINKED
POLYETHYLENE LINER BEARING SURFACE**

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Purpose: This retrospective study was to evaluate the clinical results and to measure the wear rate of liner of cementless total hip arthroplasty (THA) with a highly cross-linked polyethylene. **Materials and Methods:** From Jan 2006 to May 2010, 60 of 78 hips that underwent THA with a highly cross-linked polyethylene (Zimmer, Warsaw, USA) were included this study. The average age of the patients was 64.5 years with an average body mass index of 23.0. The average follow-up was 3.8years. We classified the physical status of patients using ASA score before operations. Harris hip score was reviewed before THA and at last follow-up. The annual linear wear rate was measured using Dorr's method on follow-up radiographs. **Results:** The average Harris hip score was improved from 60.1 to 90.4 at last follow-up. The average of acetabular cup inclination and ante-version were 46.3° and 21.4° respectively. Linear polyethylene wear rate was 0.079mm/year. Age, gender and BMI were not statistically related to linear polyethylene wear, but duration of follow-up and acetabular cup's inclination were significant negative and positive correlation respectively. The average linear wear rate were different according to ASA score, but there were no significant difference statistically. There was recurrent dislocation in 4 hips. There was no evidence of acetabular and femoral osteolysis and aseptic loosening. No patient underwent revision arthroplasty during follow-up period. **Conclusion:** Our study show low linear wear rate of highly cross-linked polyethylene and no femoral or acetabular osteolysis.

Abstract no.: 36981

METHODS PREIMPLANTATION ACETABULOPLASTY IN TOTAL HIP ARTHROPLASTY.

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Introduction: Congenital hypoplasia or acquired defects of the acetabulum in coxarthrosis stage III-IV may be one of the reasons for revision replacement of the acetabular component. **Methods:** When planning the upcoming total articular replacement the degree of the acetabulum edges deficit should be determined. To create a full acetabulum in case of acetabular dysplastic coxarthrosis, cutter is mounted vertically. Upon reaching the inner cortical plate the cutter should be angled at 45° to the horizontal plane. In case of front subluxation of the femoral head and hypoplasia of the front edge of acetabulum it is necessary to increase the cutting edge area and height. To achieve it, half of the thickness of the rear edge of acetabulum should be cut off with the bed shift posteriorly and profoundly. In case of isolated hypoplasia of the upper edge of the acetabulum and preserved front and rear edges the upper edge should be elongated and the slope decreased. Sagittal corticotomy should be performed, with the peripheral fragment bending out. Plastic of the wedge-shaped defect is performed using autotransplant from the resected femoral head. In case of the original acetabular bottom protrusion its cruciate osteotomy with edges inward shift should be performed. The mushroom-shaped defect could be filled with autotransplant from the resected proximal articular end of the femur. **Results:** These methods of preimplantation acetabuloplasty were performed in 17 patients and let is to form a reliable bone bed for endoprosthesis cup with metal-on-metal friction pair and to avoid using of reinforcing rings and cement fixation.

Abstract no.: 36982

HOMOPLASTY TOTAL HIP IN ADVANCED AGE.

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Introduction: Femoral neck fractures resulting from osteoporosis are the most common trauma in older adults. Methods: The surgical management of osteoporosis-related femoral neck fracture in elderly patients with coxarthrosis deformans is aimed at restoring mobility and bearing function of lower extremity and movement pattern, and at relieving pain. It must return to the individuals their ability to self-care. Since 1996 up to the present day in Traumatology, Orthopedics and Field Surgery Clinic Moscow State University of Medicine and Dentistry named after A.I. Evdokimov of 520 patients aged 75 to 91 with coxarthrosis deformans and fractures of the neck of the femur have been operated. Total hip joint replacement was performed in all patients. Assessment of the hip joint condition was evaluated by clinical, anthropometric and radiological methods. Results: Our observation shows that total hip joint replacement at osteoporotic femoral neckfractures and at the third - fourth stage of coxarthrosis in elderly patients bring about favourable results for most individuals. The essential conditions of that were sound detecting of the indications for surgery, strict keeping measures for prevention of inflammatory complications, proper technique of joint replacement and adequate rehabilitation treatment. Positive results of hip joint replacement were achieved in 89 % cases.

Abstract no.: 36984

QUALITY OF LIFE OF PATIENTS WITH BILATERAL TOTAL KNEE REPLACEMENT

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Introduction:Quality of life represents a personal feeling and observations about their individual , physical, emotional and social well – being . Measuring the quality of life is important for making accurate decisions about treatment and taking measures to preserve the quality of all parts of life , especially physical function .**Objective :** The aim of this study was to estimate the influence of postoperative rehabilitation on the quality of life of patients after bilateral total knee replacement (TKA).**Materials and methods :** This prospective study included 20 patients of both gender after bilateral TKA due to major degenerative changes of the knees. All patients had stationary rehabilitation at the Rehabilitation Center "" Dr Miroslav Zotovic "" in Banja Luka,RS,BiH. The quality of life was assessed for all patients with modified WOMAC Index after postoperative rehabilitation.Parameters used for analysis were: age, sex, occupation,time between two surgical procedures, duration of rehabilitation, range of motion for flexion and extension for both knees on admission and on discharge and evaluation of quality of life with modified Womac Index on admission and on discharge after postoperative rehabilitation.**Results:** Evaluation of rehabilitation success regarding quality of life was presented with modified WOMAC Index score. For numerical data analysis we used paired-samples t-test and correlation. Results showed statistically significant improvement in quality of life for all segments. **Conclusion:** The quality of life of patients with bilateral total knee replacement was improved in all parts, especially regarding the pain, after postoperative rehabilitation.**Key words:** TKA, quality of life, WOMAC Index.

Abstract no.: 36986

QUALITY OF LIFE OF PATIENTS WITH BILATERAL TOTAL HIP ARTHROPLASTY AND PATIENTS WITH BILATERAL TOTAL KNEE ARTHROPLASTY

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Introduction: Total hip and knee arthroplasty can remove esthetic and functional defects due to degenerative joint disease. Functional results of these interventions can be measured using specific tests for health related quality of life. Objective: Goal of this study was to asses if there is a difference in the quality of life between patients with bilateral total hip arthroplasty(THA) and patients with bilateral total knee arthroplasty(TKA) before and after stationary rehabilitation. Methods: Prospective study included 123 patients (93W, 30M) after bilateral total hip arthroplasty (n=68, mean age 59,98) and bilateral total knee arthroplasty (n=55, mean age 65,2) before and after stationary rehabilitation in Institute of Physical Medicine and Rehabilitation "dr Miroslav Zotović", Banjaluka, RS,BiH. We measured quality of life for each patient using Western Ontario and McMaster Universitas Osteoarthritis Index (WOMAC) before and after stationary rehabilitation. Other measures were: profession, length of stay and other comorbidities. To determine statistical significance we used Student T-test, and t-test for independent variables to determine difference between two groups. Results: WOMAC Index score for both groups was equally good and there was no statistically significant difference in the quality of life between patients with bilateral THA and bilateral TKA ($p>0,05$), neither before or after rehabilitation. Conclusion: Good quality of life of patients with bilateral THA and TKA suggest that there is an imperative for immediate postoperative rehabilitation and that WOMAC index could have big significance in treatment planning for patients with severe degenerative joint disease. Key words: hip, knee, bilateral arthroplasty, WOMAC index.

Abstract no.: 36987

RAPID MEDIAL FEMORO-TIBIAL CHONDROLYSIS AFTER MENISCECTOMY. FIRST DESCRIPTION

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Introduction : Rapidly progressive hip osteoarthritis , lateral femoro-tibial or shoulder chondrolysis are rare but well known. To our knowledge there is no description of medial compartment lysis after arthroscopic meniscectomy. This is about one case. Case report : 64 year old patient with right knee pain due to a medial meniscus tear. Partial meniscectomy was performed. There was no infiltration of the knee. Initial evolution was favourable, but soon after the knee became painful. There were no signs of infection. After a few months, the pain increased. A new set of films showed complete narrowing of the medial compartment. Clinical exam showed no swelling, redness or stiffness , no instability, a slight varus morphotype, and medial anterior femorotibial pain with no meniscal signs. Schuss radiographs showed complete narrowing of the joint (Ahlback III). Arthro-CT Scan showed complete chondrolysis of the medial femorotibial compartment. No aspiration was done. The patient is now waiting for a medial unicompartmental knee replacement. Discussion - conclusion : To our knowledge, no rapid chondrolysis after medial meniscectomy was described. It has been described for the hip, shoulder and ankle or on the lateral compartment of the knee after meniscectomy. Regarding the medial compartment, cases of aseptic osteonecrosis were reported after meniscectomy or radiofrequency therapy. This case underlines the need for a thorough physical and radiological exam before any surgery, as to be cautious regarding meniscectomies after 60 years old. As for the hip or the shoulder, arthroplasty is the treatment of choice.

Abstract no.: 36988

OSTEOSYNTHESIS WITHOUT REVISION IN PERIPROSTHETIC FRACTURES ABOUT LOOSE FEMORAL STEMS

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Purpose: In periprosthetic femoral fractures with stem loosening conventional management has focused on revision to a long stem with combinations of plate, cerclage and grafting, or total femoral replacement. Aim of our study was to design a technique of less invasive fixation in periprosthetic fractures and deformities of the femoral shaft to provide primary stability of the stem and the femur. **Methods:** In 2009-2014 we treated 27 patients with periprosthetic fractures about loose femoral stems: Vancouver B2 – 14 (2 cemented) and Vancouver B3 – 13 (3 cemented). 17/27 stems were displaced 10 mm and more. A modification of a locked nail was developed. Its design provides tight fit of the distal part of the femoral stem. With fixator-assisted nailing it appeared attainable to reduce displaced stem position. **Results:** 21/27 patients were available for follow-up in 1 year. Outcomes in patients with uncemented stems (16/21) were good. Locking screws remained intact in all patients. Loosening around the stem disappeared to 9-12 month. Cemented cases (5/21) despite fracture union demonstrated no stem reintegration. Breakage of the stem (2/5) or locking screws (1/5) occurred to 10-12 month, and the patients were scheduled for elective revision to standard uncemented stems. **Conclusions:** In case of loose dislocated stems the presented approach provides correction of stem position, proper limb length and alignment. In patients with uncemented stems secondary stem stabilization can be expected. Breakage of 6 mm locking screws occurs after usual time of union so the event is an indicator for elective revision.

Abstract no.: 36989

TRANSCALCANEAL STEINMANN PIN FIXATION IN HIGH GRADE ANKLE FRACTURES

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High grade ankle fractures / dislocations AO TYPE – 4 3 C/ 4 4 B&C is a kind of morbid condition, which precludes one to choose a specific type of management and notorious to end up with poor outcome including amputation. Severe AO-43C/44B&C fractures are commonly associated with severe soft tissue injuries or wound contaminations due to open fractures. These specific subgroups of fractures may be associated with co-morbid conditions like elderly age, peripheral vascular disease, blistered skin, severe diabetic status, pedal edema and peripheral neuropathy. The patient factor and personality of the fracture may prevent the surgeon to do an optimal internal fixation. We describe a safe, reliable and simple method for stabilizing the ankle mortise without damaging any further soft tissue by using a transcalcaneal Steinmann pin fixation. A prospective study of 17 cases [10-open fractures, 7-closed fractures] in a mean age of 40yrs [22yrs-67yrs] were analysed. The functional and radiological outcome at the end of 2yrs of minimum followup [24months-5yrs] was studied. The pain was assessed by VAS [visual analogue scale]. The subjective, objective, clinical and radiological outcome was assessed by using AHFS [ankle hind foot scale]. Out of 17, 14 cases had AHFS > 80/100, 2 cases of AHFS [65-75] and 1 case of AHFS – 55. Patient satisfaction, questionnaire revealed extreme satisfaction of the final outcome. We strongly recommend this procedure for this selective subgroup of patients for good functional outcome [medium term] with a predictable result and least complications.

Abstract no.: 36990

**NEW CONCEPT IN CONSERVATIVE TREATMENT OF HIP DISLOCATION
AND FRACTURE DISLOCATION**

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My new concept is based on prospective study on a number of “ 58” cases for the last 50 months . 53 cases has suffered of hip dislocation , stable fracture dislocation, Pipkin fractures and transverse acetabulum fractures and were treated conservatively . 5 cases suffered of unstable poserior fracture dislocation and were fixed by plate and screws. This concept is based on conservative management of these kind of injuries mentioned above ,in a sense that hospital admission was between 3- 7 days and most of cases were treated without traction, based on clear steps of management. By this management, the patients were satisfied of early mobilization and discharge as well, medical, social and financial achievement were of great value in comparison with classical way of management. This concept might bring a big change in the whole classical modality of treatment we practice till now Thank you

Abstract no.: 36993

ACETABULAR RECONSTRUCTION WITH ALLOGRAFT BONE AND REINFORCEMENT RING ABOUT 20 CASES

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Loosening of an acetabular cup is accompanied by osteolysis the importance of which can lead to partial or total destruction of the walls and roof of the acetabulum. Materials and methods: Between 2009 and 2013, we performed 20 revisions of total hip. According to the classification SOFCOT we had 12 cases type 3, 08 cases type 4. All were rebuilt not femoral head allograft protected with ring Kerboull and cemented cup. The weight bearing was allowed to 45 jours. The average follow-up period of the series was 03 years. Results : They were reviewed clinically with all their trading PMA score (Merle D' Aubigne Postel) radiologically according to the classification of MORELAND . The consolidation of the grafts appears satisfactory after 07 months, but the bone remodeling continued for 28 months. Conclusion : The acetabular reinforcement ring Kerboull is a good solution in bone loss; it helps protect the graft during consolidation. Because of its shape and its hook, it allows refocusing anatomical position of the hip.

Abstract no.: 36996

FEMUR HEAD FRACTURES-LONG TERM OUTOCME

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Femoral head fractures i.e. Pipkin fractures are uncommon injuries. Present series is an analysis of 105 patients with femoral head fractures with 88 males and 17 females analyzed. Brumback classification showed that there were 33 brumback I, 42 Brumback II, 12 Brumback III, 8 Brumback IV and 2 were brumback V. three could not be classified. FU ranged from 2- 15 years in 62 cases. Twelve of 33 in Brumback-I were operated others had conservative treatment with 2 getting AVN. 33 of the 42 brumback II were managed by open reduction and 6 got AVN. Out of 11 Brumback III injuries, ORIF in 4 and 6 were primarily replaced. Four of the 10 brumback IV series were operated and 3 were treated for THR after about 10 years of follow up. Two of 5 type V cases were operated and 1 got THR in first month due to early failure. Out of three atypical cases two got near normal outcome. Using Thompson and Epstein criteria, out of the followed up cases 42 patients were rated as having good results, 8 fair and 5 poor results. Early OA changes in 12 patients, AVN in 11 patients and 1 patient had re-fracture. Three of the 8 patients with sciatic nerve injury, had persisting motor deficit. when the quality of life was assessed in 55 cases , there was statistical relationship with quality of life and duration since injury and initial trauma.

Abstract no.: 37003

SUBCAPITAL FEMORAL NECK OSTEOTOMY FOR HEALED SLIPPED CAPITAL FEMORAL EPIPHYSIS: RADIOGRAPHIC RESULTS AND CLINICAL OUTCOMES

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Introduction: The aim of this study was to report clinical and radiological results of subcapital osteotomy for chronic healed SCFE **Materials and Methods:** 8 patients with FAI following healed SCFE underwent Ganz surgical hip dislocation with the creation of an extended retinacular soft tissue flap for subcapital intracapsular femoral neck osteotomy. Intraoperative confirmation of the blood flow to the head of femur was done using a Doppler probe. Clinical assessment included hip scores (Harris Hip score and WOMAC scores) and range of motion assessment. Radiographic assessment included calculation of the lateral slip angle (LSA) and the anterior offset angle (AOA) on the frog leg lateral radiographs, and anterior slip angle (ASA) on AP view. **Results:** The mean age of patients at the time of surgery was 17.8 years (13-29) with a mean follow up of 41 months (20-84). None of the patients had radiographic signs of AVN/OA at the last follow up. There was improvement in all radiographic angles and hip scores postoperatively, and the improvements were comparable to the published literature. Complications included a non-union (NU) in two patients. Both the patients with NU were subsequently managed with an intertrochanteric osteotomy, and had excellent outcomes. **Conclusions:** Although technically demanding, subcapital osteotomy can achieve an effective correction of the deformity with relief of symptoms related to hip impingement.

Abstract no.: 37005

COMPARISON OF SECOND AND THIRD GENERATION OF INTRAMEDULLARY IMPLANTS IN THE TREATMENT OF TROCHANTERIC FRACTURE: SCREW VERSUS HELICAL BLADE

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Although various implants are available for fixation, the ideal implant to treat peritrochanteric fractures is still a matter of discussion. The aim of our study is to compare the radiological and functional outcomes of second generation intramedullary device Antirotation Trochanteric Nail (ATN) with third generation implant Proximal Femoral Nail Antirotation (PFNA) in the treatment of peritrochanteric fractures in elderly patients. One hundred sixty five intertrochanteric fractures were treated between January 2007 and January 2010, with a minimum 1 year follow-up. The operation time, blood loss, fluoroscopy screening time and length of hospitalization were recorded. The radiological position of implant, quality of reduction and tip-apex distance (TAD) were evaluated, and the postoperative complications, mobility and functional activities were also assessed. There were no significant differences between the ATN and PFNA groups based on general complications, length of hospitalization and functional capacity. On the other hand the average operation times, intraoperative blood loss and fluoroscopy times were longer in the ATN group. The re-operation due to implant related complications was performed in 8 patients in ATN group and 2 patients in PFNA group. The second generation implant ATN and third generation device PFNA were suitable for intertrochanteric fractures but the risk of complication and need of re-operation are higher in the patients treated with ATN.

Abstract no.: 37009

**AUTOLOGOUS MATRIX-INDUCED CHONDROGENESIS IN
OSTEOCHONDRAL DEFECTS OF THE TALAR DOME**

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Introduction: Osteochondral lesions of the talus remain a challenging problem in foot and ankle surgery especially in young active patients with underlying bone cysts. If conservative treatment fails surgical options can be undertaken which can include arthroscopic debridement with micro fracturing. Newly developed reconstructive treatment option is autologous matrix-induced chondrogenesis (AMIC), which includes the application of a collagen mesh to promote chondrocyte ingrowth and fibrous cartilage formation. There have been encouraging reports in the literature using this procedure for cartilage defects in different joints. Case report: we present a clinical case of a 61-year-old lady with active lifestyle. She presented with longstanding history of pain of her right ankle. Her MRI scan revealed a large bone cyst in the medial part of her right talus with overlying osteochondral defect. As conservative management failed surgical treatment was offered. She underwent multiple operations including drilling of the cyst and arthroscopic debridement with microfracturing which did not improve her symptoms. Latest reconstructive operation included debridement of the bone cyst with bone grafting and AMIC procedure with application of a bi-layer collagen mesh, which was held in place with fibrin glue. This procedure was carried out through a medial malleolar osteotomy. Early postoperative results are satisfactory. Conclusion: AMIC procedure for talar dome defects has encouraging early results, however long-term studies are required to evaluate this new technique.

Abstract no.: 37011

USE OF ANTIBIOTIC-IMPREGNATED CALCIUM SULPHATE FOR TREATMENT OF OSTEOMYELITIS

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Introduction: Treatment of calcaneal osteomyelitis with overlying neuropathic ulcers remains a challenge especially in diabetic patients. In most cases, administration of intravenous antibiotics is an essential part of the treatment process, however systemic side effects are common. More recently, antibiotic impregnated calcium sulphate became available to treat bone infection. CaSO_4 is a synthetic biocompatible bone graft, fully resorbable and delivers a high antibiotic load locally without systemic side effects. Case report: this study presents a clinical case of an 85-year-old lady with type II diabetes and peripheral neuropathy. She developed a neuropathic heel ulcer, which was initially managed conservatively including antibiotics. Conservative treatment failed and the ulcer was complicated by calcaneal osteomyelitis leading to sequestrum formation. She underwent surgical debridement and insertion of antibiotic loaded calcium sulphate using Vancomycin and Gentamicin. Postoperative recovery was unremarkable and her early postoperative results are satisfactory. We present multiple pre- and postoperative images including radiographs and MRI images. Conclusion: local application of antibiotic loaded calcium sulphate is a promising treatment option especially in diabetic patients with chronic osteomyelitis. Randomised long-term studies are required to assess the results of this new procedure.

Abstract no.: 37012

**TREATMENT OF CHRONIC NEUROPATHIC CALCANEAL ULCER WITH
ANTIBIOTIC INSTILLATION COMBINED WITH NEGATIVE PRESSURE
WOUND THERAPY**

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Introduction: Treatment of neuropathic heel ulcers with underlying chronic osteomyelitis can be difficult and prolonged. Traditional surgical management includes debridement and use of intravenous antibiotics. New option of local antibiotic delivery has been introduced and consists of antibiotic instillation combined with negative pressure wound therapy. This system allows the delivery of topical antibiotics or antiseptic solutions and assists wound healing and granulation tissue formation with a VAC system (vacuum assisted closure). Case report: we present a clinical case of a 45-year-old lady who developed a neuropathic limb following cauda equina syndrome during pregnancy. This resulted in a neuropathic heel ulcer with underlying chronic calcaneal osteomyelitis. She was treated with multiple surgical debridement and systemic antibiotics over long years, however her heel ulcer remained infected with *Pseudomonas*, *Proteus* and *E.coli*. Following latest debridement of ulcer and calcaneus, a VAC System (V.A.C. Instill) was applied which allowed the automated delivery and drainage of topical Gentamicin to the wound bed. Postoperative wound healing was satisfactory and characterised by fast granulation tissue growth. We present multiple pre- and postoperative images including radiographs and MRI scans related to this procedure. Conclusion: topical antibiotic installation to the wound bed combined with negative pressure wound therapy is a promising new treatment option for patients with chronic neuropathic ulcers.

Abstract no.: 37013

EARLY RESULTS OF CEMENTLESS TOTAL HIP REPLACEMENT WITH CERAMIC ON E1-POLYETHYLENE ARTICULATION

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Introduction: Total hip replacement (THR) is a frequently performed procedure with predictable results and low complication rate. There are several implants available; however there is a paucity of data reporting results of ceramic on highly crosslinked polyethylene articulations, which has recently been introduced to the market. Our aim was to assess our early results using uncemented modular Exceed ABT total hip replacement with ceramic on E1 polyethylene bearing. Methods: All consecutive THRs in our centre were retrospectively reviewed with a minimum follow up of 2 years. Patients were assessed using a questionnaire for Harris Hip Score, prosthesis survival was calculated and all radiograph and clinical notes were reviewed. Results: 317 consecutive THRs were performed on 288 patients (29 bilateral procedures) with no patients lost to follow up. Average age at surgery was 68 ± 9 . Mean follow up was 4 ± 1 years. The average preoperative Harris Hip Score was 43 and postoperative HSS was 80. There were no deaths related to the operation. Complications included five cases of superficial infection, unexplained thigh pain (2), limb length discrepancy (2), foot droop (1), DVT (3), PE (2). We recorded seven cases of dislocation and four cases of intra-operative periprosthetic fracture. Three patients required revision hip surgery for recurrent dislocation or unexplained pain. Kaplan Meier Survival analysis revealed excellent survival at 5 years for the acetabular and femoral component. Conclusion: Our results demonstrate excellent early results of uncemented Exceed ABT with E1 highly crosslinked polyethylene liner with low complication and revision rates.

Abstract no.: 37016

SPONTANEOUS RUPTURES OF THE EXTENSOR TENDONS OF THE FINGERS IN MADELUNG'S DEFORMITY (A CASE REPORT)

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madelung's deformity is a congenital malformation caused by premature closure of physis of the distal radius in its volar ulnar segment. it is defined clinically as a palmar displacement of the carpus associated with dorsal prominence of the head of the ulna. the radiological features are essentially ulnar and palmar angulation of the articular surface of the distal radius with proximal migration of the carpus. spontaneous rupture of finger tendons by attrition is an extremely rare complication of madelung's deformity. we report a case of 67 year old left handed women with bilateral madelung's deformity, predominantly affecting the left wrist. she began to notice a severe episode of pain on dorsum of the left wrist with progressive functional deterioration especially during housework. between 2012 and 2013, she experienced a sequential spontaneous loss of active extension of the little and ring fingers. on examination, she had classical bilateral madelung's deformity with an irreducible dorsal subluxation of the distal ulna and absence of active extension of the ulnar two fingers. at operation, the tendons of extensor digiti minimi and extensor digitorum communis to the little and ring fingers were found to be ruptured 5 cm distal to the head of the ulna. the defect was repaired by direct suture the neighboring intact tendons. as before, the prominent ulnar head was corrected by sauev-kapandji surgical technique. on review after seven months, she had full active finger flexion and extension.

Abstract no.: 37026

CONSENTING IN ELECTIVE TOTAL KNEE REPLACEMENT IN A DISTRICT GENERAL HOSPITAL

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Introduction: Consenting in elective total knee replacement (TKR) has fundamental ethical implications and can have serious legal consequences. Different consent forms are used in the UK, many hospitals use generic forms where procedure, risk, benefits and complications are hand written and entered for each patient individually. Methods: we reviewed 100 consent forms retrospectively, used in 100 consecutive primary TKR in a district general hospital. We assessed accuracy of consenting practice including risks, benefits and complications. Results: consenters were in 78% middle grade or senior doctors, mean age of patient was 65.5 years, consent form was present in the clinical notes in 100% with correct patient's details, correctly signed and dated by surgeons and patients. Responsible health professional was entered in 17% and a copy was given in 2% of the cases. Common complications stated on the consent form included infection in 100%, pain in 38%, bleeding in 58%, stiffness in 79% and wear in 11%. Less common complications included nerve injury in 56%, fracture in 68%, dislocation in 6%, death in 9%, leg length problems in 7%. Conclusion: Use of generic consent forms where all details of a proposed procedure are entered for each patient individually can lead to inadequate consenting with missing of important risk and complications. We recommend the use of pre-printed procedure specific consent forms.

Abstract no.: 37028

THE MUSCLE STRENGTH AROUND KNEE JOINT IS IMPORTANT FOR PATIENT'S SATISFACTION AFTER TOTAL KNEE ARTHROPLASTY

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Introduction: Total knee arthroplasty (TKA) is one of the most successful orthopedic surgeries in decreasing pain and improving the functional status of the knee. However, some studies demonstrated that patients did not always satisfy their results after TKA. The aim of this study was to determine whether the muscle strength around knee joint and walking status influence patient's satisfaction after TKA. Methods: We evaluated 54 patients who had undergone 58 primary TKAs between March 2012 and June 2013, and assessed patient-derived scores using the 2011 Knee Society Scoring System, knee extensor and flexor strength (KES, KFS), 10 meter walking test (10MWT), and timed up go test (TUG) at 4 weeks after TKAs. We determined the correlation between patient-derived scores and each variables. Results: We found strongly correlation between functional activities and both 10MWT and TUG ($r=0.700$ $p<0.01$, $r=-0.749$ $p<0.01$, respectively). But, there was no correlation between patient satisfaction and both 10MWT and TUG ($r=0.110$ $p>0.05$, $r=-0.116$ $p>0.05$, respectively). On the other hand, the KES and KFS statistically correlated with both patient satisfaction ($r=0.267$ $p=0.04$, $r=0.363$ $p<0.01$, respectively) and functional activities ($r=0.492$ $p<0.01$, $r=0.476$ $p<0.01$, respectively). Conclusion: Our study demonstrated that both the quadriceps and hamstrings strength is important for increasing patient satisfaction after TKA.

Abstract no.: 37029

FEVER AFTER TOTAL JOINT ARTHROPLASTY: USE OF A SIMPLE WORKUP TO AVOID DELAYED DISCHARGE

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With more emphasis on accelerated recovery and shorter length of stay (LOS), postoperative fever has implication for discharge planning and cost. The aims of our study were to determine which patients were at risk of developing postop fever and to investigate the usefulness of a simple, relatively inexpensive, fever workup. Under IRB approval we retrospectively reviewed all TJA patients between June 2010 and June 2011. 745 patients were identified. Of these, 137 patients were 55 or younger (Group A), 353 were 56-69 (Group B), and 258 were 70 or older (Group C). There were 455 females and 290 males. The surgical technique, anesthesia, and postoperative management of all patients was identical. Fever workup was performed in all patients with Temp>100.4. Workup included surgical site examination, chest x-ray, urinalysis, blood culture, and venous duplex. Patients were allowed discharge if the workup was negative. 251 patients developed a postoperative fever for an incidence of 34%. Group B had a significantly higher incidence of postop fever. Males were more likely to develop fever. There was no association between postop fever and complications. There was no correlation between fever and findings on the medical workup. LOS was not increased by the occurrence of fever. We found an increased incidence of postoperative fever in the middle age range and in males. Postoperative fever was not associated with infection or any other postoperative complication. The use of our simple postoperative fever workup after TJA likely led to decreased length of stay and consequently decreased cost.

Abstract no.: 37032

CLINICAL RESULTS OF ARTHROSCOPIC ANKLE ARTHRODESIS

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Fusion of the ankle is an established option for end stage degenerative joint diseases or rheumatoid arthritis. The purpose of our presentation is to show the surgical technique as well as our own results. Arthroscopic ankle arthrodesis (AAA) starts with removing all of the remaining cartilage by the anterolateral portal. The fixation is performed with two or three 6.5mm cannulated screws under the check of image intensifier. We performed the operation in 4 cases (2 males 2 females). The average age of our patients was about 68.5 years. All cases we were able to reach a solid bone fusion. All of our patients evaluated the condition after the surgery as very good or good. The average duration required to solid bony fusion was 13.3 weeks. AAA is possible to operate on patients with lesion of soft tissue of the ankle, and seems to be a reliable and effective treatment with very good outcomes.

Abstract no.: 37034

CLINICAL RESULTS OF ENDOSCOPIC ASSISTED ANTERIOR LUMBAR INTERBODY FUSION (ALIF) FOR LUMBAR DEGENERATIVE DISEASES WITH 2 YEARS FOLLOW UP

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Introduction: Anterior lumbar intervertebral fusion (ALIF) offers excellent clinical results for lumbar degenerative diseases, but with risks, such as injury of intr-abdominal organ, big vessels, large surgical wound, and poor operative field view. These disadvantages of ALIF can be overcome with the help of Endoscopic assisted microsurgery procedure. Methods: We retrospectively reviewed 47 cases of endoscopic assisted anterior lumbar interbody fusion (ALIF) for treatment of lumbar degenerative disease since April 2011. 28 cases were male and 19 female. Patient's age ranged from 39 to 65, averaged of 48 ± 11 . Of 47 cases, 17 cases had the instability in lumbar spine and 7 cases had degenerative spondylolisthesis; 16 patients had symptoms of axial back pain and 7 patients had recurrent disc herniation. The follow up data included X-ray, 3D CT scan, the height and angle of disc space, angle of lumbar lordosis (LL), Pelvic incidence (PI), pelvic tilt (PT), sacral slope (SS) and ratio of bone graft fusion at post-operative 1 month, 3 months, 6 months, 1 year and 2 years were recorded and measured. The clinical outcomes were evaluated by Oswestry disability index (ODI) and visual analog scales (VAS). Results: Average length of incision is $6.2\pm 0.8\text{cm}$ (5.3-7.8cm); average blood loss was $80.9\pm 19.9\text{ml}$ (50-150ml); mean operation time was 96 ± 10 mins (65-122 minutes). ODI score and VAS score were improved significantly ($P<0.05$) at postoperative, comparing with preoperative. The disc height of operative segments were all recovered significantly ($P=0.01$) postoperatively. Bony intervertebral fusion was obtained in all cases at the end of follow up.

Abstract no.: 37035

MINIMALLY-INVASIVE AND OPEN SURGERY IN INTRAARTICULAR CALCANEAL FRACTURES: WHAT PRICE HAS MORE VALUE - NON-PERFECT REDUCTION OR WOUND COMPLICATIONS RATES?

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Background: Minimally invasive surgery has gained increasing popularity last years, but quality of reduction obtained, less rigid fixation and absence of bone grafting may lead to calcaneal subsidence and loss of the reduction quality. In the other hand ORIF is accompanied the high wound complication rates. So the aim of our study was to determine what price has more value - non-perfect reduction or wound complications rates in calcaneal fracture surgery. Methods: Prospective cohort study of 158 patients with 197 intraarticular calcaneal fractures. 37 (18,7 %) of cases underwent minimally-invasive surgery on the basis of Essex-Lopresti technique and 86 (43,6%) - ORIF through extended lateral approach. Target outcome analyzed: quality of reduction, postoperative wound complication rate, Maryland foot score (MFS), severe arthrosis and need for secondary surgery. The mean term of final outcome assessment was $3,5 \pm 2,7$ years (0,5-8 yrs). Results: Although, minimally-invasive group had significantly lower wound complication rates (2,5% vs. 13,4%), the quality of reduction was considerably better in ORIF group, especially in more severe fracture types. ORIF group shows lower arthrosis rate and some prevalence in MFS, but not statistically significant. Conclusions: the choice whether ORIF or minimally-invasive technique should be used must be based on careful preoperative CT examination without unjustified extension the indications for minimally-invasive surgery. Overall complication rates of the calcaneal ORIF in our cohort of the patients is substantial, but, we think, necessary price for the good anatomical and functional outcomes rates.

Abstract no.: 37038

THE MANAGEMENT OF COMPLICATED CERVICAL MYELOPATHY BY ANTERIOR CERVICAL DISCECTOMY AND FUSION WITH SELF-LOCKING CAGES

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Introduction: Many difficulties still remain for multi-level cervical myelopathy, such as how to correct the cervical sagittal alignment, level of decompression level, instrumentation or not. Methods: We retrospective study 62 patients of multiple levels cervical myelopathy, who underwent anterior cervical discectomy and fusion by self-locking standard-alone polyetheretherketone cages (MC+). The short form-36 physical component summary (SF-36), JOA score and VAS score was used to evaluate neurological function at preoperative, and postoperative day 3, 3 months, 6 months and 1 year. Anterior-posterior and flexion-extension Xray was taken to evaluate the disc height and range of motion. Rate of fusion was also documented. Results: The mean follow up time was 18.4 months. JOA scores improved from pre-operative 6.3±3.2 to postoperative 13.7±1.6 ($P<0.05$). The seven scores of SF-36 improved significantly postoperative, but the mental health not. The fusion rate was 94%. Height of disc space improved from preoperative 5.9±1.9mm to postoperative 9.4±0.7. Cervical curvature of cervical spine improved from pre-operative 4.9°±7.3 to postoperative 9.4°±14.2 ($P<0.05$).

Abstract no.: 37043

COMPLETE DIASTASIS OF TIBIA AND FIBULA, A CASE REPORT

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Background: Tibial hemimelia is a rare congenital anomaly, may be in isolated form or combined with other congenital anomalies. Different classification systems had been used for classification. While inferior tibiofibular joint diastasis is a well-known accompanying deformity in subtypes of different classification systems; complete diastasis of tibia and fibula is not included in either of classification systems. Methods: A 15 days infant presented to our unit with complete diastasis of tibia and fibula, a search in the English literature about a reported cases with complete diastasis of tibia and fibula and different classification systems for tibial hemimelia was done. Result: No reported cases in the literature with complete diastasis of tibia and fibula. Conclusion: We suggest modifying the current classification systems for tibial hemimelia to include complete diastasis of tibia and fibula as a variant. Level of evidence: Level IV. Key words. Tibial hemimelia, Tibiofibular, Diastasis

Abstract no.: 37046

**INTRA-ARTICULAR INJECTIONS OF PLATELET RICH PLASMA IN
PRIMARY OSTEOARTHRITIS (OA) OF KNEE - CLINICAL OUTCOME**

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Osteoarthritis (OA) of knee is an important cause of musculoskeletal disability in older age group people. Current medical treatment options are mainly palliative and research is now focussing on options which can alter the disease process and improve cartilage healing which include use of interleukin-1 receptor antagonist and growth factors. Intra-articular Platelet rich plasma (PRP) injections can deliver such growth factors in a high concentration. In a prospective study on 50 patients with low grade primary OA knee, patients were injected with 3 PRP injections in affected knee at 4 week interval. Patients were evaluated as per VAS, WOMAC and KOOS scores at pre injection, 3, 6, 12 month post injection. Ultrasonic assessment of cartilage thickness was also done at pre injection, 6 and 12 month post injection. Statistically significant improvement was observed in all the scores at 6 and 12 months post injection. There were no major adverse effects. However there was no improvement in cartilage thickness. Intra-articular PRP injection appears to be a safe and beneficial treatment strategy on short term basis with improvement in pain, stiffness, daily activity functions and overall quality of life. Maximum effect was observed within 6 months which was maintained till one year. However PRP injections did not result in improvement in cartilage thickness over one year, indicating no significant role of PRP in actual reversal of degenerative process on short term basis.

Abstract no.: 37049

COMPARISON OF PLATE OSTEOSYNTHESIS AND INTRAMEDULLARY NAIL RESULTS IN THE TREATMENT OF DISTAL TIBIA DIAPHYSEAL FRACTURES

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With the development of biological fixation and locking plates for treating fractures of the extremities, minimally invasive percutaneous plate osteosynthesis has become a widely accepted technique. Aim of this study is to compare radiological and functional results of medial anatomical locking plate versus intramedullary nail in the treatment of distal tibia diaphyseal fractures. Total 42 patients who are operated in our department with the diagnosis of distal tibia diaphyseal fracture fractures that do not extend into ankle joint, between 2009 and 2012 is included to our study. 20 patients had been treated with medial anatomical locking plate and 22 of them with intramedullary nail. Total operation time, volume of blood loss, flouroscoy time and total hospitalization time is recorded. All patients evaulated at the 6th week, 3rd, 6thand 12th months as clinical and radiological status. Knee pain, ankle pain and ankle ROM is evaluated as functional parameters. And radiological evaluation parameters are time of union, alignment at anteroposterior and lateral views. Mean operation and flouroscoy time is detected shorter in the locking plate group compared to nail group. Superficial infection ratio is higher at the locking plate group. Angular deformity (>5 degrees) is noted higher in the nail group with valgus as the most common. All patients healed in the plate group, whereas 3 nonunions in the nail group. Both intramedullary nailing and locking plate techniques are successful at the treatment of distal tibia diaphyseal fractures. Delayed union, malunion and reoperation is more common after intramedullary nailing.

Abstract no.: 37050

THE USAGE OF A INDUSTRIAL GRADE TUNGSTEN CARBIDE DRILL BIT FOR THE TREATMENT OF A COMPLEX FRACTURE IN A PATIENT WITH SEVERE OSTEOPETROSIS

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Introduction: This case report describes the successful treatment of a peri-implant neck of femur fracture in a patient with severe osteopetrosis, who was previously treated for a subtrochanteric fracture in the ipsilateral limb. **Methods:** 38-year-old male with severe osteopetrosis. He was admitted in May 2011 with a left subtrochanteric fracture, and was treated surgically with a proximal femoral locking plate(PFLP). Intra-operatively, there was difficulty drilling with resultant breakage of drill bits. He was again admitted in September 2013 with a complaint of a sudden onset of left hip pain and difficulty weight bearing. There was no history of trauma. A basicervical left neck of femur fracture was noted. There was no loosening of the PFLP, and the old fracture was still visible on radiographs. There was no obvious medullary canal noted on the radiographs. In view of the difficulty met during the first surgical procedure with regards to the ineffectiveness of stainless steel drill bits, an alternative was sought out. Various case reports have described the use of tungsten-carbide drill bits for the treatment of patients with osteopetrosis. An industrial tungsten carbide drill bit, was used to create a medullary canal, under fluoroscopy guidance. The patient had a cemented bipolar hemiarthroplasty, with a Zimmer Versys Heritage CDH stem and augmentation of the fixation with a Zimmer cable –ready plate and strut allografts. This report offers a reproducible solution in terms of the use of the industrial tungsten carbide drill bit for the treatment of fractures in patients with severe osteopetrosis

Abstract no.: 37051

BONE METABOLISM DYNAMIC AFTER TOTAL HIP REPLACEMENT

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Retrospective evaluation of the mid-term evaluation results of bone metabolism in women by dual-energy X-ray absorptiometry after total hip replacement had been made. The main group was 322 patients after primary total hip replacement, and 184 patients consisted the control group. Follow-up of 3 years, the average age of the patients was - 59.4 years. In both groups, observations have shown a decrease in bone mineral density in different segments of the skeleton, mostly at thoracic spine and operated leg till 6,2% during the year. Extended analysis of radiation monitoring musculoskeletal system reveals the most vulnerable segments of the skeleton, which allows to predict the sensitivity of the algorithm functional rehabilitation. This method is used to evaluate bone metabolism in patients with orthopedic profile. In the study an association dynamics of change in BMD in various segments of the skeleton with the biomechanical parameters of activity of the patient. In the segment most actively involved in the kinematics and power loads optical bone density increased, which favorably affects the characteristics of beam parameters of bone metabolism. X - ray monitoring data in the group surveyed over 50 years reflect the demineralization of bone matrix during perimenopause varying severity. X - ray characteristics depend on the age of the patient, as in the older age group, BMD decreased, great importance had physical activity of older age group, the degree of bone metabolic decomposition.

Abstract no.: 37052

INTERPOSITION OF PERIOSTEUM IN DISTAL TIBIAL PHYSEAL FRACTURES OF CHILDREN

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Purpose: To evaluate the factors influencing periosteal interposition in distal tibial physeal fractures of children. **Materials and Methods:** 44 cases of distal tibial physeal fractures were analyzed. We confirmed the presence of periosteal interposition with MRI in all cases and accessed the relationship between periosteal interposition and gender, age, cause of injury, type of fracture, degree of initial displacement and after closed reduction. **Results:** 15 (34.1%) of 44 fractures had interposed periosteum. There was no statistically significant correlation between periosteal interposition and gender, age, cause of injury ($p > 0.05$). 8 (88.9%) of 9 pronation-eversion-external rotation type of fractures according to Dias-Tachjian classification had interposed periosteum and that was a statistically significant correlation ($p=0.006$). As Salter-Harris type was toward to high degree, there were decreasing tendency of periosteal interposition ($p=0.026$). There was high rate of periosteal interposition in case of displacement more than 2 mm in each initial and after closed reduction ($p < 0.05$). **Conclusion:** There was high incidence of periosteal interposition in pronation-eversion-external rotation type with displacement more than 2 mm in distal tibial physeal fractures of children. But, periosteal interposition could occur in fractures with mild displacement less than 2 mm, if initial fracture displacement was more than 2 mm, the methods of treatment should be decided after confirm the presence of periosteal interposition with MRI after closed reduction.

Abstract no.: 37062

MANAGEMENT OF HUMERAL FRACTURES IN A RESOURCE POOR REGION IN NORTH -WESTERN NIGERIA

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INTRODUCTION: Humeral fractures can occur alone or part of associated injuries in polytrauma. We sought to document the pattern and management of these fractures in our subregion. **METHODS:** This was a retrospective study of all cases of humeral fractures that presented at our outpatient and emergency room from January 2010 to December 2012. Information obtained includes age, sex, mechanism and pattern of injury, treatment offered and outcome. **RESULTS:** A total of eighty cases were seen with a M: F ratio of 4.3:1. Thirty-three per cent of patients were between 31-40 year and the left humerus was affected in 51.3%. Road traffic accident was the commonest mechanism of injury in 71.3%. Eighty-five per cent of cases were closed fractures and diaphyseal fractures constituted 56.3%. There were associated injuries in 52.5% of cases. Oblique fracture pattern was the commonest in 42.5% followed by transverse in 23.8%. Eighty-four per cent of patients presented within 72 hours of injury while 11.3% of patient had prior treatment by Traditional bone setters (TBS). Complications at presentation in those with prior TBS intervention was statistically significant ($P < 0.05$). Treatment offered were cast splintage in 57.5%, open reduction and internal fixation in 17.5%. Amputation was done in 5.0% of cases. Nineteen per cent of patient signed and left against medical advice. Wound sepsis (5.0%), elbow stiffness (2.5%), chronic osteomyelitis (2.5%) were the encountered post intervention complication. **CONCLUSION:** Fractures involving the humeral are mainly diaphyseal and cast splintage is the commonest mode of management in our subregion.

Abstract no.: 37064

MANAGEMENT OF PROXIMAL FEMORAL DEFECTS USING CEMENTLESS MODULAR LONG FEMORAL STEM IN ELDERLY PATIENTS

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Introduction: modular cementless long femoral stem hip arthroplasty, whether total or hemi, is fast becoming an established form of treatment in cases of proximal femoral fractures in the elderly, in whom the standard methods of fixation may not be feasible. Twenty four cases of the use of the modular cementless long femoral stem prosthesis for replacement of the proximal femur in Beni Suef university hospital and El Helal Hospital in Cairo. They were 15 males and 9 females with average age of 71.23 years. The follow up of patients ranged from 18 to 48 months with a mean period of 38 months. American academy classification was used pre to classify the patients. All hips were assessed clinically and radiologically at 6 weeks, 3 months, 6 months and 1 year then every six months using Harris hip score and radiological Gruen criteria. One patient was lost during follow up. Clinically Harris hip score were excellent in 18 hips, good in 4 hips, fair in 1 hip and no poor results. There were signs of acetabular loosening in one patient. Three hips required revision one due to superficial infection and two due to dislocation. One patient had DVT. Conclusion: from the current study we can conclude that the use of modular cementless long femoral stem is a golden solution for a more biological for both simple and complex defects, provided that there is enough diaphyseal contact and there is no abductor weakness due to severe loss of the proximal femur affecting the abductor insertion.

Abstract no.: 37066

INVESTIGATION OF THE INDICES FOR PELVIC ROTATION ON A PLAIN RADIOGRAPH

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Background: We have developed new software “ACX dynamics” to evaluate the three-dimensional acetabular coverage using a plain radiograph of the pelvis. As it includes the algorithm of correction for pelvic rotation, investigation of the appropriate pelvic rotation was necessary. Purpose : To compare the pelvic rotation angle calculated by three radiographic indices in the rotational pelvic position. Materials and Methods: We reviewed CT images from 30 patients without osteoarthritic changes. We created a virtual three-dimensional bone model and digitally reconstructed radiographic images (DRR), substituting for plain AP radiographs, of the pelvis with five degrees rotation anteriorly or posteriorly to anterior pelvic plane. Utilizing 60 DRR images of the pelvis in the rotational positions, we calculated the pelvic rotation angle by three radiographic indices for pelvic rotation (A: the horizontal distance between pubic symphysis and center of sacrococcygeal joint, B: the ratio of the distance between pubic symphysis and the midpoint of inter-teardrop distance to the inter-teardrop distance, C: the ratio of transverse diameters of bilateral obturator foramen). Then, we compared the values of pelvic rotation angle by three indices. Results: In the images of the rotational pelvis of five degrees, the average rotational angle of index was $8.3 \pm 2.5^\circ$ for A, $4.8 \pm 1.6^\circ$ for B and $3.4 \pm 1.5^\circ$ for C, which suggested that index B indicated the closest true rotation values. Conclusions: Index B was the most useful to calculate pelvic rotational angle.

Abstract no.: 37068

FIXATION OF LATERAL END CLAVICLE FRACTURES WITH DISRUPTION OF CORACOCLAVICULAR LIGAMENT USING SUPERIOR LATERAL CLAVICLE LOCKING PLATE AND REATTACHMENT OF CORACOCLAVICULAR LIGAMENT - RADIOLOGICAL AND FUNCTIONAL RESULTS IN 16 CONSECUTIVE CASES

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Introduction: Modified Neer's classification includes a subvariety of type II fracture whereby the medial and lateral clavicle fragments are detached from the coracoclavicular ligament, however, the integrity of the ligament is intact and there is a bony avulsion fragment from clavicle attached to the C-C ligament. Additionally, we have identified cases where although, the fracture line is lateral to the C-C ligament attachment, there is complete detachment of fully intact C-C ligament either from clavicle or coracoid process. Methods: Sixteen lateral end clavicle fractures with detached C-C ligament were identified. All of these fractures showed maintained integrity of the substance of C-C ligament peroperatively (12 with bony fragment avulsion from clavicle, 3 with detachment of C-C ligament from clavicle and 1 with detachment of C-C ligament from coracoid process). These fractures were fixed with lateral clavicle locking plate. Bony fragment avulsion of C-C ligament was secured in this fixation. Pure ligament avulsions of C-C ligaments were secured using interosseous anchor sutures. Results: Functional assessment of these 16 patients with average age of 42 years (17 – 64yrs) was done by American Shoulder and Elbow Surgeons (ASES) score. The average ASES score at an average follow up duration of 16 months (range 13 – 42 months) was 80 (range 44 – 100). All fractures healed with a well maintained coracoclavicular distance and acromio-clavicular joint integrity. 2 patients required plate removal because of discomfort, one patient had breakage of a screw in the distal fragment and one patient developed superficial wound infection.

Abstract no.: 37074

**BILATERAL MIDDLE CEREBRAL ARTERY OCCLUSIONS AFTER
SIMULTANEOUS-BILATERAL TOTAL KNEE ARTHROPLASTY**

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Surgeries in elderly patients have increased yearly as the population ages. Many elderly patients have comorbidity such as hypertension and diabetes, with a corresponding potential increase in perioperative complications. We report a very rare complication of bilateral middle cerebral artery occlusions which developed after simultaneous bilateral total knee arthroplasty (TKA). The patient was a 73-year-old woman with bilateral osteoarthritis of the knee who underwent simultaneous bilateral TKA. The surgical time was 216min and the bleeding volume was 100g. She had no other significant medical history. In the workup of the patient, a brain CT was normal and an electrocardiogram showed a sinus rhythm. Other laboratory results, including coagulation profile, were within the normal range. Postoperatively, she initially recovered well. On postoperative day 2, she started walking training. Just when she took the first few steps, she lost consciousness and fainted. Brain CT was performed immediately and no infarction was found. And then, a cerebral angiography was performed and bilateral middle cerebral artery occlusions were found. The possible causes of occlusions were thought to be chronic atrial fibrillation (CAF), paradoxical embolism due to patent foramen ovale (PFO), and paroxysmal atrial fibrillation (PAF). CAF was not recorded in the electrocardiogram and there were no old paradoxical embolisms in the preoperative brain CT. Therefore, we could suspect that PAF occurred in the perioperative period. This indicates that monitoring heart rate while the perioperative period should be considered to find occurrence of PAF.

Abstract no.: 37075

CAN SERUM BIOMARKER RELIABLY QUANTIFY LUNG CONTUSION IN POLYTRAUMATIZED PATIENTS? PRELIMINARY RESULTS

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The use of CT for diagnosing lung trauma in severely injured patients at the time point of admission may not be sufficiently sensitive, a control scan after 24-48 hours is often necessary. Therefore, the objective of this study was to detect a lung specific serum biomarker that correlates with the extent of lung contusion in multiple injured patients; hence sparing the patient this control CT scan. Multiple injured patients (age≥18years, ISS≥16) were included in this analysis. Immediately after being admitted and after 24-48 hours (time point of the control) whole blood samples were collected from the patient. Then they were centrifuged and stored until assayed. Clara cell protein 16 (CCP16), Surfactant protein D (SPD), Cytokeratin 19 (CK19), RAGE (Receptor for Advanced Glycation Endproducts) and Interleukin 33 (IL33) were measured using ELISA. All samples were analyzed in triplets. Lung contusions were detected with spiral CT at initial admission and after 24-48 hours, when the quantity could be visualized to its full extent on the basis of volume analysis. 40 Patients were already evaluated. The extent of lung contusion correlated with RAGE in both time points ($p=0.003$; $p=0.011$) and with SPD during the control CT ($p=0.031$). Whereas the extent of lung contusion did not correlate with the appearance of pneumonia or ARDS, a significantly higher value of CK19 could be observed in patients suffering from one of these complications ($p=0.030$; $p=0.032$). Therefore, CK19 might identify a high risk patient group for lung specific complications at the time point of admission.

Abstract no.: 37076

ENDOSCOPIC LUMBAR DISCECTOMY FOR P.I.D. BY DESTANDAU TECHNIQUE

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Introduction : Various Endoscopic Discectomy techniques have been developed to reduce morbidity of conventional open laminectomy for PID with sciatica. Micro-Endoscopic Discectomy technique of Dr.Jean Destandau from France, approaches the disc herniation through the familiar posterior portal, with much reduced morbidity and faster return to work. Methods : An artificial working space is created by introducing an operating insert within a conical outer tube, passed upto the lamina through a 18-20 mm. incision. The root is exposed by removing small part of lower lamina and ligamentum flavum and discectomy performed under vision. Patients were allowed out of bed on next day and resume their work after three weeks. Average hospital stay was 4.8 (3-17) days. Total 105 cases – 64 (61%) males and 41 (39%) females, of PID with unilateral radicular symptoms were treated between 2004 to 2013 – L5-S1- 35 cases (33.4%) , L4-L5 – 61 cases (58%), L3-L4 - 5 cases (4.8%) and 4 cases (3.8%) of both L4-L5 and L5-S1 discectomy through single incision. Mean operative time was 68 (45-140) min. Results : Conversion to open was needed in 4 cases (3.8%) , while dural tears occurred in 7 patients (6.7%), with significant neurodeficit in only one patient, which recovered partially. 3 cases (2.9%) had discitis which settled eventually with rest and antibiotics. 98 patients (93.3%) had immediate relief from radicular symptoms , while remaining 7 (6.7%) had some residual radicular symptoms persisting. Conclusion : Destandau endoscopic lumbar discectomy reduces morbidity, with good cosmesis.

Abstract no.: 37078

UNUSUAL PRESENTATION OF A TYPE 1 MONTEGGIA EQUIVALENT LESION: SIMULTANEOUS MEDIAL HUMERAL CONDYLE FRACTURE WITH IPSILATERAL ANTERIOR DISLOCATION OF THE RADIAL HEAD AND ACUTE PLASTIC BOWING OF THE ULNA

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The authors describe a case of simultaneous anterior dislocation of the radial head with plastic deformation of the ulna and an ipsilateral medial humeral condyle fracture in a 6-year-old boy following a fall on an outstretched hand. This is a rare combination of injuries that has not been previously described in the literature. Management consisted of closed reduction of the dislocated radial head and percutaneous K-wires fixation of the medial humeral condyle fracture which achieved an excellent result with full function. This rare combination of injuries is considered an unusual subtype of the Bado type-I Monteggia equivalent lesion. The case emphasizes that when a fracture is detected around an elbow other injuries in the region should be suspected.

Abstract no.: 37079

**SURGICAL MANAGEMENT OF HAEMOPHILIC PSEUDOTUMOUR
COMPLICATED WITH DESTRUCTIVE OSTEOARTHROPATHY**

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Objective: Haemophilic pseudotumour gradually eroded the bone and induced fracture or deformity, causing joint dysfunction or destructive osteoarthropathy. So far, reports about surgery for haemophilic pseudotumour complicated with destructive osteoarthropathy were scarce. The objective of this study was to evaluate the results and complications of surgery management for patients of pseudotumour complicated with destructive osteoarthropathy. Methods: From July 1996 to July 2013, 8 patients of pseudotumour complicated with destructive osteoarthropathy were retrospectively reviewed, and followed up. Demographic data, the time for surgery, amount of blood loss and transfusion, bone union and complications were recorded. 7 patients were diagnosed with haemophilia A and 1 with haemophilia B. The mean age at surgery was 31.9 ± 8.3 years old. 2 of them underwent excision of pseudotumor and metallic fixation, 1 with amputation and 5 with autogenous or exogenous bone graft and fixation with absorbable screw. Results: The median time of surgery was 170min (135-315min). The median amount of blood loss during the surgery was 1350ml (100-4000ml). The amount of RBC, plasma and whole blood transfusion after surgery were 0-24 unit, 0-2000 ml, and 0-4600 ml, respectively. After a median follow-up time of 75 months, the numbers of pseudotumor recurrence, fracture nonunion, coagulation factor inhibitor formation, and wound complications were 1, 1, 2, and 4 cases, respectively. Conclusions: Surgery is an effective treatment for haemophilic pseudotumour complicated with destructive osteoarthropathy, but the incidence of wound infection, coagulation factor inhibitor formation, haemophilic pseudotumor recurrence and fracture nonunion are high.

Abstract no.: 37081

ASSESSING AND QUANTIFYING INSTABILITY IN REVISION TOTAL KNEE ARTHROPLASTY

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Introduction: Instability is estimated to be the reason for revision of total knee arthroplasty (TKA) in 20% of cases. In the absence of definitive criteria, diagnosis is based on patient symptoms and clinical assessment. The aim of this study was to assess whether a standardised forceful leg extension activity could be used to assess instability of primary TKA. Methods: 25 consecutive patients undergoing revision TKA for instability of a primary implant were assessed with a Nottingham rig, pre-operatively and then at 6 and 26 weeks post-op. Output was quantified by accelerating a stationary wheel (rpm). A control group of 183 primary TKAs was evaluated for comparison. Significance was accepted at $p = 0.05$. Results: All 25 instability cases exhibited a distinctive "'mid-push' speed reduction pattern prior to surgery. Mean reduction was 55 (33.2) rpm. Following correctional surgery no patients exhibited this pattern; "'mid-push' reduction in speed was 0 rpm. Change between pre-op and post-op assessment was highly significant ($p = <0.001$). No patients in the control group exhibited this output pattern at any of the time points assessed, the between group difference therefore also being highly significant ($p = <0.001$). Discussion: This is the first description of a diagnostic test for knee arthroplasty instability. All patients undergoing revision TKA for instability demonstrated a distinctive pattern pre-op that was corrected with surgery in every case. This suggests that diagnostic criteria to assess the unstable primary total knee replacements may be developed.

Abstract no.: 37083

VALIDATION OF THE USE OF RADIOGRAPHIC FRACTURE-HEALING SCORES IN A SMALL ANIMAL MODEL

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Precise assessment of fracture healing is vital in both clinical and research settings, where therapies are typically assessed in animal models taking union as the study end point. A lack of valid and repeatable assessment tools impedes interpretation of study findings and limits the ability to generalise results across studies. Radiographic scoring systems have been developed to standardise reporting, however have not been validated in pre-clinical models. Thirty sets of radiographs of rat tibial shaft fractures, treated with external fixation were reviewed by 6 observers using the Radiographic Union in Tibia (RUST) scale, the Lane and Sandhu scoring system, and an overall impression of union. Observers rated all radiographs using the 3 methodologies at a single sitting, and repeated 3 weeks later (radiographs presented in a different order). Fleiss's kappa and Intra-class Correlation Coefficients (ICC) were used to determine reliability. Inter-observer and intra-observer agreement using the general impression score was moderate [kappa; 0.58; 95%CI (0.49 to 0.65) and 0.66 (0.43 to 0.89) respectively]. Excellent inter-observer and intra-observer agreement was observed using both the RUST score [ICC; 0.81 (0.72 to 0.89) and 0.86 (0.74 to .093) respectively] and Lane and Sandhu score [ICC 0.88 (0.81 to 0.93) and 0.90 (0.81 to 0.95) respectively]. The 2 clinical scoring systems demonstrated strong agreement. Employing a defined scoring system enhances both the reproducibility and repeatability of bone healing assessment in a small animal model. Routine reporting of fracture scoring methodology should be encouraged to enrich the results and facilitate data synthesis across studies.

Abstract no.: 37086

THE ROLE OF ADIPOKINES IN END-STAGE KNEE OSTEOARTHRITIS

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Obesity is a risk factor for the development of osteoarthritis (OA), which is typically described as a wear and tear process. However, recently metabolic components have been recognised. Adipose tissue is a potent endocrine organ and weight gain results in molecular changes at the hormonal level, which affects multiple other tissues. Adipokines may influence the metabolic component in the pathogenesis of OA. The purpose of this study was to examine the expression of two key adipokines (adiponectin and visfatin) in obese patients with end-stage OA. Samples were collected from patients undergoing TKA. Patients were dichotomised by BMI index (Lean, BMI <25; obese, BMI >35). Synovium and infra-patellar fat pad (IPFP) were analysed. Protein expression was assessed by Western blot, which indicated a different expression of adipokines between lean and obese subjects. Visfatin was down-regulated in both synovium and IPFP of obese patients, while adiponectin level was down-regulated in the synovium but not the IPFP. These data suggest the importance of local adipokine mediation in the pathogenesis of OA, and suggest a more complex regulatory pathway in the control of visfatin production.

Abstract no.: 37088

CHALLENGES OF OSTEOLYTIC LESIONS AROUND SHOULDER

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In my last 30 Years of Practice of Orthopedic Oncology .I have faced Challenging Situations of Benign & Malignant lesions . Around Shoulder in our .Cancer Hospital Bhopal . I am Presenting 10 Such Cases .Where Management was .By wide Exusion or Custom Mega Prosthesis or By Simple Bone Grafting and after long follow –up some of them have Complications .Which Were Managed By Team of Oncological Setup.

Abstract no.: 37089

SURGICAL MANAGEMENT OF FRACTURE SHAFT FEMUR IN CHILDREN WITH FLEXIBLE NAIL

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Introduction: The treatment of femur fractures in children remains controversial, which include early spica casting, traction, external fixation, plating, flexible intramedullary nails. Internal fixation in the form of flexible intra medullary nailing provides a healthy environment for fracture healing with some motion leading to increased callus formation. It is simple, effective and minimally invasive, with excellent functional results and minimal avoidable complications. **MATERIALS AND METHODS:** Children between the age group of 5-16 years with femoral shaft fractures were admitted to our hospital from Sep 2009 to July 2013. A minimum of 40 cases were studied without any sampling procedure. All cases were treated with flexible nails over a 4-year period were reviewed. There were 26 boys and 14 girls. Antero posterior and lateral radiographs were obtained of the femur at follow-up visits at 1, 2, 3, 6 months and 1 year. **RESULTS** Titanium flexible nails were used in 13 patients and stainless steel nails were used in 27 patients. Postoperative period was 10 days. Knee stiffness was seen in 4 patients which was managed by regular physiotherapy and full range of movements were achieved. Impingement of nail at insertion site was seen in 2 patients which was well managed after the nail removal following bone union. There were no limb length disturbances. **CONCLUSIONS** Flexible nails are relatively easy-to-use, minimally invasive with high rate of good and excellent outcomes in children less than 15 years of age. Given the high costs of osteosynthesis material in our country, the results of this study provide a less expensive alternative.

Abstract no.: 37090

DOUBLE PLATING- "A NEW OVERLAPPING PLATING TECHNIQUE FOR NON UNION OF HUMERUS"

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Following the principles of treatment of Non union we developed a technique of fracture fixation of non union of long bones. In this technique after exposing the fracture site fracture ends freshened and medullary cavity opened and fracture reduced and fixed with a plate fixed and screws, the second plate was placed in dead space between the first plate and bone in such a way that it overlapped the first plate. Total number of screws in both the plates were same as fixed in a single plate.(if a 8 holed plate was decided to fix the fracture then total number of screws on both plates would be only 8 screws or max up to 10 screws). The second plate was fixed after placing the bone graft at the fracture site.Total of 20 cases of non union were studied and 8 of them were primary non union which were treated conservatively and 12 of them were with failed osteosynthesis (plating,nailing). All the fractures were immobilized for 6 weeks in plaster cast after surgery. There were no deep infection and 4 of them had superficial infection, there were no problem with skin closure. All fracture united clinically and radiologically by 3 months. Conclusion: This stable fixation enhances the fracture healing and now we follow this technique for fracture non union of humerus (long bones). And all new implants does not mean good Surgery

Abstract no.: 37091

A MINIMALLY INVASIVE UNILATERAL POSTERIOR DECOMPRESSION AND FUSION WITH PERCUTANEOUS LONG ARM PEDICLE SCREW SYSTEM FOR LUMBAR DEGENERATIVE SPONDYLOLISTHESIS

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Object : To analysis the clinical outcomes, safety, and efficacy of minimally invasive unilateral posterior decompression and fusion using percutaneous long arm pedicle screw system in patients with lumbar degenerative spondylolisthesis. **Methods :** 18 patients with lumbar degenerative spondylolisthesis underwent operation of percutaneous pedicle screw fixation and minimally invasive unilateral decompression and interbody fusion and followed-up for more than three month. The average time of each pedicle screw fixation, X ray exposure times, the blood loss of intraoperavie and post-operation, reduction ratio, hospitalization time, location of screw and complication were recorded, the comparison of preoperative and postoperative VAS and ODI score were also analyzed. **Results:** The average insertion time for each pedicle screws was 15.38 ± 5.61 min, X-ray exposure times for each pedicle screw were 4.99 ± 2.65 times, the intraoperative blood loss was 92.73 ± 26.16 ml for each segment decompression. The vertebral body reduction ratio was $85 \pm 5.6\%$, the hospitalization time was 6.8 ± 2.5 days. VAS scores were 8.26 ± 0.81 before operation, 4.84 ± 0.82 in 3 days after operation and 2.45 ± 0.48 after 3 months, ODI score was 63.34 ± 12.7 before operation, 46.39 ± 8.94 after 3 days was, and 32.76 ± 5.23 after 3 months, the VAS and ODI score was obviously decreased ($P < 0.05$). No cases of nerve injury, leakage of cerebrospinal fluid, hematoma, wound infection and other complications were detected. **Conclusions:** The unilateral decompression and fusion with percutaneous long-arm pedicle screw fixation system is a safe and feasible technique during degenerative spondylolisthesis surgery.

Abstract no.: 37092

RADIOLOGICAL ASSESSMENT OF THE SAFE ZONE FOR MEDIAL MINIMALLY INVASIVE PLATE OSTEOSYNTHESIS IN THE DISTAL FEMUR WITH COMPUTED TOMOGRAPHY ANGIOGRAPHY

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This study aimed to explore the safe zone for medial minimally invasive plate osteosynthesis of the distal femur with computed tomography angiography. In a series of 30 patients, the region of interest between the lesser trochanter (LT) to the adductor tubercle (AT) was divided into six levels (I to VI), and the distance from the femur to the femoral artery (FA) was measured. At each level, the medial half of the femur was divided into eight sections that were assigned 'A to H' from anteromedial to posteromedial, and the position of the FA and the deep femoral artery (DFA) was recorded. The average length from the LT to AT was 295.0 mm. The average distance to FA was 38.0 mm, 29.9 mm, 26.9 mm, 27.0 mm, 21.8 mm, and 12.2 mm from level I to VI, respectively. The FA was positioned posteromedially below level IV and positioned at C–H below level II, which was out of the anterior aspect of the femur. The DFA was in the same location as the FA between levels II and III. The anteromedial aspect of the distal half of the femur is the safe zone, and a long plate can be positioned safely in this zone at the anterior aspect up to the level of 8 cm below the LT.

Abstract no.: 37094

THE CLINICAL OUTCOMES OF EARLY INTERNAL FIXATION FOR UNDISPLACED FEMORAL NECK FRACTURES AND EARLY FULL WEIGHT BEARING IN ELDERLY PATIENTS

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The purpose of the present study was to evaluate the clinical outcomes of early internal fixation for undisplaced femoral neck fractures and early weight bearing in patients aged 65 years and older. The records of consecutive patients who underwent surgery for undisplaced femoral neck fractures between 1999 and 2011 were retrospectively reviewed. The patients underwent the surgery as early as possible, and allowed early weight bearing. The interval between initial injury and surgery, time to admission and operation, operation time, decrease in hemoglobin (Hg), the postoperative day starting to walk, postoperative walking status, and the incidence of any secondary procedures were evaluated. The average patient age was 77.5 years and the average duration of postoperative follow-up was 46.8 months. The patients were divided to two groups to determine the effect of early operation; the early operation group within 24 hours on admission, and the late operation group done 24 hours after admission. Eighty-six percent of surgeries were performed within 48 hours of admission. The average operation time was 46 minutes (range, 20–95 minutes). Transfusions were performed in 6.9% (4/58) of patients. The mortality rate was 6.9%, and the rate of complications was 9.3% (5/54): four cases of avascular necrosis (AVN) and one case of fixation failure. The rate of secondary procedures was 7.4% (4/54). Seventy-two percent (39/54) of patients recovered their postoperative walking ability to pre-injury levels. This study demonstrated that early internal fixation of undisplaced femoral neck fractures in elderly patients produced satisfactory clinical outcomes.

Abstract no.: 37096

RADIOLOGICAL EVALUATION OF PLACEMENT OF FEMORAL FOOTPRINT OF ANTERIOR CRUCIATE LIGAMENT IN TWO DIFFERENT TECHNIQUES OF ACL RECONSTRUCTION: PROSPECTIVE COHORT STUDY.

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INTRODUCTION: Anatomic tunnel positioning is important in ACL reconstructive surgery. Recent studies have suggested the limitation of transtibial technique to place graft within the anatomic tunnel position of the ACL on the femur. The purpose of the study is to determine whether anteromedial portal technique can place femoral tunnel to native ACL center when compared with transtibial technique. **METHODS:** Consecutive 40 patients who underwent single bundle ACL reconstruction using hamstring tendon autograft were included. Femoral tunnel locations were measured with quadrant methods on medial to lateral view of the lateral femoral condyle. These measurements were compared with reference data on anatomical tunnel position. **RESULTS:** With quadrant method, femoral tunnel centers of the trans-tibial technique and anteromedial portal technique were identified. The mean(\pm standard deviation) was 46.62% \pm 7.74% and 36.95% \pm 7.15% respectively, from the over the top along the notch roof(parallel to the blumensaat line) and at 17.63% \pm 6.29% and 47.61% \pm 7.15% From the notch roof(perpendicular to the Blumensaat line). The transtibial portal leads to ACL femoral tunnel is often positioned too high and too deep in the intercondylar notch, away from the native ACL femoral attachment site. The anteromedial portal technique used in this study placed femoral tunnel more shallow and deep, closer to anatomical position. **CONCLUSION:** After single bundle ACL reconstruction, three dimensional CT scan showed that anteriomedial technique allows for placement of the graft closer to anatomical femoral tunnel position when compared to transtibial technique.

Abstract no.: 37102

PRIMARY THR IN CASES OF COXARTHROSIS WITH HIGH LUXATION OF THE HIP

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Introduction: Anatomic features of bones and soft tissues which are present in high luxation of the hip (HHL) require a different surgical logic when performing THR surgery. Anatomical changes are: insufficient muscles, shortened neurovascular fascicle, deformed femur, extended diaphysis, narrowed femoral channel, underdeveloped acetabulum. Objectives: To show the possibilities of surgical treatment of coxarthrosis with HHL with primary total hip endoprosthesis Methods: Percent of HHL is 1,97% (2830/56). 45 patients had CHD and 11 patients developed luxation as a consequence of the postnatal septic osteoarthritis. An average discrepancy in leg length was 5,75 cm. Surgical technique includes surgical reposition of the luxated hip up to the equalization, restitution of the natural centre of hip rotation, subtrochanteric osteotomy and THR. We used cementless straight stem with distal fixation in 43 patients, cementless modular rounded stem in 12 patients and 1 cemented stem. Results: For follow-up we used clinical tests, radiological and functional (HHS, Womac). The leg length equalization was achieved in 41 patients while shortening of 1 cm remained in 15 patients. Complications we encountered were longitudinal femur fractures, non-united femur osteotomy. Conclusions: Early results in patients with HHL who were treated according to the described protocol confirm that the leg length equalization is possible. Results also prove that restitution of the anatomic centre of hip rotation is both the most decisive and the most predictive factor for good clinical and radiological result of the surgery. This surgical procedure is followed with more complications than standard primary THR.

Abstract no.: 37103

SURGICAL TREATMENT OF GONARTHROSIS ASSOCIATED WITH THE PROXIMAL TIBIAL STRESS FRACTURE

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Introduction: Proximal tibial stress fractures (PTSF) associated with gonarthrosis which require total knee arthroplasty rarely occur in practice. Patient usually does not give us information about the trauma. Objectives: To show the possibilities of surgical treatment of gonarthrosis with associated PTSF. Methods: In IOPMR "Dr Miroslav Zotovic" from June 2004. to December 2013. over 1500 TKR were performed. The indication for surgery in 8 patients was severe bilateral gonarthrosis associated with unilateral PTSF (in all of these patients, we first operated knee with associated PTSF). None of the patients gave us information about the traumatic event. Modular total knee endoprosthesis was implanted to 6 patients: with the Küntcher's nail (2 patients), with a long tibial stem (4 patients), with AO plate (2 patients). After surgery all patients were involved in the early rehabilitation treatment according to the protocol of our institution. Results: In one patient, to whom Küntcher's nail was primary implanted, there was no union of fracture, nail was removed, apparatus Ilizarov was placed. Fractures of the proximal tibia healed in all patients. Also all patients had a good anatomical and functional recovery and they returned to daily living activities. Conclusions: Surgical treatment is the treatment of choice in patients with stress fracture associated with osteoarthritis, which causes severe deformities. Modular total knee endoprosthesis with tibial extension is an adequate solution for gonarthrosis associated with PTSF, because it corrects the deformity, stabilizes the fracture and solves arthrosis.

Abstract no.: 37104

THE ROLE OF ARTHROSCOPY IN THE TREATMENT OF KNEE SYNOVITIS IN JUVENILE RHEUMATOID ARTHRITIS

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Introduction. Treatment of patients with juvenile rheumatoid arthritis (JRA) is one of the difficult and pressing problems of today. Materials and methods. Between 2005 and 2014 on the basis of the City Clinical Center of Traumatology and Orthopedics we performed 60 arthroscopic procedures on the knee (48 (87.3%) diagnostic arthroscopy and 7 (12.7%) arthroscopical subtotal synovectomy) in 60 children with synovitis in JRA. The median age was 10.0 years. When diagnostic arthroscopy performed a biopsy of the synovial membrane, removal of adhesions, fibrin clots and joint cavity lavage. Indications for synovectomy were: - mono- or oligoarthritis, lack of effectiveness of conservative treatment for 6 months, low or medium activity; hyperplastic synovitis with effusion; marked reduction (over 30%) of the bioelectrical activity of muscles of the femur and tibia; later morphological criteria (pronounced infiltration of immunocompetent cells , mainly consisting of plasma cells , fibrinoid and sclerotic processes) . Synovectomy was performed shaver in front - sides of the joint of 4 approaches. Results. The average value of the status of the knee at a specified scale in the preoperative period was 54.2 points (on a scale Lysholm-Tegner) in the late postoperative - 88.7. Excellent results were observed in 26 patients (52.0 %), good - in 23 patients (46.0 %), satisfactory - in 1 patient (2.0%). Conclusions. Arthroscopy, as one of the components of a comprehensive assessment and treatment of children with JRA, is a highly invasive surgical method, in most cases, receive excellent or good clinical results

Abstract no.: 37106

**ULTRASONOGRAPHY IN THE DIAGNOSIS OF RHEUMAORTHOPEDICS
DISEASES OF KNEE IN CHILDREN**

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Introduction. The most important problem is the child reumaorthopedic early differential diagnosis of lesions of the knee joint, which should be used for an integrated approach using modern laboratory, instrumental and minimally invasive surgery methods. Materials and methods. The results of ultrasound (US) 74 knees in 37 patients with lesions of the knee joint in JRA. Subsequently, 23 (62.2 %) patients underwent diagnostic knee arthroscopy with biopsy of the synovial membrane. The median age was 7.5 years. In 47 (63.5%) joint pathology revealed intraarticular structures of the knee. Results. Effusion in the upper volvulus was visualized in 47 (100%) joints and had an average size of 10.7 mm. The size of hypertrophic synovium in the upper volvulus the average was 6.1 mm. Heterogeneous structure of the effusion was observed in 11 (23.4%) cases and in 36 (76.6%) - homogeneous. When disease duration from 1 to 36 months there is a gradual increase in the thickness of the synovial membrane and the size of effusion in the upper volvulus, while disease duration of more than 36 thickness reduction synovium. With substantial synovial hypertrophy a marked vascularity of the synovial membrane. If the duration of the disease for more than 3 years and older patients (average 10 years) is characterized by a rough articular surfaces, thinning of hyaline cartilage . Conclusions. Conducting US research in the dynamics helps to predict the further course of the pathological process in the joint at failure of conservative treatment.

Abstract no.: 37107

ARTHROSCOPY IN THE DIAGNOSIS OF SYNOVITIS OF THE KNEE IN CHILDREN

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Introduction. Synovitis at arthroscopy allows to study in detail the nature and extent of changes synovial membrane, and also provides material for morphological, biochemical, immunological, virological examination. Materials and methods. Between 2005 and 2013 we performed diagnostic arthroscopy of the knee with synovial biopsy in 49 children at the age of 2.9 years to 18 years with synovitis of unknown cause. The average age was 12.9 years. Male patients was 19 (38.8%), female - 30 (61.2%). The pathology of the right knee was observed in 26 cases (53.1%), left - in 23 (46.9%). Result. Among the patients were operated by us: in 6 (12.2%) were identified posttraumatic synovitis; in 10 patients (20.4%) were identified various reactive synovitis; in 6 (12.2%) - arthropathy of unknown genesis; 7 patients (14.3%) - pathological synovial folds (6 - mediopatellaris, 1 - suprapatellaris); 11 patients (22.4%) - juvenile rheumatoid arthritis, including 1 patient - against syringomyelia; 5 patients (10.2%) - pigmented villonodular synovitis; in 2 (4.1%) - a disease Hoffa; in 2 (4.1%) - synovial chondromatosis. Conclusion. Arthroscopy, as one of the components of a comprehensive assessment and treatment of children with reumaorthopedic diseases, in some cases, to obtain information that is not available to other research methods. Therefore, in the absence of contraindications, its use can be justified in all children with mono- and oligoarthritis of the knee of unknown etiology.

Abstract no.: 37110

FUNCTIONAL RESULTS AND PATIENT SATISFACTION OF TOTAL HIP REPLACEMENT PERFORMED IN A DISTRICT HOSPITAL IN OUAGADOUGOU, BURKINA FASO: A MEDIUM TERM FOLLOW-UP STUDY

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Total hip replacement (THR) is increasingly performed in Africa. Reports, however, describing functional results of THR in Sub-Saharan Africa excluding South Africa are virtually non-existent. Doubts regarding the feasibility of joint replacement in this specific region remain among orthopaedic surgeons. We started a follow-up study of THRs performed in a district hospital in Ouagadougou, Burkina Faso from 2008 until 2012. Our database contained 143 (primary and revision) THRs in 122 patients. We tried to contact all patients by telephone, asking them a specific questionnaire. Patients seen at the outpatient clinic after July 2013 were asked the questionnaire at that time. 78 (63,92%) patients completed the questionnaire (63 by telephone, 15 at the outpatient clinic). 3 patients appeared to have died at the time of follow-up, 41 patients could not be contacted. Mean follow-up was 24,6 months. 67 (85,9%) patients responded they were satisfied with the result of the operation. 11 patients didn't answer this question and none mentioned to be dissatisfied. 73 patients indicated their operated hip or hips were functioning well. 74 (94,87%) patients indicated to be working. We designed a specific functional hip score aimed at use in a West-African population. The average score was 3,19, indicating good function. Overall the medium term functional results of THR in Burkina Faso seem good and promising. The high amount of patients that could not be contacted is an important limiting factor to the current study. Ideas for improvement to follow-up studies in an African setting will be discussed.

Abstract no.: 37111

EXCHANGE NAILING FOR TIBIAL DIAPHYSEAL FRACTURE NON-UNIONS. RISK FACTORS FOR FAILURE

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The aim of this study was to identify risk factors for failure of exchange nailing in tibial diaphyseal fracture non-unions. The cohort comprised 99 tibial diaphyseal fracture non-unions treated by exchange nailing. The mean age of the patients at exchange nail surgery was 36 years. The median time from primary fixation to exchange nailing was 6.4 months. The main outcome measures were union, number of secondary fixation procedures required to achieve union and time to union. Univariate analysis and multiple regression were used to identify risk factors for failure to achieve union. Multiple causes for non-union were found in 31.3% cases, with infection present in 32.3%. Further exchange procedures were required in 35.4%. The additional use of other fixation modalities was required in 7.1%. Union was ultimately achieved in 97.8%. The median time to union was 8.7 months. Univariate analysis confirmed that cigarette smoking, an atrophic pattern of non-union and infection were predictive for failure of exchange nailing ($p < 0.05$). Multi-regression analysis found that only infection was predictive of failure ($p < 0.05$). Exchange nailing is an effective treatment for tibial diaphyseal non-unions even in the presence of infection. Smoking, atrophic pattern of non-union and infection are associated with an increased risk of further fixation surgery.

Abstract no.: 37112

**MEDIAL DISPLACEMENT OSTEOTOMY FOR UNSTABLE
INTERTROCHANTERIC HIP FRACTURES**

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In unstable intertrochanteric fractures of the hip, surgery is the preferred modality to ensure early mobility and optimal restoration of function. We present our experience with a modified medial displacement osteotomy performed for unstable IT fractures using the DHS implant. The procedure involves telescoping the medial beak of the proximal fragment into the medullary canal of the femoral shaft and fixation with a DHS implant. This procedure in our experience has the following merits: -better stability ensuring early mobility -lesser instance of implant cut outs esp in osteoporotic patients - easily reproducible - can be done without image intensifier -economical - good patient satisfaction

Abstract no.: 37113

PATIENT FACTORS ASSOCIATED WITH A DELAY TO DIAGNOSIS IN PATIENTS WITH HIP FRACTURES

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Introduction: Current literature indicates that a delay of just 2 days in diagnosis of a hip fracture in the elderly could double the mortality rate [1]. We aimed to determine which patient factors were associated with a delayed diagnosis. Methods: A retrospective review over a 10-year period was performed. A delay was defined as a delay of greater than or equal to 12 hours. Two hundred and fifteen patients over 7 years were transferred to our unit from another ward. Thirty-five patients met the set inclusion criteria of delayed diagnosis. Demographics, fracture classification and Abbreviated Mental Test (AMT) score was collected. Previous data for hip fracture patients from 2012 was used as our comparison group. Results: In 2012, there were 700 hip fractures in the over 65 year old (mean age=80.1 years). The delayed to diagnosis group had a mean age of 82.9 (males: n=20; females: n=15). The analysis showed that male gender, an AMT of less than 6/10 and intracapsular fractures were associated with delayed diagnosis ($p < 0.05$). Conclusion: Our study indicates that male patients with a lower AMT presenting with a fall have a higher risk of delay to diagnosis of their hip fracture. This highlights an index of suspicion when the above factors present in daily clinical practice. Reference: [1] Zuckerman JD, Skovron ML, Koval KJ, Aharonoff G, Frankel VH. Postoperative complications and mortality associated with operative delay in older patients who have a fracture of the hip. J Bone Joint Surg AM 1995; 77: 1551/6

Abstract no.: 37117

ASSOCIATION OF CIRCULATING STRAIL AND HIGH-SENSITIVITY CRP WITH TYPE 2 DIABETIC NEPHROPATHY AND FOOT ULCERS

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Background: Hyperglycemia is among the potent factors that may induce or facilitate apoptosis. TNF-Related Apoptosis- Inducing Factor (TRAIL) is known for its apoptotic and immunomodulatory effects that have recently been cor-related with diabetes. We examined serum-soluble TRAIL (sTRAIL) and high-sensitivity CRP (hs-CRP) levels and their association with various distinct parameters in type 2 diabetic nephropathy patients with diabetic foot disease. **Material/Methods:** Twenty-two diabetic nephropathy patients with foot ulcers were enrolled in our study. Patients had been diag-nosed with diabetes at age 24 ± 10.58 years. Circulating sTRAIL and Hs-CRP levels were compared with control values, and possible correlations were investigated with parameters such as age, Wagner's Grade (WG), BMI, HbA1c, and creatinine. **Results:** Serum sTRAIL levels were significantly reduced in the patient group, compared to healthy subjects. High HsCRP levels correlated with age, and WGS correlated with BMI and creatinine levels. **Conclusions:** Significantly suppressed sTRAIL levels in diabetic nephropathy patients with foot ulcers compared to healthy controls suggest a protective role for TRAIL in the disease setting.

Abstract no.: 37121

COMPOSITE CERAMIC GRAFT IN PEDIATRIC CAVITARY BENIGN BONE LESIONS.

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Background: In the pediatric age group, filling of some cavitory benign bone lesions may be problematic because of the limited available volume of autogenous iliac bone graft and donor site morbidity. So, synthetic materials are becoming an increasingly popular alternative or adjunct to bone graft in such situations. Patients and methods: 14 cavitory benign bone lesions (in 13 children 1.5 – 6.5 y.) were managed by local curettage and the application of a composite ceramic bone substitute. The mean size of the cavitory bone lesion was 21.7 cm². Patients were followed clinically and radiologically for an average of 39 m (26m – 51m). Results: Patients` function and parents` satisfaction with the procedure was graded as satisfactory end result in all patients. Bone healing (according to Neer et al. grading system) was 28.6% type (1), 64.3%, type (2) and 7.1% type (3). Graft resorption and incorporation (according to Irwin's staging system) was 35.7% grade II and 64.3% grade III, at the latest follow up (average 39 m). There were no major early or late post-operative complications. Conclusion: Composite ceramic bone substitutes are a satisfactory option in the management of pediatric cavitory benign bone lesions.

Abstract no.: 37123

USE OF COMBINED AUTOLOGUS BONE GRAFT WITH GEL AUTOLOGUS CHONDROCYTE IMPLANTATION FOR TREATMENT OF MALUNITED SEVERELY DEPRESSED SHATZKER TYPE 3 LATERAL TIBIAL PLATEAU FRACTURE

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A 37 year old lady presented to us with a 4 month old severely depressed malunited shatzker type 3 fracture of her right knee which had been treated conservatively elsewhere. On CT/MR imaging she was found to have a 1.3 cms depression of the lateral tibial plateau fragment. It was a contained defect 1.8cms in diameter. This presented a unique problem as leaving her alone would have lead to severe arthritis and deformity and complicated a future TKR. Osteotomy also would be challenging and may not prevent a future TKR. Gel ACI on the other hand has been extremely successful in treating cartilage defects in joints. We decided to combine autologus bone grafting with Gel ACI to address the bone loss and at the same time provide a scaffolding of cartilage cells to cover the raw bone which will eventually get replaced by Hyaline like cartilage and thus may help prevent a future TKR. The procedure was done in 2 stages. In the first stage an osteochondral block was harvested from the same knee arthroscopically while at the same time assessing the bone defect to estimate the amount of cartilage cells that may be required. In the second stage the cartilage cells were implanted in to the defect over a bed of strut iliac crest autograft impacted into the defect to build up the bone loss. Its 8months postop with good consolidation of the bone graft and ACI. She is currently bearing full weight and has complete ROM.

Abstract no.: 37132

EXTERNAL FIXATION AND PERCUTANEOUS PINNING TECHNIQUES IN MANAGEMENT OF UNSTABLE DISTAL RADIUS FRACTURES.

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Background: Distal radius fractures (DRFs) crush the mechanical foundation of man`s most elegant tool, the hand. The impact of Colles` teaching, led many surgeons to refer loosely to any DRF as a Colles` fracture. Because of its frequency and the impact of the old teaching, it is usually managed by inexperienced junior staff. Unfortunate results are obtained frequently, as the malunited DRF is associated with significant functional deficits. Patients and methods: 126 unstable DRFs (in 121 patients: 18 - 80 y.) were operated upon. Percutaneous pinning (PCP) was performed in 90 fractures, and external fixation (\pm open reduction \pm PCP) was done in 36 fractures. Bone grafting was done in 27 fractures. Mean follow-up period was 16.8 m. with a range of 10 – 24 m. Results: Final radiologic scoring (Sarmiento & Latta`s modification, 1981) was 77.8% satisfactory and 22.2% unsatisfactory results. Final clinical end results (Jakim et al., 1991) were 35% excellent, 31.7 % good, 19% fair and 14.3% poor. Total complication rate was 36% (110 complications = 0.87 complication / fracture) Conclusion: reduction of inherently unstable DRFs must be maintained with PCP or distraction fixation, otherwise a high complication rate and less favorable final outcome should be expected.

Abstract no.: 37134

MIPPO IN DISTAL RADIUS FRACTURES WITH METAPHYSEAL INVOLVEMENT.

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We evaluated objective and subjective outcomes after closed reduction and minimally invasive volar locked T plate osteosynthesis for displaced distal radius fractures with metaphyseal involvement. Methods: We retrospectively evaluated six patients treated by minimally invasive volar locked T plate osteosynthesis for unstable extra-articular or partial articular distal radius fractures with metaphyseal involvement between 2007-2012. Age averaged 40, 6 years. All fractures were closed, and classified as type 23A3 (n: 5) and 23B1 (n: 1) AO/OTA system. Indirect reduction was performed. Two volar small incisions were made; a volar locked compression T plate was introduced in the sub-muscular plane, under radioscopic guidance. Analysis included radiological parameters (volar angulation, radial inclination, radial height); range of motion and strength. Subjective results were assessed using DASH Score and Visual Analogue Scale. Results: All fractures healed within 2, 3 months. Radiographic outcomes showed no difference between the first postoperative control and the last Rx at one year of follow up. Flexion and extension averaged 70° and 60°, pronation and supination 79° and 80°. Grip Strength 78, 4%. DASH Score 19, 84 and VAS 1, 5 points. Conclusions: Minimally Invasive technique decrease surgical injury and complications (infections and re fractures). It is an option in patients with metaphyseal comminution severe soft tissue injuries and high energy trauma. Percutaneous volar LCP allows obtaining stable fixation and restoring distal radius anatomy in radius fractures with metaphyseal involvement. It is technically demanding procedure, and the most common problem can be bone malalignment.

Abstract no.: 37142

OVERVIEW OF THE TREATMENT RESULTS OF SLIPPED CAPITAL FEMORAL EPIPHYSIS

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Slipped capital femoral epiphysis is the most common adolescent hip disorder. In our investigation, we compared the epidemiology and incidence, along with the various implicated treatment methods between 2001 and 2014, with the aim of reviewing the results of these methods. A total of 29 patients were reviewed for this study (15 boys, 14 girls). The overall trend in the number of cases of epiphyseolysis in Szeged has not been increasing. The age range in males was 10 and 16 years, while in females the range was 10 and 15. The average BMI from all 29 patients, was 24.1 kg/m² (for boys 24.78 kg/m² and girls 24.01 kg/m²). This difference is statistically significant, when compared to the average normal BMI in adolescents of 18 kg/m². From a total of 40 operated hips, 20 hips were treated with an open, double screw option. Percutaneous single screw fixation occurred in 12 patients. Percutaneous double screw fixation was employed in 12.5% of the hips, with open, single screw fixation in 5%, and treatment with Kirschner wire occurred in 2.5%. Statistically, there was no difference between the different methods of treatment. 5 (17.24%) had subsequent epiphyseolysis on the other side. One (3%) child had simultaneous bilateral lysis. The data gathered in our study demonstrate that the treatment of SCFE had internationally comparable results. When taking this into consideration, the more recent application of the percutaneous method of treatment has provided similar results to the open, double screw method.

Abstract no.: 37147

VTE PROPHYLAXIS IN PATIENTS WITH ANKLE FRACTURES

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Introduction: The extent of risk of VTE in patients with ankle fractures is not clearly defined. NICE recommends chemoprophylaxis until a patient's mobility is no longer significantly reduced. This implies all non-weight bearing patients regardless of plaster immobilisation. When non weight bearing both the calf muscle and foot pumps are de-functioned. Foot and ankle surgeons in our trust recommends chemoprophylaxis if a patient is in cast regardless of weight bearing status. Prophylactic treatment is not without complications. Objectives: To determine: 1.The compliance of VTE prophylaxis against both the NICE and trust guidelines. 2.The incidence of symptomatic VTE. 3.The incidence of complications of VTE prophylaxis. Methods: Retrospective study of 50 consecutive patients with ankle fractures treated at our Trust. Medical notes were reviewed for complications of VTE prophylaxis. The PACS was reviewed for radiographic/sonographic evidence of VTE. Children, patients already on Warfarin and those who had external fixators were excluded. Results: 50% compliance with trust guidelines. 54% compliance with NICE guidelines. The mean post operative duration of VTE prophylaxis was 34 days. None of the patients suffered a symptomatic VTE or complications of VTE prophylaxis. Conclusion: The compliance with NICE and trust VTE prophylaxis guidelines was poor, although no patients suffered with complications from either omission or initiation of VTE prophylaxis. Our trust is reviewing its VTE prophylaxis policy with a view to adopting NICE recommendations. Weight bearing status rather than cast immobilisation may be a more accurate marker of calf muscle pump and foot pump activity.

Abstract no.: 37149

A MODIFIED TECHNIQUE TO EXTRACT FRACTURED FEMORAL STEM IN REVISION TOTAL HIP ARTHROPLASTY

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Introduction:The removal of well-fixed broken femoral component can be extremely demanding, time consuming and potentially damaging to the host bone. We describe a modified sliding cortical window technique to aid extraction of a fractured cemented femoral stem in revision total hip arthroplasty. **Methods:** Patient is positioned laterally and posterior approach to the hip joint is utilized. The proximal stem fragment is removed without difficulty. Creating a sliding posterior cortical rectangular window just below the level of stem fracture exposes the distal stem fragment follows this. A carbide drill bit is used to machine a divot in the proximal part of the fractured distal stem. Once achieved, a Charnley pin is used to disimpact the residual stem through the crater by controlled retrograde orthopaedic mallet blows till the stem is extracted. Subsequently, the cortical window is secured with cable ready system and a polished tapered cemented stem is implanted using cement-in- cement technique. **Results:** Two patients presented with fractured femoral stem were managed with this technique in our institution. The First patient with a fractured revision femoral stem and the second with fractured primary cemented femoral stem. Follow-up at 12 months revealed stable and good hip range of motion and no hip pain in both patients. **Conclusions:**The sliding cortical window technique utilizing tungsten carbide drill, Charnley pin retractor and an Orthopaedic mallet is technically easy and most importantly; preserves host bone stock with cement-in-cement revision hip arthroplasty. We believe this technique can be added to the armamentarium of revision hip surgeon.

Abstract no.: 37151

COMBINED ACL RECONSTRUCTION AND HIGH TIBIAL OSTEOTOMY

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Introduction: presence of mal-alignment at the level of the knee joint may alter the long term result of anterior cruciate ligament (ACL) reconstruction. Material and methods: twelve patients with ACL deficiency and varus deformity had single stage high tibial osteotomy (HTO) and anatomic single bundle ACL reconstruction using quadruple hamstring autograft. The average per-operative varus deformity was 8 degrees (range 5-12). The open wedge osteotomy site was filled by calcium tri-phosphate (CTP) and fixed by plate and screws. The average age of these patients was 39 years (range 32-53) and the average follow up period was 23 months (range 35 to 12). Patients were prospectively evaluated using the IKDC score, in addition to radiological evaluation of the varus deformity and limb alignment. Results: correction of the varus deformity was achieved in all patients with an average 4 degrees (range 1-7) of valgus in the knee alignment. All osteotomies were united. The IKDC score has significantly improved from 35 per to 78 at the latest follow up. Only 30% of these patients were able to practice Sports. Conclusion: though correction of varus deformity along ACL reconstruction is a more technically demanding, it is a highly successful procedure at the short term. There is not enough evidence to support the hypothesis that ACL reconstruction can prevent osteoarthritis (OA) of the knee. This may be related to the inadequate correction of associated mal-alignment along with ACL reconstruction. It is important to report the development of OA at the long term.

Abstract no.: 37152

MID-TERM CLINICAL AND RADIOLOGICAL RESULTS OF SIZE 36MM HEAD ARTICULATION METAL ON METAL TOTAL HIP ARTHROPLASTY. MEAN OF 4 (1-7) YEARS FOLLOW UP.

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Introduction: Despite the many perceived benefits of metal-on-metal (MoM) articulation in Total Hip Arthroplasty (THA), there have been growing concerns about metallosis and adverse reaction to metal debris (ARMD). Analysis of size 36 mm MoM articulations THA is presented. Methods: A retrospective cohort review of size 36 mm MoM articulation of 288 THA in 264 patients implanted in our institution from 2005–2010. These patients were assessed clinically, biochemically and radiologically utilizing Metal Artefact Reduction Sequence (MARS) MRI. Results : Mean Follow up was 4 years (1-7). Mean age 73 years. Eighteen patients (5%) lost to follow up due to death. There were 66 (22%) symptomatic patients. However, blood metal ion levels were elevated in 17 (6%) patients only. MARS MRI scan findings were observed in 66 patients. Mean Oxford Hip score was 36.7(5-48) and mean cup inclination was 45° ($32-66^{\circ}$). Revision arthroplasty was executed in 21 (5.6%) patients, of which 16 patients underwent single stage revision THA. The cumulative survival rate, with revision for any reason, was 92.7% (95% CI 92.3 - 93.1%) at seven years. However, cup inclination $> 45^{\circ}$ observed to be high in symptomatic group with significant P value of < 0.017 . Conclusion: Relatively low revision rate observed for 36mm MoM articulation THA. Raised metal ions were not indicative of patients needing revision hip arthroplasty. Appropriate cup orientation appears to be one of the important factors to consider in cup revision in symptomatic patients with normal metal ion levels and negative MARS MRI findings.

Abstract no.: 37153

"COMPARISON OF CORE DECOMPRESSION WITH NON-VASCULARIZED BONE GRAFTING IN OSTEONECROSIS FEMORAL HEAD"

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A retrospective study comparing mid term results of core decompression (32 hips) and non-vascularized bone grafting (30 hips) in the management of osteonecrosis femoral head (ONFH). We managed 81 hips with ONFH with either of the hip preserving procedures. A total of 62 hips were available for evaluation, out of which 30 were in Ficat-Arlet stage IIA, 14 stage IIB, and 18 stage III. A total of 62 hips in 40 men and 14 women (54 cases) underwent surgery with a mean age of 34 years (range 22-50). There was no significant difference (p value – 0.452) between the two operative groups (NVBG vs CD) in terms of clinical outcome using Oxford hip score as the analytical tool. A total of 16 hips (25.8 %) were revised at a mean of 2.5 years. While using a clinical end point, both the groups had the comparable failure rates and mean survival time. Survival ship analysis showed a survival rate 65 % at 5 years (95 % CI 0.5275 to 0.8919) in NVBG group and 68.2 % at 4 years (95 % CI 0.6160 to 0.9532) in CD group. Non-vascularized bone grafts do not place over added advantage over relatively simple, core decompression in ONFH. Core decompression is worthwhile for pre-collapse stage, as a much more conservative hip preserving procedure as compared to non-vascularized bone grafting. It may also be recommended as a palliative hip preserving procedure, in early post-collapse stages, where in potential to progress to arthritic stage is high.

Abstract no.: 37170

MORPHOLOGIC FEATURES OF DISLOCATION OF THE PERONEAL TENDON

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This case control study evaluated the morphologic features of dislocation of the peroneal tendon using MRI. We compared 20 cases of dislocation of the peroneal tendon and 23 controls. Both groups were matched for age, gender and BMI. The following patients were excluded: those with acute injury within the past three weeks and/or findings of peroneal tendon tears or a dislocated peroneal tendon on MRI. We investigated the shape (concave, convex or flat) and angle of the posterior fibular malleolar groove and the soft tissue dimensions within the peroneal tendon sheath at the level of the ankle joint using MRI in the axial view. No significant differences were observed in either the shape (peroneal dislocation: concave= 2 cases, convex= 10 cases, flat= 8 cases; control: concave= 4 cases, convex= 12 cases, flat= 7 cases. $P=0.70$, chi-square for independence test) or angle (peroneal dislocation: $57.5\pm5.4^\circ$ vs. control: $59.2\pm8.8^\circ$. $P=0.45$, Student's t-test) of the posterior fibular malleolar groove. whereas a significant difference was confirmed in the soft tissue dimensions within the peroneal tendon sheath (peroneal dislocation: $144.6\pm41.4\text{ mm}^2$ vs. control: $97.5\pm29.1\text{ mm}^2$. $P<0.0001$, Student's t-test). These results suggest that a larger amount of soft tissue inside of the peroneal tendon sheath is a significant anatomical feature associate with chronic peroneal tendon dislocation. It remains unclear whether the soft tissue was bulky prior to injury. However, the presence of enlarged soft tissue within the peroneal tendon sheath is considered to be involved in the pathology of recurrent dislocation of the peroneal tendon.

Abstract no.: 37174

A COMPARISON OF DYNAMIC VIEWS USING PLAIN RADIOGRAPHS AND THIN-SECTION THREE-DIMENSIONAL COMPUTED TOMOGRAPHY IN THE EVALUATION OF FUSION AFTER POSTERIOR LUMBAR INTERBODY FUSION SURGERY

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Evaluation of the postsurgery status of interbody fusion is important in deciding treatment. Dynamic plain radiographs are used as a convenient method, but the accuracy is not so good. This study aimed to evaluate dynamic radiographs as a method for evaluating fusion, by comparing with 3D-CT. We conducted a prospective study of 158 levels that underwent PLIF surgery with follow-up by dynamic radiographs and CT for 1 year postoperatively. In dynamic radiographs, we looked for less than 3° of lordotic angle change, less than 3mm of translation between vertebral bodies, and no presence of halo signs; satisfying all the criteria was regarded as fusion (Group A), whereas failure to satisfy any was referred to as probable nonfusion (Group B) and if none were satisfied as nonfusion (Group C). The patients were classified into fusion or nonfusion groups based on CT. Correlation and clinical assessment between groups were analyzed. In 158 levels, 95(60.8%) levels were classified into fusion group by plain radiographs and 131(83%) levels by CT. When we analyzed the results of each group, in Group A, 78(81.3%) levels belonged to the CT fusion group, in Group B, 51(89.5%) levels, in Group C, 2(40%) levels, respectively. For each of CT fusion group, a cross-comparison using dynamic radiographs reconfirmed 78(59.5%) levels for Group A, 51(38.9%) levels for Group B, and 2(1.6%) levels for Group C. In terms of observer-to-observer agreement, CT showed a statistically higher level of correlation. Dynamic radiographs cannot be seen as an objective standard. It would be desirable to confirm the fusion status by 3D-CT for an objective analysis.

Abstract no.: 37177

SURGICAL OUTCOME OF LUMBAR SPINAL STENOSIS: 10 YEARS PROSPECTIVE FOLLOW-UP STUDY.

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Previous prospective clinical studies on lumbar spinal stenosis (LSS) have reported clinical outcomes with follow-up times from one to five years in. Our aim was to evaluate the surgical outcome in LSS up to 10 years. At baseline a total of 102 LSS patients were operated (mean age 62 years). Inclusion criteria were 1) presence of back, buttock, and/or lower extremity pain, with radiographic evidence (MRI) of compression of neural elements; 2) conservative therapy for several months with insufficient outcome. At 10 years follow-up there were 72 LSS patients (mean age 69 years, 45 women, 27 men) in the study. 18 patients were died and 12 patients were not available for the evaluation. Main outcome measures were Oswestry Disability Index (ODI), Visual Analogue Scale (VAS) and Patients Global Assessment and Satisfaction to Surgery (PGASS), prior to the intervention at 2 years and the last evaluation at least 10 years postoperative. The mean ODI before surgery was 43,9 (SD 15.2); at two years follow-up 26.6 (SD 19.2) ($p<0.001$) and 29.4 (SD 20.9) ($p<0,05$), respectively. The PGASS for good or excellent outcome was 61 % at two years follow-up and 68 % at 10 years follow-up, respectively ($p<0,05$). 3 patients had moved from good outcome to totally cured group during the follow-up. In general VAS and ODI values deteriorated during the 10 years follow-up. However patients Global Assessment and Satisfaction for the Surgery Outcome improved. Patients comorbidities may explain the conflicting results.

Abstract no.: 37178

PERCUTANEOUS CERCLAGE WIRING FOR REDUCTION OF SUBTROCHANTERIC FEMORAL FRACTURES IN FEMORAL INTRAMEDULLARY NAILING

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OBJECTIVES: The purpose of this study was to evaluate the patients who had undergone percutaneous wire assisted reduction and intramedullary nail fixation to determine the impact of this technique on fracture union and reduction quality. **METHODS:** Between November 2009 and March 2013, twenty eight patients with a displaced subtrochanteric femoral fracture were treated with percutaneous cerclage wire assisted reduction and intramedullary nail fixation. One patient died, and two were lost to follow-up. The remaining twenty five patients were followed until union or a minimum of one year. The mean age of patients was fifty-four years. All were treated with an antegrade reamed nail as well as the assistance of cerclage wiring placed through a small lateral incision. Seven patients were treated with an additional Collinear clamp-assisted reduction. Radiographs were evaluated for the quality of the reduction and fracture union. **RESULTS:** The mean operation time was 126 minutes (75-180 minutes) and the mean fluoroscopic time was 62 seconds (30-145 seconds). Twenty four of twenty five fractures united. The mean fracture union time was 15 weeks (11-24 weeks). All reductions were within 5 degree of the anatomic position in both the frontal and the sagittal plane. **CONCLUSION:** Surgical treatment of subtrochanteric femoral fractures with percutaneous wire assisted reduction and intramedullary nail fixation can result in excellent reduction and high union rate.

Abstract no.: 37182

**DELAYED FLAP COVERAGE OF OPEN EXTREMITY FRACTURES
AFTER PREVIOUS NEGATIVE PRESSURE WOUND CLOSURE THERAPY**

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Background: It is widely accepted that the most reliable result for the management of open extremity defects are obtained by definitive bony and soft tissue reconstruction within a critical period of 72 hours, yet in many cases this may be difficult due to concomitant injuries or delayed referral. The authors evaluated the use of negative pressure vacuum device in treating traumatic wounds sustained associated with an open fracture. **Methods:** Between March 2008 and April 2013, eighteen consecutive delayed flap coverage of open lower extremity fractures after previous use of negative pressure vacuum device were performed. Information on the time from injury to definitive wound coverage, type of coverage, type of fixation, and complications such as infection were collected. **Results:** The location of fracture was tibia in sixteen cases, femur and metatarsal bone in one case each. The vacuum-assisted closure device was applied for the average of 28 days, and the time from injury to definitive wound coverage averaged 32 days. Skin graft coverage was performed in five cases, free flap in ten cases, and local flap in three cases. Two flaps were complicated by superficial infection and one flap developed deep infection which was successfully treated with repeated irrigation and debridement. **Conclusions:** Use of negative pressure vacuum device in treating traumatic wound sustained associated with an open fracture provides good primary dressing over open wound and can be a treatment option in patient who cannot underwent soft tissue reconstruction within a critical period of 72 hours.

Abstract no.: 37183

FUNCTIONAL IMPROVEMENT IN GERIATRIC HIP FRACTURES - IS TYPE OF SURGERY A FACTOR ?

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Introduction: Though there is evidence of improved functional outcome with our 'Integrated Care Pathway' for geriatric hip fractures, we do not know if the functional recovery in activities of daily living is dependent on the type of surgery. The objective of the study is to determine if there is a difference in the Modified Barthel Scores post-operatively. Methods: Hip fracture patients treated surgically were divided into Group A (internal fixation) and Group B (arthroplasty). Demographic data, Charlson's Comorbidity Index (CCI) score, time to surgery and length of stay was recorded. Modified Barthel Index (MBI) scores were measured for functional assessment for the following intervals; pre-fall, discharge, 6 months and at 1 year follow up. Results: There mean age (A: 80.32 years, n=212; B: 81.38 years, n= 197), the mean CCI (A: 5.41, B: 5.43) and mean length of stay (A: 14.7 days, B: 15.3 days) were not significantly different. However, there was a significant difference ($p<0.05$) in time to surgery (A: 4.2 days, B: 3.5 days). The MBI scores were significantly different ($p<0.05$) for the pre-injury scores (A=91.9, B=88.4), however, there was no significant difference for scores measured at discharge (A=60.4, B=59.5), 6 months (A=77.6, B=77.0) and 1 year (A=81.1, B=83.0). Conclusion: We conclude that the type of surgery (fixation or arthroplasty) is not a determining factor in functional recovery in our Integrated Care Pathway although patients requiring an arthroplasty had higher functional scores and improvement (A= 88.3 %, B= 93.9%) at 1 year.

Abstract no.: 37184

ANTERIOR SURGERY FOR DORSOLUMBAR BURST FRACTURE : IS IT REALLY SO MORBID

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Anterior surgery for Dorsolumbar burst fracture : Is it really so morbid High morbidity has been reported in the literature following anterior surgery, in terms of increased blood loss. Complications specific to the approach, include injury to the lumbar plexus, vascular injury to the inferior vena cava or aorta, ileus, damage to intraperitoneal contents, damage to the ureter, chylothorax or chylous leak, sympathetic plexus injury, and splenic injury. Late complications may include incisional hernia, neu-ropathic pain, and permanent abdominal swelling on the side of the approach. We did a retrospective analysis of the patients treated for thoracolumbar burst fracture via anterior or anterior plus posterior approach. Material & Methods 41 patients of thoracolumbar burst fractures operated by Anterior or Anterior plus posterior approach at JPNATC between Jan 2008 to May 2012, were retrospectively analysed for any early and late complications. Patients with more than 6 months of followup were also analysed for late complications. Results Minimum follow up was of 6 months to maximum follow up of 4.5 yrs. We had no vascular complication. The amount of blood loss was 700 ml – 1.5 litre. 1 patient developed post operative pleural effusion for which chest had to be inserted again, and patient was managed satisfactorily and recovered fully. 2 patients had radiating pain along the stitch line which improved with medication and time. No other complication whatsoever was seen in any of the patients. Neither of the patients required any Ventilatory support nor any Intensive care support post operatively.

Abstract no.: 37187

COMPARISON OF METAL-ON-METAL TOTAL HIP RESURFACING ARTHROPLASTY FOR TREATMENT OF OSTEONECROSIS OF FEMORAL HEAD AND OSTEOARTHRITIS IN AN EARLY AND MID-TERM PERIOD

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Abstract : To evaluate the clinical results of metal-on-metal hip resurfacing arthroplasty (HRA) in treating patients with osteonecrosis of the femoral head (ONFH) and to make a comparison to patients with osteoarthritis. **Methods :** From July 2005 to July 2010, 19 patients (20 hips) in the ONFH group and 15 patients (16 hips) in the osteoarthritis group were treated with metal-on-metal total hip resurfacing arthroplasty. The clinical data (Harris Hip Score,HHS) and radiographic outcome of these patients was recorded at the time of 1,3,6,12 month respectively and then yearly thereafter. **Results:** Baseline between two groups was comparable ($p>0.05$). None of them was lost to follow up. The mean follow-up time was 58 months . 1 case in ONFH group suffered from femoral neck fracture 41 months after operation received total hip replacement, while 1 case with acetabular prosthesis loosening and 1 case with femoral component loosening in the osteoarthritis group undergone revision operation at 20 months and 57 months postoperatively. The recent Harris scores were 94.5 ± 2.7 in ONFH group and 94.0 ± 3.9 in osteoarthritis group($P =0.721$). but there were significant differences between pre- and post-operation ($P < 0.05$). Overall survivorship, using any revision as an endpoint, was 94.4% for ONFH, compared to 81.7% for OA at five years ($P=0.413$). **Conclusion :** The median-term results of HRA was satisfactory in ONFH group, as well as in osteoarthritis group. Large volume and long-term follow-up are needed to identify differences between two groups.

Abstract no.: 37193

CEREBRAL FAT EMBOLISM FOLLOWING ORTHOPEDIC SURGERY: A REPORT OF TWO CASES

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Introduction: Fat embolism syndrome is diagnosed based on clinical features, as the classical symptom triad may not be present. We describe cases diagnosed by characteristic MRI for disturbance of consciousness following orthopedic surgery. Case 1: A woman (age = 18) hit by a car was hemodynamically unstable [GCS and Injury Severity scores = 14 (E3M6V5) and 35, respectively] on admission. Following resuscitation, she underwent intramedullary nailing for an open tibial fracture. On day 2, convulsion developed with no recovery from anesthesia. MRI revealed disseminated signal changes in deep white matter and periventricular, suggesting cerebral fat embolism (CFE). Her consciousness gradually improved, followed by extubation 6 days thereafter with supportive measures. Discharge was on day 25 without neurological deficit. Case 2: A woman (age = 82) with a sustained femoral neck fracture underwent uneventful prosthesis replacement under spinal anesthesia on day 4 following injury. Room air saturation that postoperatively decreased to 90% asymptotically was recovered with oxygen inhalation. After 7 h, abrupt neurologic deterioration developed (GCS score = 6), without ventilatory impairment. MRI revealed a “starfield pattern,” a pathognomonic sign of CFE. Her eyes opened to verbal command 3 days later; subsequently, her consciousness gradually improved. She walked with a cane; discharge was 4 months following injury. Discussion: Although not fulfilling Gurd’s criteria, these cases were diagnosed with CFE based on the typical pattern on MR images. MR images for CFE are not specific but characteristic. Therefore, diffuse axonal injury and embolic cerebral infarction should be excluded when diagnosing CFE.

Abstract no.: 37194

EVALUATION OF THE LIPOSARCOMA BY FDG-PET

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Introduction Integrated 2 deoxy 2 F18 fluoro D glucose positron emission tomography combined with computed tomography (FDG PET/CT) has increasingly been used for the management of patients with various types of cancer. However, it is denied about the usefulness of the benign and malignant in soft tissue-tumors. In this background, it is thought that soft-tissue sarcomas have various histological types and malignancies. Liposarcoma is one of the most frequent soft-tissue sarcoma. The aim of the current study is to evaluate the usefulness of FDG-PET when limited to liposarcomas.

Material and Method From our database comprising of 255 bone and soft tissue tumors, which were obtained from patients who were examined by integrated FDG PET imaging during the period from December 2004 to December 2013, 56 patients with liposarcoma were biopsied or surgically treated, pathologically recognized. We examined the differentiation of the tumor having a maximum standardized uptake value (SUVmax) by tumor size, AJCC stage, and histological type.

Result The study included 23 pleomorphic liposarcomas, 22 myxoid liposarcomas, 4 dedifferentiated liposarcomas, and 10 well-differentiated liposarcomas. The mean size of pleomorphic, myxoid, dedifferentiated, and well-differentiated liposarcomas were 9.25cm, 9.33 cm, 9.95cm and 11.65cm, respectively. No statistically significant differences were observed when comparing these histological types. The mean SUVmax of these histological types were 6.26, 2.93, 3.21, and 0.97, respectively. There was a statistically significant difference identified in the SUVmax between pleomorphic liposarcomas and other histological types.

Conclusion The SUVmax on FDG-PET is valuable parameter for distinguishing the histological type of liposarcoma.

Abstract no.: 37196

DOES A PREOPERATIVE COGNITIVE-BEHAVIOURAL INTERVENTION IMPROVE RETURN TO WORK AND DAILY LIFE IN PATIENTS UNDERGOING LUMBAR SPINAL FUSION SURGERY?

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Background: Lumbar spinal fusion surgery (LSF) is a commonly offered treatment for chronic low back pain when conservative treatment is unsuccessful. Although high rates of radiographic fusion are achieved, many individuals continue to report pain and disability. Research has found psychological characteristics like maladaptive coping strategies and fear-avoidance beliefs to be predictive of worse outcomes after spine surgery. These characteristics have proven susceptible to interventions using a cognitive behavioural approach (CBT), but this is not well investigated in LSF patients. Aim: To examine the effect of a preoperative CBT intervention on disability, pain and return to work in LSF patients. Methods: The study is a randomized clinical trial with 1 year follow-up, including 96 LSF patients. Patients are randomly allocated to either standard care (surgery and rehabilitation) or standard care plus a CBT intervention. The intervention consists of an 18-hour patient education focussed on pain coping, managed by a multidisciplinary team. Effect is measured on disability (primary outcome), pain, return to work, fear-avoidance beliefs, pain coping and quality of life. Results: No results are ready yet. The 1 year follow-up for all patients will be completed by September 2014, and results will be presented at the SICOT congress. Discussion: This project combines knowledge from different areas (medicine, psychology, physical- and occupational therapy) because of increasing evidence of efficacy of integration of more areas. We expect that the results can make a significant contribution to development of guidelines for good rehabilitation of patients undergoing lumbar spinal fusion.

Abstract no.: 37201**37201**

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Introduction: modular neck hip prostheses offers more options in controlling the offset, stability, and leg length during total hip arthroplasty (THA). However, these benefits of modularity may be shadowed by the increased risk of modular neck fracture, a consequence of fretting corrosion. We present an analysis of the patients needing revision surgery for modular neck fracture after THA performed at a university clinical center and at a nearby county hospital in a 15-year period. Materials and Methods: A series of six patients treated with fully modular THA of the same taper cone design made of titanium alloy (GSP, Cremascoli Ortho, Milan, Italy, and Profemur Z, Wright Medical Technology, Arlington, TN, USA) is presented. Four long straight and two long varus necks were implanted. All patients were male gender, aged 49 years (mean, range 37 to 56 years), the BMI was 31.4 kg/m² (mean, range 25.9 to 34.6 kg/m²), and the fracture occurred 5.6 years (mean, range 2.3 to 12 years) after index procedure. Discussion: the remaining part of the fractured neck could not be removed at revision. Well-fixed femoral stems were revised with long cone titanium revision stems. At the latest follow-up at 3.3 years (mean, range 1 to 11 years) after revision, all patients had stable implants and walked without crutches. Conclusion: the changing demographics of the patients undergoing THA including increase in patients weight, physical activities and life expectancy, could also contribute to the increased fracture rates. Added modularity brings another possibility for complication in THA.

Abstract no.: 37203

POSTEROMEDIAL APPROACH IN PROXIMAL TIBIA FRACTURES

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Introduction: Tibial plateau fractures require different approaches according to initial fracture pattern. The most widely used classification (Schatzker) is based on the description of anteroposterior lesion, and does not describe the sagittal plane fragments. The posteromedial fragment fractures, are secondary to a combination of varus over an axial load with knee hyperextension. The incorrect interpretation of the fracture pattern can lead to an incorrect approach. The aim of this study is describe the posteromedial approach for the posteromedial fragment of tibial plateau fractures and show our experience. Methods: Between January 2005 and March 2009 were evaluated 15 patients who were surgically treated with posteromedial approach for posteromedial fracture fragments of the tibial plateau. Nine male and six female. The average age was 38.9 years. All fracture were close. Twelve fractures were bicondylar. Results: Average follow-up was 16.1 months, there were not perioperative complication. There were no nonunions or malunion. We evaluated the quality of reduction following DeCoster, having five anatomic reductions, seven good and three regular reductions. Conclusion: We believe that posteromedial approach for treatment the posteromedial fracture fragments of the tibial plateau is highly effective and reproducible, providing a satisfactory vision for correct treatment.

Abstract no.: 37204

ESTABLISHING A STANDARD IN SURGICAL SITE MARKING

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Introduction: Pre-operative marking is key in promoting correct site surgery and patient safety. In the UK, hospitals reported 111 “never events” on surgical patients in the 2009/2010 period. 57 of these were related to wrong-site surgery. A study in February 2013, at Southend Hospital, found variable methods of marking and no specific standard. A standard was established and defined using posters, which were displayed on all orthopaedic wards and emailed individually to all orthopaedic trainees and consultants. Methods: All orthopaedic procedures (n=113) performed on limbs between 3– 7 March 2014 were assessed in main theatres and the day stay unit. Spinal procedures were excluded. A tick/cross pro-forma was marked, prior to surgery, after the WHO checklist was read out. It assessed whether or not the mark was made with permanent ink, the arrow pointed to the correct site, the correct side was written, the procedure was written, the marker’s initials were written, the arrow was visible after draping and the grade of the marker. Results: Assessment against the standard showed improvements in all areas. The correct site was marked in 100% of cases (95% on original audit), permanent marker use was 99% (94%), procedure was written in 89% (76%), initials were written in 71% (33%) and the arrow was visible after draping in 80% (44%). Conclusion: The poster defined and communicated standards effectively, leading to improvements in practice. Accurate and thorough marking functions as an excellent learning tool for trainees.

Abstract no.: 37205

ENDOPROSTHESIS OF THE HIP JOINT IN DYSPLASTIC COXARTHROSIS.

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Azizov, M.ZH., Mirzaev Sh.H. Introduction: Per 1000 adults who applied to the clinic Research Institute of Traumatology and Orthopaedics of the Republic of Uzbekistan 578 suffer from diseases of large joints. Of which not less than 90-100 people are in need of endoprosthesis of the hip joint. Among all the patients, which was endoprosthesis of the hip joint 67-70% of patients with dysplastic can. Material and methods: In 845 cases, the replacement of the hip joint on the dysplastic coxarthrosis. The average age of patients was 37 years. One of them 676 women, 169 men. In 34 patients was two-sided total endoprosthesis. Sick of III degree for Crowe was endoprosthesis of the hip joint with the installation of cups in place of the center of rotation or above with the plastic of the roof or without plastics. In 8 patients with the two parties was endoprosthesis with the installation of cups in place neoarthrosis. In 6 patients of the IV degree for Crowe held a two-stage operation – 1 stage - excision of the capsule, head resection, setting up the device Ilizarov of 1.5 rings (the iliac bone ring-road, the n/3 hip 1 ring) with a view to reduce proximal femur to the level of acetabulum, after which was conducted stage 2 - total endoprosthesis. Results: When arthroplasty 134 patients with III-IV degree of dysplasia of Crowe operations proceeded without complications, obtained excellent results in 40 cases, good in the 80, satisfactory-in 3 (observed this complication as paresis fibularis nerve).

Abstract no.: 37206

ATROPHIC DISTAL FÉMUR NONUNION

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Background: Retrospective review of the surgical results of aseptic atrophic distal femur metaphysis nonunion treated by ORIF plus autogenous bone graft. Methods: 17 patients surgically treated for distal femur nonunion between January 2005 and July 2007 were evaluated. Fracture type, initial surgical treatment, time between fracture and nonunion, preoperative ROM and definitive surgical treatment were recorded. Patients were followed until union, and functional results were evaluated with the HSS knee rating scale. Results: 14 fractures were classified as AO C and 3 as AO A3. 12 fractures were initially open. Average time between fracture and nonunion was 12 months. 95 Blade plate was used in 8 cases, LCP in 8 and DCS in 1 case. Autogenous bone graft was applied in all cases. All fractures healed in average 4.5 months. HSS knee rating scale improved from average 48 to 81 postoperative. Conclusion: Open reduction and rigid internal fixation plus autologous bone graft in adequately selected patients with a controlled postoperative rehabilitation allows a high success rate in the treatment of atrophic distal femur nonunion.

Abstract no.: 37209

LONG LOCKED WAVE PLATES AND AUTOLOGOUS BONE GRAFT FOR THE TREATMENT OF LOWER LIMBS NONUNIONS

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Introduction: Reduction and fixation with intramedullary nailing is the gold standard for diaphyseal lower extremity long bone fracture. Many different causes are responsible of nonunion. The literature provides little information on the treatment of nonunion with long locked wave plates fixation techniques. The purpose of this paper is to report our experience in treating such injuries. Methods: Retrospective review of 19 patients between 2006 and 2010. 10 male and 9 female. The average age was 41.9 years old. 7 femur and 12 tibia. 3 were hypertrophic and 16 atrophic. All aseptic at the time of definitive treatment. The time between initial treatment and final plating was 2 years (range, 8 months to 8 years). 11 out of 19 had previous exchange nailing. Number of previous surgeries per patient: 4. In all cases, wide, long locked 4.5 mm. wave plates were used (16-22 holes) with 4 screws proximal and 4 screws distal to nonunion site on average. In 16 patients (84%), autologous cortical bone graft was used. Results: Bone healing was achieved, on average, at 6.5 months (range, 5 to 9) without any signs of instability or pain at the nonunion site. Hip, knee nor ankle ROM was affected. Conclusion: Long bone diaphysis nonunion continues to be a significant clinical problem. Long wave plate fixation provides adequate force distribution, and allows bone remodeling. Used appropriately, long locked wave plate osteosynthesis with locked / conventional screw fixation and bone graft is a good treatment option for these complex situations.

Abstract no.: 37210

**SOFT TISSUE SARCOMAS OF THE EXTREMITIES.
MULTIDISCIPLINARY APPROACH**

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Introduction: Soft tissue sarcomas are rare, and represent 15% of tumors in childhood and 1% of adult tumors. Adult sarcomas are more frequent in soft tissue than in bone, and they are located 50% around the extremities, 40% in retroperitoneal, thorax and abdomen and 10% involve head and neck. Objectives: Evaluate prognosis and life expectancy at one and three years. Methods: Retrospective review of 19 patients who underwent surgical treatment for soft tissue sarcomas between 2005 and 2009. 15 (79%) involved lower extremity and 4 (21%) upper extremity. Average tumor size was 8.6 cm. (3/18cm). Histology informed: Fibrohistiocytoma 8 (42%), Leiomyosarcoma 4 (21%), liposarcoma 2 (11%), synovial sarcoma 2 (11%), schwannoma 2 (11%), and angiosarcoma 1 (6%). 18 patients underwent compartmental resection, and 1 primary amputation. 2 (11%) received preoperative chemotherapy. Postoperative radiotherapy was done in 5 (26%) and chemotherapy in 3 (16%). Results: Pathology reports informed margins free of pathology in 94% (18 cases) and insufficient margin in 1 (6%). 4 (21%) patients had a local recurrence during follow up, 2 underwent new surgery with limb salvage and 2 amputations. 5 patients (26%) had systemic recurrence. Life expectancy at 1 year was 89% and at 3 years 74%. Conclusions: Surgical treatment and a multidisciplinary approach are the alternatives of choice for the management of these complex and rare tumors. 1 and 3 years life expectancies are acceptable for this malignant tumors.

Abstract no.: 37211

FLOATING KNEE. REOPERATION RATE

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Introduction: Ipsilateral femur and tibia fractures are uncommon lesions, but are usually associated with a high complication rate (nonunion, infection, knee stiffness) and mortality. These injuries are the result of high energy forces, in polytrauma patients with a high ISS. Surgical treatment varies from damage control to early total care. Material and methods: Retrospective review of 20 floating knee injuries treated between 2008 and 2011 with an average follow up of 3.2 years. Average age 38 yo. According to Fraser classification: 9 type I, 7 type IIA, 1 type IIB and 3 type IIC. 10 were open fractures. Associated lesions were present in 75 % of the patients. Average ISS score was 27.9 (14-50). Damage control was done in 6 patients and early total care in the remaining 14. Results: Reoperation was required in 8 patients for either nonunion in 6 or infection in 2. With a higher complication rate according to fracture type (intraarticular) and open fracture. Functional results were excellent in 8, good in 7 and bad in 5. Conclusion: Floating knees are high energy injuries, are usually associated to polytrauma patients and still have a high complication and mortality rate. Intraarticular fractures as well as open fractures are bad prognostic fractures with higher complication rates and lower functional score

Abstract no.: 37219

VARUS DEFORMITY OF THE FEMORAL HEAD IN THE TREATMENT OF FEMORAL TROCHANTERIC FRACTURES BY INTRAMEDULLARY NAIL

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〔Introduction〕 One of the complications in the treatment of femoral trochanteric fractures by intramedullary nail is varus deformity of the femoral head. Excessive varus deformity causes cut out of lag screw. We evaluated decreases of neck shaft angle in the different three types of diaphyseal canal retrospectively. 〔Materials〕 Two hundred and nine patients of femoral trochanteric fractures underwent internal fixation by intramedullary nail. We used the nail of thinnest distal diameter (9mm) in all cases without reaming and compared the neck shaft angle at immediate post-surgery with the neck shaft angle at follow-up. All patients were divided into three groups according to the occupying ratio (ORC) of the distal nail end to the diaphyseal canal which was measured in the anteroposterior plain radiography. Group A was wide canal group (ORC 46-60%) and included 68 cases. Group B was intermediate canal group (ORC 61-70%) and included 74 cases. Group C was narrow canal group (ORC 71-94%) and included 67 cases. 〔Results〕 The average decreases of neck shaft angle at follow-up were 2.0 degrees in group A, 2.1 degrees in group B and 2.7 degrees in group C. There were no significant differences statistically between three groups. 〔Conclusion〕 Some authors recommend inserting the nail of thicker distal diameter to be afraid of varus deformity of femoral head. The results of our study convince us that it is not necessary to insert the nail of thicker distal end in the case of wide diaphyseal canal.

Abstract no.: 37222

LOCKED PLATES PLACED THROUGH LATERAL MIPPO APPROACH IN HUMERUS NONUNIONS.

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We retrospectively evaluated eight patients with humerus oligotrophic nonunions treated by MIPPO between 2009 and 2013. Nonunions were diaphyseal in 5 cases, and located in the proximal humerus metaphysis in 3 cases. The 5 diaphyseal nonunions had previous surgical treatment with static locked nails. Two 4cm lateral approaches were used, one proximal transdeltoid approach, and another distal approach in which the radial nerve was released and protected. Stabilization was achieved using locked 90° blade-plates in 3 cases, and long 3.5mm LCP plates in 5 cases. Time between initial surgery and revision surgery averaged 10.5 months. Preoperative DASH score averaged 26 points. Preoperative Constant's score averaged 70,5. Preoperative pain score averaged 3.5 points. In diaphyseal nonunions the intramedullary nail were left in-situ. The nonunions were not opened or decorticated, and bone graft was not associated. Follow-up averaged 18.1 months. Union was achieved in all cases, time to union averaged 3.8 months. DASH score at last follow-up averaged 7.5 points, and final Constant's score averaged 92. The analog scale of pain averaged 0.5 points. Time from definitive surgery to work return averaged 11.3 weeks. There were no infections or nerve compromised. There was no need of implant removal. The technique was used in nonunions in which we considered that mechanical instability was necessary, and simultaneously we could achieve good bone contact and alignment using indirect reduction techniques. We had good objective and subjective results in all cases, with high patient satisfaction using a MIPPO technique in selected oligotrophic humerus nonunions.

Abstract no.: 37223**37223**

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According to hemodialysis (HD) is popular, surgeries in HD patients have increased. Several authors have reported a high mortality rate and a high early complication rate following operation in HD patients. However, to our knowledge, there is no report of superior mesenteric artery (SMA) occlusion after operation. We report a very rare complication of SMA occlusion after simultaneous bilateral total knee arthroplasty (TKA). The patient was a 80-year old woman with osteoarthritis of both knees who underwent TKA. She had been on HD since 5 years before. The surgical time was 180min and the bleeding volume was 300g. Postoperatively, she initially recovered well. On postoperative day (POD) 1 she underwent HD and she vomited 3 times. On POD 2 she complained of weakness of her right arm and then her consciousness became faint and oxygen saturation declined. Brain CT was performed immediately and no infarction was found. An abdominal X-ray showed gaseous distension of the bowel. Contrast enhanced CT revealed contrast defects in SMA, and a diagnosis of acute SMA occlusion was made. The possible causes of occlusions were thought to be paroxysmal atrial fibrillation or paradoxical embolism due to deep venous thrombi, although, it is still unknown. We conclude that despite intensive care for HD patients, the risk of vascular complications is still high. Patients, families of patients and physicians should recognize the vascular complications even in patients with less than 10 years period of HD.

Abstract no.: 37225

EN BLOC OPEN LAMINOPLASTY FOR LUMBAR SPINAL CANAL TUMORS: ANALYSIS OF 7 CASES

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INTRODUCTION: Laminectomy is used to approach intraspinal lesions. When removal of the posterior elements have been attempted, the effectiveness of the technique has been limited by the amount of bone sacrificed. Because cases of kyphotic spinal deformity after laminectomy have been reported Patients underwent En bloc open door laminoplasty in the lumbar spine for extirpation of spinal cord tumors. **OBJECTIVES:** We examined the safety and efficacy of the En bloc open door laminoplasty for lumbar spinal canal surgery. **METHODS:** Seven patients who had undergone this laminoplasty for excision of spinal cord tumors between 2002 and 2013. There were three men and four women, with a mean age 59.0 years (range,20-84years). The mean follow-up period was 42 months. Two-level laminoplasty was performed in three patients, and three-level in four. The patients did not need their spinal canals to be enlarged after the intradural procedure had been performed. After excision of spinal cord tumors, the excised laminae were replaced exactly in situ to their original anatomic position. **RESULTS:** The operative field was wide enough for an intradural procedure to be performed in all patients. No complications such as postoperative spinal canal stenosis, kyphosis were observed except in one patients, who experienced sinking of the replaced laminar flap. Findings on radiographs confirmed primary bony union in all patients. **CONCLUSION:** En bloc open door laminoplasty is a useful and safe procedure that can be used to reconstruct the posterior spinal elements throughout the whole spinal region after the intradural procedure has been performed.

Abstract no.: 37243

SAGGITTAL SPINE ALIGNMENT RECONSTRUCTION IN HIGH-GRADE LUMBAR SPONDYLOLISTHESIS

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Objective:The surgical experiences of high-grade lumbar spondylolisthesis were summarized in order to investigate the surgical treatment strategy. **Methods :**42 cases, including male 24 cases, female 18 cases, and ages were 27~68ys. According to the Meyerding classification, 26 cases were grade III, 16 cases were grade IV. All the patients were taken radiograph in standing position. The lumbar lordosis, sacral slope, pelvic tilt and pelvic incidence were measured preoperatively and postoperatively. And the Visual Analogue Scale(VAS) was used to evaluate the operation effects. **Results:**In the study, 33 cases were reduced anatomically, 6 cases were reduced from grade IV to grade I, and 3 cases were reduced from grade IV to grade II. There were no infection and nerve injury. 40 cases were fused well, 2 cases were formed psedoarticulation and screw were broken. 3 cases had transient nerve root pain, but recovered within 7~10 days. Lumbar lordosis were corrected from 72.4 ± 14.1 degrees to 61.6 ± 9.2 degrees. Sacral slope were corrected from 54.3 ± 7.2 degrees to 44.6 ± 5.7 degrees , pelvic tilt were corrected from 16.3 ± 3.3 degrees to 12.4 ± 2.9 degrees , and pelvic incidence were reduced from 66.5 ± 13.8 degrees to 62.2 ± 9.3 degrees.The VAS scale of the every follow-up point was decreased significantly according to the pre-operation. **Summary:**The high-grade spondylolisthesis should be treated according to etiopathogenesis. The lumbopelvic parameters were close relation to slippage degree and turnover of the spondylolisthesis. It is very important of formulating of proper parameters to get excellent clinical outcomes.

Abstract no.: 37249

IS VANCOMYCIN-LOADED DAC HYDROGEL COATING OF ORTHOPAEDIC IMPLANTS SAFE FOR HUMAN USE ? SHORT-TERM CLINICAL RESULTS.

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Introduction: Infection in orthopaedics remains a leading reason for failure. Various antibacterial coatings for implanted biomaterials are under study in different centers around the world, aimed at reducing bacterial colonization and biofilm formation, thus preventing implant-related infections; however, only few technologies are currently available in the clinical setting. In vitro and in vivo studies have recently demonstrated the efficacy and safety of a fast resorbable (<96 h) antibacterial-loaded hydrogel coating (DAC, Novagenit Srl, Italy). Aim of this study was to evaluate the short-term clinical safety of a vancomycin-loaded DAC coating. Methods: In this prospective, single blind study, 74 patients, undergoing hip or knee prosthesis were randomly assigned to receive vancomycin-loaded DAC coating or to a control group, without coating. Pre- and post-operative assessment of laboratory tests, wound healing (ASEPSIS score), clinical score (HHS or KSS score, SF-12) and x-rays was performed at fixed time intervals, by a blind investigator. Statistical analysis was performed with Fisher exact test or Student's t test. Significance level was set at $p < 0.05$. Results: Wound healing, clinical scores, laboratory tests and radiographic findings did not show any significant difference between the two-groups at a mean 6 months follow-up (min: 3, max: 12 months). No early infections of the surgical site were observed in either group and no local or systemic side effects, that could be related to DAC hydrogel coating, were noted. Discussion: vancomycin-loaded DAC hydrogel coating appears clinically safe in this first short-term clinical trial.

Abstract no.: 37255

**ACETABULAR RECONSTRUCTION WITH REINFORCEMENT RING
ABOUT 30 CASES**

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Loosening of an acetabular cup is accompanied by osteolysis the importance of which can lead to partial or total destruction of the walls and roof of the acetabulum. Materials and methods: Between 2008 and 2013, we performed 30 revisions of total hip. According to the classification SOFCOT we had 10 cases type 2 , type 3 and 12 cases 08 case type 4. 20 cases were not reconstructed femoral head allograft protected with ring Kerboull and cemented cup and 10 cases without allograft. During the recovery period, we conducted early mobilization without support on the operated limb for a period of 03 months to 45jours . The average follow-up period of the series was 03 years Results : They were reviewed clinically with all their trading PMA score (Merle D' Aubigne Postel) radiologically according to the classification of MORELAND . Conclusion: The acetabular reinforcement ring Kerboull is a good solution in bone loss, it helps protect the graft during consolidation.

Abstract no.: 37262

FOUR QUADRANT PARALLEL PERIPHERAL SCREW FIXATION IN DISPLACED FRACTURE NECK OF FEMUR

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Treatment of displaced femoral neck fracture in elderly patients is still controversial. The treatment options are screw fixation, hemiarthroplasty and total hip arthroplasty based primarily on age of the patient. The issues in screw fixation are ideal patient selection, optimal number of screws, optimal screw configuration and positioning inside the head neck of femur. Patients aged 50 to 73 years who sustained displaced femoral neck fracture and fit the inclusion criteria were enrolled in this prospective study. They were treated with closed reduction under image intensifier control and cannulated cancellous screw fixation. Accurate anatomical reduction was not aimed and a cross sectional contact area of >75% without varus was accepted as good reduction. Four screws were positioned in 4 quadrants of femoral head and neck, as parallel and as peripheral as possible. Radiological and functional results were evaluated periodically. Sixty four patients who could complete a minimum follow up of two years were analyzed. Radiologically, all fractures healed after mean duration of 10 weeks (8-12 weeks). There was no avascular necrosis. Non anatomical healing was observed in 45 cases (70%). All patients except one had excellent functional outcome and could do cross-legged sitting and squatting. Chondrolysis with progressive head resorption was seen in one case, which was converted to total hip arthroplasty. The four quadrant parallel peripheral (FQPP) screw fixation technique gives good stability, allows controlled collapse, avoids fixation failure, achieves predictable bone healing in patients \geq 50 years of age gives satisfactory functional results in large group of patients.

Abstract no.: 37265

METHOD OF SURGICAL TREATMENT OF CHRONIC LATERAL CONDYLE FRACTURES OF TIBIA

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Introduction. Fractures around knee joint area is severe trauma of extremity. In 64% cases these fractures is accompanied with knee congruity disturbance, in 28,3% cases with meniscus and cruciate ligament ruptures. In displaced fractures instability of knee joint may occur, this is not always from ligament injury but from incongruity of the knee. Methods. In sport trauma 13 patients (8 male, 6 female) with malunion of lateral condyle of tibia. Their complaints were knee instability in coronal plane, varus deformity, bending of the axis of extremity, thigh and shin soft muscles hypotrophy. Patients were underwent X-ray, MRI, CT, MSCT investigations. We performed approach in 90 degrees on lateral side from lateral condyle of femur until tuberosity of tibia. In this approach articular surface and edge of lateral condyle of tibia is well visible. Osteotomy of proximal part of tibia under 45 degrees We performed and lateral condyle is placed to its initial place. After reduction proximal part of tibia is fixed with 2 screws. Knee joint is immobilized with plaster cast for 12-14 days, after that we recommended patients active motion of the knee. Results. Short term resultes were studied in 13 patients. Criterions for knee evaluation were level of flexion and extension, frontal stability in weight-bearing and not weight-bearing states. Good results were occurred in 8 patients, satisfactory in 5 patients. Conclusion. CT, MSCT and MRI allow evaluate state of articular surface lateral condyle fractures of tibia. Success depends on restoration of articular surface in these type fractures

Abstract no.: 37266

PHATHOMORFOLOGICAL CHANGES IN MENISCUS CYSTS OF THE KNEE JOINT

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Introduction. Cyst transformation of meniscus, or meniscus cyst is independent nosological unit with enough precise symptoms and its own pathologoanatomical pictures. Data about this disease doesn't almost occur in textbooks, and only a few number of works were published in foreign literature. Pathomorphological changes character issue in meniscus cyst is up to now in discussion. Materials and methods. 80 patients with cysts of the meniscus of the knee were treated in Sport trauma department of Research Institute of Traumatology and orthopedics of Uzbekistan from 2006 to 2014. In all 80 patients surgery was performed. We studied about 60 drugs with meniscus cysts removed during surgery in 24 patients aged 16 to 60 years. Morphologically picture changes manifested in loosening meniscus tissue. Collagen fiber bundles in the area turned into a network of thin fibrils. With more severe changes in tissue sections loosened meniscus determined small cavities and crevices. Here there were areas of proliferation of cellular elements and the formation of isogenic groups that established the restructuring of fibrous tissue and hyaline cartilage meniscus. Conclusions. Morphological examination of the meniscus and parameniscus tissue in patients with meniscal cyst gives grounds to consider the beginning of the formation of mucous cysts process of metamorphosis as compensatory- adaptive response to chronic injury.

Abstract no.: 37268

SUPRASCAPULAR NERVE ENTRAPMENT - ARTHROSCOPIC RELEASE

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Introduction. Suprascapular nerve arises from upper trunk of Brachial plexus and is essential for supraspinatus and infraspinatus. Mechanism of injury of the suprascapular nerve could be during compression, traction or direct trauma. That could be associated with multiple sports activity, trauma to neck or scapula, heavy labor or crutch use. Compression could be by spinoglenoid ligament; from cyst at spinoglenoid notch and compression at suprascapular notch by transverse scapular ligament. Symptoms are pain over posterolateral shoulder, fatigue with overhead activities, weakness in external rotation. Symptoms can mimic RC disease. Method. We perform arthroscopic treatment of suprascapular nerve entrapment in beach chair position. Results. At 5/6 patient we have improved pain and, 6/6 improved strength. For the patients with spinoglenoid cysts we perform decompression of the cysts and we got 7/8 improved pain and external rotation. Conclusion. Arthroscopic treatment is less invasive and potentially more effective. This technique requires advanced arthroscopic skill and very good knowledge of arthroscopic shoulder anatomy.

Abstract no.: 37269

MRI AND ULTRASOUND EXAMINATION IN THE EVALUATION OF THE STRUCTURES OF THE ELBOW JOINT WITH INTRAARTICULAR FRACTURES

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Introduction: The modern scientific achievements orthopedic trauma field helped to reduce the frequency of adverse events and improve treatment of elbow joint injury. However, despite the widespread and successful use of modern methods in diagnosis and treatment there is still large number of patients with the consequences of the elbow joint injuries. The aim of our study was to evaluate the diagnostic capabilities of MRI and ultrasound for the study of musculoskeletal changes at the elbow injury. Materials and Methods: MRI and ultrasound examination of the elbow joint was performed in 25 patients who treated in our clinic regards to intraarticular fractures of the elbow joint. MRI allowed a three-dimensional picture of fracture nature, the presence and degree of bone displacement from callus forming, bone damage in ""contusion"" zone near the fracture line. Most detectable on the ultrasound study was condition of elbow muscles, tendons and capsules. Conclusion: Thus, MRI technique allows obtaining sufficient diagnostic information about all structures of the joint, which is not possible with single X-ray, CT or ultrasound examination. Application of ultrasound examination on preoperative planning is not recommended due to the inability to visualization of joint structures. In this period appropriate method is to use MRI, which allows you to explore not only the nature of the joint damage, but also determine the severity of damage to bone structures, examine the condition of the bone marrow , which is important to determine the tactics of treatment

Abstract no.: 37270

THE EARLY SURGICAL TREATMENT OF SHARP SLIDING AT YOUTHFUL THE EPIPHYSEOLYSIS FEMUR HEADS. ZORYA V, BOSYKH V. GRIGORYEV A RUSSIA

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Research objective was the assessment of efficiency of an early one-stage reposition and fixing at sharp sliding proximal pineal gland (epiphysis) a femur. Treatment of 38 patients with the 4th stage youthful epiphyseolysis femur heads (24 boys and 14 girls) from 10 till 15 years old within 2003 - 2013 is carried out. Unilateral defeat was observed at 34 patients, in 4 cases sharp sliding had 2-sided character. The one-stage reposition of sliding of a head of a femur with epifizidezy spokes was made in the first 48 hours after an injury with the subsequent fixing. Spokes were removed in 6 months from the moment of a reposition. Vertical adjustment without support on the operated extremity was allowed through 6, and walking with loading - in 12 months from the moment of a reposition. The transcervical polidiafixation from mezhvertelnya area of a head of a femur is made by spokes (5 - 7 pieces) in 27 cases. To 11 patients similar fixing was made by only 2 spokes. Completely sliding is eliminated at 28 patients, in 10 cases residual shift made less than 30 ° back displacement and less than 15 ° from top to bottom. Results of surgical treatment are observed from 1 to 10 years. Movements in coxofemoral joints are in full restored in 29 cases. Chondrolysis is revealed among 6 patients from group in which fixing by a bunch of spokes was made, among 3 children shift wasn't completely eliminated.

Abstract no.: 37271

RISK FACTORS FOR FEMUR NON-UNIONS

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Purpose: Reamed intramedullary nailing is the gold standard in the treatment of femoral shaft fractures in adults. The objective of the present study was to determine the incidence of nonunion following this technique and to assess factors which may affect union. Methods: Between 2006 and 2012, we assessed retrospectively the incidence of femoral nonunion in patients treated with reamed IM nailing. 80 patients with 80 post traumatic femoral shaft fractures. 13 female 67 male. Mean age 32,1 years. We evaluated segment, fracture pattern (AO Classification), soft tissue injury (open or closed), associated injuries. Type of nail, diameter and length, entry portals (greater trochanter or piriformis fossa) and the mode of locking. Results: Nonunion occurred in 13 patients (16%). 77% Type B and 23% Type C. 2/18 involved proximal third of the femur, 7/55 middle third and 4/7 distal third. There was no relationship between the rate of union and the type of nail, diameter and length of the nail or mode of locking. Dinamisation was not effective. 31% were open fractures Type III (Gustillo-Anderson) ($p \leq 0,05$). Infection occurred in two patients both were open fractures. Conclusions: Although in this series the incidence of femoral nonunion was 16%, we still believe that reamed IM nailing is the gold standard in the treatment of femoral shaft nonunion. There is increased risk in patients with Type B and C fractures, Type III open fractures and those that involved proximal and distal third of the femur.

Abstract no.: 37274

SURGICAL MANAGEMENT OF CALCANEAL FRACTURES USING LOCKING COMPRESSION PLATES

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INTRODUCTION: Calcaneal fractures make up a large proportion of tarsal bone fractures. It can lead to prolonged immobilization as it is a weight bearing area. Essex-Lopresti and Sanders classification is used to evaluate the fractures. The purpose of this study was to evaluate the outcome of calcaneal fractures treated with locking compression plates and assess subtalar motion and stability. **MATERIALS AND METHODS:** 19 adult patients with calcaneal fracture were treated with Locking Compression plate between November 2012 and March 2014. 14 were intra-articular and 5 extra-articular. All patients were operated using the lateral extensile approach and fixed with 'Y' or 'P' Locking Compression Plate and using 4mm locking screws. Post operative follow up was done at 6, 12 and 24 weeks. Functional outcome was assessed using Maryland foot score and Rowe score. **RESULTS:** Of the 19 patients, post operative infection was noted in 2(10.53%), delayed wound healing was noted in 5(26.3%). There were no cases of non union. Full weight bearing was initiated at 12-14 weeks after surgery. Excellent Rowe scores were achieved in 6 patients (31.5 %), good in 9 (47.4 %) and satisfactory in two(10.5 %). Two patients (10.5 %) reported poor outcome. This study shows that fixation of calcaneal fracture with locking compression plate has produced good results, allowed the patient to return to their workplace earlier and reduced incidence of chronic pain syndrome. Delayed wound healing could be avoided by operating after the oedema subsides.

Abstract no.: 37279

**VASCULAR COMPLICATIONS OF TRAUMATIC KNEE DISLOCATION
AMONG PATIENTS OF MOSCOW, RUSSIA.**

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Introduction: Numerous reports have documented the incidence of vascular injuries in association with knee dislocations, ranging from 7% to 64%. With respect to an established popliteal artery injury and resultant ischemia, blood flow must be reestablished within 6 to 8 hours. Materials and Methods: 73 cases of traumatic knee dislocation were analyzed in ten Moscow clinics during the period of 1986 to 2013 year. Results: Vascular complications were found in 9 cases. Five patients were diagnosed with venous thrombosis in a few days after the injury, anticoagulant therapy led to complete blood flow recovery in all of them. One patient suffered from the rupture of popliteal artery due to anteromedial knee dislocation, vascular plastic was performed in 16 hours resulting in complete blood flow recovery. In one year ligament plastic was performed. Other two cases of popliteal artery rupture resulted in amputation because of the irreversible limb ischemia due to the delayed diagnosis. One more popliteal artery damage with blood flow reestablished in 9 hours after the injury resulted in intimal detachment in anterior and posterior tibial arteries with the development of the massive thrombosis on the next day. In a few days an amputation of the lower limb was performed. Conclusion: Vascular damage is a quite uncommon (12,3%) complication of traumatic knee dislocation among Russian patients, but it is vital to make the diagnosis as soon as possible, since the untimely diagnosis of the knee dislocation leads to serious complications later on, ending with amputation of the limb.

Abstract no.: 37285

SYNERGISTIC EFFECT OF TNF ALFA, PDGF AND TGF BETA ON SYNOVIAL LINING HYPERPLASIA VIA INDUCIBLE PI3K DELTA

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Objectives:To determine the mechanism underlying hypertrophic intimal lining layer(ILL) of synovium in rheumatoid arthritis (RA). **Methods:**We examined micromass cultures of fibroblast-like synoviocytes (FLSs) stimulated with TNF alfa, PDGF,and/or TGF beta.The hypertrophic structure of the micromasses, expression of PI3K isoforms, and activation of PI3K-Akt pathways were investigated. FLSs transfected with siRNA were also examined in the micromass cultures. **Results:**The combination of TNF alfa, PDGF and TGF beta (TPT condition) induced obvious hypertrophy of ILL in FLSs in micromass cultures, and was accompanied by upregulated expression of PI3K delta. In monolayer FLSs, the TPT condition enhanced the expression of PI3K delta and persistent activation of the PI3K-Akt pathway. Knockdown of PI3K delta significantly inhibited the formation of the hypertrophic ILL in the TPT condition. **Conclusions:**These results collectively indicate that inducible PI3K delta plays a crucial role in persistent activation of PI3K-Akt in FLSs, and in the formation of a hypertrophic ILL. PI3K delta may be an alternative treatment target for the regulation of proliferative synovium in RA.

Abstract no.: 37286

**FRAGILITY FRACTURE MANAGEMENT PROGRAM IN ORTHOPAEDICS:
PRELIMINARY RESULTS OF A MULTIDISCIPLINARY APPROACH.**

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Objectives: Clinical guidelines of Osteoporosis Canada (2010) for the diagnosis of osteoporosis, clearly indicate that patients with high-risk of fracture are those who have already sustained a fragility fracture (FF). Only 12% of the fragility fractures that we treated each year before 2010 received a diagnosis and treatment for osteoporosis. Our goal was to validate a multidisciplinary fragility fracture management program (FFMP) by a clinical nurse specialist to prevent subsequent fractures. Material and Method: We enrolled 543 subjects (men and women) over 40 years of age who were treated for a FF in our orthopaedic surgery department. We initiated osteoporosis treatment, determined the compliance and persistence to treatment evaluated CTX-1/ Osteocalcin/ vit D and functional outcome/quality of life post-fracture at different time intervals. Patients will be followed for a 10 year period. Results: We enrolled 463 women and 80 men. Mean age was 63.5±0.5 y.o. One hundred twelve patients (20.6%) dropped out in the first 12 months. Ninety-three patients (17.5%) were already on bisphosphonates and 178 pts (36.1 %) had already sustained a fragility fracture before the index fracture. The majority were osteopenic (62%) and 23% had a normal BMD. Twenty-seven percent of the patients were referred to a rheumatologist and 73% were managed by the clinical nurse specialist. Conclusion: Our FFMP improved the osteoporosis treatment rate from 12 to 62 % in our orthopaedic surgery department. Clinical Nurse Specialists could represent the best approach to safely manage the underlying osteoporosis that leads to FF.

Abstract no.: 37290

MULTIDISCIPLINARY APPROACH FOR THE MANAGEMENT OF FRAGILITY FRACTURES IN ORTHOPAEDICS. FRACTURE RATE AND RESPONSE TO TREATMENT AFTER ONE YEAR

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Objectives: Fragility fractures (FF) are common and few management programs aiming to reduce and prevent secondary fractures are currently in place. We implemented a multidisciplinary fragility fractures management program (FFMP) with a clinical nurse specialist as case manager. The goal was to evaluate fracture rates and response to treatment after one year. Methods: We enrolled 543 patients over 40 y.o with a FF in our 2 institutions. Patients who completed 12 months follow-up (161 women, 23 men) in our FFMP had their demographic data, bone mineral density (BMD), subsequent fracture rates, response to treatment, bone markers and vitamin D levels evaluated. Baseline and 12 months values were compared using paired t-test (or signed rank test for non-parametric data). Results: Prior FF occurred in 39.0% of patients and 23.9% were under treatment at the time of the index fracture. Re-fracture occurred in 3.8% of the patients during the 12 months FU. Most fracture sites were wrist (43.5%), ankle (15.8%), proximal humerus (13.6%), hip (10.3%) and vertebrae (5.9%). Most patients were osteopenic (67.4%) or normal BMD (17.7%). Elevated CTX-1 levels decreased from 61.4% to 25.0% of patients ($p<0.01$). Normal Vitamin D levels increased from 54.0% to 77.8% of patients ($p<0.00001$). Conclusion: Our program improved osteoporosis treatment initiation. Bone remodeling decreased and Vit D levels increased after one year. Most patients were either osteopenic or normal, challenging the current thinking that BMD alone will define FF risk. Our refracture rate was lower than the average published by other groups without systematic management.

Abstract no.: 37292

CAN WE MEASURE EFFICACY OF CAUDAL EPIDURAL INJECTION FOR LOW BACK PAIN USING FATTY DEGENERATION OF PARASPINAL MUSCLE MASS?

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Introduction: Low back pain (LBP) is a common presentation, affecting around 1/3 of the UK adult population annually (1). Previous studies have shown a correlation between cross sectional area (CSA) and fatty degeneration of para-spinal muscles with LBP and leg pain (5)(6). Caudal epidural injection (CEI) is commonly used interventions in managing chronic low back (4). Despite the longevity of this treatment there is no specific predictor of its outcome. Methods: Between Jan 2013 and Oct 2013, 103 (48M, 55F) patients were included in this prospective cohort study, who underwent caudal epidural steroid injection (CEI) for chronic back pain associated with disc pathology, facet degeneration and spinal stenosis. All patients received 80 mg of depomedrone in OR under x-ray guidance by the senior author (NO). Preop T1 weighted axial MRI image at L4/5 level was used to assess lumbar paraspinal fatty degeneration, using newly devised Luton Spine Score (LSS). Each patient completed the (VAS) and (ODI) at baseline, 6 weeks and 6 months follow up. Patients' spinal muscle mass and fatty changes were measured using T2 weighted axial MRI Image at upper part of 4th Lumber vertebra. Data was analysed by SPSS v17.0 (Spearman's rank correlation coefficient) Results: Mean improvement of VAS and ODI for all patients was 30%. No statistically significant correlation was found between effectiveness of CEI and level of fatty degeneration of para-spinal muscles. A statistically significant improvement was noted in non-smokers and patient's with BMI <30. No variation with gender was established.

Abstract no.: 37296

ADVANTAGE OF ANTERO-MEDIAL HUMERUS PLATING IN FRACTURE SHAFT OF HUMERUS- OUR EXPERIENCE

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introduction:anterolateral surface plating has been classically used for fracture shaft of humerus.the purpose of this study was to report the effectiveness of a locking compression plate on anteromedial surface of humerus for fracture shaft of humerus and study its advantage over classical approach. methods:40 patients who presented with fracture shaft of humerus in indian spinal injuries centre, new delhi, underwent humerus plating. Exposure was done through classical anterolateral approach and locking plate was applied on anteromedial surface of humerus rather than anterolateral surface as described classically.all the patients were followed up till 1 year post op. results:all 40 patients had smooth post op recovery. No incidence of non- union or infection was reported.plating on anteromedial surface of humerus provides good alternative to classical anterolateral plating in view of even anteromedial surface of humerus that requires less of contouring of plate , need for less soft tissue dissection, deltoid is spared, low risk to radial nerve in lower third humerus. If required , pre bending of plate can be done to achieve better compression.

Abstract no.: 37297

MANAGEMENT OF PROXIMAL HUMERAL FRACTURES BY PROXIMAL HUMERAL INTERNAL LOCKING SYSTEM PLATE; PROSPECTIVE CASE SERIES

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Introduction:The objective of this study is to evaluate the functional and radiological outcome after open reduction and internal fixation of proximal humeral fractures with the proximal humeral internal locking system plate (PHILOS).
Patients and Method:This prospective case series included 30 patients. All cases were managed by open reduction of the fractures and internal fixation by PHILOS Plate. The inclusion criteria included patients with displaced two, three and four part fractures. Six patients had two-part fracture (20%), 12 had three-part fracture (40%) , 12 had four-part fracture one (40%). There were 18 males and 12 females. The mean patient age was 49 (22–74) years. The average follow up period was 9 (6 -12) months. The functional outcome was assessed using the Constant score at 6months. Radiological evaluation was done immediately postoperative, 6weeks, 3months, 6months, and at 1year .
Results:Most patients had a satisfactory outcome . The mean Constant score, was 72.4 points (range: 46–94) at 6 months follow up. Healing of the fracture occurred uneventfully in (83.4%). However some complications were found in this patient series. In two patients (6.6%), humeral head collapsed due to avascular necrosis after fracture healing. In one patient (3.3%), fracture healing occurred with varus displacement but the patient satisfied with the outcome. No implant failure and no delayed union or nonunion was noted.
Discussion and Conclusion:Management of proximal humeral fractures with PHILOS plates achieves a good reduction, satisfactory clinical and radiological outcome; however, some complications might be expected in some patients.

Abstract no.: 37299

SAFETY PROFILE OF ASPIRIN AND INTERMITTENT PNEUMATIC COMPRESSION DEVICES IN THROMBOPROPHYLAXIS IN ARTHROPLASTY- A PROSPECTIVE STUDY

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Introduction: Thromboembolic disease is one of the complications of total hip and knee arthroplasty. Study purpose was to find out incidences of deep vein thrombosis(DVT) and symptomatic and fatal pulmonary embolism(PE) in patients undergoing total hip and knee arthroplasties (THA-TKA), to compare safety of thromboprophylaxis with low-molecular-weight-heparin(LMWH) versus aspirin plus intermittent-pneumatic-compression device and to formulate rational approach towards thromboprophylaxis. Methods: Patients who had a THA-TKA were randomized to receive prophylaxis with LMWH(Group-A) or aspirin-intermittent pneumatic compression device(Group-B). After 4-6 days, all patients underwent bilateral lower-extremity color doppler ultrasonography to screen for DVT in calf and thigh. Any clinical symptoms of PE were evaluated with pulmonary CT-angiography. Bleeding events in both groups were documented. Patients were followed-up at 6-week and 3-months. Results:409 joints were randomized. Rates of major bleeding events were 6% in LMWH-group and 0.67% in aspirin-compression group. Prevalence of DVT and PE in patients who underwent THA-TKA was 0.67% and 0.33% respectively. Rates of DVT were nil in LMWH group compared to 1.33% in aspirin-compression group. Rates of pulmonary embolism were nil in group-A and 0.67% in group-B. There were no fatal PE. Within 6-week and 3-month follow-up period, no bleeding events occurred. There was no difference between groups with regard to prevalence of VTE. Conclusions: An inexpensive multimodal protocol, consisting of aspirin, exercises, and intermittent compression devices is safe in preventing DVT without local and systemic side effects of LMWH.

Abstract no.: 37300

DO PHYSICIANS AS SURGICAL ASSISTANTS IMPROVE OUTCOMES IN ORTHOPAEDIC TRAUMA SURGERY?

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Introduction: Having expert assistance at surgery may translate into shorter operative times, increase the safety of the procedure and reduce surgical complications. The American college of surgeons (ACS) has produced a consensus statement detailing procedures that almost always, sometimes and almost never require a physician as an assistant. The aim of this study was to determine if these standards were being followed and whether having a physician as the surgical assistant translated into improved outcomes. Methods: A search was carried out on a prospectively entered online database of all operations carried out at a level 1 trauma centre during a three month period. Type of surgery and presence of an assistant was noted and compared against the ACS guidelines. Three procedures were selected as 'index operations' for further analysis; ankle fracture fixation, hip fracture fixation and hemiarthroplasty. Drop in haemoglobin, length of hospital stay, 30 day mortality and complications were recorded for all hip procedures. For ankle fractures, complications and tourniquet times were recorded. Results: A total of 713 consecutive operations were carried out during this period. Of the operations that almost always needed an assistant 27% did not have one present. Our results showed that the presence of an assistant did not make any significant difference to the outcomes assessed. Discussion: ACS guidelines were not being met in over a quarter of cases studied, however, we have failed to demonstrate any benefit in adherence to these guidelines in terms of outcome.

Abstract no.: 37302**37302**

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Objective:According to SENIC and NNIS index co-morbidities and ASA score are associated with increasing risk of prosthetic joint infection. **Purpose:**To analyze the infection rate of prosthetic joint replacement after hip fractures according to ASA score and co-morbidities. **Materials&Methods:**In prospective observational study all the patients with (intracapsular)hip fracture treated in University Clinical Centre Maribor from 2008-2013 were included. **Results:**There were 868 patients (mean age 75,3years)(326men/542women)(mean ASA2,20) with intracapsular hip fracture. 755 of them were treated with endoprosthesis (525 with bipolar (PEP)/230 with total endoprosthesis(TEP)) and 113 with osteosynthesis(OS).In 22(2,91%) patients infection occurred (mean ASA3,40,NNIS 1)(in 16 with PEP(mean ASA3,44) and in 6 patients with TEP(mean ASA3,33)). There were no infections in patients with osteosynthesis (mean ASA2,05). In 7 patients (31,8%)((3TEP/4PEP) infection was successfully healed with surgical and antibiotic treatment (mean ASA3,28), in 1 patient(4,5%) two stage prosthetic(PEP) replacement was done (mean ASA3), in 3 patients (13,6%)(1TEP/2PEP) retention with chronic low-grade infection (AB supression) was possible (mean ASA3,33), in 5 patients (22,7%)(1TEP/4PEP) prosthetic removal with hanging hip was necessary (mean ASA3,40) and 6 patients (27,3%) (1TEP/5PEP) died (mean ASA3,66). Analyzing co-morbidities 6 patients (27,3%) in whom infection occurred had cirrhosis and 5 patients (22,7%) past cerebrovascular incident (with neurological impairment) or hypertensive myocardiopathy. **Conclusion:**The results of study support ASA score as well as co-morbidities (cirrhosis, past cerebrovascular incident and hypertensive myocardiopathy) as important risk factors for prosthetic joint infection after hip fractures and worse outcome.

Abstract no.: 37306

TARSAL TUNNEL SYNDROME SECONDARY TO AN UNREPORTED OSSICLE OF THE TALUS: A CASE REPORT

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Background: Tarsal tunnel syndrome (TTS) is a compression neuropathy of the posterior tibial nerve in the tarsal tunnel. In around 80 % of patients a specific cause could be identified for TTS. These include trauma, heel varus, rheumatoid arthritis and space-occupying lesions (ganglion, lipoma, accessory muscle, schwannomas, exostosis, varicosities). Case presentation: We present a case of TTS secondary to an ossicle in close relation to the talus that is not reported before. A 26-year old male presented with left ankle and foot pain, which increased with activity and playing football, he had tingling sensation and parasthesia at the sole and medial border of the foot along the distribution of the medial and lateral plantar nerves. Clinically he had hard swelling at the floor of the tarsal tunnel and Tinel sign was positive. CT showed an accessory ossicle articulating with the posteromedial aspect of the talus, separating the FDL and FHL, with tenosynovitis of the tibialis posterior, FDL and FHL tendons. Surgical release of the tarsal tunnel and excision of the ossicle were performed. Intra-operatively the neurovascular bundle was stretched over the ossicle and they were released and the ossicle delineated and excised. It was in close relation to the medial surface of the talus. Postoperatively the patient showed rapid improvement and was asymptomatic after 2 months. To the best of our knowledge this ossicle was not reported before, more interestingly to cause tarsal tunnel syndrome.

Abstract no.: 37307

GENDER-SPECIFIC DIFFERENCES IN CARTILAGE DEFECTS OF THE KNEE

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Objectives: The aim was to determine gender differences in patients with cartilage lesions of the knee with focus on the etiology, localisation and therapy of cartilage defects. **Methods:** The retrospective study contained 309 knees of 272 patients (155 male, 117 female) with a mean age of 43.9 years (SD 14.3). Patients with traumatic and degenerative cartilage defects of the knee and an age below 60 years were included. Differences between men and women regarding etiology of cartilage defects, BMI and pre-existing operations, localisation and treatment of cartilage defects were analyzed. Cartilage lesions, detected with 3 Tesla MRI, were classified according to the Outerbridge Classification. **Results:** More traumatic cartilage lesions were found in men, whereas in women more degenerative cartilage defects were detected (traumatic cartilage lesions: men 70.3%, women 49.3%; $p < 0.001$). Most of the lesions were located in the patella (22.1% men, 25.2% women; $p > 0.05$). The second most common location was the medial femoral condyle (21.9% men, 9.7% women; $p = 0.01$). 194 knees had previous operations (117/77, male/female). The most common of these previous procedures was arthroscopic partial meniscectomy (N=106, m/f: 66/42). The final surgical treatment of our patients was matrix-associated chondrocyte transplantation in 14.1%, microfracturing in 9.9% and mosaicplasty in 2.8% (with no significant differences for gender). 75.7% of the patients obtained conservative therapy (73.1% males, 79.1% females). **Conclusion:** Traumatic cartilage lesions are more common in men, whereas degenerative cartilage defects predominate in women. Cartilage defects in the medial femoral condyle occur more often in men than in women.

Abstract no.: 37311

**TOTAL HIP ARTROPLASTY WITH OBLIQUE SUBTROCHANTERIC SHORTENING OSTEOTOMY IN DEVELOPMENTAL HIP DYSPLASIA
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INTRODUCTION :Total hip arthroplasty in high dysplastic hips is a challenging procedure. The aim of our study is to evaluate the results of patients undergone uncemented total hip arthroplasty for Crowe type 3 and 4 hips requiring shortening performed with oblique subtrochanteric osteotomy. **METHOD :** We took 42 dysplastic hips of 32 patients into our study and analysed retrospectively the results of total hip arthroplasty and femoral shortening with oblique osteotomy. This patients were evaluated clinically and radiographically at the preoperative and postoperative period. The mean follow up duration was 42.7 ± 7.8 months. **RESULTS :** 29 patients were female and the remaining 3 were male. Their mean age was 52.6 ± 13.3 years. After 42.7 months of follow up period , The Harris Hip Score of the patients which was 45.2 ± 5.6 preoperatively increased to 82.5 ± 11.9 postoperatively ($p < 0.05$). The mean femoral shortening value was 3.9 ± 0.9 cm and there was a mean extremity lengthening of 4.1 ± 1.8 cm. None of the patients had nonunion however one patient suffered neuropraxia of the femoral nerve whereas another patient had sciatic nerve injury who later suffered early hip dislocation. After this dislocation sciatic nerve injury healed. **CONCLUSION :** Total hip arthroplasty for Crowe type 3 and 4 dysplastic hips performed with oblique subtrochanteric femoral shortening where the osteotomized femoral segment is used as autograft around the osteotomy line, is a successful method with a low complication rate and good patient satisfaction.

Abstract no.: 37313

IS IT A SIMPLE BREAK?

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We report a 12 year old boy who presented with a pathological fracture of his femoral shaft 2 yrs post ORIF of his femoral fracture. He was admitted with a displaced femoral shaft fracture following a fall whilst running. This was managed surgically by plating and was discharged following a uncomplicated fracture union and elective removal of his plate a year later. He however presented 2 years later with intermittent pain and wasting of his thigh muscles when a repeat X-ray confirmed the diagnosis of fibrous dysplasia with typical bowing, cyst formation with pathological fracture and a ground glass appearance of the lesion. Although his initial radiographs were not suspicious for any obvious lesions, one needs to consider a pathological fracture with low energy trauma and get expert radiological opinion. We also feel if he was followed up , the diagnosis could have been made early and treatment instituted. We therefore recommend ""unusual"" paediatric fractures to be followed up at least 1 year post surgery.

Abstract no.: 37316

BEWARE OF FOOT LUMPS!

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We report a 75 yr old gentleman presenting to our foot and ankle clinic with signs and symptoms of hallux rigidus with prominent bony lump over his 1st MTPJ. He had trouble wearing his footwear and sought medical attention. Radiographs showed an arthritic joint with destruction and exuberant osteophytosis. He accepted a cheilectomy procedure which was performed as a day case surgery. At surgery in view of extensive osteophytosis, specimens were sent for histology which surprisingly confirmed a Chondrosarcoma. Chondrosarcoma is the most common malignant neoplasm of the foot but accounts only to 0.5% to 2.97% of all chondrosarcomas. Treatment is generally by surgical excision. Although benign lumps are common, we recommend further imaging and biopsy if there are unusual features such as long history, large bony lump and cortical destruction with matrix calcification and or endosteal erosion on radiographs.

Abstract no.: 37318

INTRA-OSSEOUS EPIDERMOID CYST OF THE DISTAL PHALANX OF A FINGER: A CASE REPORT

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Background: Epidermoid cysts are common benign tumors of the subcutaneous tissue of the back, face and chest. However intra-osseous epidermoids are very rare. Diagnosis of these lesions is challenging and usually not confirmed before histopathological examination. Case presentation: We present a case of intra-osseous epidermoid of the distal phalanx of the middle finger. A 31 years right-hand dominant presented with pain and swelling of the tip of the middle finger for one year, with history of crushing injury to the same finger 2 years ago. Radiographs showed a well-defined expansile osteolytic lesion occupying most of the distal phalanx with thinning of the cortex, fracture of the ulnar and dorsal cortices. CT confirmed the previous findings and suggested an intra-osseous epidermoid. It was treated by surgical excision through a midline palmar longitudinal incision and filling of the cavity with artificial bone graft. Postoperatively there were no scar problems and the cavity healed and was filled with bone, however the swelling of the distal phalanx did not resolve on the latest follow-up of the patient.

Abstract no.: 37323

CONGENITAL PSEUDARTHROSIS OF BOTH FOREARM BONES ASSOCIATED TO DISLOCATION OF THE RADIAL HEAD: SURGICAL TREATMENT WITH SINGLE-BONE FOREARM.

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Background: Congenital forearm pseudarthrosis is a rare clinical entity which is often linked with neurofibromatosis type I. Involvement of both bones associated to dislocation of the radial head is extremely rare, and few cases have been reported in the literature. Methods: We present a case of a 10-year-old female patient with neurofibromatosis type 1, and pseudarthrosis of both forearm bones associated to dislocation of the radial head. She underwent resection of the distal ulna, excision of the pseudarthrosis, and a one-bone forearm procedure fixed with a plate. The first surgery failed to achieve bone union, and require revision with bone grafting, plate removal, and intramedullary nailing. After 2nd surgery, she had a stable forearm that was shortened by approximately 7 cm. At the last follow-up, 4 years postoperatively, the patient was asymptomatic maintained bony union, with mild limitation of wrist flexion-extension. Conclusion: The one-bone forearm is a reasonable option for forearm pseudarthrosis with radial head dislocation in children. This salvage procedure produces a stable upper limb with a satisfactory wrist and elbow function

Abstract no.: 37327

CAUDA EQUINA SYNDROME FOLLOWING EPIDURAL PCA IN TOTAL KNEE ARTHROPLASTY

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Epidural patient controlled analgesia (PCA) was used for effective post-operative pain control in lower extremity surgery. we encountered a case of cauda equina syndrome following epidural PCA in TKA surgery. 70-year-old female patient was admitted to our hospital to take an operation of total knee arthroplasty. Under epidural anesthesia, total knee arthroplasty was done and epidural PCA was inserted. Postoperatively, continuous epidural injection through PCA was done and 2days after operation, patient showed progressive neurologic deficits ; foot drop, decreased leg sensation, decreased perianal sensation and dysuria. In MRI, severe spinal stenosis was shown in multiple lumbar levels. In EMG-NCS study, cauda equina syndrome was verified. Emergency lumbar decompression with laminectomy and posterolateral fusion in L1-5 were performed. After operation, patient neurologic status was improved. We report this unusual case of cauda equina syndrome following epidural PCA occurred in TKA patient with undetected spinal stenosis.

Abstract no.: 37339

DEFORMATION SIMULATION OF SOFT TISSUE IN VIRTUAL SHOULDER ARTHROSCOPY SURGERY

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An improved mass spring deformation model based on the mesh free model was proposed to simulate the deformation of soft tissue in the virtual arthroscopic shoulder surgery. Adaptive sampling method and KNN rapid inquiry algorithm were used to establish a topological structure model with high density of particle in the surface and low density of particle in the center; The restoration force was taken into account in the traditional mass spring model; The deformation simulation was transplanted to GPU to improve the computing efficiency. Simulation results show that the algorithm proposed could achieve a realistic simulation of deformation.

Abstract no.: 37341

A BEYOND COMPLIANCE STUDY OF A UNIQUE METAPHYSEAL FITTING CEMENTLESS SHORT STEM HIP REPLACEMENT.

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Introduction: Short-stem total hip arthroplasty has been proposed as a bone-conserving procedure preferably for the younger and the more active. The Evolution stem is a next generation metaphyseal and physiological loading stem. Objectives: To establish a Beyond Compliance study as best practice for new implants, we evaluated clinical results using validated scoring instruments, osseointegration and bone remodelling, complications and rates of revision and osteolysis. Methods: We prospectively reviewed 174 consecutive patients (187 hips). Clinical and functional outcome was recorded using Harris hip score, Euroqol 5D and HOOS scores. Osseointegration, stem stability were assessed using Engh's criteria. The minimum follow up is 27 months. (18-27 months). Results: The mean age was 62.7 yrs (19-81). There were no intra-operative fractures of the femur. No dislocations, clinical DVT in 2 pts, no infections. One pt had leg length discrepancy of 1.5cm. Mean time to return to recreational sport was 19 weeks. There was no reported thigh pain. There were 3 revisions. The Harris hip score improved from 61(44-78) to 96(SD:2.5). Euroqol and HOOS scores complemented the other outcome scores. Radiologically, all stems were stable with no stress shielding. There was stem subsidence in 2 pts (1 into varus) within the first 6 weeks. Offset was restored to within 5 mm in all patients. Conclusions: This beyond compliance study demonstrated the safety and stability of this stem. The stems performed as well as the established furlong stem with added benefits. Lessons were learnt on pre op planning, sizing, femoral preparation and instrumentation.

Abstract no.: 37344

**THE INCIDENCE AND RADIOLOGICAL CHARACTERISTICS OF THE
FABELLA IN AN ASIAN POPULATION**

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Introduction: The fabella, a sesamoid bone, sometimes found in the lateral head of the gastrocnemius muscle, often articulates directly with the lateral femoral condyle. This study aimed to determine the incidence of the fabella in an Asian population and characterise its radiological features. Methods: Electronic radiographs and magnetic resonance imaging films of 80 consecutive patients who underwent knee arthroscopy between May 2005 and October 2009 were reviewed to determine the presence and characteristics of the fabella. Results: The incidence of the fabella was 31.25%. The median length, thickness, width and distance of the fabella from the lateral femoral condyle were 7.06 mm, 4.89 mm, 6.12 mm and 33.19 mm, respectively. The fabella was consistently bony, located in the lateral head of the gastrocnemius, with 52% of these having an articulating facet. Fabella in men were larger than in women, although the difference was not statistically significant. The presence of an articulating groove was associated with increased size of the fabella, but not with the distance between the fabella and its insertion onto the lateral head of the gastrocnemius. Conclusion: The incidence of fabellae in our population was lower than that of regional studies. They were consistently bony and not all had articulating grooves on the lateral femoral condyle. We found that the bigger the fabella, the higher the chances of it having an articulating groove. By defining the radiological characteristics of the fabella, we provide objective parameters to differentiate the fabella from other loose bodies or calcifications in the knee

Abstract no.: 37345

ONE & DONE: IMMEDIATE PERCUTANEOUS FIXATION OF DISPLACED INTRA-ARTICULAR CALCANEUS FRACTURES WITH K-WIRES

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Background: Several percutaneous techniques have been recently developed for the treatment of displaced intra-articular calcaneus fractures due to the high rate of soft tissue complications associated with open treatment through an extensile-lateral approach. This study addresses immediate percutaneous fixation of these fractures in which tissue homeostasis never permits definitive open treatment. Methods: We performed a retrospective study on seven patients representing nine displaced intra-articular calcaneus fractures (DIACFs). The fractures were treated percutaneously within 72 hours of the injury using a 5mm Shanz pin to restore calcaneal height followed by fixation with 2.0mm unthreaded K-wires. Bohler's angle was measured upon initial presentation and post-operatively. The clinical outcome was measured using the Musculoskeletal Function Assessment. Results: Bohler's angle was improved by an average of 31 degrees. All clinical results obtained were rated good to excellent. 55% of our patients were able to complete the questionnaire. All but one patient had the percutaneous wires removed in the clinic after radiographic evidence of fracture healing was demonstrated. There was a minor superficial wound (pin site infection) related to one surgery. Conclusion: DIACFs in patients with risk factors such as non-compliance, smoking, and diabetes can be treated early and safely with this true percutaneous technique using inexpensive K-wires. This technique greatly improves Bohler's angle without significant hardware or soft tissue complications.

Abstract no.: 37353

DYNAMIZATION WITH ADDITIONAL POLLER SCREWS FOR THE TREATMENT OF THE FEMORAL NONUNION AFTER INTRAMEDULLARY NAILING ; ROLE OF THE MULTIPLE POLLER SCREWS DURING THE DYNAMIZATION.

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Objective: To evaluate the outcome of femoral nonunion after intramedullary nailing treated with additional Poller screws for dynamization. Material and Method: Between Jan 2011 and Dec 2013, 11 patients (M:F = 6 : 5 , mean age: 43.8 years) underwent dynamization with additional Poller screws insertion for management of femoral nonunion after intramedullary nailing. To improve angular stability of the femur during dynamization, Poller screws were placed around the nail for achieving three-point fixation in the infra-isthmal area of the femur. In case of hard-ware failures such as loosening of the nail or screw breakage, nail exchange was performed before dynamization. Cephalomedullary nail was used for nonunion at the supra-isthmal part, conventional or cephalomedullary nail fixation was performed for nonunion at the isthmal part, and retrograde nail was placed for nonunion at the infra-isthmal part. Bone graft was not performed in all cases. Result: There were 6 hypertrophic nonunion cases and 5 oligotrophic nonunion cases. All patients achieved successful bone union, and the mean union time was 7.7 months (range: 4-11 months). There was no significant femoral shortening (> 20 mm), and no malrotation was occurred during follow-up after dynamization. The mean follow-up periods was 16.4 months (range: 13-24 months). Conclusion : The use of multiple Poller screws helps to support the angular stability of the femur during dynamization and could be one of the options to obtain good clinical outcome for management of femoral nonunion after intramedullary nailing.

Abstract no.: 37357

A CASE OF RECURRENT POSTSURGICAL INFLAMMATORY NEUROPATHY OF MEDIAN NERVE AFTER BILATERAL THA

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Postsurgical inflammatory neuropathy is a rare condition occurred free from mechanical factors. We report a case of spontaneous median nerve palsies occurred on contra-lateral side at each time of bilateral THA operations. Case: 55 year-old female at her first consultation First onset: Ten days after right THA, she noticed thumb pain and weakness of FDP1 at 2 months and FPL at 3.5 months postoperatively. On examination, PT, FCR, FPL and FDP1 were M0 but FDS, APB remained M5. Denervation potentials were observed in paralyzed muscles and polyphasic motor units were observed in shoulder girdle muscles by needle EMG. So she was diagnosed as high median nerve palsy due to neuralgic amyotrophy, and treated conservatively. At 2 years from onset, all muscles recovered more than M4+ though numbness in the thumb and index finger remained. Second onset: After 2.5 years from the first operation, she received left THA. At 2 days postoperatively she noticed numbness of the dorsal side of right thumb and afterwards started severe right brachialgia. On examination at 1.5 months from the second onset, PT, FCR, FPL DP1, APB were M0. FDS was M4 but declined to M0 at 3 months. At 2 year and 3 months from 2nd onset, FCR, FPL, FDS recovered >M3 but PT, FDP1, APB remained below M2. Discussion: We could not find other report of recurrence of postsurgical inflammatory neuropathy. If it occurs because of inflammatory reaction of the surgical invasion, the risk of recurrence in second operation may be higher.

Abstract no.: 37361

**COMPLETE REPLACEMENT OF METACARPAL WITH METATARSAL
FAFTER BENIGN TUMOR REMOVAL TWO CASES PRESENTATION**

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Introduction:destruction of a metacarpal(mc)by a benign tumor in the hand is not uncommon and the replacement of the mc with preservation of the function of the mcpj is still a challenge,several methods were practiced.Methods:two patients (8&26 y old) having complete destruction of second mc by giant cell tumor & aneurysmal bone cyst were removed completely and replaced by complete 3rd metatarsal(mt) .Results:the replacement were fully successful and both mt were incorporated in the hands with good preservation of the function of the mcpj ,results were good after 2 years of followup,pictures of one case shall be presented completely.Conclusion:the usage of complete mt as graft to replace a pathological mc is possible easier way of treatment in such situations.

Abstract no.: 37365

FUNCTIONAL OUTCOME OF TOTAL HIP REPLACEMENT BY MOORES APPROACH

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Background & Objective Pain in the hip joint causes disability in human locomotion. Osteoarthritis of the hip is one of the oldest affliction of mankind. Total hip arthroplasty has an operative history of over 100 years which has been reviewed and improved over previous years making it the most successful operation of this generation. The present study was conducted to study the functional outcome and complication of total hip replacement by moore's approach. **Methods** In this study of 30 patients, with 33 diseased hip, aged between 19 to 70 years were treated with total hip replacement in our institution and followed up for a period of 24 months. **Results** The evaluation was done by using Harris hip score(modified) showed excellent results in 18 hips, good in 10 hips, fair in 3 hip. No poor results were noted. **Interpretation & Conclusion** This study shows that total hip replacement by moores approach is the best choice in younger individuals with good bone quality. With proper patient selection, adequate planning and meticulous surgical technique, we have achieved results which can be comparable to other authors. In a nutshell, our institute has performed this procedure with technical precision which has provided us with very good clinical result. Functional results are excellent and complications are minimal if done with care and precision **KEYWORDS:** Hip, Replacement, Moore's

Abstract no.: 37367

REGENEREX TITANIUM AUGMENT OPTION FOR ACETABULAR DEFECTS IN TOTAL HIP ARTHROPLASTY.

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Introduction: Bulk bone grafting for reconstructing the large acetabular defects are sometimes reported as unsatisfactory results due to collapse of grafts. Purpose: We followed our 17 patients in whom we reconstructed the acetabular bone defect with a regenerex titanium augment combined with a cemented polyethylene shell. Material and method: 1 man and 16 women with an average of 76 years were evaluated radiographic signs of osteointegration according to Moore and quality of life was measured with Japanese orthopedic association score. Result: At a minimum of 1 year follow up, no patient required further surgery for aseptic loosening, all had stable cup fixation radiographically, and improved JOA score. Conclusion: The early results with regenerex titanium augments are promising but longer follow up is required.

Abstract no.: 37374

A NEW COMPUTERIZED PHOTO METHOD FOR ASSESMENT OG THE MECHANICAL AXIS OF THE LOWER EXTREMITY

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Introduction: Assessment of the mechanical axis (MA) is routine in the examination of patients with lower extremity pain. Long leg x-ray examination is the golden standard for exact measurement, but associated with a significant x-ray dose. An alternative method to examine the MA exactly has been highly warranted. We developed a computerized photo method to calculate MA from a digital photo. Methods: 25 patients, 10 f/15 m, mean age 65 (43-78) had both legs examined by the photo method and long leg x-ray simultaneously. The location of the centre of the femoral head was calculated from ink marks on both superior iliac spines. Results: The digital photo method was found to be highly reliable: The inter-observer average difference was 0.008 ± 1.30 (mean \pm SD) and the intra-observer average difference (day to day variation) was 0.003 ± 1.33 . MA determined by the two methods was highly correlated ($R = 0.943$). The 95% prediction interval for the photo values was ± 1.88 dg. (95% confidence interval) Conclusion: Among the examined age group and severity of malalignment the photo method appears to be a very attractive alternative to the conventional long leg x-ray. It seems most convenient for routine clinical examination, and also for screening and control purposes in primary health care.

Abstract no.: 37376

ASSESSMENT OF BONE MINERAL DENSITY: A COMPARATIVE PILOT STUDY WITH PHANTOM LESS QUANTITATIVE COMPUTED TOMOGRAPHY (QCT) AND QUANTITATIVE ULTRASOUND (QUS)

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PURPOSE: To compare the bone mineral density with Quantitative Computed Tomography (QCT) and Quantitative Ultrasound (QUS) such that to confirm whether in a clinical setup both the modalities can be used complementarily or not. **MATERIALS & METHODS:** study conducted at a Kasturba Hospital, Manipal. **FOR QCT** Philips Brilliance 64 slice CT with EBW 4.5 Version with QCT software and for **Q USG** Ultrasound Omnisense 8000S were used. **Duration of the Study:** June 2013 to October 2013. **Methods:** With CT, the Bone Mineral Density was assessed from T12- L5 vertebrae of patients between the age group of 20 to 80yrs who presented for routine abdominal CT studies (The QCT software supports to calculate BMD with dedicated BMD studies and also with routine abdominal images). The same patients were subjected to Quantitative Ultrasound of the distal radius, and classified according to WHO guidelines as normal/osteopenic/osteoporotic. **Results and Analysis:** Early results suggest a very definite correlation between QCT and Q USG modalities. However QCT seems to be more sensitive to detect bone density, whereas Q USG seems to be good screening tool. Further study with significant number of subjects is necessary to validate our findings.

Abstract no.: 37378

THE FATE OF LARGE BUTTERFLY FRAGMENT IN LONG BONE FRACTURES OF LOWER LIMBS

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Introduction: In long bone shaft fractures of the lower limb the treatment of choice is intra medullary interlocking nailing, but in case of shaft fracture with large butterfly fragment does the plan of management & treatment of choice remains the same or does it requires open reduction? **Methods:** The object of this study was 30 cases of long bones fracture of lower limbs with large butterfly fragments more than 3 cm size. All fractures were treated with intramedullary interlocking nailing without opening the fracture site. We assessed the size, the degrees of displacement and angulations of the large butterfly fragments preoperatively & postoperatively, The union & fate of butterfly fragment was evaluated. **Results:** In our study, the union was complete varying from 4 months to 9 months depending on fragment size & rotation without any significant shortening or angulations. All the cases were followed up for the duration of the 12 months **Conclusion:** In long bones fracture with large butterfly fragments treated with closed interlocking nailing, the distance and angulations of fragments decreased gradually and even the fragments were largely displaced or angulated were united. So caution must be given not to displace the fragments intraoperatively and try to keep the position of the fragments without opening the fracture site. Open reduction and internal fixations of the fragments will not be necessary. Only one patient of the 30 went on to nonunion which required bone grafting and renailing. **Key words:** butterfly fragment- long bone – nailing **Conflict of interest:** None

Abstract no.: 37389

HEAD REPLACEMENT VERSES OTHER SURGICAL INTERVENTION FOR MASON III AND IV RADIAL HEAD FRACTURES.

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To assess the early results of implant arthroplasty versus other surgical intervention for radial head fracture in patients with Mason III and IV radial head fractures. The medical records of 40 patients with mean age of 40 years old (31 to 57) including (18 males, 22 females) with Mason III/IV radial head fractures requiring surgical intervention between January 2011 and March 2013, were reviewed retrospectively. Out of forty patient 20 underwent radial head replacement (group A) and remaining underwent either fixation or excisional arthroplasty (group B). Broberg and Morrey elbow scores were used for assessment. Forty patients included in this study were having follow up for 12 to 35 months with an average of 20 months. Broberg and Morrey elbow scores were used for assessment (92.1 versus 72.4, mean difference (MD) 19.70; 95% confidence interval. Range of movement parameters was significantly lower in group B ($P < 0.01$). Radial head implant arthroplasty gives satisfactory results regarding range of motion and function of the elbow joint in short term as compare to other surgical intervention. Further long term studies are required to assess mid-term and long-term follow-up results.

Abstract no.: 37390

ARTHROSCOPIC TREATMENT OF ANTERIOR SHOULDER INSTABILITY

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INTRODUCTION: Frequency of anterior shoulder instability is quite high, due to the anatomical and functional shoulder particularities, frequent recurrences after orthopedic treatment of traumatic dislocation of the humerus, especially in young age people. Arthroscopic surgery provides significantly higher advantages in traditional surgery such as minimal tissue trauma, reduced intraoperative morbidity, and optimal functional and cosmetic results. **METHODS:** Personal experience includes treatment of 82 patients (74 men and 8 women with a mean age of 27 years) on which was performed arthroscopic stabilization of anterior shoulder instability between 2004-2013. Was performed the reinsertion of anterior-inferior part of the glenoid labrum and joint capsule using bioresorbable anchors (3 patients), metal (30pacienți), transglenoidal unresorbable thread suture (49 patients). In 3 patients Bankart lesion was associated with SLAP lesion, and was performed additional anchor fixation. Hill-Sachs lesion was found in 11 cases. **RESULTS:** After surgery the patients were evaluated at an interval of 12 to 24 months using the Rowe and Zarins score . We obtained excellent or good results in 56 patients (76.5%), satisfactory - 3, unsatisfactory - 1 patient. Negative result we have found in a year after surgery in a patient, who suffered a minor injury which caused the dislocation of the humerus and recidivism signs of instability. **CONCLUSIONS:** Arthroscopic treatment of anterior shoulder instability is a pretentious technique that requires advanced experience of orthopedic surgeons in arthroscopic surgery, providing good and very good functional and cosmetic results in most cases.

Abstract no.: 37393

FEMORAL SHAFT FRACTURE

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Femoral shaft fracture is a common pediatric injury for which variable methods of treatment are used. We randomize a study to asses 2 operative methods ,Material and methods:From 2009 to 2013, we treat 56 patients with fracture shaft femur. Patients age was 4 -12 years, there were 38 boys and 18 girls. The injury was in left sided in 24 patients while 31 patients were right sided. One patient was bilaterally injured.The first group, 28 patients were treated with titanium elastic nails (TENS) including 19 males and 9 females , The other 28 patients were treated with open reduction and internal fixation using narrow AO plates including 18 males and 10 females. Clinical and radiological followup was done in regular intervals (2 weeks, 6 weeks, 3 months, 6months and 1year) and the Final clinical and radiological results were evaluated using Flynn etal (2001) scoring system .Results :In the TENS group, 18 patients had excellent results and 10 patients had good results with minor complications. Union achieved with average 8.5 weeks (rang 6 - 12 weeks).In the plating group, 17 patients had excellent results, 8 patients had good results with minor complications and three patients had poor results in form of re-fracture after metal removal, severe infection that resolved after later metal removal and debridement and sever infection reaching the bone. Union achieved with average 8.7 weeks rang 6 - 14 weeks..Conclusion : TENS is a simple, reliable, effective and minimally invasive method of treatment of pediatric femoral fractures.

Abstract no.: 37395

HUMERAL SHAFT FRACTURES UNDERWENT STABILIZATION, USING ELASTIC STABLE NAILS (ESIN)

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Between February 2009 and march 2010, 13 cases with humeral shaft fractures underwent stabilization, using elastic stable nails (ESIN), all patients were operated with retrograde technique, closed reduction was successful in all cases. The series included 11 males (85%) and 2 females (15%). Their ages ranged between 15 - 70 years with a mean 34.69 years. The range of follow up was 2 to 15 months with a mean of 7.3 months. The average time of radiological and clinical union in our series was (8.83 weeks), The average time to union among male patients was 8.7weeks and 8 weeks in female patients. Patients with isolated humeral fractures (8 cases) had an average union time (8 weeks) while polytraumatized patients (5 cases)had (8.5weeks) average union time .Results showed that functional evaluation (after Raghavendra et al 2007) of the operated shoulder joint are very close as compared to the contralateral nonoperated limb with 7 cases (53%) ended with normal function (excellent), 4 cases (31%) with $\geq 75\%$ of normal function (good) . The elbow range of movement was only marginally affected with 4 cases(31%) regained normal function (excellent) , 8 cases regained $\geq 75\%$ of normal range(good) this merely affected lack of last degrees of extension this not affecting the function at all. There was one case (7%) of nonunion with poor functional outcome, and 2 patients (15%) had nail related problems. No post-Operative nerve injuries or deep infections. Conclusion:ESIN is a valuable option in the treatment of humeral diaphyseal fractures

Abstract no.: 37397

TWO MODALITIES OF THORACIC DISC HERNIATION: A POSTMORTEM HISTOLOGICAL STUDY

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Introduction: herniated masses in all cases of cervical disc herniation contains cartilaginous endplate (CEP) fragments (Kokubun et al Spine 1996). This CEP type of herniation results from horizontal and vertical cleft formations of the discs at the final stage of the degeneration. Contrarily, herniated tissues in the lumbar spine can consist of nucleus pulposus and annulus fibrosus (NP type). And lumbar disc herniation frequently happens at the early stage of disc degeneration. In the present study, intervertebral discs from autopsy cases were examined histologically as to elucidate the pathomechanism of thoracic disc herniation. Methods: specimens of 240 intervertebral discs from T1-T2 to T12-L1 were obtained at autopsy from 20 individuals. The age at the time of death ranged from 38 to 93 years (average, 63 years). A 5-mm thick midsagittal slab was cut off from each specimen, then fixed, decalcified and embedded in paraffin. The sections were sagittally cut, stained and examined. Results: disc herniation penetrating the deep layer of the posterior longitudinal ligament was observed in 55 % (11) of the autopsy cases and 9 % (21) of the discs examined. The youngest age with disc herniation was 38 years while the oldest was 93 years. Multiple herniations were observed in 5 autopsy cases. The 21 disc herniations were histologically classified into two types. Six were CEP type occurring in the discs at their final stage of degeneration, and remaining 15 were NP type occurring in the discs at their early stage of degeneration.

Abstract no.: 37399

TOTAL KNEE ARTHROPLASTY USING PATIENT-SPECIFIC SURGICAL GUIDE -COMPARISON OF MRI BASED GUIDE AND CT BASED GUIDE-

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Introduction: There have been reported that using patient-specific surgical guide (PSSG) in total knee arthroplasty (TKA) achieve better positioning of prosthetic components and less coronal malalignment which result higher failure rate and less patient satisfaction. Purpose: To evaluate the post-operative component alignment and compare the accuracy of two different MRI based and CT based PSSGs for TKA. Methods: Post-operative radiographs both MRI based PSSG (MRI group) (n=20 patients) and CT based PSSG (CT group) (n=20patients) were evaluated according to the coronal alignment of femoral and tibial component and mechanical axis. Results: Both group demonstrated excellent mean coronal alignment of both femoral and tibial component and mechanical axis (Femoral component MRI group $90.2\pm0.9^\circ$, CT group $89.0\pm2.2^\circ$, tibial component MRI group $89.3\pm1.4^\circ$, CT group $90.4\pm1.8^\circ$, mechanical axis MRI group $180.1\pm1.8^\circ$, CT group $182.0\pm3.2^\circ$) however, the percentage of outlier (greater than 3degree) were observed in only CT group (2/20: 10%). Conclusion: Both MRI group and CT group showed superior post-operative alignment in the coronal plane of both femoral and tibial component and mechanical axis, however, MRI group demonstrated fewer outlier rate compared to CT group.

Abstract no.: 37401

SPONDYLECTOMY IN SPINE TUMORS

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There were analysed treatment results of 34 patients with spine tumors, who were operated in the Republic National Practical Centre of Traumatology and Orthopedics (Belarus) in the period of 2000-2012 years, whome spondylectomy was performed (7 patients with cervical spine tumors; 15 with thoracic; 12 with lumbar). Different surgical technologies were employed such as single-step spondylectomy with osteal plastic and osteosynthesis, separable two-stage tumor extraction in combination with osteal plastic and osteosynthesis, combined spondylodesis in combination with extrafocal correction and Halo-apparatus stabilization. Stabilization of operated vertebro-motional segments was realized by transpedicular and combined titanic fixators, interbody vertebral spondylodesis – by porous or reticular titanic implants in combination with auto- or allobone. The most important question of operation planning we consider adequate grade of tumor spreading in vertebrae structures and its morphologic description.

Abstract no.: 37404

CAN HYPERBARIC OXYGEN BE USED TO PREVENT DEEP INFECTIONS IN NEURO-MUSCULAR SCOLIOSIS SURGERY?

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Introduction: To determine beneficiary effects of hyperbaric oxygen treatment in terms of prevention of postoperative deep infection in this specific group of patients The prevalence of postoperative wound infection in patients with neuromuscular scoliosis surgery is significantly higher than that in patients with other spinal surgery. Hyperbaric oxygen has been used as a supplement to treat postsurgical infections Methods: Fifty five neuromuscular scoliosis cases were retrospectively reviewed. The inclusion criteria were: presence of scoliosis and/or kyphosis in addition to cerebral palsy or myelomeningocele, postoperative follow-up >1 year and posterior only surgery. We had a total of 42 patients meeting these inclusion criteria. Eighteen patients formed the Hyperbaric oxygen prophylaxis (P-HBO) group and 24, the control group. The HBO group received HBO and standard antibiotic prophylaxis, and the control group (received standard antibiotic prophylaxis). Results: In the P-HBO group of 18 patients, the etiology was cerebral palsy in 13 and myelomeningocele in 5 cases with a mean age of 16.7(11-27yrs). The average follow-up was 20.4 months (12-36mo). The etiology of patients in the control group was cerebral palsy in 17, and myelomeningocele in 7 cases. The average age was 15.3 years (8-32yrs). The average follow-up was 38.7 months (18-66mo). The overall incidence of infection in the whole study group was 11.9% (5/42). The infection rate in the P-HBO and the control group were 5.5% (1/18), and 16.6% (4/24) respectively. Conclusions: The use of HBO was found to significantly decrease the incidence of postoperative infections in neuromuscular scoliosis patients.

Abstract no.: 37408

**POSTOPERATIVE RESULTS OF SINGLE PORTAL ENDOSCOPIC
CARPAL TUNNEL RELEASE TECHNIQUE**

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OBJECTIVE: To evaluate the postoperative results of single portal endoscopic carpal tunnel release technique. **METHODS:** 20 patients (22wrists) were evaluated preoperatively and postoperatively at 1week, 1month and 6 months by the Dash score, Mayo score and grip strength. Only one male was operated while others were females. 2 cases complaining of bilateral carpal tunnel syndrome while others complaint varied between right (12wrists) and left (6 wrists) hand. **RESULTS:** In this study; Onset of relief of symptoms [mainly nocturnal parathesia and pain] was within three days in about 12 patients (60%) and complete remission of symptoms occurred within one month in 18 patients (90%). Sixteen patients (80%) return to work during the first 14 days while only four patients (20%) had more than 21 days off work but less than one month. According to mayo score, our results improve significantly by about 20% after one week and reach normal to excellent results by the end of one month. According to dash score, our results improved markedly by about 3% after one week and reach normal to excellent results by the end of one month. Grip strength also improves by about 5kg/m² after one week and reaches normal after one month as compared to non operated hand. There were no complications. **CONCLUSION:** endoscopic release under local perineural anaesthesia using the USE single portal system serves as a safe and efficacious option for carpal tunnel release due to minimal postoperative pain and scarring, shortened recovery period and a high level of patient satisfaction.

Abstract no.: 37421

**OUR EXPERIENCE OF PEDICLE SCREW
POLYMETHYLMETHACRYLATE AUGMENTATION IN OSTEOPOROTIC
VERTEBRAE**

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Introduction: The use of pedicle screw fixation in osteoporotic vertebrae is often limited due to the high risk of installed implants instability. Many investigations proved that the use of polymethylmethacrylate increases the strength of pedicle screws fixation in osteoporotic vertebral bodies. However, the introduction of cement in the perforated screws can be complicated with extravertebral leakages of bone cement into the spinal or radicular canals. Purpose: To investigate the possibility of safe use of different designs perforated screws for pedicle fixation in osteoporotic vertebrae. Methods: 6 patients (5 women and 1 man aged from 45 to 73) with osteoporosis and various diseases of the spine were operated on using cement augmentation of pedicle screws. Results: There were no cases of cement leakage outside of the vertebral body. But the cement filling of transverse process and pedicle of the vertebra in the vicinity of the spinal canal was observed in one case of application of screws with close position of the most proximal perforation. The bone cement filled the vertebral bodies mainly in cases when pedicle screws with distal position of the most proximal perforation have been applied. There were no cases of implants instability in the postoperative period. Discussion: We believe that use of cement fixation screws is advisable to reduce the risk of instability pedicle screws in osteoporotic vertebral bodies. In our opinion the use of pedicle screws with distal position of the most proximal perforation reduces the risk of leakage of cement into the spinal or radicular canals.

Abstract no.: 37431

RELIABILITY OF THE SOFTWARE "ACX DYNAMICS" TO EVALUATE THE ACETABULAR COVERAGE USING A PLAIN RADIOGRAPH.

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Background: We have developed new software ACX dynamics to evaluate the three-dimensional acetabular coverage using a plain antero-posterior (AP) radiograph of the pelvis. The reliability of this software was still not confirmed. Purpose: The intraobserver reproducibility and interobserver reliability in evaluation of acetabular coverage by ACX dynamics was investigated. Materials and Methods: Fifty hip joints of 50 patients were randomly selected from 289 hips of 194 patients with dysplastic hip or osteonecrosis of the femoral head. Hip joints with osteoarthritic change and/or collapse of the femoral head were excluded. Utilizing their plain AP radiographs, the regional acetabular coverage rates (total, anterior 1/2 (A1/2), posterior 1/2 (P1/2), antero-lateral (AL) and postero-lateral (PL)) were measured by ACX dynamics. To examine the intraobserver reproducibility, one resident measured acetabular coverage by ACX dynamics three times, with an interval of 3 weeks. For interobserver reliability examination, one resident and two hip surgeons measured. The reproducibility and reliability were evaluated by the intraclass correlation coefficient (ICC). Results: The ICC of the intraobserver reproducibility was 0.98 for total, 0.97 for A1/2, 0.98 for P1/2, 0.97 for AL, and 0.98 for PL. The ICC of the interobserver reliability was 0.95 for total, 0.93 for A1/2, 0.96 for P1/2, 0.93 for AL, and 0.96 for PL. Conclusions: Excellent intraobserver reproducibility and interobserver reliability were observed in the measurements of the acetabular coverage by ACX dynamics. This software appears to be reliable and reproducible method for evaluation of acetabular coverage.

Abstract no.: 37432

ILIZAROV APPLICATIONS TO BENIGN BONE TUMORS

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Introduction: The usefulness of Ilizarov external fixator was investigated for the treatment of benign bone tumors. Materials and Methods: We treated 29 limbs 27 patients with deformity and different LLD due to benign bone tumor. There were 20 males and 7 female with a mean age of 11 years. We used Ilizarov of different bone tumors. The etiologies were osteochondroma in 9 patients, Olliers disease in 5 patients, fibrous dysplasia in 8 patients and GCT in 5 patients. Result: The outcomes of the results were satisfactory in case of all these benign bone tumors. Conclusion: Preservation and bone degeneration by means distraction osteogenesis constitutes a highly conservative limb saving surgery. Patients with good defects of less than 10cm, a great deal of preserve healthy tissue and good prognosis are good candidates for these methods.

Abstract no.: 37439

MINIMALLY INVASIVE PERCUTANEOUS PLATE OSTEOSYNTHESIS OF VERTICALLY UNSTABLE SACRAL FRACTURES

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Vertically unstable sacral fractures show difficulties to achieve stable fixation and there is no general agreement on the optimal fixation method. The aim of this study is to evaluate the outcome of vertically unstable sacral fractures treated by percutaneous posterior tension band plate fixation. Eighteen patients with vertically unstable sacral fractures were included. Inclusion criteria were comminuted Denis Zone II or III sacral fractures. All patients were treated by closed fracture reduction and percutaneous insertion of a bridging plate. The plate was inserted through a small oblique incision (3-4 cm) parallel and lateral to the sacroiliac joint, pushed submuscularly, retrieved from another similar incision on other side. The plate was fixed to the iliac bone on each side. Standard narrow DCP was used in all patients. It was contoured to fit to the anatomical site. Contouring of the plate was guided by preoperative CT measurement of posterior iliac inclination angle. Mean age was 31 years. Mean follow-up was 19 months. Neurological deficit was reported in 9 patients. The mean ISS was 26. A Morel-Lavallee lesion was reported in 4 patients. Infection and soft tissue complications were not reported. According to Tornetta&Matta, reductions were graded as excellent in 10, good in 7, and fair in one. All sacral fractures united. Fracture re-displacement was reported in 2 patients. Majeed score was excellent in 12 patients, good in 5, and fair in 1. Posterior minimal invasive plate fixation of vertically unstable sacral fractures is effective in stabilizing the fracture with soft tissue protection.

Abstract no.: 37440

**PERONEUS LONGUS AUTOGENOUS TENDON GRAFT : AN
ALTERNATIVE CHOICE OF AUTOGENOUS TENDON GRAFT**

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Ligament reconstructions using tendon grafts are common procedures in the field of Sports Medicine. Allograft, artificial ligaments, and autogenous tendon are choices of tendon grafts. Autogenous grafts are popular because of their high successful rate. Autogenous tendon grafts from different donor sites have their advantage and disadvantages, especially the patellar tendon (central third, bone tendon bone "BTB" technique) and hamstring tendons (semitendineous tendon "ST") alone or combined with the gracilis tendon). The quadriceps tendon is also available sometimes. The major consideration for autogenous grafts include easy accessibility, durability, and donor site morbidity. Hamstring graft is currently the most widely used graft . Revision ACL and PCL reconstructions are more and more. However, in specific situations such as multiple ligaments reconstruction, revision cruciate ligament reconstruction surgery, too small or short hamstring and even posterior cruciate ligament (PCL) reconstruction, the hamstring graft does not appear to be a good choice both in quality and quantity of the graft. In this paper, we introduce a novel peroneus longus tendon graft which provides easy accessibility, a graft that is strong enough to fit most ligament reconstructions, and associated with lower donor site morbidity.

Abstract no.: 37449

TWO INCISION TOTAL HIP ARTHROPLASTY: OUR TECHNIQUE AND CLINICAL RESULTS

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Background: There are many surgical techniques for minimally invasive Total Hip Arthroplasty (THA). Especially, THA approach has been improved to produce satisfactory long term clinical and radiological outcomes. The two incision THA is minimally invasive technique without any damage of muscle and soft tissue, however that has been controversial, with some authors reporting its use is associated with a rapid recovery whereas others report no differences in outcomes and higher risk of intra or postoperative complications secondary to increased surgical complexity. The purpose of this prospective study is to report and to discuss our modified two incision THA technique and that clinical result. Patients and Method: Between April 2004 and March 2014, 1205 primary THAs (Male 109, Female 1096, mean age 75.6 years old) were performed by two incision approach and a single surgeon in all cases. In our series, Osteoarthritis 1186 cases, Avascular necrosis 14 cases, Rheumatoid Arthritis 2 cases, and Ankylosed hip 3 cases. Analysis and Discussion: Prospectively analysis of surgical result and clinical outcomes were performed in our series. This study provides information about two incision THA technique and clinical good results and introduce our modified, minimally invasive and safety technique. Furthermore, as a result of having introduced changeable neck stem (Kinectiv, Zimmer, Warsaw, IN) to this series from November 2009, the number of the intraoperative complications decreased by using the changeable neck stem system.

Abstract no.: 37456

THE RELATIONSHIP OF PERIOPERATIVE BLOOD LOSS TO RECOVERY FOLLOWING LOWER LIMB ARTHROPLASTY

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Total hip arthroplasty (THA) and total knee arthroplasty (TKA) are major orthopaedic operations with associated blood losses. The aim of this study was to examine the average drop in haemoglobin (Hb) in patients undergoing primary THA or TKA, and to examine how this impacted upon length of stay (LOS) in hospital. 105 primary THA and TKA patients were identified prospectively with electronic and operative records used to ascertain parameters including peri-operative Hb levels. 105 patients of average age 70 years were included, with 57.1 % of patients female and 42.9% male. 53 THAs and 52 TKAs were identified, with average decrease in Hb post-operatively 26.1 g/l (S.D 12.8) for THAs and 22.0 g/l (S.D 12.3) for TKAs with no significant difference found ($P=0.099$). Male patients had a significantly higher drop in Hb post-operatively compared to females ($P<0.0001$), though only 1.9 % of patients were transfused. Use of tranexamic acid was associated with a significantly lower post-operative drop in Hb than without it, 20.3 g/dl v 26.3 g/L ($P=0.008$). LOS positively correlated with decrease in Hb ($r=0.33$, $p=0.001$), BMI ($p=0.001$, $r=0.34$), PCA usage ($p<0.05$), and increasing ASA class ($p<0.0001$). Average length of stay was 4.8 days (S.D 2.52) for THAs and 5.7 days (S.D 3.88) for TKAs. Very low overall transfusion rates were found compared to the literature. Although male patients experienced significantly larger drops in Hb than females, this did not translate into increased transfusion rates or LOS. Tranexamic acid usage was associated with significantly reduced blood loss.

Abstract no.: 37459

INTER- AND INTRA-OBSERVER RELIABILITY OF THE MODIFIED WALDENSTROM CLASSIFICATION FOR STAGING OF LEGG-CALVE-PERTHES DISEASE (LCPD)

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Background: The absence of a reliable classification system in LCPD has contributed to difficulty establishing consistent management and interpreting outcome studies. This study assesses the inter- and intra-observer reliability of the Modified Waldenstrom Classification. Methods: 20 pediatric orthopaedic surgeons independently completed four rounds of staging: two assessments of 40 de-identified radiographs of patients with LCPD in various stages, and two rounds of staging after the addition of a second X-ray in sequence. Kappa values were calculated within and between each round. In addition to the full 7-stage system, a two group paradigm of Early and Late disease was analyzed for reliability. Results: Inter-observer Kappa values for the full Classification for Rounds 1, 2, 3, and 4 were 0.81, 0.82, 0.76, and 0.80 respectively (0.61-0.80 = substantial agreement, 0.81-1.0 = near perfect agreement). Inter-observer Kappa values for the Early vs Late system for Rounds 1, 2, 3, and 4 were 0.68, 0.72, 0.65, and 0.68 respectively. Intra-observer agreement for the full Classification between Rounds 1 and 2, and between Rounds 3 and 4 was 0.88 (0.77-0.95) and 0.87 (0.81-0.94), respectively. Intra-observer agreement for the two group system between Rounds 1 and 2, and between Rounds 3 and 4 was 0.80 (0.67-1.0; 0.73-0.86) for both. Conclusions: The Modified Waldenstrom Classification for staging of LCPD demonstrated substantial to almost perfect agreement between and within observers across multiple rounds of study. Ultimately, the goal is to provide a reliable, validated classification tool for use in clinical trials investigating outcomes of patients with LCPD.

Abstract no.: 37460

DOES OPEN REDUCTION NEED FOR "IRREDUCIBLE" PEDIATRIC SUPRACONDYLAR HUMERUS FRACTURES?

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Treatment of “irreducible” supracondylar fracture of the humerus in children remains a challenge. Open reduction techniques for these fractures have been widely reported in the literature, and scarcely been questioned. In this study, we prefer to choose a special procedure of closed reduction and percutaneous pinning fixation method, for new extension pediatric supracondylar humerus fractures. From July 2008 to September 2012 eighty-six patients with extension supracondylar humeral fracture were treated in our department. There were 47 males and 39 females, from the age of 1.8 to 13 years (average 6.3 years). The mechanism of injury included 9 high falling cases, 43 falling cases in motion. For all type fractures, a special procedure of manipulation was performed. The mean time from injury to operation was 11.8 h (7-48 h). Complications such as osteofascial compartment syndrome or loss of reduction were not present in all patients. The ulnar nerve injuries were identified in 5 fractures while this situation resolved spontaneously in 4-6 months. The mean follow-up time was average 9.8 months (6-20 months). According to Flynn criteria, 79 cases were excellent, 7 good recovery. In conclusion, open reduction should not be regarded as the primary option for treatment of pediatric supracondylar humerus fractures, even in “irreducible” Gartland type III fractures. Satisfactory reduction can be achieved in these cases by our special manipulation and percutaneous pinning fixation is safe and minimally invasive, and facilitates the recovery of the elbow joint functions.

Abstract no.: 37461

IMPROVING RADIATION SAFETY AWARENESS AMONG ORTHOPAEDIC SURGEONS: ARE FILM BADGES SUFFICIENT?

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Introduction: The increasing use of fluoroscopy in orthopaedic procedures means that the risks of ionizing radiation exposure must be re-examined. X-ray exposure is known to increase cancer risk in orthopaedic surgeons, and it has also been linked with an increased incidence of congenital abnormalities in surgeons' children. Current protection mechanisms include lead shields to reduce exposure, and film-badges to monitor dose. Use is usually not compulsory and compliance rates are low. The aim of this study is to investigate compliance rates with film-badge use in theatre and determine if use varies depending on grade of surgeon operating. Methods: All film-badges were registered with a named surgeon and collected after a 6 month period. The badge records were analysed in our radiography department to determine how frequently they were used and what dose was accumulated by each surgeon. Results: 20 surgeons took part in the study (13 consultants and 7 registrars.) No badges were used during the 6 month period giving a compliance rate of 0%. Conclusion: Film badges as used at present are of no value in improving radiation safety awareness among surgeons. Compulsory use of film badges would improve awareness of risks of occupational exposure to ionizing radiation. Compliance could be increased by use of digital dosimeters in place of film badges, which provide real-time dose recording on the fluoroscopy screen. Ongoing research aims to determine the impact of digital dosimeters on compliance among surgeons, and radiation exposure.

Abstract no.: 37478

ARTHROSCOPY OF THE WRIST JOINT AND SMALL HAND JOINTS

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INTRODUCTION: The arthroscopy of the wrist joint and small hand joints enables detection and simultaneous correction of intra-articular changes. Small hand joint arthroscopy has not been widely used in Russia until the present time. **METHODS:** From 2012 to 2013, the specialists of the Nizhny Novgorod Traumatology and Orthopedics Research Institute performed 15 surgeries using arthroscopic equipment for small joints with the diameter of 2.7 mm. 11 endoscopic surgeries for tenosynovitis stenosis of hand fingers (7) and tenosynovitis of the styloid process of the radius (de Quervain syndrome) (4) were performed, in the course of which annular ligaments and the wall of the first fibrous canal were incised, and the tenolysis was made. In addition, 4 arthroscopic surgeries on the wrist joint (2), metacarpophalangeal joint of the I hand finger (1) and proximal interphalangeal hand joint (1) were made accompanied by therapeutic/diagnostic arthroscopy, arthrolysis and joint debridement. **RESULTS:** To evaluate the surgical treatment results, "The Disabilities of the Arm, Shoulder & Hand (DASH)" was used. Treatment results within 2 months were regarded as the nearest ones. The state of the upper limbs improved by an average of 44% as per DASH questionnaire. Therefore, the arthroscopy of the wrist joint and small hand joints is a modern, high-tech, low traumatic technique for diagnostics and treatment of intra-articular pathology, enabling to detect radiolucent injuries of articular structures and to evaluate the level of degenerate and dystrophic changes in the tissues forming an articular space.

Abstract no.: 37486

**CORRECTION OF RECURRENT DEVELOPMENTAL COXA VARU AFTER
FAILED INTERNAL FIXATION BY ILIZAROV METHODOLOGY**

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Introduction: Intertrochanteric or subtrochanteric femoral osteotomy and fixation by plate and screws is the standard method for treatment of Developmental Coxa Vara. But inadequate fixation of the proximal segment may lead to implant failure and recurrence of the deformity. Patients and Methods: In the period between January 2010 and December 2013, a prospective study was conducted including 12 patients with recurrent coxa vara after femoral osteotomy and internal fixation by plate and screws , 8 patients were males and 4 were females with average age at presentation of 6.4 years. Removal of the implant and subtrochanteric valgus femoral osteotomy was done followed by ilizarov application in the same session. 7 patients had limb length discrepancy of mean 4.2 cm, where second distal femoral osteotomy was done to correct the LLD. Results: All osteotomies healed without major complications, with improvement of the mean of Hilgenreiner's epiphyseal (HE) angle from 75.6° preoperatively to 27.3° postoperatively, with no limb length discrepancy or recurrence of deformity at final follow up. 7 cases had superficial pin tract infection which was managed by systemic antibiotic. Conclusion: The use of Ilizarov external fixator in correction of developmental coxa vara proved to be an efficient method as it can correct not only the neck shaft deformity but also the LLD also it provides very rigid fixation especially in recurrent cases after failed internal fixation where inadequate fixation can't be achieved by ordinary internal fixation techniques.

Abstract no.: 37489

PRELIMINARY APPLICATION OF COMPUTER-ASSISTED PATIENT-SPECIFIC NAVIGATIONAL TEMPLATE FOR PROXIMAL FEMORAL CORRECTIVE OSTEOTOMY

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Proximal femoral corrective osteotomy produces excellent clinical results for developmental dysplasia of hip (DDH), but the surgical procedure is technically challenging, and severe complications related to the osteotomy have been reported. To provide a safe, accurate surgical procedure, we have developed a novel computer-assisted patient-specific navigational template for individual patients. The aim of this article was to present preliminary application of a computer-assisted, patient-specific navigational template for proximal femoral corrective osteotomy. Patients with proximal femoral deformities requiring instrumentation were recruited. Volumetric CT scan was performed on each femur and a three-dimensional reconstruction model was generated from the scan data. Using reverse engineering technique, the optimal derotational and shortening osteotomy were determined and a drill template was designed with a surface that is the inverse of the lateral femoral surface. The drill template and its corresponding femur were manufactured using rapid prototyping technique and tested for violations. The navigational template was sterilized and used intraoperatively to assist with the proximal femoral corrective osteotomy. There were no major complications related to the osteotomy such as redislocation or avascular necrosis. The actual femoral anteversion angles corresponded almost exactly to the planned corrective angles in all cases. We have developed a novel, patient-specific, navigational template for proximal femoral corrective osteotomy with good applicability and high accuracy.

Abstract no.: 37490

ANTERIOR FRACTURE DISLOCATION OF SACROILIAC JOINT-A RARE SUBTYPE OF CRESCENT FRACTURES

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Background: Crescent fractures of the pelvis have been usually described as posterior sacro-iliac fracture dislocations. Rarely anterior displacement along with dislocation has been reported of the fractured iliac fragment of the crescent fractures. The mechanism of injury, radiological features and outcomes of this rare subset of lateral compression injury pattern of pelvic fractures has not been described in details till date. Case Description: Four cases of anterior fracture dislocations of the sacro-iliac joint managed in the last two years by a single surgeon are presented along with complete radiological diagnosis, management and functional results. The injury mechanism, radiological diagnosis, management protocol along with functional outcomes of all four patients has been discussed. Literature Review: Only four such cases of pelvis fractures have been described in adults with two cases being pure dislocations of sacro-iliac joints with no fractures. The functional outcome of these patients was not good due to intraoperative and postoperative complications. Clinical Relevance: This rare subset of lateral compression type of injury should be widely known to the trauma surgeon as its incidence is expected to increase in the present world. CT scan is essential in the diagnosis and preoperative planning of this injury pattern. Early fixation along with proper reduction steps leads to excellent functional outcome in this subset of lateral compression injuries of pelvis.

Abstract no.: 37491

MANAGEMENT OF GUNSHOT WOUNDS OF THE LIMBS: WHAT CAN WE LEARN ABOUT RELATED CASES DURING TUNISIAN JASMIN REVOLUTION ?

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The incidence of bullet wounds in civilian trauma has increased in many parts of the world during 2011. For general surgeons with limited experience there is a bewilderment range of apparently contradictory advice on management. An attempt to clarify this for gunshot injuries of the limbs without major vascular injury must include current concepts of ballistic wounding, the pathology of soft tissues wounds, fractures and of bacteria contamination. Neither bullet velocity nor available energy can provide a guide of tissue damage in gunshot fractures; the surgeon should not "treat the weapon". The state of soft tissue envelope and the fracture pattern are the key factors, and are determined by energy transfer. The aim is the preservative of healthy soft tissue with minimal non-viable and contamination. Advice on clinical practice achieved during Tunisia events (January and February 2011) and treatment options cannot be prescriptive because of the wide range of injury patterns and settings but an understanding of the general principles can guide clinical management

Abstract no.: 37494

A COMPARISON OF TWO APPROACHES FOR THE CLOSED REDUCTION OF TYPE II SUPRACONDYLAR HUMERUS FRACTURES IN CHILDREN

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The aim of this retrospective study was to compare cast immobilization versus percutaneous pinning for the closed reduction of type II supracondylar humerus fractures in children. We divided eighty-nine children, between the ages of two and eleven years, with type II supracondylar humerus fractures into two groups from 2008 to 2012. The group A (forty-three children) received closed reduction and cast immobilization. The group B (forty-six children) received closed reduction and percutaneous pinning. During the course of treatment, 12 fractures (27.9%) were found to have unsatisfactory alignment in group A and these fractures underwent secondary reduction and pinning. Based at the criteria of Flynn et al, 31 patients (72.1%) had an excellent result, 7 patients (16.3%) had a good result, 3 patients (7.0%) had a fair result and 2 patient (4.7%) had a poor result 1 year after injury. In group B, there were no loss of reduction or need for reoperation for loss of alignment, two patients developed pin site infections. Two patients had ulnar nerve palsy postoperatively and resolved spontaneously in 6 months. 37 (80.4%) patients had an excellent result, 9 (19.6%) patients had a good result. The cosmetic and functional outcomes of the two groups were statistically significant ($P < 0.05$). Type II supracondylar humerus fractures can be successfully managed by closed reduction and percutaneous pinning, without loss of reduction or increasing the risk of iatrogenic nerve injury.

Abstract no.: 37497

CAUSES ANALYSIS AND MANAGEMENT OF POSTOPERATIVE FEMORAL FRACTURES IN CHILDREN WITH DDH

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Proximal femoral corrective osteotomy produces excellent clinical results for developmental dysplasia of hip and locking compression plates are being increasingly utilized in fixation of osteotomies in the pediatric population. However, plate insertion or removal may pose a risk of femoral fractures or refractures. The goal of this study was to analyze postoperative femoral fractures associated with LCPs and identify possible contributing factors in children with DDH. From May 2008 to January 2012, 5 cases from 86 DDH patients with postoperative femoral fractures in our department were retrospectively reviewed . There were 1 males and 4 females with the age range from 2 to 6 years (mean 3 years and 5 months) . In cases of femoral fractures, the timing, circumstances, fracture location, and refixation method were recorded. Three patients sustained refractures after plate removal, all at the original fracture or regenerate site: 1 after a fall and 2 spontaneously. The mean follow-up time was 10.6 months (2-27 months). There seems to be an increase in risk of refracture immediately after plate removal. Caution should be taken in the first weeks after plate removal. Many factors , such as , injuries from the surgery, prolonged immobilization or the internal fixation devices can result in postoperative femoral fractures in children with DDH. In order to reduce or prevent occurrence of femoral fractures , measures including rehabilitation exercises, drugs, and standard operational principle should be directed properly.

Abstract no.: 37498

NON ACCIDENTAL INJURIES IN CHILDREN: ARE WE AWARE?

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Objetives: To review the attitude and knowledge of physicians (general and pediatric orthopaedic surgeons, pediatricians and residents of both programmes) towards non accidental injuries (NAI). **Material and method:** Descriptive, observational study. An email-based questionnaire was applied to a group of 25 physicians, including general orthopedic surgeons, pediatric orthopedic surgeons, pediatricians and residents of both programs from different universities. We evaluated which factors affected the performance in áreas such as knowledge about NAI and the chilean law system about this problem. **Results:** 80% had 10 or less years working as a physician, an average of 1 case in the last year was managed, more than 50% refer to have received specific physician training on this matter, but less than 40% received training on chilean laws about NAI. 54% answered that didn't know or didn't have specific algorithms in their place of work. 100% said it was the orthopedic surgeons's responsibility to inform the case, according to a level of suspicion, to the proper authorities. **Conclusions:** Our study strongly suggest that orthopedic surgeons and pediatricians, both trained and under training, would benefit from programmes directly oriented to the NAI and its characteristics, and also oriented to the chilean law body on the issue

Abstract no.: 37499

FIVE-YEAR RESULTS WITH PROXIMA STEMS

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Introduction: In young patients with severe osteoarthritis the Proxima stem, as a bone saving arthroplasty technique, should be a reasonable choice because this population might be potential candidates for subsequent revision arthroplasty. Methods: Our first 41 consecutive Proxima short stem cases were evaluated and followed-up clinically and radiologically. Mean age at operation was 48 years. Mean follow-up time was 67 (45 to 89) months. Results: Harris Hip Score was 40 preoperatively, and elevated to 89 at one year follow-up period, which was maintained 67 months later. No radiological loosening or migration was observed. One femoral fracture was happened during the stem implantations, which resolved without any further complications. One revision was in the early postoperative period due to recurrent luxation caused acetabular component malposition. Of the 41 patients, all would undergo the procedure again; 39 (95%) were completely satisfied, two (5%) was just satisfied (periprosthetic fracture and revision cases). Conclusion: When the resurfacing arthroplasty is contraindicated in young patients, the short stems still seem to be a good alternative to total hip replacement offering good bone saving method after five years.

Abstract no.: 37500

THE EARLY DIAGNOSIS AND OPERATIVE TREATMENT OF LATERAL CONDYLAR FRACTURE OF HUMERUS IN CHILDREN

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The treatment goal in lateral condylar fracture is union without residual deformity. However, growth disturbance may occur despite initial anatomic reduction and secure fixation. The purpose of this study was to investigate the early diagnosis and treatment of lateral condylar fracture of humerus in children. From July 2010 to July 2012, 18 patients suffered from humerus lateral condyle fracture were treated with open reduction and internal fixation with kirschner wires in our hospital, the functional outcomes were assessed using o Flynn standard of the function of elbow. Radiographically, osteoarthritis or heterotopic ossification was investigated. All patients were follow-up for 13 to 27 months, with the average of 19 months, whose average age was 5.7 years (range from 2 to 11 years). The time of clinical bone union was 6 to 8 weeks and no nonunion and delayed union were observed in X-ray films. According to Flynn standard of the function of elbow, the results were excellent in 15 cases, good in 3 cases. Displaced humerus lateral condyle fracture is easy to be misdiagnosed or missed because of the cartilage. So it is important to be able to conduct an early diagnosis and treatment to reduce various deformities and complications. Crossed pins fixation will have a satisfying outcome. Using this method can have satisfactory reduction, firm fixation, less complication. At present it is an ideal method for treatment of lateral condylar fracture of humerus in children.

Abstract no.: 37501

PIGMENTED VILLONODULAR SYNOVITIS OF 1ST MTP JOINT

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Introduction & aims: Pigmented villonodular synovitis common disease entity particularly in the knee joint but its incidence in the foot is quite rare. **Method:** A 17 year old female presented to our institution with diagnosis of pigmented villonodular synovitis which had been operated once outside but recurred. Recurrence was confirmed with histopathology. After careful examination and investigations open excision was done. Patient remained pain free for 5 months but again started having pain at first metacarpophalangeal joint and treating physician thought that disease has recurred again. After careful physical examination she was found to have a corn at the planter aspect of the first metacarpophalangeal joint. She was sent for the opinion of an expert dermatologist, who excised that corn. **Results:** Patient is now completely pain free even after one year of the surgical management. **Conclusions:** PVNS of the forefoot and 1st metatarsal joint, although reported earlier, is rare entity. This report signifies the importance of the differential diagnosis of pain in the foot and particularly in the weight bearing part of the foot and implies that recurrence should be considered only after careful examination.

Abstract no.: 37508

COMPARATIVE STUDY OF SEPTIC ARTHRITIS AFTER SINGLE AND DOUBLE BUNDLE ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION.

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Introduction: Incidence of Septic arthritis after anterior cruciate ligament (ACL) reconstruction surgery varies from 0.2% to 1.7%. **METHODS:** A retrospective review was conducted of all cases of septic arthritis after arthroscopic Single bundle (SBACL) and Double bundle (DBACL) ACL reconstructions, performed at our institution between 2008 and 2012. The incidence, presentation, causative organism, laboratory parameters and treatment outcome of all infected patients were analyzed. Mode of sterilization, tourniquet time was also noted. In all such cases knee was aspirated and synovial fluid subjected to TLC, DLC, culture and sensitivity. Erythrocyte sedimentation rate(ESR), C-reactive protein level (CRP), and fibrinogen level done. Arthroscopic knee debridement and lavage was done. Simultaneously patients were started with intravenous third generation cephalosporins and gentamicin in appropriate dosage. Patients were followed up at 2 weeks, 6 weeks, 3 months and 6 months. **RESULTS:** Septic arthritis occurred in 12 cases out of 1492 cases of DBACL (0.8%) and 3 cases out of 723 cases of SBACL (0.41%). Hamstring tendon graft was used in all cases. In both the groups the most common symptoms of the infected patients were fever, swelling, severe pain, tenderness and restricted motion.ESR, CRP and fibrinogen level were markedly elevated. Coagulase-negative Staphylococcus was the most common bacterium in both the groups, though in 7 cases no growth was recorded. In no patient ACL graft was removed. There was no significant difference between the two groups in terms of incidence of infection, causative organism, laboratory parameters, tourniquet time, mode of sterilisation and post treatment response.

Abstract no.: 37515

COMPARATIVE EVALUATION OF TREATMENT RESULTS OF UNSTABLE DISTAL RADIUS FRACTURES WITH DIFFERENT STAGES OF BONE DENSITY

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Introduction. To compare the results of surgical treatment of unstable distal radius fractures with different stages of bone density. **Materials and methods.** We analyzed the treatment of 38 patients, diagnosed with unstable distal radius fractures Type C2, C3 (AO classification), who underwent inpatient treatment in Orthopaedic Trauma Center from 2011 to 2012. According to densitometric ultrasound study patients were divided into two groups, each consisting of 19 patients: T-score ≥ -2.5 and higher (group I) and T-score lower than -2.5 (group II). The first group's average age was 44 (44 ± 12) and the average T-score -0.56 ($+1.1$ to -2.43). The second group was aged 63 (67 ± 8) with T-score -3.56 (-2.54 to -5.13). We performed open reduction and volar locking plate osteosynthesis, operating on all patients. Functional and radiological results were compared between the two groups. **Results.** Functional results were evaluated according to Green and O'Brien scoring system after 3, 6 and 12 months. The average score in group I was 85.0 ± 6.2 , and 81.2 ± 9.3 in group II. The first group showed excellent good results in 86 % of cases. The second group had 83 % excellent and good outcome. Radiographic results, which included dorsal tilt, radial inclination and length, were evaluated in 3, 6 and 12 months after the surgery. The comparative results of 2 groups had no statistically significant difference. **Conclusions:** Bone density indexes occurred not to influence statistically authentically on the operative treatment functional outcomes of unstable distal radius fractures using volar locking plate, which provides strong mechanical fixation and early joint immobilization.

Abstract no.: 37519

COMPARISON OF MINOR HAEMORRHAGIC AND SOFT TISSUE ADVERSE EFFECTS USING DABIGATRAN AND ENOXAPARIN FOLLOWING TOTAL HIP REPLACEMENT

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Introduction: A few years ago orally administered agents were added to thromboprophylactic guidelines for total hip replacement (THR). Clinical trials with the orally used dabigatran etexilate suggest that its efficacy and bleeding risk are equivalent to the subcutaneous low-molecular weight heparin enoxaparin. Our aim was to examine the minor haemorrhagic and soft-tissue adverse effects of dabigatran compare it to the previously used enoxaparin. **Methods:** Patients undergoing THR were enrolled in our prospective case-control study. Two groups were formed according to perioperative thromboprophylaxis: enoxaparin group versus dabigatran group. Thigh volume changes, calculated perioperative blood loss, area of haematoma on the skin surface, wound bleeding, duration of wound oozing and amount of seroma on 3rd and 7th postoperative days were observed. **Results:** 151 consecutive patients were enrolled in our study, 80 in enoxaparin group and 71 in dabigatran group. Duration and amount of serous discharge formation differed significantly between the two groups ($p < 0.05$). Duration of wound discharge after drain removal was 2.3 days (SD 2.7) in the dabigatran group and 1.2 days (SD 1.9) in the enoxaparin group after drain removal. Significant elevation of serous discharge formation was found in the dabigatran group ($p < 0.05$) on 3rd and 7th postoperative days. **Conclusion:** Both medicines have appropriate antithrombotic effect in case of THR. However, dabigatran have elevated serous discharge formation compared to enoxaparin, which might cause reluctance os surgeons to use it because of longer hospitalization, prolonged antibiotic prophylaxis and wound infection.

Abstract no.: 37520

STUDY OF SURGICAL TREATMENT OF FRACTURE MIDDLE THIRD CLAVICLE WITH RECON PLATES VS LOCKING COMPRESSION PLATES.

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Purpose:Fractures of the Clavicle are one of the most common injuries. Traditionally it has been treated by non-operative methods.The present study was undertaken to compare the results between the two surgical methods used in middle third clavicle fractures. **Materials & Methods :**25 adult patients with clavicular fractures treated surgically between June 2010 and March 2013 were included.10 patients from June 2010 to Dec 2011 were fixed with Recon plates and 15 patients from Jan 2012 to March 2013 were fixed with LCP **Results :**Among 10 patients operated with recon plates,8 patients united at an average of 11.15 weeks,2 patients had delayed union.Among the 15 patients operated with LCP,12 patients united at an average of 11.09 weeks,2 patients had delayed union,1 patient had plate loosening.The functional outcome according to Constant and Murley score after fracture union in Recon Plate group was excellent in 7 patients,good in 2 patients and fair in 1 patient.Whereas in LCP group it was excellent in 12 patients,good in 2 patients and fair in 1 patient. **Conclusion :**This Study shows rigid fixation for middle third clavicle fractures with locking compression plate holds a slight advantage over recon plates in terms of better functional outcome.

Abstract no.: 37526

A PILOT STUDY ON THE TREATMENT OF DEGENERATIVE SCOLIOSIS BY USING MINI-TLIF AND PERCUTANEOUS VERTEBRAL PEDICLE NAIL FIXATION

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objectives To investigate the operative key points and therapeutic effects of degenerative scoliosis by using mini-tlif and percutaneous vertebral pedicle nail fixation. **Methods** There were twenty cases with degenerative scoliosis who had underwent mini-tlif and percutaneous vertebral pedicle nail fixation in our hospital from september 2012 to september 2013. All cases were minimally invasive exposure, open the intervertebral space in step by step, implant the cage with bone into the curved side of the intervertebral space, and finally percutaneous vertebral pedicle nail fixation with extending in the curved side and compressing in the convex side of spine. Cobb's angle were measured and compared between radiography at pre-operation, postoperation, and follow up, while intervertebral fusion were detected by radiography and CT scanning, and the clinical effect were assessed according to Nakai methods. **Results** Bony fusion were surely take placed in 16 cases but not sure in another 4 cases. The final VAS decreased from (7.5 ± 1.2) score in pre-operation to (2.3 ± 1.1) score in leg pain, (6.8 ± 1.3) to (1.7 ± 1.3) in lumbar pain. Cobb's angle were decreased from (33.7 ± 3.5) degree in pre-operation to (10.7 ± 2.4) . clinical effect is excellent in 12 cases, good in 5 cases and so-so in 3 cases, so the excellent and good rate was 85%. **Conclusion** Mini-tlif and percutaneous vertebral pedicle nail fixation is a minimally invasive technique and good at correcting scoliosis, it is an effective way for the treatment of degenerative scoliosis.

Abstract no.: 37528

SURGICAL TREATMENT OF SACRAL FRACTURES

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Purpose: To analyze the diagnosis and treatment of sacral fractures. To determine the indications for surgical and conservative treatment and evaluate results. **Methods:** 34 patients with fractures of the sacrum underwent treatment since 2009. 26 (76,5%) were operated on unstable injuries. The patients were divided into 3 groups according to Denis classification. The first group included 12 patients, 4 of them had surgery. There were no neurological disorders in that group. All of 11 patients from the second group were treated operatively, due to the presence of neurological disorders. The surgery of 8 patients consisted of osteosynthesis and nerve roots decompression with revision of foramen. 3 of 3 patients from group 3 were operated on. 2 patients had decompression of nerve roots performed and 1 had laminectomy. Means for the fracture fixation were iliosacral screws (18 cases), bridge plates (5) and both methods combination (3). **Results.** In 3 cases we faced festering wounds. 2 patients presented inadequate reposition with more than 1 sm displacement. We used the functional evaluation according to Matta in 29 (85,3%). 6 patients showed excellent results, 19 - good, 3 - satisfactory and 1 poor. Regression of neurological symptoms was seen in 8 patients, 4 had partial regression, 2 had no changes. **Conclusion.** Surgical treatment is indicated in unstable sacral fractures and in case of neurological disorders. Optimal means of fixation are iliosacral screws and transiliac plate. Revision and decompression of nerve roots must be performed in case of fractures with foramen deformity.

Abstract no.: 37532

**ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION USING BONE
PATELLAR TENDON BONE GRAFT WITH MINI ARTHROTOMY
TECHNIQUE**

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Background And Objectives: This study is to learn the results of ACL Reconstruction using Bone-Patellar-Bone using Miniarthrotomy technique. **Materials and methods:** This study was conducted in Bapuji hospital, Davangere from October 2010 to October 2012. During this period 20 cases of adult patients with ACL deficient patients were selected according to the inclusion criteria. **Results :** Prospective Study of ACL Reconstruction using Bone-Patellar-Bone grafts by Mini arthrotomy technique in terms of Post operative knee stability, Subjective Knee functions, Patient satisfaction, Graft site morbidity, Range of motion. In this study, an effort was made to weigh the advantages over arthroscopic approach. **Results of our study** clearly showed that bone-patellar tendon-bone graft could effectively improve knee stability and functions after anterior cruciate ligament reconstruction. **Conclusions:** Mini arthrotomy is a good procedure which can be done where arthroscopically assisted ACL reconstruction is not available. The procedure has many advantages including eliminating the need of displacement of the patella and minimizing the biomechanical disturbance to the patella-femoral joint after operation. Successful ACL reconstruction performed before significant joint deterioration has occurred can preserve joint function. The goals of the ACL reconstruction are to restore stability to the knee; allow the patient to return to normal activities and to delay the onset of osteoarthritis with associated recurrent injuries to the articular cartilage and loss of meniscal functions.

Abstract no.: 37535

COMPARISON BETWEEN MICROLUMBAR DISCECTOMY VERSUS OPEN LAMINECTOMY & DISCECTOMY IN LUMBAR INTER VERTEBRAL DISC PROLAPSE

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Background: Lumbar intervertebral disc herniation is one of the main causes of low back ache and sciatica, which might incapacitate a person. There are many techniques available for treating lumbar disc herniation. But however Microlumbar discectomy is gold standard in disc surgery.OBJECTIVES:The AIM of the study is to compare & evaluate subjective, objective and functional results between microlumbar discectomy with that of open laminectomy and discectomy.METHODOLOGY:A prospective study was done from June 2010 to Aug 2012, including 60 patients with lumbar disc herniation. In group A 30 patients underwent microlumbar discectomy and in group B 30 patients underwent Open Laminectomy &Discectomy.Preoperative and postoperative scores were taken and the rate of improvement in terms of percentage was calculated using Japanese Orthopaedic Association Low Backache score.Results : In our study, we achieved 95%of excellent result in microlumbar discectomy and 95% of excellent results in open laminectomy &discectomy.Conclusion: There are many techniques for treatment of lumbar disc herniation but microlumbar discectomy is gold standard technique in disc surgery.Takes short surgical time,smaller incision so healing is early and amount of blood loss is less and early return to daily life/work.

Abstract no.: 37536

RISK FACTORS FOR MEDIAL MENISCAL ROOT TEAR

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Intorduction: To analyze the risks factors of patients with medial meniscal root tear and evaluated their relative importance.**Method:** 120 patients with root tear of MM (medial meniscus) confirmed by MRI were classified as group 1, 115 patients with other tears of MM confirmed by MRI were classified as group 2. Patients' age, gender, Body Mass Index (BMI) were surveyed through medical records. Simple radiographs taken at their first clinical visit were utilized to evaluate varus deformity. Kellgren-Lawrence (KL) grade and MRI images were utilized to evaluate degenerative change of MM and medial extrusion.**Results :** Analysis showed statistical significant differences in sex, age, KL grade, MRI extrusion, MRI degeneration grade of MM, and varus angle ($P < 0.05$) and Fisher's Exact test (non-parametric method) also showed a statistical significant difference ($p < 0.05$). However the gender, 1-3 KL grades were the only to show significant relative risks among ages, gender, BMI, varus deformity, KL grade, varus deformity, MRI degeneration grade. **Conclusion:** Comparative analysis between root ligament tear of MM and other tears of MM showed no statistically significance in age, BMI, varus deformity, MRI degeneration grade. However patients with root ligament tear of MM had significantly female sex predominance, increased KL grade (1-3) compared with persons with other types of meniscal tear.

Abstract no.: 37537

DISLOCATIONS OF THE SMALL JOINTS OF THE HAND.

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Introduction: Dislocations of the small joints of the hand are the second most common dislocation, 3.9/10,000/year. Whilst we have clear descriptions of fractures of the bones of the hand many consider dislocations as trivial akin to contusions and sprains. Methods: A database of all patients presenting acutely with dislocation/subluxation (November 2008 and October 2009) was searched for those affecting the small joints of the hand. There were 202 dislocations/subluxations of the small joints of the hand. Each of these cases' notes and radiographs were reviewed. Patient factors including age and sex were documented along with injury related factors including direction of dislocation, associated fractures, open or closed injury as well as recurrent or first time dislocation. The 4 year outcomes for alive patients were assessed by the Michigan Hand Outcome Questionnaire (MHQ). Nine patients were dead, 41 were not traceable, leaving a total of 75% followed up with MHQ scores available. There was no significant difference between the group followed up and uncontactable or deceased. Results: There were significant associations between the direction of dislocation and the finger involved, the joint and the mechanism of dislocation and the mechanism and direction of dislocation. The patient reported outcome was significantly different dependant on age, open fractures and gender. Conclusion: This is the first study to assess the epidemiology and medium term outcomes following dislocation of the small joints of the hands allowing us to better understand and treat these injuries.

Abstract no.: 37538

**APPLICATION OF COMPUTER-ASSISTED DESIGN AND MANUFACTURE
TECHNIQUE IN JOINT CONGRUENCY OF THE DYSPLASTIC HIP JOINT
FOR THE OPTIMAL OPERATION METHOD**

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Introduction: To investigate the correlation research in digitalized visualization preoperation design in joint congruency of the dysplastic hip joint and provide the optimal operation method. **Methods:** The CT and MR scanning of 8 older patients suffered from DDH were conducted. Three-dimensional reconstruction of pelvis was performed using the Mimics 14.0 software on the basis of CT images. Dump, mask and splicing the MR image of hip joint, and CT scanning. Reconstruction of the hip joint based on CT image. The application of rapid prototyping technology produce hip joint model, so as to optimal operation method for the rotational acetabular osteotomy and predict postoperative results. postoperative CT examination and comparison with the preoperative design, evaluation of application effect. **Results:** The three-dimensional models of the dysplastic hip joint with unossified epiphyseal cartilage, postoperative CT showed the effect of operation matched with the preoperative planning well. Accurate of rotational acetabular osteotomy was confirmed with postoperative X-ray and CT. After six to ten months of follow up, the range-of-motion were satisfactory, and all the hips with good joint congruency. **Conclusion:** The pre-operative application of CAD/CAM technique reconstitute the three-dimensional models of the dysplastic hip joint of unossified epiphyseal cartilage can improve the accuracy of the surgery and the correction procedure of deformity asymmetry, as well as saving operating time.

Abstract no.: 37544

A COMPARATIVE ANALYSIS OF LUMBO-SACRAL FIXATION STRENGTHS: WHAT IS BEST IN A LONG FUSION?

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Introduction: While various techniques are available to reduce pseudoarthrosis in long spine fusions, there are limited data comparing fixation methods biomechanically. Methods: 12 fresh-frozen cadavers were instrumented from L2-S1. Strain gauges measured strain on: rods between L5-S1, connectors between S1 and iliac bolts, and S1 screws. Specimens were sequentially tested in 4 planes of motion with different construct configurations, including interbody devices and iliac bolts. Results: Extension: Adding anterior and posterior instrumentation significantly decreased strain on S1 screws, L5-S1 rods, and S1-iliac bolt connectors. Flexion: Compared to posterior fusion without iliac bolts, strain at S1 screws increased with iliac bolts, cages placed by a TLIF approach, and cages placed by an anterior approach. However, strain decreased with anterior cages and iliac bolts or an ATB. Rotation: Compared to posterior instrumentation with iliac bolts, strain on S1 screws significantly decreased when instrumentation was changed to a SynFix implant and iliac bolts were removed. A significant decrease at S1 screws was seen when ATB was used without bolts with the SynFix implant. Conclusions: Other trends: flexion increases strain at S1 screws and L5-S1 rods, and can be mitigated with the combination of iliac bolts/interbody cages. Iliac bolts appear to increase strain in flexion greater than interbody cages alone. In extension, anteriorly placed devices decrease strain when compared to iliac bolts, but a combination of techniques provides the greatest decrease. In rotation, anterior interbody constructs increase S1 strain compared to iliac bolts, but again, a combination of bolts/anterior devices led to decreased strain.

Abstract no.: 37545

**OPEN WEDGE TIBIAL OSTEOTOMY WITH PUDD PLATE--
COMPARATIVE RADIOLOGIC STUDY BETWEEN WEDGE TYPE AND
RECTANGULAR TYPE PUDD PLATE -**

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Purpose: To compare the radiologic result of open wedge proximal tibia osteotomy using wedge type and rectangular type Pudd plate® **Methods:** Group A(19 cases) consisted of cases that underwent surgery using plate with rectangular type metal block, meanwhile group B(20 ases) consisted of wedge type metal block. The femorotibial angle, tibia posterior slope, and patella height before surgery, after surgery, and on the final follow up were compared. Each group was subdivided to group a, b, and c regarding the location of the plate and according to which, the change of tibia slope was analyzed. **Result:** Radiological measurement revealed preoperative, postoperative, and final femorotibial angle of 2.3 degrees varus, 7.18 degrees valgus, and 7.01 degrees valgus in group A and 2.50 degrees varus, 7.2 degrees valgus, and 7.03 degrees valgus in group B. The preoperative, postoperative, and final tibial slopes were 9.95, 12.65, and 12.71 degrees in group A and 9.77, 11.2, 11.15 degrees in group B. Additionally, as the plate was placed anteriorly, the tibial slope was greater. The patella height before and after surgery, and on final follow up were 1.11, 1.08, and 1.05 in group A and 1.13, 1.04, and 1.03 in group B which were measured by Insall-Salvati index. **Conclusion:** It should be carefully performed since rectangular type can relatively increase the tibial slope compared to wedge type. In addition, increment of tibial slope can be somewhat prevented by avoiding anterior placement of the plate.

Abstract no.: 37557

CAN ULTRASOUND-GUIDED NERVE BLOCK BE A USEFUL ANESTHESIA METHOD FOR ARTHROSCOPIC KNEE SURGERY?

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Purpose: To compare general anesthesia, spinal anesthesia, and ultrasound-guided nerve block for knee arthroscopic surgery. **Methods:** 400 patients were allocated to one of three groups: spinal (100 patients), or general anesthesia (100 patients), ultrasound-guided nerve block (200 patients). All patients completed a questionnaire with 5 questions after surgery and all of their medical records were reviewed. For the group of ultrasound-guided nerve block, intraoperative, postoperative visual analog scale (VAS) score, discomfort during surgery, and perioperative vital signs were assessed. Also differences of intraoperative VAS score among the groups were evaluated according to age, gender, and disease. **Results:** There was no significant difference in the duration of surgery between the groups, and none of the cases changed to the other anesthetic method during operation. VAS score of postoperative 1hour showed significant difference between group of regional nerve block group, spinal and general anesthesia ($P < 0.05$). And VAS score of postoperative 6hr, 12hr showed significant difference between group of regional nerve block group and spinal, general anesthesia. 190 nerve block (95%), 68 spinal (68%), 75 general anesthesia (75%) stated that they would prefer same type of anesthesia if they were to have knee surgery again, showing significant difference ($P < 0.05$). 150 nerve block (75%), 78 spinal anesthesia (78%), 65 general anesthesia(65%) considered themselves completely recovered from the arthroscopy, a nonsignificant difference ($P = 0.43$). **Conclusion:** ultrasound-guided nerve block for rthroscopic knee surgery was highly satisfactory and safe procedure.

Abstract no.: 37565

MANAGEMENT OF PAEDIATRIC DIAPHYSEAL FEMUR FRACTURES - A COMPARITIVE STUDY

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Introduction: Femoral shaft fractures account for 1.6% of all pediatric bony injuries. The objective of the study was to access the relative functional outcome in conservative modality (Thomas Splint + Spica) and operative method (Flexible Intramedullary Nailing) of treating diaphyseal femur fractures in children. Materials and methods: A controlled comparative and explorative study involving children and adolescents with Femoral shaft fractures admitted to J.S.S Medical College, Mysore in the period from September 2011 to September 2013. 16 patients underwent flexible intramedullary nailing fixation and another 16 were treated with Thomas splint followed by hip spica. Patients were followed up between 3 months until 1 year after surgery. Results: The study comprised of 20 male and 12 female patients aged from 6 to 14 years with mean of 10.7 years. Fall while playing was the most common mode of injury followed by RTA, causing mostly mid shaft fractures, followed by proximal and then distal. Majority of the fractures had a transverse pattern followed by spiral and oblique. All fractures were united without any major complications, significant limb length discrepancy, delayed -unions or non-unions in either of the two groups. Conclusions: The time for union was significantly shorter with FIN than with TS+SPICA thereby eliminating the need for prolonged rest in bed by providing early independent ambulation, which also reduces the morbidity and dependency of the patients. The functional outcome based on Flynn's criteria was also better among the FIN group leading us to make the final conclusion that it is better.

Abstract no.: 37566

EFFECTS OF CONTROLLED HYPOTENSION IN BEACH CHAIR POSITION UNDER NEUROPHYSIOLOGICAL MONITORING IN SHOULDER ARTHROSCOPY FOR ROTATOR CUFF REPAIR WITH DOUBLE-ROW.

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Key Word: Neurophysiology , arthroscopy, hypotension, beach chair position, cardiovascular diseases. **Introduction:** Controlled hypotension for shoulder arthroscopy in beach chair position is used to improve visualization; this has the risk of decreasing cerebral perfusion in patients with cardiovascular diseases. **Objective:** To determine the safe blood pressure range in the beach chair position to avoid cerebral hypoperfusion under intraoperative neurophysiological monitoring. **Material:** Sample of 10 patients (mean 57.8 years, σ 4.10) with rotator cuff tear (RCT) diagnosis (Patte < 2 Goutailler < 3) using beach chair position with double-row and traction with Spider TM. Real-time monitoring of peripheral and central sensory pathways using somatosensory evoked potentials (SSEP) of median and posterior tibial nerves. The standard monitoring of anesthesia and bispectral index (BIS) system were used. **Results:** Surgical times (mean of 2.11 hours, σ 0.032), arthroscopic irrigation volume (mean of 16.15 l, σ 1.30) and pressure (mean of 34.5 mmHg, σ 3.68) decreased. No significant changes were found in the amplitude or latency of SSEPs associated with arterial hypotension. We found voltage flattening of the peripheral components of the median nerve in prolonged tractions lasting more than 20 minutes. **Conclusions:** Controlled hypotension facilitates an appropriate visualization and anatomical reconstruction of the RCT. Non-invasive intraoperative neurophysiologic monitoring can be used to identify and treat cerebral hypoperfusion in patients with cerebral vascular disease. The transient signal of the median nerve was lost because of the traction. These changes did not result in peripheral sensory or motor deficits.

Abstract no.: 37567

**ISOLATED CONGENITAL DISLOCATION OF KNEE: A CASE REPORT
AND REVIEW OF LITERATURE.**

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Introduction: Congenital dislocation of the knee (CDK) is a very rare condition (estimated incidence is nearly 1.7 per lakh live births) that comprises a spectrum of deformities from hyperextension of knee to subluxation and complete dislocation. We report our experience with a case of isolated unilateral grade 1 CDK and review of available literature on this topic. Case: Our case is a female baby with cephalic presentation delivered at nine months by caesarian section by a primigravida mother. Birth history and perinatal course were obtained from medical records. After thorough physical examination and radiological studies, the patient was diagnosed to have an isolated unilateral grade 1 (Leveuf & Pais classification) CDK with no associated congenital anomalies. Within 24 hours of birth, early, direct reduction under gentle, persistent manual traction with gradual correction of the hyperextension deformity was attempted and a long leg cast was applied. Serial stretching and casting was done at intervals of 4 weeks for 3 months till 90 degrees of knee flexion was obtained. Pavlik harness was used thereafter with a satisfactory result after 24 months of follow up. Discussion: Our case is a good example of CDK originating from abnormal fetal posture in intrauterine period of life. For isolated grade 1 CDK patients, early and direct closed reduction within 24 hours of birth affords excellent outcome.

Abstract no.: 37570

SEQUELAE OF THE LIBYAN WAR TRAUMA

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Treatment of war trauma sequelae is a high demanding procedure due to the complexity of the cases, low compliance of distressed patients and, when patients are abroad, to different language and culture. In a civil hospital in Italy, from October 2011 to March 2014 we have treated 203 victims of the Libyan revolution. We report on 43 patients affected from bone non union and/or infection. For every patient blood tests and white body bone scan to detect infection were performed. 40 of the 43 patients were affected from lower or upper limb septic or aseptic non union, 2 from chronic multiresistant osteomyelitis and one from leg length discrepancy, mean age was 32 yo. All cases were treated as septic cases with removal of the hardware, application of a dynamized external fixator. When required, in patients with aseptic non union, autologous bone graft was used. In 3 cases additional muscular flap was performed to grant a better blood supply. In the first case of osteomyelitis we performed a vascularized fibula graft from the other leg and applied a dynamized exfix. In the other case we performed a muscular flap and applied a dynamized exfix. In 39 patients healing was achieved between 3 and 15 months. 4 of the 43 patients are still receiving treatment. Treatment of war injury sequelae is challenging. Patient compliance has not always been good and this might have delayed the healing process. Cooperation between Orthopaedic surgeon, infectivologist, plastic surgeon and Libyan doctors as well as removal of the hardware applied in camp hospitals is mandatory. Compression and dynamic load transfer through the fracture is of utmost importance for fracture healing

Abstract no.: 37573

IMPACT OF MAJESTRO-FROST SURGERY IN THE TREATMENT OF INTERNAL HIP ROTATION IN CEREBRAL PALSY

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Introduction:Children with Cerebral Palsy (CP) frequently walk with excessive internal rotation of the hip.Proximal femur external rotation osteotomy is a common procedure used for the correction this problem; however the recurrence is related in the literature.The aim of this study is to evaluate the results of Majestro-Frost surgery as an option for treatment of internal rotation of the hip in CP.**Methods:** Retrospective study with clinical and kinematic evaluation of 17 diparetic and hemiparetic spastic CP patients,Gross Motor Function Classification System (GMFCS) I- III who had undergone a correction of internal hip rotation through the transposition of the internal rotators (Majestro-Frost surgery) from October 2008 to December 2012,with complete documentation at gait laboratory.**Results:**Of 17 patients,10 were male,14 were spastic diplegic, with a mean age at time of surgery of 10.4 years,70.5 % underwent unilateral surgery,70.6 % were GMFCS II and with mean follow-up of 1 year and 9 months. Data of physical examination,only the external hip rotation showed significant result,with an average increase of 22.7 °to 32.9 °.The kinematic data,no significant difference in the coronal plane,but in the transverse plane,there was a reduction in the internal hip rotation of 18.3 ° to 0.27 °and the foot progression angle of 16.7 ° to 0,01°.There was also significant improvement of average GDI from 51.6 to 62.5. **Conclusion:**We conclude that Majestro–Frost surgery in the sample, reduces internal hip rotation in the kinematics as well as the foot progression angle, without negative impact on the coronal plane, and with significant improvement in mean GDI.

Abstract no.: 37575

SURGICAL MANAGEMENT OF FRACTURE SHAFT OF FEMUR IN CHILDREN AND ADOLESCENTS USING FLEXIBLE NAILS.

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Introduction: Femoral shaft fractures account for 1.6% of all pediatric bony injuries. Angulation, malrotation and shortening are not always corrected effectively. Fixation of femur fractures in children and adolescents by flexible intramedullary nailing is becoming widely accepted because of the lower chance of iatrogenic infection and prohibitive cost of in-hospital traction and spica cast care. The objective of the study was to study the functional outcome, duration of union and the complications following the use of flexible nail for femoral shaft fractures in children & adolescents. Method: Children and adolescents with Femoral shaft fractures were admitted to J.J.M Medical College Hospital, Davangere in the period from September 2009 to September 2011. All patients underwent flexible nailing fixation for the sustained fracture. Patients were followed up between 3 months until 1 year after surgery. A minimum of 20 cases were studied without any sampling procedure. Result: The study comprised 14 male patients and 6 female patients aged from 5 to 16 years with mean of 10.45 years. The commonest duration from date of injury to date of surgery was 2 to 4 days. The follow-up ranged from 3 months to 1 year. Conclusion: Flexible intramedullary nail leads to rapid fracture union by preservation of fracture hematoma and limited soft tissue exposure. It also helps in preventing damage to the distal femoral physis. Hence we conclude that flexible intramedullary nailing is an excellent technique for the treatment of diaphyseal fractures of the femur in children and adolescents aged 5 to 16 years.

Abstract no.: 37577

TACTICS OF SURGICAL TREATMENT OF PATIENTS WITH KNEE OSTEOARTHRITIS (OSTEOTOMY OR ARTHROPLASTY?)

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Abstract Title - Tactics of surgical treatment of patients with knee osteoarthritis (osteotomy or arthroplasty?) Aim of investigation was to improve the results of surgical treatment of patients with osteoarthritis of the knee joint, by developing of treatment algorithm and choosing of optimal surgery techniques. We studied the results of treatment of 168 patients with knee osteoarthritis. There were 113 female (65,3%) and 55 male (34,7%) patients with idiopathic (80 cases), posttraumatic (60 cases) and dysplastic (26) knee osteoarthritis. In cases of varus knee deformity, which were caused by tibia axis violation (which manifested radiographically with descending of base-tibial angle) and satisfactory range of knee joint movements we performed over-tuberosity correction tibial osteotomy with iliac crest autografting and stable-functional osteosynthesis. When the knee joint deformities were caused by femur axis violation (which radiographically manifested by base-femoral angle changes) and a satisfactory range of knee joint movements we use an supra-condyle coorection resection osteotomy with 95 degrees L-shaped plate fixation. In cases of significant destructive changes in the knee joint, with notable movement limitation, total joint replacements were performed. Designed treatment algorithm for patients with knee joint osteoarthritis allowed to improve significantly results of treatment and functional restoration in this group of patients.

Abstract no.: 37585

TEMPORAL EXPRESSION OF GROWTH FACTORS AFTER INTRAMEDULLARY NAILING OF THE FEMORAL SHAFT FRACTURES

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Introduction: Growth factors are considered to play an important role in the process of bone healing. This study assessed the serum levels of TGF- β 1 and VEGF over a period of six months in patients undergoing intramedullary nailing for isolated fracture shaft of femur operated at various time periods after injury. Methodology: TGF- β 1 and VEGF levels were evaluated, for 50 patients undergoing nailing and 15 patients of femoral plating, before the procedure and on postoperative 3rd day, 14th day, six weeks, 12 weeks and 24 weeks. The time lag between injury and surgery and the expression of the growth factors was also evaluated. Results: Out of the 50 patients, 30 patients were operated within the first 48 hours while the rest were operated after 48 hours. There was a steady increase in the expression of VEGF with peak values in the first 10 days after surgery. This returned to near normal levels by the end of six months. TGF- β 1 level also showed increasing trend after surgery but the levels reached high peaks after 2 weeks and continued to remain high till the end of six months. Conclusion: There is a definite and specific trend of serum levels of growth factors in the fracture healing process. There is no effect of delay in surgery on the serum levels of growth factors essential for fracture callus formation. The changes in the levels of these factors may be a pointer to the status of the bone healing.

Abstract no.: 37588

FOCAL RESURFACING WITH HEMICAP FOR THE TREATMENT OF FEMORAL HEAD AVASCULAR NECROSIS: EARLY CLINICAL RESULTS OF FIVE PATIENTS CASE SERIES

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Introduction: Femoral head is one of the most common anatomical location for avascular necrosis. The aim of this study was to report mid-term clinical outcomes of focal resurfacing implantation with “Hemicap” in six hips of five patients. Patients and Methods: Between the years 2012 and 2013, the patients (ages between 45.2 +/- 7.0, four male, one female) were diagnosed radiologically as stage III or IV femoral head avascular necrosis. Their pain was unresponsive to conservative treatment modalities for one year. One patient was operated from his left side, three patients were operated from their right side. One male patient was operated from his both sides with a one-month interval between operations. In order to implement the Hemicap, a standard safe hip dislocation was performed to all patients. Results: The mean postoperative follow-up period was 17.8 +/- 5.5 months. The patients were mobilized partial-weight bearing during the postoperative four weeks, thereafter mobilized full-weight bearing. They returned back to their daily activities 1.5 months postoperatively, without any pain and restriction in range of motion. The VAS and Harris Hip Scores were found to be improved significantly in postoperative one year follow-up visit compared to preoperative measurements ($p < 0.05$). No complications were seen until their final follow-up. Conclusion: In this limited case series, we found promising early functional outcomes in the femoral head avascular necrosis patients treated with focal femoral head resurfacing implant (Hemicap). However, further long-term randomized clinical trials are necessary in the selection of the appropriate patients for this surgical treatment option.

Abstract no.: 37591

MANAGEMENT OF TIBIAL CONDYLAR FRACTURES IN ADULTS - A COMPARATIVE STUDY

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Introduction: Conservative versus operative treatment in tibial condylar fracture has been a controversial question. Evaluating 32 cases of tibial condylar fractures treated in JSS Hospital, Mysore between August 2010 and March 2013. Methods: All patients with tibial condylar fractures in the age group of 20-60 years were classified using Shatzker's classification. 12 patients were treated by conservative methods and 20 patients treated by surgical methods. Follow up done for an average period of 12 months, the functional evaluation of knee joint graded by modified Hohl and Luck criteria. Result: The results revealed most patients between 31-50 years (62.5%) with male preponderance, commonest mode of injury being RTA (56.3%). Schatzker type II fracture was commonest (31.3%). Result revealed 16.7% excellent, 41.7% good, 25% fair and 16.7% poor results with conservation methods(A/K cast). The results of surgical methods showed 58.3% excellent, 33.3% good and 8.3% fair results with CC = 0.0663; P=0.051 (HS) with CRIF with CCS and 25% excellent, 37.5% good, 25% fair and 12.5% poor with ORIF BP and BG. Conclusion: We conclude that surgery is the treatment of choice for displaced fractures belonging to Schatzker type I and II. Schatzker's type III fractures can be managed conservatively if the depression is less than 5-10 mm. Schatzker's type IV and V can be managed by ORIF and BG. Conservative method is a valid and useful alternative for Schatzker type V and VI fractures especially in those patients with osteoporotic bone.

Abstract no.: 37595

SURGICAL MANAGEMENT OF PROXIMAL HUMERUS FRACTURES BY PHILOS PLATE

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Introduction: Proximal humerus fractures accounts for about 4 to 5% of all fractures. They are the third most common fractures in elderly population after hip and distal radius fractures. Regarding treatment of proximal humerus fractures, controversies still exists whether to do conservative or operative management. Various operative procedures are carried out, recent trend in internal fixation has moved on to locking plates. The present study is undertaken to evaluate the functional outcome and complication of proximal humerus fractures treated by PHILOS locking plate. Methods: Prospective study involving Adults (>18yrs) with proximal humerus fractures admitted to J.J.M. Medical College Hospital, Davangere in the period from September 2010 to September 2013. In this study period 20 cases of fractures of proximal humerus treated by open reduction and internal fixation with PHILOS Locking Plate were evaluated. Results: In our series, majority of the patients were males, elderly aged, with road fall being the commonest mode of injury, involving 2 part, 3 part and 4 part fractures of proximal humerus. The fractures united in all 20 patients. Excellent and satisfactory results were found in 80% of patients, unsatisfactory results in 20 % according to Neer's criteria. Conclusion: In conclusion PHILOS locking plate is an advantageous implant in proximal humeral fractures due to angular stability, particularly in comminuted fractures and in osteoporotic bones in elderly patients, thus allowing early mobilization.

Abstract no.: 37603

THE OUTCOME OF FIXATION OF COMMUNUTED DISTAL RADIAL FRACTURES USING FRAGMENT SPECIFIC FIXATION PLATES"

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Purpose To assess the clinical, radiologic and functional outcome of treating comminuted intraarticular distal radius fractures with fragment –specific fixation. **Methods** A retrospective review of 25 patients (22 males and 3 females) with age ranges from 24 to 58 years from different nationalities with 25 unstable intraarticular distal radius fractures (type C2 AO) who had fragment specific fixation done in Orthopedic department in Hamad General Hospital over the last 3 years (2010-13). Preoperative x-rays were compared to postoperative x-rays at different time points (i.e. 6weeks, 3months, 6months ..etc). After initiation of occupational rehabilitation programme, Range of motion and grip strength were recorded at different time points till the final follow up evaluation. All the data has been obtained from patient's old files(including outpatient and occupational therapy rehabilitation range of motion data). **Results** There is an obvious improvement between pre and postoperative wrist parameters at different time points, but P-values were not significant. supination and pronation at 6 weeks of follow up showed significant values (p-0.04, 0.03 respectively) in patients above 35 years of age and pronation at 3 months after surgery (p-0.01) in young patients below 35 years of age (74 ± 2). Grip strength improved about 76% compared to the normal side in both age groups. **Conclusion** Fragment specific fixation is a reasonable alternative for treating intra-articular distal radius fractures.

Abstract no.: 37605

BILATERAL OSTEONECROSIS OF THE FEMORAL AND HUMERAL HEADS AFTER SHORT TERM HIGH DOSE CORTICOSTEROID THERAPY. A CASE REPORT

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Introduction: Steroid induced osteonecrosis is a devastating injury with the femoral & humeral head being most commonly affected . Osteonecrosis is considered multifocal when three or more joints are involved. The incidence of multifocal osteonecrosis is estimated to be around 3%. We report a patient with bilateral steroid-induced osteonecrosis of the proximal femora & humeri .
Methods: A 58 years old male presented to the outpatient clinic with bilateral groin pain and limitation of movement of both hips . 4 years earlier, this patient received 3 courses of high dose methylprednisolone for three days each after being diagnosed with multiple myeloma . The patient was suspected as having osteonecrosis of both hips, for which magnetic resonance imaging (MRI) was advised. MRI confirmed the diagnosis of bilateral femoral heads osteonecrosis which is more extensive on the right hip . He had bilateral total hip replacement as a staged procedure. At one year follow up he complained of bilateral shoulder pain that is worse on the left. Given the previous history of the patient, MRI of the shoulder was requested. The MRI confirmed bilateral osteonecrosis of the humeral heads. A left shoulder hemiarthroplasty was done and the right shoulder is under Surveillance.
Results: Sections from the femoral head sent to histology confirmed the diagnosis of osteonecrosis. Patient is satisfied with the bilateral hip replacements and left shoulder hemiarthroplasty.
Conclusions: Multifocal Osteonecrosis should be suspected and thoroughly investigated in patients who present with joint pain after having steroids.

Abstract no.: 37606

CAN THE GRACILIS BE USED TO REPLACE THE ANTERIOR CRUCIATE LIGAMENT IN THE KNEE? A CADAVER STUDY

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Introduction: We hypothesised that a four-strand gracilis-only graft can be used in anterior cruciate ligament (ACL) reconstruction. Methods: This study involved 16 cadaver knees. The length and diameter of the native ACL was measured in each one. The same measurements were performed on a four-strand graft of the gracilis only, the semitendinosus only and both tendons. Student's t-test was used to compare the various conditions. Results: The diameter of the four-strand gracilis was closest to that of the native ACL (+1%, $p < 0.01$). The gracilis tendon was consistently long enough to fill the intra-articular joint space and provide satisfactory bone tunnel fixation. A four-strand gracilis construct meets the anatomical specifications for use as an ACL reconstruction graft. By using the gracilis only, the morbidity associated with harvesting the gracilis and semitendinosus tendons would be reduced.

Abstract no.: 37612

**A RARE PRESENTATION OF PAROSTEAL LIPOMA OF HUMERUS-
CASE REPORT**

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Introduction: Osseous lipomas account for less than 0.1% of all primary bone tumours and Parosteal lipomas account for 15% of all osseous lipomas. They almost always occur in extremities and are often solitary. They arise from mesenchymal cells in the periosteum, may have a narrow bony stalk with a lucent lipomatous cap, mimicking a pedunculated exostosis. Methods: A forty year old lady, teacher by profession, presented with swelling and pain over the right shoulder for one year. The swelling was gradual in onset and increased progressively in size. No history of trauma, fever or constitutional symptoms. On examination, a 12 x 8 cm, soft, tender swelling was palpated over the anterolateral aspect of her right shoulder. Abduction and rotations of right shoulder were restricted with pain. Distal neurovascular status was normal. Complete surgical excision of the mass was performed and sent for histopathological evaluation. Results: Radiographs showed bowing of bone with erosion of bony cortex secondary to adjacent lipomatous tumour. CT scan showed thickening of cortex with excrescent bone spicules. Histopathological examination revealed features suggestive of osteochondroma surrounded by lipoma. Conclusion: Parosteal lipomas account for 0.3% of all lipomas. If nerve entrapment occurs, the tumour should be removed as soon as possible before irreversible muscle atrophy occurs. Local recurrence is uncommon and malignant transformation is hitherto unknown.

Abstract no.: 37615

CASE OF MUSCULOSKELETAL FORIEGN BODY ;A CASE REPORT

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The presence of metallic foriegn body is arelatively common finding on the xrays of patients feom industrial accidents and war injuries.They often catch the attention of the patient and his relative who impute to them the cause of the pain and disability and insist with the doctor for removal.The operation are risky uselesconsume time and material.The foriegn body usually become inert .Our case reports such a patient who presented with left thigh pain after penetration with a metallic piece.Radiographs showed a small metallic foriegn body in left thigh with mimimal symptoms and clinical finding .Investigations showed a pseudoaneurysm of the profunda femoral artery which require vascular intervention.

Abstract no.: 37617

UNSTABLE DISTAL TIBIA FRACTURES

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twenty eight patients of unstable distal tibia fractures between 2011 to jan 2014 including comminuted fractures with or without intraarticular fractures . these fractures were not suitable for IM Nail fixations . All of these fractures by LCP distal tibia method with or without fibula fix by MIPPO allow for adequate fix by MIPPO. mean average age 32.3 yrs results callus seen at 08 weeks in 86% all seen callus by 12 wks. partial wt bearing 06 wks full wt bearing 12 wks All but 02 pts achieve full union by 24 months. one pt had sup infection one malunion no case of implant failure was noted conclusion mipo LCP distal tibia reliable method of distal tibia fractures not suitable for IM nailing

Abstract no.: 37625

DEROTATIONAL FEMORAL OSTEOTOMY TECHNIQUE WITH LOCKING NAIL FIXATION FOR ADOLESCENT FEMORAL ANTEVERSION SURGICAL TECHNIQUE AND PRELIMINARY STUDY

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Background : Rotational femoral osteotomies for excessive femoral anteversion may be considered only for symptomatic adolescents. Our main objective was to describe our femoral osteotomy technique. Surgical technique: Preoperative planning was performed clinically and with EOS imaging system. Percutaneous osteotomy was performed on distal femoral metaphysis under radioscopy control. Fixation was achieved with antegrade locking nail. Rotation was checked precisely with a specially designed protractor before distal locking. Patients and Methods: We performed a prospective pilot study between 2009 and 2010 on 6 patients (9 procedures). All the included patients presented a symptomatic femoral anteversion $> 20^\circ$. Clinical parameters including range of hip mobility, femoral anteversion were measured every 2 months during the first 6 months, then every year until skeletal maturation was reached. We obtained orthoroentgenograms using the same technique at each follow-up and torsional analysis by EOS TM 3D Imaging at 6 months. Results The average correction of the femoral anteversion was $19.0^\circ \pm 4.0$ (range, 13-25 °). Average time of union was 3 ± 1.2 months (range, 2-6 months). Patients returned to full weight bearing at an average of 2.6 ± 0.4 months (range, 2-4 months). One patients experienced an early secondary displacement in varus for which a reoperation was required. Conclusions We believe that this technique can accurately achieve derotational femoral osteotomies. A study is ongoing in order to evaluate the clinical results of this technique including mechanical and cosmetic advantages.

Abstract no.: 37629

**DISPLACED SUPRACONDYLAR HUMERUS IN CHILDREN MATERIAL
METHODS 112 SUPRACONDYLAR BETWEEN 2009 TO 2013**

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aim study various kwire fix configuration methods for fix of displaced supracondylar humerus in children material methods 112 supracondylar between 2009 to 2013 all displaced were subjected to close kwire fix under c arm iitv with local anaesthesia kwires configuration mostly 02 lat site sometimes three needed lat side few cases fixed with two lat one medial side all were followed for 06 months Results 88% had excellent to good results addition of extra pin lat side and medial communiton very unstable configuration require medial pin fix in addition despite all 08% pts had mild cubitus varus, small change in carrying angle, but was not clinically significant conclusion two k wires parallel to each other on lat side usually sufficient as most elbow grossly swollen and difficult to palpate medial epicondyle but unstable older cases require three or additional one more kwire lat side none of my case require ORIF

Abstract no.: 37630

LENGTH OF TIME TO SURGERY IN PATIENTS WITH ANKLE FRACTURES

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Introduction: In many centres in the UK patients requiring surgical fixation of ankle fractures are generally hospitalised for swelling to subside prior to surgery. A large number of bed days are spent for this passive process, which is less than ideal in a modern day trauma unit. Objectives: To assess the feasibility of allowing selected patients to rest at home prior to being admitted on a specified day. Methods: All patients admitted over a 12 month period with ankle fractures that required surgical fixation were analysed retrospectively, regarding socio demographic data and feedback of their hospital stay. Results: 70 patients required surgical fixation, 28 (40%) were delayed due to swelling. The average delay was 6.6 days. 19 were below 60 and were fit and mobile. 9 were over 60. Of those who were fit and mobile, all lived within a hours drive to hospital. 9 were confident they could have managed at home. 11 of those contacted felt they could NOT have managed at home. 3 felt their pain was too severe. 5 had inadequate support facilities. 1 had medical problems. 1 felt she would not have complied with advice. Conclusion: A pilot programme for selected patients with swollen ankles to be managed at home prior to surgery is being conducted based on the above. This would mean assessment of ability to manage at home, co morbidities, availability of quick easy access to hospital, likelihood of compliance to advise, and provision of a number to contact in an emergency.

Abstract no.: 37631

**APPLIANCE OF DISTRACTION HISTOGENESIS IN CASES OF TISSUE
COMPENSATION ON EXTREMITIES**

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Introduction: Tissue compensation on extremities can appear as significant problem if defects are big and in cases when is necessary to compensate skin and also the other tissues. Trauma and infection are the most common causes for compensation of several various tissues on extremities. Standard procedures are bone grafts, local flaps, free microvascular flaps and bone transportation. Successful procedure is distraction histogenesis (DHG). Aim: Presentation of clinical experience in appliance of distraction histogenesis (DHG) in compensation of difficult tissue defects on extremities. Method: This analysis included patients with bone and soft tissue defects, among whom the distraction histogenesis was applied. Bone defect was the consequence of trauma, infection or both. DHG is based on Ilizarov distraction osteogenesis. We noticed that, with the use of bone transportation, it was possible to achieve the compensation of all kinds of soft tissue with authentic functional tissue. The effect of DHG depends also on the way the wires used for bone transportation are set. Results: DHG was applied on 18 male patients. Extremity shortenings or tissue defects were in range of 3-22cm. Correction of function and lenght was achieved with tissue compensation. Equalization was complete in the lower extremities. In the upper extremities the satisfying functional and aesthetic results were achieved. Conclusion: DHG is the procedure which is minimally invasive and enables compensation of all tissues in cases of difficult tissue defects. DHG has wide usage in extremity equalization and also in cases of segmental, longitudinal defects. Keywords: tissue defect, tissue compensation, distraction osteogenesis.

Abstract no.: 37633

BREAKAGE OF BIOCOMPOSITE INTERFERENCE SCREW AFTER ACL RECONSTRUCTION: CASE PRESENTATION AND RETRIEVAL ANALYSIS

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The prevalence of soft tissue graft in ACL reconstruction, as well as the preference for bioabsorbable fixation continues to grow. This paper presents a recent case of a broken biocomposite (third generation 75% PLLA, 25% HA) interference screw from the tibial site at 8 months after ACL reconstruction with soft tissue autograft. A 32 years-old woman presented with symptoms of pain, catching and blockage for the last 3 weeks. No history of trauma was recorded. The broken screw tip was identified at arthroCT examination. Arthroscopic removal was performed. Small area 2/8 mm - grade II Outerbridge chondral lesion was detected on the medial femoral condyle. The patient symptoms resolved postoperatively. The fragment was analyzed following an established implant retrieval protocol (surface and structural analysis, resorption volume) and considerations about the pattern of fracture were recorded. The retrieved implant surface shows cracks and breakdown characteristic to the final phase of resorption but incomplete probably due to biomechanical stress. We had, in the last seven years, 7 such cases of recorded migration of screw fragments. Most had a certain level of tunnel enlargement, the complication was recorded at more than two years follow-up, and only two cases had implant breakage, but this is the first case with a composite implant and such an early complication. The case supports the idea that the breakage of biocomposite screws should be considered during ACL reconstruction. A careful measurement of the length and diameter of both graft and tunnel should be performed.

Abstract no.: 37634

WE NEED ANOTHER ALTERNATIVE FOR THE TREATMENT OF ANEURYSMAL BONE CYSTS: PRELIMINARY RESULTS OF SCLEROTHERAPY USING SURGIFLO.

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Aneurysmal bone cysts (ABC) are traditionally treated with surgery and/or intralesional sclerotherapy. The purpose of this preliminary study was to evaluate the results of a percutaneous haemostatic agent Sugiflo (Ethicon) in the treatment of active and aggressive ABC. Thirteen consecutive patients with ABC were treated between 2010-2013, at an average age of 10.1 years (3.2-17.4) by percutaneous intracystic administration of a mixture of Surgiflo and pure alcohol. The cysts were located in the proximal humerus (5), proximal tibia (3), distal femur (2), iliac bone (1), L3 (1), and C4 (1). The mixture was administered under fluoroscopic and/or CT guidance. Patients were assessed clinically and radiologically at an average follow-up of 16M (6 to 42). The number of required procedures per patient, the improvement of pain, rate of pathologic fracture if any, tumor volume, distance to the physis, as well as improvement in cortical thickness were assessed. The procedure was performed once in 12 patients, and twice in 1 patient. At last follow-up, 12 patients were pain free. There was a decrease in mean tumor volume by 13%, an increase in mean distance between physis and tumor of 7.9 mm, and in mean cortical bone thickness of 2.5 mm. Complications were minor and included postoperative pain for 3 weeks (1 case) and slight limb shortening (3 cases). Percutaneous administration of Surgiflo for active and aggressive ABCs seems to be effective and safe and shows promising results. It is an easier alternative to surgery mainly in some specific locations.

Abstract no.: 37638

OUTCOME FOLLOWING SURGERY FOR PROXIMAL FEMUR FRACTURES IN CENTENARIANS

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Introduction: In England and Wales, there were 12320 centenarians. Proximal femur fractures in centenarians have poor outcomes. We report the largest known series assessing outcomes amongst them. Methods: A retrospective analysis of 32 centenarians admitted to the Heart of England Foundation Trust between January 2000 - April 2012 with a proximal femur fracture was performed. Patient outcomes were measured in terms of mortality, mobility, and residential status. The results were compared with a randomised group of 33 patients aged between 60-95 years (mean 82.06). Chi square analysis was used to compare 30 to 120 day mortality. Results: Average age amongst centenarians was 101.71 years. Most younger patients lived at home compared with 40.6% aged ≥ 100 years. 42.42% of younger patients walked independently compared with 9.37% of centenarians. The distribution of fracture types was similar in both groups. Centenarians' stayed 10.1 days longer than younger patients. In-hospital mortality was 34.4% v 18.8% (younger patients v centenarians). Thirty day mortality was double in centenarians whilst 120 day mortality variation was statistically significant. Two thirds of younger patients returned home, compared with only 15.6% of centenarians. No younger patients were unable to walk post-operatively compared with $> 33\%$ of centenarians. Conclusions: Our findings support previous studies highlighting poor outcomes (120 day mortality $> 50\%$). These patients require prolonged hospital and social care. It emphasises the requirement for prevention and resource allocation to an aging population.

Abstract no.: 37639

TREATMENT OF INTRA-ARTICULAR CALCANEAL FRACTURE WITH TEMPORARY EXTERNAL FIXATOR AND OPEN REDUCTION INTERNAL FIXATION

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Introduction: We describe a technique of open reduction and internal fixation of calcaneal fractures utilizing a temporary external fixator intra-operatively. **Methods:** A modified obtuse lateral incision is used. The soft tissue flap is held retracted by two Kirschner wires which are secured into the lateral malleolus and the talus posteriorly. Insertion of the first 5mm Steinmann pin of the external fixator at the junction of its upper and middle 1/3 of the lateral cortex of the tibia. The second 5mm Steinmann pin is inserted from lateral to medial across the posterior plantar calcaneal fragment. The unilateral external fixator frame is applied, followed by locking the frame in place at the desired tension. The fracture line is identified after lifting the lateral wall to expose the articular fragments. The depression of the posterior facet joint is reduced using a lamina spreader. A temporary 1.6mm Kirschner wire is passed just beneath the articular surface aiming towards the sustentaculum. Valgus heel alignment is restored by controlling the amount and direction of distraction using the multiaxial distractor. The "constant" sustentacular fragment is then fixed by a 3.5mm cancellous partially threaded screw. A calcaneal locked plate is then applied. The external fixator and half pins are then removed and a layered closure. **Results:** Although pin sites represent stress risers, no stress fractures have been observed. **Conclusions:** The controlled distractive force provides numerous benefits. These include improved exposure of the subtalar joint, correction of angulation and maintenance of temporary stability prior to definitive fixation. We have found this technique applicable and easily reproducible.

Abstract no.: 37642

HOW TO EVALUATE THREE-DIMENSIONAL ANGLE DIFFERENCE FROM PLAIN RADIOGRAPHS

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Evaluating three-dimensional angle error is necessary because we cannot get every patients' CT or MRI at all times. Creating a method that can calculate angle error from plain radiographs is therefore important. Using vector and trigonometric mathematics, we gradually deduct our formula which can calculate angle error from goal angles (the angles we plan to achieve before operation) to result angles (the angles we get after operation) by two perpendicular radiographs. We also encode it into Microsoft Excel™ (Redmond Campus, Redmond, Washington, U.S.) so that it becomes more user-friendly. We hope this tool can be used when evaluating TKR, corrective osteotomy, fracture fixation, and so on.

Abstract no.: 37644

SOFT TISSUE COMPLICATIONS FOLLOWING DIFFERENT FIXATION METHODS OF CLAVICLE FRACTURES

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Purpose: Document the outcome of patients with clavicle fractures treated with internal fixation that had local wound complications. Method: 95 patients underwent ORIF between 2006 and 2010, 15 were treated with intramedullary (IM) fixation and 80 with plate fixation. A wound complication occurred in 8 patients (8.4%). Complication rates differed significantly between intramedullary and plate fixation, 5 out of 15 (33.3%) in the intramedullary and 3 out of 80 (3.8%) in the plate group. The mean follow up was 50.8 months with Visual analogue pain scores (VAS), Oxford Shoulder Score (OSS) and QuickDash Score (QD). Results: Five patients (3 IM and 2 plate fixation) had wound breakdown, in only one was an organism grown (Coagulase negative Staphylococcus). Three patients had wound erythema (2 IM and 1 plate fixation). In 7 patients with stable fixation it was possible to “dress and suppress”, these were treated with oral antibiotics. One patient had unstable fixation required intravenous and oral antibiotic treatment with debridement and then early screw removal. One patient developed a chronic discharging wound with no evidence of osteomyelitis requiring debridement and later plate removal. At final follow up all wounds remained dry and healed. Clinical and radiographic union was achieved in all. The mean scores for all were: VAS 1 (0-3); OSS 46 (43-48); QD 4.5 (0-9). Conclusion: A good outcome can be achieved but the difference in complication rates may be due to the IM technique of drilling and due to aseptic thermal bone necrosis rather than true infection.

Abstract no.: 37650

RESULTS OF MINIMALLY INVASIVE MEDIAL UNICOMPARTMENTAL KNEE ARTHROPLASTY ASSOCIATED WITH OBESITY

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The purpose of this study was to analysis the relationship between the short-term results of unicondylar arthroplasty procedures and obesity. Indications for unicompartmental knee arthroplasty using minimally invasive techniques has been expanded. The advantages of this concept that only the abnormal joint surfaces are removed, the total amount of bone excised is minimal, and the amount of foreign material is also minimal. All the patients had predominantly unicompartmental knee osteoarthritis. Obesity was defined as body mass index (BMI) greater than 32 kg/m². 131 unicondylar arthroplasties were performed between 2004 and 2006 for osteoarthritis at the Orthopedic Department, University of Szeged. There were 82 women and 49 men. The average age was 62 years (range, 52 to 74 years). Only the medial compartment was replaced. The follow-up examination included the American Knee Society score, physical assessment, and radiological evaluation. The relationship between the clinical result and body mass index was analysed. Fortyfive patients had BMI's higher than 32 kg/m², the remaining 86 patients had lower BMIs. In both BMI group, 2-2 knees were revised to total knee arthroplasty. The eight-year survival rate for fixed bearing unicondylar knee arthroplasty is 98%. All components were radiographically stable. Properly selecting the patient for unicondylar knee arthroplasty is important in providing similar short term outcome for obese and non-obese patients. The unicondylar knee arthroplasty is a less extensive surgical option, which results in a faster postoperative recovery. There was no significant difference between the American Knee Society scores between the two surviving BMI groups.

Abstract no.: 37652

BILATERAL KNEE ARTHROSCOPY: A SAFE AND EFFICIENT OPTION?

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Introduction Knee arthroscopy is the most commonly performed elective orthopaedic procedure, routinely undertaken in the day case setting. In selected cases, pathology presents bilaterally and is appropriate to perform simultaneous arthroscopy. Few reports in the literature document this, focusing on patient safety. We aim to determine the financial benefits of simultaneous procedures, and effect on rehabilitation. **Methods** Retrospective analysis of 96 bilateral knee arthroscopies, performed by a single knee surgeon 1996-2012. Male: female ratio was 1, and average ASA 2. Operations performed in the private sector were also included. **Results** Operative times for simultaneous bilateral procedures were not significantly increased; morbidity and mortality were also unchanged. The NHS payment tariff is 50% higher for bilateral procedures. There were no complications at 6 weeks. Functional improvement was documented in 52% of patients, 16% required total knee replacement for severe osteoarthritis. **Pathologies** included bilateral meniscal tears and osteoarthritis. **Discussion/ Conclusion** Knee pathology is a major cause of morbidity and contributes to the loss of workforce. Arthroscopy is a routine procedure which is diagnostic and therapeutic for knee pathologies. Typically patients undergo separate procedures despite bilateral symptoms, with increased numbers of general anaesthetics. Kulkarni et al (2003) documented the safety of the bilateral procedures. We show that bilateral procedures are cost effective with no complications. Further work with longer follow-up periods using a functional scoring system is in progress to assess the longevity of the benefits seen.

Abstract no.: 37654

RETROGRADE INTRAMEDULLAR FIXATION AND ANKLE ARTHRODESIS OF A RHEUMATOID PATIENT WITH BILATERAL TIBIA AND FIBULA PSEUDOARTHROSIS

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The 46 year old female patient was referred by the Rheumatology Department to our out-patient clinic. The patient was diagnosed with Rheumatoid Arthritis (RA) for 12 years. Osteoporosis has developed because of long term (10year) steroid treatment. One year earlier right ankle Grice surgery was performed at another institutions, delayed healing, permanent cast was recorded. Gradually both ankle and lower extremity strongly deformed. Injury, accident was not reported, higher than usual pain was not detected. Patient was ambulatory only for a short distances and only with the aid of a walker. Recent X-ray showed bilateral lower leg distal third complete fracture with 50-degrees of valgus position and hypertroph pseudoarthrosis, and ankle joint subluxation was observed. In 12-week difference on each side correction of the pseudarthrosis and tibio-talo-calcaneal arthrodesis, with retrograde genocephalic nail, was performed. On the fourth week dinamization was performed. 4 months after the primary surgery the patient was able to walk with a stick at full weight bearing. Rheumatoid-ankle score pre-operatively was 24 at the one year follow-up control was 63. During treatment, there was no need for casting. With proper wound care and antibiotics, there was no wound complication. Six months after start of therapy the patient was able to walk without complaint with custom made roller bottom shoes.

Abstract no.: 37655

EFFECT OF PLATELET RICH PLASMA AND HYALURONIC ACID ON CHONDROGENIC DIFFERENTIATION OF HUMAN MESENCHYMAL STEM CELLS

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Purpose:To evaluate the effect of hyaluronic acid(HA) and platelet rich plasma (PRP) on chondrogenic differentiation of mesenchymal stem cells (MSCs).**Methods:**We analyzed the inducer and enhancer effects of HA and PRP on chondrogenic differentiation of MSCs. To evaluate the inducer effect, MSCs were seeded with basal culture medium, in the presence or absence of different concentrations of HA (1-2-10 mg/mL) or PRP (10-25-50%). To evaluate the enhancer effect, MSCs were seeded with chondrogenic differentiation medium, in the presence or absence of different concentrations of HA or PRP as described above. At 14 and 21 days of culture, Safranin-O staining and RT-PCR for sox9, aggrecan and collagen II were performed.**Results:**In the induction assay, there was no positive staining for Safranin-O at 14 and 21 days in both cultures receiving HA as PRP. No significant differences in the expression of sox9, aggrecan and collagen II in the presence or absence of HA or PRP at day 14 or 21 were observed. In the differentiation enhancement assay, positive staining was seen Safranin-O at 14 and 21 days in cultures receiving HA, PRP or chondrogenic medium alone. By day 14 there was an increase in the expression of collagen II in the presence of PRP 25% compared to controls. In the same group, there was an increase in the expression of collagen II between day 14 and 21.**Conclusion:**HA does not induce or enhance the chondrogenic differentiation of MSCs, unlike the PRP, which would have a role enhancing the chondrogenic differentiation of MSC in vitro.

Abstract no.: 37659

PAINFUL DIGIT: A CASE OF MISTAKEN IDENTITY

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Herpetic whitlow is an acute viral infection of the hand caused by either herpes simplex virus (HSV) 1 or 2. Its characteristic findings are significant pain and erythema with overlying non-purulent vesicles. It is often mistaken for flexor tenosynovitis, a bacterial felon or paronychia. Treatments of these conditions differ widely. We present a case of recurrent infection of the middle finger in an immunocompetent 19-year old girl. Multiple painful pustules with tracking cellulitis were initially treated by oral antibiotics. A recurrence with positive Kanavel's signs suggested flexor tenosynovitis. Her symptoms resolved following a flexor sheath washout however she required two further washouts due to recurrences; each time the symptoms resolved. Viral cultures were obtained from the third washout as HSV infection was disclosed from further history taking. These were positive for HSV2 and treatment with acyclovir led to a complete resolution of her symptoms with no further recurrences. This case highlights the need for careful history and examination when presented with a painful red digit. Alternative diagnoses such as a bacterial felon, flexor tenosynovitis or paronychia need to be excluded as their treatment differs greatly and will not lead to resolution of symptoms.

Abstract no.: 37662

SENSITIVITY AND SPECIFICITY OF RADIOGRAPHS IN THE DIAGNOSIS OF CARPOMETACARPAL JOINT INJURIES

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Introduction: Although injuries to the little and ring finger carpometacarpal joints are common they can be missed at initial presentation due to misinterpretation of the radiographs. We aim to determine the sensitivity and specificity of the standard hand radiographic views for these injuries. Methods: Four patients with injuries to the ulna sided carpometacarpal joints were identified from our trauma records. All patients had undergone 4 radiographic views – anteroposterior, lateral, pronated oblique and supinated oblique. Four patients with normal carpometacarpal joints were used as controls. Radiographs were anonymised, randomly ordered and duplicated then mirrored. All radiographs (64) were shown to a group of orthopaedic higher trainees (n=17) in a timed “test”. Trainees were asked for spot diagnoses for each radiograph, without knowledge of the study. Using the same radiographs divided into 8 randomly ordered cases, Emergency Department staff stated which X-ray demonstrated an injury. Results: In the timed test, the pronated oblique radiograph yielded the most correct diagnoses with a sensitivity of 71.3% and a specificity of 77.2%. The supinated oblique had a sensitivity of 27.2% and a specificity of 77.9%. Emergency Department and junior orthopaedic staff correctly diagnosed fewer injuries. The lateral and pronated oblique views provided most correct diagnoses. Conclusion: The pronated oblique view offers the best chance of a successful diagnosis. Education is essential for correct interpretation. A succinct history and examination is crucial for diagnosis and suspected injuries should be referred on this basis. An orthopaedic background correlates with the correct diagnosis.

Abstract no.: 37665

WARD ROUND DOCUMENTATION IN A MAJOR TRAUMA CENTRE: CAN WE IMPROVE PATIENT SAFETY?

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Introduction Thorough, relevant documentation is paramount in the challenging environment of major trauma centres. It forms a record of the patients stay, and is a legal document forming part of best practice standards from the UK Royal Colleges. In an environment where shift changes are frequent, it provides safe handover ensuring patient safety. **Methods** Retrospective note-keeping audit was undertaken. Ward round entries on 3 dates were assessed according to recognised Royal College Standards. Following poor compliance a new note keeping system was devised, whereby details according to each required standard is recorded in a spreadsheet. Mail merge was performed and a document formatted to be inserted as ward a round note. The audit was repeated in April in an identical manner. **Results** Initial results: 75 ward round entries, 24 from weekend rounds, with lower staffing levels. No entry was 100% compliant. Mean compliance per entry was 59%. Antibiotic prescription and DVT prophylaxis were poorly documented (4% and 3% respectively). Repeat: 90 entries, 30 from weekend. Mean compliance 97%, with all criteria achieved in all entries, except antibiotic prescription in 3. **Discussion/Conclusions** Recent distressing reports regarding patient safety has highlighted its importance in clinical governance. Outstanding note-keeping ensures sound handover of patients between staff and promotes patient safety. Our initial audit proved improvement required. The new system has improved documentation, and is a useful handover tool.

Abstract no.: 37666

TRAUMAX SCREW PLATE VS. GAMMA NAIL. BLOOD LOSS IN PERTROCHANTERIC FRACTURES TREATED BY MINIMALLY INVASIVE OSTEOSYNTHESIS

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This study is aimed to determine whether the Traumax dynamic hip screw reduces perioperative blood loss and transfusion rate compared to the Gamma nail in the treatment of pertrochanteric fractures. Materials and methods: A series of 331 patients were followed prospectively in a cohort study between February 2008 and October 2011 after a pertrochanteric fracture. Two types of fixation were used, 163 patients were treated with a Gamma nail and 168 patients with a minimally invasive screw plate Traumax. Perioperative blood loss, evaluated by the Mercuriali formula based on pre- and post-operative haemoglobin and transfusion rates were compared in order to assess risk factors. Results: Increased perioperative blood loss was significantly linked with patient-related parameters (age, anticoagulant and platelet aggregation inhibitor treatment). Type of osteosynthesis and type of fracture were also risk factors for blood loss and transfusion. The Traumax group had significantly lower blood loss (347 ml vs. 577 ml) and transfusion rate (33.9% vs. 63.8%) than the Gamma group. Involvement of the greater trochanter increased the risk of blood loss only in the Gamma group. Functional results and bone healing were comparable at six months follow-up. Conclusion: Screw plate Traumax significantly reduces perioperative bleeding within the pertrochanteric fractures. It avoids fragments gaps that lead to maintain the bleeding. Given the morbidity and complications related to acute anaemia and blood transfusion, the surgical management of these elderly patients is aided by the choice of fixation.

Abstract no.: 37668

360 DEGREE EXPOSURE OF THE ACETABULUM USING A MODIFIED HARDINGE APPROACH

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The two most commonly used approaches to the hip for replacement arthroplasty are the posterior and anterolateral (Hardinge) approaches. Commonly quoted disadvantages of the Hardinge approach include poor exposure of the acetabulum and injury to the Superior Gluteal Nerve resulting in Trendelenburg gait. The senior author has modified the Hardinge approach to achieve 360 degree exposure of the acetabulum irrespective of patient dimensions with minimal risk of to the Superior Gluteal Nerve. The steps to the exposure include: 1. Long skin incision with longitudinal split in IT band centred over Greater trochanter 2. Split Gluteus Medius into anterior 2/3 and posterior 1/3 for no more than 2-3 cms from tip of greater trochanter 3. Complete release of the ischiofemoral ligaments from the calcar 4. Division of the inferior capsule 5. Single incision through the capsule and gluteus minimus onto the most superior aspect of the femoral neck. 6. Release rectus femoris superiorly. 7. Appropriate positioning of Exeter retractors. The exposure has permitted complex revision surgery, impaction grafting, and acetabular reconstruction without excising the capsule and compromising stability.

Abstract no.: 37670

ISOLATED TUBERCULOSIS OF THE WRIST

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Introduction: Atypical infections with mycobacteria are unusual in the developed countries and tuberculous involvement of the wrist or carpal bones is a rare presentation. Material: This is a new rare case of tuberculosis of the wrist joint in a non-immunocompromised 24-year-old male without concomitant pulmonary tuberculosis. He then underwent two months course of intra-articular steroid injections and methotrexate therapy for a presumed diagnosis of inflammatory oligoarthritis of the wrist as radiographs were reported as normal. The diagnosis was initially obscured by lack of systemic symptoms and was established by direct visualization of acid-fast bacilli on joint fluid and biopsy of the abscess. Musculoskeletal involvement in tuberculosis may be easily missed because of its non-specific clinical signs. The disease may mimic inflammatory arthritis and high index of suspicion is required when dealing with long standing inflammatory swellings. Conclusion: Persistent swelling of bones or joints can be a presenting sign of tuberculosis. A normal chest radiograph or the absence of systemic symptoms does not exclude the possibility of bone tuberculosis. When confronted with unusual inflammatory findings, always send tissue for histology and alcohol and acid-fast bacilli (AAFB) culture.

Abstract no.: 37671

A NEW METHOD OF ASSESSING DYNAMIC SAGGITAL BALANCE

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The importance of sagittal balance of the spine has become increasingly recognised in the assessment of spinal pathology. Parameters are commonly measured on static standing lateral radiographs. Measurement of the pelvic incidence, sacral slope, lumbar lordosis and thoracic kyphosis etc yield valuable information but tell us little about dynamic sagittal alignment. We have developed a protocol to quantify dynamic sagittal balance during gait using a motion analysis system. This camera based system can track and record motion of the limbs and trunk. The spine was modelled in three segments. 100 subjects were analysed during walking gait, squatting and stepping. Dynamic data were compared to standard measurements on long lateral radiographs. The system could not replicate accurate measurement of pelvic incidence, pelvic tilt or sacral slope. Tracking of the position of the head over the centre of mass could be reliably and reproducibly measured during gait. Position of the centre of the head in relation to the femoral heads, knees and ankles yielded reproducible measurements of dynamic sagittal alignment. These data appeared to correlate well with static radiographic measurements but statistical comparison of these two different methods was not possible. In patients who had surgery to correct sagittal imbalance, the system was clearly able to measure that change. This method is at a very early stage of development but shows definite potential for non invasive dynamic measurement of spinal sagittal balance.

Abstract no.: 37678

STATISTICAL SIGNIFICANCE OF MRI IN DETECTION OF CHANCE TYPE FRACTURES OF THORACOLUMBAR VERTEBRAE

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Chance type fractures, defined by G Q Chance in 1948, is a flexion-distraction type injury of the spine. Initial investigations include X-Ray and CT-scan to evaluate the configuration of the fractures. MRI is often considered as more accurate method to assess the soft tissue status and determine the need of surgical fixation in the patient. It is often recognized as gold standard for the assessment of injury to the posterior ligamentum complex, although there is no precise quantitative calculation about the statistical significance of magnetic resonance imaging in detection of Chance type fractures of thoracolumbar spine. The main aim of our study was to quantitatively assess the statistical significance of MRI in detection of suspected Chance type fractures of the thoracolumbar spine and its impact on surgical planning. In this retrospective study, all patients with traumatic thoracolumbar vertebral fractures that were operated at our hospital from January 2010 to January 2014 were included. MR image results were compared to the intra-operative findings for all the patients. In the primary phase, statistical calculations were done and sensitivity, specificity, negative predictive, and positive predictive values were calculated with a confidence interval of 95%. In the second stage, all the MR images of eligible patients were re-evaluated by a blinded radiologist and all statistical calculations were redone. The interobserver reliability was measured using the Fleiss kappa statistics. We were able to conclude strikingly low sensitivity levels of MR imaging for detection of PLC injury in Chance type fractures of the thoracolumbar spine.

Abstract no.: 37679

**WOULD PROCEDURE-SPECIFIC CONSENT FORMS BE THE ANSWER?
A PROSPECTIVE STUDY OF CURRENT METHODS IN CONSENTING
FOR LOWER LIMB ARTHROPLASTY.**

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INTRODUCTION: Litigation against surgeons and hospitals continues to increase in western countries. Failure to mention complications of surgery not only results in patient dissatisfaction when complications occur, but may also result in surgeon being held liable for a negligent failure to inform. **OBJECTIVES:** examine our methods in obtaining an informed consent and explore potential benefits of introducing procedure-specific forms to improve process. **METHODS:** Prospective analysis of documentation of serious complications of arthroplasty. **RESULTS:** In hip replacement, risk of DVT achieved 94% documentation, bleeding 96%, and infection 98%. However documentation of other risks such as fractures 40%, leg length discrepancy 62%, PE 84%, and dislocation 68% was not as comprehensive. In knee replacement, risk of DVT was documented in 90%, bleeding 92%, and infection 96% while other risks such as fractures 22%, leg length discrepancy 4%, nerve injury 70%, PE 80% and dislocation 4% was not as comprehensive. **CONCLUSION:** Complications of surgery were incorrectly or insufficiently documented which may result in surgeon being held liable for a negligent failure to inform and leave door open to litigation. The study proposes improving consenting process through adopting procedure specific consent forms. Further standardisation of consent process appears inevitable in today's increasingly litigious environment.

Abstract no.: 37685

POSTERIOR FIXATION OF HANGMAN'FRACTURE

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27 cases with hangman's fractures were treated surgically fixed between 1998 and 2013. There were 24 males and 3 females. The average age was 45 years (18-70). Mechanism of injury was traffic accidents in 20 cases and falling height in 7 cases. 20 cases were neurologically free and the other 7 cases had some deficits in the upper limb. 10 cases had associated skeletal injuries. 18 cases were classified as type II or IIA and the other 9 had type III. Skull traction was applied for all cases to help in reduction. 11 cases with type II were treated by screw fixation through the fracture. 16 cases were treated fixation C2-C3 fixation, 9 with type III and the other 7 with type II has some comminution or the bone quality was not good. Follow-up was 46 months (12 months-15 years). There was neurologic deterioration or infection. Metal loosening occurred in 2 cases. Neurologic improvement occurred in those with preoperative deficits. Good reduction could be achieved in 22 cases and partial reductions in the other 5 cases.

Abstract no.: 37689

SHOULD WE SCREEN NASAL CARRIAGE OF MRSA ?

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Introduction: The patient remains the main risk factor for infection in the OR. Nearly half of nosocomial infections are related to a MRSA for which nasal carriage concerns 27 % of the population. Among them half may be carrying a Staph. Nasal carriage is favored by Caucasian type, HLA type, young men, diabetic patients. Nose is damp, its immune response is low and easy to reach with your hands. There are adhesins and clumping factor B. Methods : Detecting Staph preop has an obvious interest regarding the frequency of infections and the possibility of limiting risk by screening and preoperative preparation. Prophylaxis recommendations provide a change of prophylactic antibiotics if identified preoperatively as MRSA. Results: A series of 1250 THA who received a nasal sampling 15 days before surgery showed that 25.3% were carriers of *Staphylococcus aureus* including 5.6 % of MRSA. In the presence of *Staphylococcus aureus*, it was applied in the Mupirocin local treatment for the last 5 days preoperative with chlorhexidine skin preparation. This personal series led to 0% of postoperative infection with a maximum follow-up of 3 years. Discussion: Surgical risk is multiplied by 3 for a patient and by 1.3 for non-carrier patients hospitalized beside carrier patients. Lonneke et al. (NEJM 2010) assessed 6760 cases of whom 917 received preoperative treatment. They showed a cut of more than half the rate of infection with an overall relative risk of 0.42 and 0.21 for deep surgery. Staph nasal screening might become a medico-legal obligation.

Abstract no.: 37693

THE HOFER CLAVICULA PIN. AN ANATOMICAL STUDY ASSESSING THE APPLICATION OF STATIC AND DYNAMIC INTRAMEDULLARY PINS FOR CLAVICULAR FIXATION.

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A cadaveric study was performed using the Hofer Clavicle Pin. This device allows both static and dynamic fixation for midshaft clavicle fractures. The aim of the study was to assess clavicular morphology and to assess ease of intramedullary clavicular pinning using Hofer Clavicular Pins. Method: Forty cadavers were used. The static and dynamic Hofer Clavicle Pins were introduced from a medial or lateral direction. Entry of the pin from the sternoclavicular or acromoclavicular end was measured together with intramedullary pin length. Results: Clavicles were 150mm in length and had AP diameter of 12.7mm and depth of 11.2mm at the midpoint. No difference between right or left side. Mean entry point of the dynamic Hofer Clavicle Pins in 30 cadavers from the sternoclavicular end was 32.5mm. Length of pins was 81.5mm. For static pins, mean entry was 9mm. Length was 74mm. Nine pins could not be passed. Mean entry point of the dynamic Hofer Clavicle Pins in 37 cadavers from the acromoclavicular end was 20mm. Length of pins was 68mm. For static pins, mean entry was 21mm. Length was 75mm. Three pins could not be passed. Discussion: Clavicular morphology is highly variable however a consistent point of entry was achieved from the acromoclavicular end. The entry point from the sternoclavicular end is more variable with a greater number of pins unable to be passed. This cadaveric study shows that it is possible to pass intramedullary pins in the clavicle and this is easier from a lateral to medial direction.

Abstract no.: 37694

INTRA OPERATIVE LUMBAR SPINE WOUND LOCAL ANAESTHETIC INFILTRATION FOR POST OPERATIVE PAIN CONTROL IN SINGLE LEVEL DECOMPRESSION.

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Background: We undertook a retrospective observational study evaluating the effect of bupivacaine and lidocaine wound infiltration on post-operative pain scores, morphine consumption and hospital stay in single level spinal decompression. Method: A new technique providing post-operative analgesia was implemented for posterior spinal decompression involving the infiltration of 40 ml 0.25% bupivacaine into paravertebral muscles and 10 ml 2% lidocaine into the subcutaneous tissue on wound closure. We reviewed the means of hospital stay, pain scores, morphine consumption at recovery, 24hr and 48hrs post surgery of 44 patients(22 patients before and 22 patients after the start of this technique). Inclusion criteria for this study: 1) all patients had primary single level spinal decompression without fusion. 2) All operations were performed by one single surgeon. Continuous variables were analysed using T-test. The Null hypothesis was rejected if P-value was < 0.05 . Results: there is a significant reduction in the mean of post operative pain at recovery and 24 hrs as well as in the morphine consumption at recovery and cumulative 24 hrs. The correspondent P-values were all less than 0.05. Conclusion: This study suggests that within our practice this infiltration technique reduces post-operative pain, morphine consumption and facilitates earlier recovery and discharge (1); however a larger prospective multi-surgeon and multi-site study is needed to confirm these findings.

Abstract no.: 37695

ANTIBACTERIAL AND DEODORIZING EFFECTS OF PROCESSED STOCKINET FOR CAST IMMOBILIZATION

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Introduction: Plaster cast is still an important treatment option for limb trauma. However, plaster casts begin to smell with long term use. The purpose of this study is to examine the effect of a newly-developed stockinet, processed with a deodorizing agent, on plaster cast odor. Methods: 50 patients who received plaster cast immobilization on their limbs due to fractures or sprains. For each stockinet, one-half of its circumference was made of an processed fabric and the other half made of an unprocessed fabric, and the two halves were sewn together. The stockinet was collected after the final cast removal, and cut in half to promptly evaluate the processed and unprocessed sides. The following were performed. (1) sensory evaluation using a six grades odor intensity measurement method, (2) measurement of residual odor concentration of ammonia, acetic acid, and hydrogen sulfide, and (3) measurement of bacteriostatic activity values satisfied the criterion in the Certification Standards of Antibacterial Finished Textile Products of the Japan Textile Evaluation Technology Council (JTETC). Results: (1) Odor was significantly reduced in the processed stockinets (2.27 ± 0.93) compared with the unprocessed stockinets (2.92 ± 1.03). (2) The odor concentrations were reduced for all these substances but a significant difference was not observed only for acetic acid. (3) The bacteriostatic activity was 4.23 ± 0.70 for processed stockinets and 0.48 ± 1.49 for unprocessed stockinets. Conclusion: The above findings demonstrated deodorizing and antibacterial effects of the processed stockinets. This stockinet will improve the QOL of patients who are troubled by malodors of plaster casts.

Abstract no.: 37697

EXTERNAL FIXATOR AS A TREATMENT FOR TYPE III SUPRACONDYLAR FRACTURES IN CHILDREN

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Objetives: To analyze the use of external fixation as an alternative for the management of displaced humeral supracondylar fractures in pediatric patients and to validate its use, with excellent clinical outcome. Material and method: Restrospective study, including patients under 15 years old that sustained a displaced humerus supracondylar fracture, and were treated with a laterally placed external fixator in Valdivia Base Hospital, between september 2008 and september 2013. A descriptive analysis of the cases was done, including clinical and radiological outcome. Results: Overall, 21 patients were treated with this method, with an average age of 5,8 years old. The main indications were difficulty in reduction and severe displacement. The average operative time was 50 minutes. 95% of the cases recovered axis, with an average Baumann angle of 74°. No cases of cubits varus were reported. Conclusion: The use of a lateral modular external fixator is a valid and reproducible alternative for treating supracondylar humeral fractures, with excellent results and no significant complications.

Abstract no.: 37698

OPEN VERSUS PERCUTANEOUS REDUCTION OF DISPLACED INTRA-ARTICULAR CALCANEAL FRACTURES: WHAT IS THE BEST OPTION?

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Introduction: Calcaneus fracture is the most frequent tarsal bone fracture. 75% are intra-articular and caused by high-energy trauma, affecting predominantly young male in their prime working years. Treatment of displaced intra-articular calcaneal fractures remains controversial, but recent studies suggested superior results with surgical reduction and fixation. Objective: Assess functional outcomes and complications of percutaneous (PR: Indirect fragment manipulation fixed with percutaneous K-wires) versus ORIF technique (Open reduction and internal fixation with plate/screws). Methods: Retrospective cohort study that included operated patients with displaced intra-articular calcaneal fractures between January/1998 and December/2012. We assessed: Gender; Age; Laterality; Associated fractures; Time to surgery after injury; Sanders Classification; Bohler / Gissane angles; Height / Width of calcaneus (pre and post-operatively); Complications rate; AOFAS ankle hind-foot (from Excellent (90-100) to Poor (< 50)). Results: ORIF group: 22 patients with 26 fractures (19♂; 3♀); mean age of 40,6years. PR group: 16 patients with 18 fractures (12♂; 4♀); mean age of 35,1years. Type IIB (Sanders classification) was the most frequent (OR- 27%; PR- 44,4%), in both groups. Bohler / Gissane angles and Height / Width of calcaneus improved after surgery by an average of 25.8°/111,7° and 57,1/48,7mm in OR group with 28,9/118,4° and 52,4/45,4mm in PR group. Average AOFAS score was 76,2 in OR group and 81,75 in PR group, with no significant difference between them. 1 deep infection and 4 minor wound complications occurred in OR group. Conclusion: In our study percutaneous technique minimizes complications and achieves/maintains extra-articular reductions as well as the standard extensile ORIF.

Abstract no.: 37700

CAN THE JAMAR HAND DYNAMOMETER DETECT MALINGERING PATIENTS?

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Introduction: The Jamar hand dynamometer has a handlebar that can be set at 5 different settings (grip 1 to 5). It is reported that production of a “bell-shaped curve” across these settings with a maximum value in grip position 2 or 3 is normal, while malingering produces a flat distribution. We examined grip strength with the Jamar hand dynamometer, and evaluated the effectiveness of this “bell-shaped curve” indicator. **Methods:** We evaluated 50 handgrips from 50 healthy individuals and 67 handgrips of 50 symptomatic individuals that complained about their upper extremities. The symptomatic cases consisted of trauma, central and peripheral nervous system disorder, and degenerative disease, among others. We instructed the subjects to sit on a chair with shoulders in an intermediate position and elbows flexed at 90 degrees, and to exert full effort from grip 1 to 5. The mean score for each grip was then calculated. We used multiple comparisons for each grip strength. **Results:** Healthy cases (average±SD, in kg) grip1: 29.15±9.61, grip2: 35.36±10.50, grip3: 34.47±9.60, grip4: 31.25±9.78, grip5: 24.26±7.74 Symptomatic cases (average±SD, in kg) grip1: 11.54±7.14, grip2: 17.46±8.19, grip3: 16.19±8.17, grip4: 13.25±7.13, grip5: 10.23±6.45 Healthy individuals exhibited significant differences between grip1 and 2; 1 and 3; 2 and 4; 2 and 5; and 3 and 5. Symptomatic cases exhibited same results. **Conclusion:** We recognized a “bell-shaped curve” in all cases except for 3 symptomatic cases that also exhibited many neurological inconsistencies and suspected malingering. The Jamar hand dynamometer is a simple and useful tool for detection of malingering.

Abstract no.: 37701

ULTRASOUND GUIDED HIGH VOLUME INJECTION FOR PLANTAR FASCIITIS: A PROSPECTIVE STUDY.

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Plantar fasciitis can be a disabling condition with significant associated morbidity. The management can present a challenge to the treating clinician. We believe using ultrasound-guided high volume injection is an effective treatment option. We report our results from a single centre, single surgeon prospective cohort of patients with plantar fasciitis. We injected around the plantar fascia under sedation 10mls of Levobupivacaine 0.5%, 1ml of 40mg depomedrone and 20mls of normal saline under ultrasound guidance. The foot and ankle outcome score (FAOS) was used as the primary outcome measure. Statistical analyses were done using IBM SPSS software (version 19) using Wilcoxon Signed-Rank test. Data were described using median and interquartile range. 55 feet were injected in 39 patients with an average age of 51 (40-54) years. The FAOS pre operative pain scores improved from 42 (30) to 75 (20) and 70 (25) at 6 and 12 weeks respectively ($P=0.001$). The FAOS symptoms scores improved from 64 (32) pre-operatively to 76 (15) at 6 weeks follow-up ($p=0.001$). The pre-operative ADL scores improved from 51 (29) pre operatively to 75 (12) at 12 weeks ($p<0.001$). The sports and recreational activity scores were 77 (15) at 6 weeks improving from 42 (70) pre-operatively ($p=0.001$). The quality of life scores were 31 (37) pre-operatively and 70 (19) at 12 weeks ($p<0.001$). 3 patients required further injections after 12 weeks. No infections were encountered. One patient had bilateral plantar fascial release. Our early results are promising, however long term results needs to be established.

Abstract no.: 37702

PULLOUT FAILURE STRENGTH OF POSTERIOR ROOT TEARS OF THE MEDIAL MENISCUS: A BIOMECHANICAL STUDY OF THE PORCINE MENISCUS

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Introduction Many orthopedic surgeons have become interested in medial meniscus root tears. Since the root serves as the anchor point for the meniscus, posterior root tear of the medial meniscus should be repaired. However, since the biomechanical evaluations of such techniques are lacking, this study was to determine the point of greatest pullout strength in the repair of root tears of the posterior horn of the medial meniscus(PHMM). **Methods** :120 medial menisci were obtained from fresh porcine. The red-red and red-white zones of the meniscus were divided by two lines designated lines A and B (groups A and B). Groups A and B were further divided into three groups each by dividing lines A and B at three points: 3, 5, and 7 mm from the MRL root insertion. Vertical meniscal repair was performed on each point. The pullout failure strength was tested using a biaxial servohydraulic testing machine (model 8874; Instron Corp., Norwood, MA). **Results:** The average maximal load value (NF) was significantly higher in group A (87.65) than in group B (62.93) ($p < 0.001$). Among groups 3, 5, and 7 mm, group 7 mm(96.70) showed the highest maximal load (NF). **Conclusion:** Conclusively, group 7 mm of group A exhibited the greatest pullout strength. To reduce the suture failure rate of posterior root tears of the medial meniscus, it is recommended to perform the repair in the red-red zone and as far as possible from the root tear.

Abstract no.: 37709

CLINICAL OUTCOMES OF THE MODIFIED BROSTROM PROCEDURE FOR CHRONIC LATERAL ANKLE INSTABILITY. DOES PERIOSTEAL FLAP AUGMENTATION IMPROVE SCORES?

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The modified Brostrom- Gould technique is commonly mentioned in chronic lateral ankle instability and the use of periosteal flap (PF) augmentation may confer additional stability to the reconstruction. This study aims to compare results of our patients who underwent reconstruction of ankle lateral ligaments using inferior extensor retinaculum (IER) reinforcement and augmentation with a PF from the fibula (Group 1) versus those who only underwent IER reinforcement (Group 2). 48 patients who underwent lateral ankle reconstruction, using the modified Brostrom procedure, from January 2005 to October 2008 were reviewed retrospectively. Clinical outcomes were evaluated using a physical examination and use of the AOFAS(Hindfoot) scores pre and post operatively. Pre-operative AOFAS(Hindfoot) scores in Group 1 and 2 averaged 61.2 and 58.7 respectively while mean post-operative scores were 81.8 and 82.0 respectively. Differences between the post-operative and pre-operative average scores in both groups was statistically significant ($p < 0.005$) but average post-operative scores in both groups were not. Post-operative functional scores were further assessed by looking at reduction in pain, returning back to sports and ankle stability with no further ankle sprains. Group 2 had better reduction in post operative pain which was statistically significant ($p = 0.006$) but there was no difference between the 2 groups, in terms of returning back to sports and ankle stability. Our results indicate that the use of PF augmentation in addition to IER reinforcement has not been shown to improve functional outcome and stability as compared to only IER reinforcement and it also causes less reduction in post-operative pain

Abstract no.: 37710

**TRABECULAR TITANIUM IN ACETABULAR RECONSTRUCTION
DEMONSTRATES EARLY STABILITY AND INGROWTH**

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Introduction: 3D titanium shells and augments have a trabecular ingrowth surface, with a high coefficient of friction. This enhances initial stability and demonstrates a large resistance to shear. The ability to add face changing liners means that anteversion and inclination can be altered after optimum bone fixation has been achieved. Augments can be pre-assembled to the shell allowing the relatively easy insertion of a monobloc construct. Methods: We present 119 consecutive acetabular revisions performed since 2011 using a trabecular titanium system. Pre and post-operative clinical, radiological and outcome score were assessed at one to three years follow up. Results: 119 acetabular revisions were identified. The indications for revision were aseptic loosening (87) infection (19), dislocation/instability (6), metallosis (5) and impingement (2). External augments were used in 19 cases and face changing liners in 41 cases. At one to three year follow up there were no cases of aseptic loosening either clinically or radiographically. Four cases were subsequently revised for infection (3) and dislocation (1). The mean preoperative Oxford Hip Score was 24 (IQR 13-33) with a postoperative mean score of 36 (IQR 13-46). Discussion: Uncemented acetabular reconstruction relies on initial stability and an ingrowth or ongrowth surface to allow osseointegration. Our large case series of revision acetabular reconstruction using trabecular titanium shows promising early results. The ability to build a monobloc construct with augments and accurately trial, speeds up the procedure. Face-changing liners, following optimum seating of the component, adds to the versatility of this system.

Abstract no.: 37711

WOUND COMPLICATIONS FOLLOWING LUMBOPELVIC FIXATION IN SACRAL FRACTURES, RISK FACTORS AND TREATMENT

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Background: Lumbopelvic fixation provides stability to sacral fractures with spino-pelvic dissociation. However, wound complication and infection remains a major concern in posterior midline approach. The purpose of our study is to examine the risk and the prognosis of the infection. Method: We retrospectively reviewed twenty-four cases of sacral fractures treated with lumbopelvic fixation by posterior midline approach, ranging in age from 19 to 77years(mean 43years). The mean time from injury to the operation was 3days (0-12days). Associated injuries, Injury severity score (ISS), Body mass index (BMI) and pathogenic bacteria were reviewed. Result: Six cases of infections were observed (25 %). Five cases required debridement in the operation room. Two cases required removal of the implants due to the infection. The mean BMI in the infected cases was 24.2, whereas 21.7 in non-infected cases($p=0.2$). The mean ISS in the infected cases was 31, whereas 34 in non-infected cases ($p=0.6$). Among the infected cases, one case was complicated with Morel-Lavallée lesion and the other case was complicated with open sacral fracture. Two cases of infection were caused by Methicillin-resistant staphylococcus aureus (MRSA) and three cases were caused by Enterobacter species. Conclusion: Wound complications are not associated with BMI or severity of the injury. Soft tissue problem are observed in the infected cases. Observed bacteria such as MRSA and Enterobacter species can be the first target in selecting the antibiotics.

Abstract no.: 37712

LUMBOPELVIC FIXATION

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Abstract no.: 37713

SIMPLE BONE CYST OF METACARPAL: RARE LESION WITH UNIQUE TREATMENT

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Introduction: Simple bone cyst or unicameral bone cyst (UBC) are benign cystic lesions commonly found in femur and humerus. However hand is a very rare site of occurrence. Treatment described for UBC of hand commonly involves curettage and bone grafting. **Case:** A 7 year old right hand dominant girl presented to us with chief complaints of pain and swelling in right 4th metacarpal since 2 month. On imaging, plain radiographs of right hand showed expansile lytic lesion on Metaphyseal-diaphyseal region of 4th metacarpal with pathological fracture. MRI showed cystic lesions with internal loculations and fluid-fluid levels (figure 2). There was minimal soft tissue extension. We performed aspiration which showed serosanguinous fluid with haemorrhagic tinge. With the diagnosis of unicameral bone cyst in mind we performed and closed intramedullary nail with k wire. The cyst healed up completely within 2 months. There is no recurrence at 18 month follow up. **Conclusion:** In conclusion simple bone cyst is very rare in metacarpal bone. However it should be considered as important differential since it warrants simple treatment and avoid extensive procedures.

Abstract no.: 37716

VARIABILITY IN THE ANATOMICAL COURSE OF THE LATERAL FEMORAL CUTANEOUS NERVE (LFCN): A SYSTEMATIC REVIEW OF CADAVERIC STUDIES

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The incidence of LFCN injury during anterior approach hip arthroplasty has been reported in up to 91% of cases. We undertook a systematic review to identify all cadaveric studies reporting the course of the LFCN. We aimed to describe variability in the LFCN course and branching pattern in order to identify the risk of injury during surgery. The literature search yielded 1,902 potentially eligible studies of which 15 articles reporting on 1,045 LFCN specimens met the inclusion criteria and were reviewed. There were significant variations in the anatomy of the LFCN at the level of exit from the psoas; relationship to the iliac crest (IC), ASIS and inguinal ligament (IL); branching pattern; level of bifurcation; and infra-inguinal course. The most common course identified was that the nerve emerges through the lateral border of the psoas at a mean distance of 1cm below the IC, crosses the pelvis at or below the level of IC (77%), passes medial to the ASIS (77%) either through or under the inguinal ligament (99%) as a single trunk (83%). It was noted that the LFCN may have up to 5 branches at the level of the IL. When the bifurcation was below the IL, this always occurred over the surface of the sartorius muscle and no nerves pierced the deep fascia of the thigh within 3cm of the ASIS. An improved understanding of the anatomy of the LFCN would help surgeons avoid inadvertent injury and inform patients of the potential risk of injury.

Abstract no.: 37717

USEFULLNESS OF MEDICAL POLE WALKING AFTER ARTHROPLASTIES OF RHEUMATOID ARTHRITIS PATIENTS

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Introduction:We recommended an early discharge if rheumatoid arthritis patients, who had undergone arthroplasty, could easily walk around a flat barrier-free corridor, as we had a financial motive to increase the circulation rate of patients. Unfortunately, after their discharge, two of our patients fell down in their homes, one breaking her leg. So we began to ask our patients to use Medical poles for walking, which they learned to use during rehabilitation, after being discharged. **Methods:**The cases were 2 male and 6 female rheumatoid arthritis patients, with an average age of 64, who had undergone arthroplasty. We required them to train walking with Medical poles, 5 times a week, 20 minutes a day, for approximately 4~6 weeks until they were discharged. We examined the physical strength of the patients at the period of 4 weeks and 1 year after arthroplasty, using the chair stand test and 10m walk test. And we prepared a questionnaire for their subjective symptoms. **Result:**Walking with medical poles significantly and safely improved walking balance, speed, and posture of patients after the arthroplasty. Fixed type strap was comfortable for the Steinbrocker stage II/III patients. European type strap was comfortable for the Steinbrocker stage IV patients. Good results of QOL were not concerning to Age, sex, Steinbrocker stage, but to improving Chair test over 20 times.

Abstract no.: 37719

WHEN IS IT SAFE FOR PATIENTS TO DRIVE AFTER RIGHT TOTAL HIP ARTHROPLASTY?

Victor HERNANDEZ, Alvin ONG, Fabio OROZCO, Anne Marie MADDEN,
Zachary POST

Rothman Institute, Egg Harbor Township (UNITED STATES)

Introduction: When patients may safely be allowed to drive after total hip arthroplasty (THA) remains controversial. Most studies recommend 6 weeks but recent advances in post-operative management may have changed this time frame. The purpose of this study was to evaluate driving safety after THA through brake time reaction. Methods: After IRB approval, 30 patients scheduled for right THA were prospectively evaluated between October 2013 and March 2014. Driving performance was evaluated using the Brake Reaction Test. After a preoperative assessment, patients were re-tested at 2, 4 and 6 weeks post-operatively. Patients were allowed to drive when the post-operative reaction time was equal to or less than their pre-operative baseline. Results: All 30 patients completed the pre-op and 2 week post-op tests. The mean pre-op reaction time was 0.607 sec. The mean 2-week reaction time was 0.566 sec. Of the 30 study patients, 26 (87 %) were able to reach their baseline time by 2 weeks. Three patients (10%) reached their baseline at the 4-week post-op test and only 1 (3%) required 6 weeks to reach base line. Evaluation of confounding variables revealed no differences with respect to age, gender, and the use of assistance devices in the group. Conclusion: Most patients in this study were able to return to normal brake response times by 2 weeks after THA. This represents a substantial improvement from current recommendations. These findings have allowed us to encourage patients to re-evaluate their driving ability as soon as 2 weeks after THA.

Abstract no.: 37722

PREDICTORS OF DISCHARGE TO INPATIENT REHABILITATION AFTER TOTAL KNEE ARTHROPLASTY

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Introduction: Advances in total knee arthroplasty (TKA) have increased the number of patients able to go home after surgery. In spite of improvements, many patients continue to require inpatient rehabilitation (IR). The purpose of this study was to evaluate factors associated with patient disposition and predictors of IR after TKA. Methods: After IRB approval, a series of 800 consecutive patients undergoing TKA between January 2011 and December 2011 were retrospectively evaluated. Of these, 743 had unilateral, primary TKA and were included in our analysis. Several potential disposition predictors including family support, health status, home situation, surgical variables and demographics were evaluated. Binary logistic regression was used for statistical analysis. Results: 340 patients (46.5 %) required discharge to IR. Significant predictors of IR were age (OR=1.072), female gender (OR=0.5), Medicare as primary insurance (OR=0.36), length of stay (OR=2.7), and lack of assistance at home (OR=0.38). No surgical or other demographic factors, including blood loss, length of surgery or BMI, were associated with IR. Medical conditions based upon Charlson comorbidity index and ASA score also did not predict IR discharge. Conclusion: Our evaluation showed that non-modifiable factors such as age and gender were associated with an increased risk of IR. Interestingly, medical factors did not seem to influence the disposition of these patients. The only modifiable factor associated with IR was a lack of support at home. Future programs directed at decreasing costs through increased home discharge should focus on improving patient support at home after TKA.

Abstract no.: 37727

: EFFECT OF POSTERIOR MULTILEVEL VERTEBRAL OSTEOTOMIES ON CORONAL AND SAGITTAL BALANCE IN FUSED SCOLIOSIS DEFORMITY CAUSED BY PREVIOUS SURGERY - PRELIMINARY RESULTS

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Objective: To study the effect of posterior multilevel vertebral osteotomy (posterior crack osteotomy) on coronal and sagittal balance in patients with the fusion mass over the spine caused by previous surgery. Summary of Background Data: Few studies have investigated revisional scoliosis surgery with the fusion mass using osteotomy. Methods: Among patients who had a history of prior surgery for scoliosis correction and posterior fusion, those showing progression of the curve postoperatively due to non-union, implant failure, or adding-on phenomenon were enrolled. Results: Ten patients (5 males and 5 females) were enrolled. The preoperative diagnosis was neuromuscular scoliosis (3 cases), syndromic scoliosis (1 case), congenital scoliosis (5 cases), and neurofibromatosis (1 case). Osteotomies were performed at 3.3 ± 1.3 levels on average. Pre- and postoperative Cobb angles were $70.8^\circ \pm 30.0^\circ$ and $28.1^\circ \pm 20.0^\circ$ ($p=0.002$ (0.97)) Conclusions: Posterior crack osteotomy can be used effectively in revisional scoliosis surgery and the clinical and radiological results are seems to be acceptable.

Abstract no.: 37728

**FOOT HEEL ABRASION AND ITS POSSIBLE BIOMECHANICAL CAUSE:
A TRANSVERSAL STUDY WITH INFANTRY RECRUITS**

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Introduction: Excessive shoe heel abrasion is of concern to patients, parents and shoe manufacturers, but little scientific information is available. The purpose of this study was relate this phenomenon in a group of infantry recruits performing similar physical activity, with biomechanical factors that could predispose to heel abrasion. Method: Eighty-seven subjects (median age 25) were enrolled. Shoe heel abrasion was assessed manually after a normal day of activity. Number of sprains, foot alignment, posterior chain shortening (Silverskiood test) were also assessed in order to relate it with shoe heel abrasion. Results: The most commonly abrasion site was the lateral rear foot surface (45%). 44% had neutral foot alignment and 39% had valgus alignment. Twenty six (30%) patients have had previous sprains. Neutral foot were related with less posterior chain shortening. On the other hand, valgus feet were more associated with Achilles shortening ($p<0,05$). Patients with neutral rear foot alignment presented with a more uniform abrasion of the posterior insole of the shoe ($p<0,05$). Shoe abrasion were not statistically related with posterior chain shortening, nor with the number of sprains. Conclusion: Based on our results, we can conclude that foot abrasion of the posterior insole of the shoes are not related with ankle sprain nor with valgus or varus alignment of the foot and nor with posterior chain shortening.

Abstract no.: 37730

MAGGOT DEBRIDEMENT THERAPY FOR POSTSURGICAL

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Summary of Background Data. Numerous clinical reports have been published that describe outstanding effects of MDT, most notable on debridement, cleansing, disinfection, and healing of indolent wounds, many of which have previously failed to respond to conventional treatment. However, till date no reports have been found in the literature describing its use for the treatment of wound infection after scoliosis surgery, which has relatively longer and deeper wound. Methods. A total of 5 patients (2 females and 3 males) who developed wound infection after scoliosis correction surgery were included in this study. All were operated for neuromuscular scoliosis using posterior approach with pedicle screw fixation. All developed deep wound infection within 2 to 6 weeks of surgery, which was resistant to all kinds of conventional therapy. MDT applied in all using prepared commercially available maggot bags, and dressing was changed twice a week till wound shows signs of healing. After confirming negative culture, MDT was stopped and routine dressings or secondary closure was done. Results. There were 1 patient with paralytic scoliosis and 4 with cerebral palsy. All wound healed completely within 5.2 to 1.8 weeks of MDT or 8.8 to 3.8 cycles of MDT. Conclusion. We would propose to use MDT for the treatment of wound infection after scoliosis surgery as an effective alternative to conventional treatment. In this way, implant extraction could be avoided without losing any correction.

Abstract no.: 37731

ISOLATED PERCUTANEOUS THORACOPLASTY PROCEDURE

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Study Design. Prospective case series study. Objective. To study the effect of percutaneous thoracoplasty– only procedure on curve pattern in mature adolescent idiopathic scoliosis (AIS). Summary of Background Data. The rib hump prominence on the convex side is the major cosmetic concern among patients with AIS. Thoracoplasty combined with spinal fusion is a commonly used procedure in scoliosis. However, there are no studies regarding the effect of isolated thoracoplasty procedure on curve pattern in skeletally matured patients with AIS . Methods. The study involved 7 skeletally matured female patients with AIS. The convex rib hump deformity was measured preoperatively using hump height and hump angle. We performed thoracoplasty without spinal fusion in patients with the Cobb angle less than 40 ° but with prominent hump deformity. Thoracoplasty was performed percutaneously using 1 or 2 transverse incisions along the rib hump, and apex portions of the deformed ribs were resected. Results. The mean patient age was 20.24 years and an average of 4 ribs were resected. The mean preoperative hump height and hump angle of 38.14 mm and 14.14 ° improved to 11.70 mm and 11.42 ° respectively, after surgery (P = 0.018 and 0.042). Conclusion. Percutaneous thoracoplasty–only procedure gives significant rib humps correction and satisfactory clinical outcome. However, progression of the curve was observed after surgery. This suggests that the convex ribs function as a buttress for curve progression .

Abstract no.: 37733

PROXIMAL HUMERAL LOCKED PLATING THROUGH MINI-OPEN APPROACH FOR REDUCTION AND FIXATION OF PROXIMAL HUMERAL FRACTURES AND FRACTURE DISLOCATIONS

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Introduction: The aim of this study is to evaluate the quality of reduction and fixation of proximal humeral fractures and fracture dislocations; through mini-open approach and identifying its risks and complications. **Patients:** 50 cases were enrolled in this prospective study (19 males and 31 females). The mean age was 40 (26-54 years). 23 are three part fractures, 18 are four part fractures and 9 are fracture dislocations (1 posterior and 8 anterior). The mean follow up was 24 (6-48 months). **Methods:** Pre-operative assessment by x-rays in AP, lateral scapular views and reconstruction CT scan. The surgery was performed in the beach-chair position through two 4cm incisions (transdeltoid and distal) with palpation of the axillary nerve. Assessment included incidence of nerve injuries, quality of reduction and range of motion (after completion of a rehabilitation program) as well as the rate of fracture union. **Results:** 43 cases had anatomical reduction of which two cases subsequently went into varus deformity. One case had failure of fixation, one suffered of complete brachial palsy that recovered in 4 months. 2 cases of preoperative axillary nerve palsy recovered 6 weeks postoperatively. One case of nonunion which was treated by bone grafting and ultimately united within 4 months and one case had delayed union. 4 cases of limited arm abduction and rotation (all in fracture dislocation cases). **Conclusion:** This is a useful approach for ORIF of 3 and 4 part fractures. Risks are improper reduction, nerve injuries and limitation in the range of motion particularly in fracture dislocations.

Abstract no.: 37734

EFFECTS OF MINIMALLY INVASIVE PERCUTANEOUS DISTAL METATARSAL OSTEOTOMY ON GAIT PATTERNS IN PATIENTS WITH HALLUX VALGUS

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Introduction: Minimally invasive percutaneous distal metatarsal osteotomy (MIPDMO) was proposed for the correction of HV with the potential advantages of reduced operating time, decreased surgical exposure and early weight-bearing. However, no study reported the biomechanical effects of MIPDMO on the lower extremities during walking. The aim of this study was to investigate the gait changes in patients after MIPDMO for bilateral HV. **Methods:** Five females with bilateral HV were analyzed before and 4.5 months on average after MIPDMO. Each participant was instructed to walk for 3 times at a self-selected pace. The kinematic data was measured by a 7-camera motion capture system (Vicon 512) and ground reaction forces (GRF) were captured from two AMTI forceplates. The data were analyzed by Wilcoxon signed ranks test with $\alpha = 0.05$. **Result:** After MIPDMO, patients showed reduced loading rate of the GRF, magnitude of vertical GRF at mid-stance and greater ankle adduction at end of single limb support. **Discussion and conclusion:** These suggest that the patients restored the ability of shock absorption after correcting the abnormal alignment of HV and flatfoot. However, they still showed similar toe-out angle after MIPDMO. Prolonged walking in such deviated pattern is anticipated to aggravate HV in the future so follow-up assessment in these patients after MIPDMO is suggested. Overall, the MIPDMO appeared to be effective in treating HV with good biomechanical outcome.

Abstract no.: 37741

JUVENILE HALLUX VALGUS TREATED WITH MINIMALLY INVASIVE DISTAL METATARSAL OSTEOTOMY

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Introduction: Minimally invasive distal metatarsal osteotomy SERI technique (simple, effective, rapid, inexpensive) has shown good outcomes in mild to moderate hallux valgus (HV) treatment in adults. This technique could be applied in adolescents with juvenile hallux valgus (JHV) in order to avoid disease progression. Methods: 42 mild or moderate HVJ patients (84 feet) from 11 to 19 years-old, were evaluated from 2007 to 2013 with physical and radiological examination. HV AOFAS scale before surgery, 6 months and 12 months after surgery was applied. Results: Patients mean age was 14 years-old. Mean intermetatarsal (IMA) and metatarsophalangeal angles (MFA) before surgery was 11,5° and 20,6° each. Mean correction of IMA and MFA was 5° and 7,5° each. Mean AOFAS score before surgery was 52 points, 6 months after surgery 97 points and 12 months after surgery 93 points. No complications were reported. Conclusion: SERI osteotomy in mild and moderate JHV showed good outcomes and no short and medium-term complications, allowing disease resolution in a cost-effective way from the adolescence, avoiding pain, deformity, subsequent osteoarthritis of the metatarsophalangeal joint and discomfort in shoe wearing as adults.

Abstract no.: 37744

HIGH FREQUENCY ULTRASONOGRAPHY HAS THE GREAT VALUE IN THE RAPID DIAGNOSIS OF THE IRREDUCIBLE RADIAL HEAD SUBLUXATION IN CHILDREN

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Introduction:To explore the application of high frequency ultrasonography in the rapid diagnosis of irreducible radial head subluxation in children. Methods:13 patients aged 1 to 5 irreducible with single radial head subluxation in children were observed by high-frequency ultrasonography and radiography,and then compared with the contralateral side radial head position relative to the capitellum. Results: 1 case of radial head subluxation was detected by radiography. 13 cases of radial head subluxation were detected by high frequency ultrasonography ,10 cases with articular cavity effusion. On the diagnosis of radial head subluxation in children, the sensitivity of high frequency ultrasonography was obviously higher than that of radiography. Conclusion: The sensitivity of high frequency ultrasonography in the rapid diagnosis of the radial head subluxation in children is obviously higher than that of X ray film. High frequency ultrasonography through continuous scan can determine the continuity of anatomical structure and the relationship between some views to show the location of the specific structure relations. Specifically , it can be quickly and clearly diagnosed with comparison to the uninjured elbow on lateral longitudinal section of former area and the lateral longitudinal section area.

Abstract no.: 37751

'CAUDA EQUINA SYNDROME" - THE PRELUDE TO AN EVIDENCE-BASED SCORING SYSTEM

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Background: Diagnosis of 'Cauda Equina Syndrome' (CES) can be challenging and delays in decompression can result in inferior outcomes. CES is identified by cardinal 'Red Flags', and eliciting these symptoms/signs is essential for assessment and medico-legal documentation, though they are not conclusive of the presence of CES. Objective: Establish the value of clinical symptoms/signs in patients with suspected CES. Methods: An observational study was undertaken to consider the association between presenting symptoms, examination findings and CES. Prospective neurosurgical referrals, MR scans and operation notes were reviewed. For logistic regression analyses, CES treated surgically was the outcome measure and variables considered were: presence of sciatica, paraesthesia, sphincter dysfunction and motor weakness; perianal/dermatomal sensation; reflexes and anal tone. Results: 137 patients were studied (60males/77females, mean age 42.3years, SD 12.5years) with 76 proven CES, 61 suspected but MR negative. Uncontrolled analyses found all predictors except age and anal tone exhibit importance. Final multiple logistic regression analysis showed sciatica ($p=0.001$), paraesthesia ($p<0.001$), altered perianal ($p=0.028$) and dermatomal ($p<0.001$) sensation, motor weakness ($p<0.001$) to be significantly associated with CES. Increased odds of CES were observed in patients: with sciatica (OR=26.3); paraesthesia (OR=24.6); intact perianal (OR=4.5) and dermatomal (OR=10.1) sensation and without motor weakness (OR=20.4). Conclusion: This is the largest study conducted correlating presenting symptoms/signs with CES. The positive constellation of sciatica and paraesthesia are more predictive of CES than other typical symptoms. This study, along with previous research can prelude establishing a predictive scoring system for CES and support clinicians' index of suspicion in future.

Abstract no.: 37759

DEVELOPMENT OF A NEW PHYSICAL PROPHYLAXIS FOR DEEP VEIN THROMBOSIS IN PATIENTS WITH PLASTER-CAST IMMOBILIZATION OF THE LEG: EFFECTS OF INTERMITTENT PNEUMATIC COMPRESSION ON THE THIGH ON BLOOD FLOW VELOCITY IN THE FEMORAL AND POPLITEAL VEINS

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Introduction: Deep vein thrombosis (DVT) is a major risk factor for fatal pulmonary thromboembolism. In particular, the incidence of DVT is 4 to 30% in patients with plaster-cast immobilization of the leg. The development of physical prophylaxis for DVT in them is therefore an urgent problem. The aim of this study was to examine the effects of intermittent pneumatic compression on the thigh on blood flow velocity and develop a new physical prophylaxis for DVT in them. **Subjects and Methods:** Eighteen healthy male (age, 70.0 ± 4.6 years) were recruited. We immobilized each subject's right lower leg and ankle with a plaster splint. Peak venous blood velocity of the femoral vein (PVF) and popliteal vein (PVP) were measured by using pulsed Doppler ultrasound during IPC to thigh. The portable IPCD was applied to each subject's right thigh, compressing the thigh at a pressure of 50 mmHg in supine and sitting. **Results:** PVF during IPC to thigh in the supine and sitting positions was 2.3 and 2.6 times higher, respectively, than at rest. PVP during IPC to thigh in supine and sitting were 3.0 and 2.9 times higher, respectively, than at rest ($P < 0.01$). **Conclusion:** In this study, IPC to thigh resulted in a 2.3- to 2.4-fold increase of PVF and 3.0-fold increase of PVP in supine and sitting. Since PV is the surrogate outcome measure of thromboprophylaxis effect, IPC to thigh could also be a useful prophylaxis for DVT in patients with plaster-cast immobilization of the lower leg.

Abstract no.: 37761

SURFACE MODIFICATION OF TITANIUM WITH CURCUMIN: A PROMISING STRATEGY TO COMBAT FIBROUS ENCAPSULATION

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Introduction: Fibrous encapsulation that prevents the direct contact between an implant and the bone can cause implant failure. However, prevention of fibrous encapsulation is difficult due to the lack of effective strategies which can selectively modulate and control the growth of fibroblasts and osteoblasts. Curcumin, an extract from *Curcuma longa*, exhibits a variety of biological effects such as anti-oxidant and anti-inflammatory properties. Recent studies have shown that curcumin has anti-fibrotic effects in liver, lung and kidney, attenuating TGF- β -induced fibrosis through down-regulation of TGF β R II. Based on these studies, we hypothesize that loading curcumin on implant surfaces would be efficacious to inhibit fibrous encapsulation without adversely affecting osteoblast functions. Methods: Curcumin was functionalized on titanium surface using polydopamine as a chemical anchor, and the behaviors of fibroblasts and osteoblasts on these curcumin-modified surfaces were investigated. Results and Summary: Curcumin was successfully loaded on titanium with low release after incubation for 7 days, and characterized by X-ray photon spectroscopy (XPS) and high performance liquid chromatography (HPLC). On the curcumin-modified surfaces, fibroblast proliferation was suppressed, and the expression of the fibrosis markers (ACTA2, Collagen1A1, and fibronectin) was significantly reduced. This reduction was possibly due to the enhancement of fibroblast apoptosis induced by the surface curcumin. In contrast, no significant reduction in osteoblast proliferation and function was observed on the curcumin-modified substrates. These findings exhibit a promising solution to reduce fibrous encapsulation without adversely affect osseointegration, and thus may be highly beneficial for orthopedic applications.

Abstract no.: 37762

TREATMENT FOR OSTEOPOROSIS IN THE HIP FRACTURES

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【Introduction】 The hip fracture is a common trauma in the elder people in the world. The number of the patient has been increased in many countries every year. In this report, the operated cases with hip fracture is statistically analyzed. 【Method】 1333 cases with hip fracture treated in 42 national hospitals belong to National Hospital Organization between from April, 2006 to March, 2009 are reviewed. They are 262 males and 1071 females. They are evaluated at the point of operation age, fracture type, operative method, post-operative complications, gait ability and the history of treatment for osteoporosis. 【Results】 The age distribution is as follows, 514 cases in eighties, 393 in seventies, 202 in nineties and 224 in other ages. There are 636 cases with intertrochanteric fracture, 516 with femoral neck fracture, 147 with subtrochanteric fracture and 44 with unknown types. Complications on admission are recognized in 20.4% of the patient, 538 cases are operated by femoral nail system, 423 cases by hip prosthesis, 157 cases by compression hip system and 144 cases by screw system. Postoperative complications are found in 13%. Respiratory lesions is the most popular complication. Gait ability has been disturbed after surgery in many cases. 204 cases of 1333 cases are treated for osteoporosis before trauma. 【Conclusions】 The hip fracture is expected to increase every year according to the increase of elder population. It seems that the early beginning of the treatment for osteoporosis is the most important to prevent the increase of the hip fracture.

Abstract no.: 37765

DEVELOPMENT OF A NEW PHYSICAL PROPHYLAXIS FOR DEEP VEIN THROMBOSIS IN PATIENTS WITH PLASTER-CAST IMMOBILIZATION OF THE LEG: EFFECTS OF FORCED DEEP BREATHING ON BLOOD FLOW VELOCITY IN THE FEMORAL VEIN

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Introduction: Deep vein thrombosis (DVT) is a major risk factor for fatal pulmonary thromboembolism. In particular, the incidence of DVT is 4 to 30% in patients with plaster-cast immobilization of the leg. The development of a new physical prophylaxis for DVT in them is therefore an urgent problem. The aim of this study was to examine the effects of forced deep breathing on blood flow velocity, and develop a new physical prophylaxis for DVT in them. **Subjects and Methods:** Eighteen healthy male (age, 70.0 ± 4.6 years) were recruited for this study. Before collecting data, we immobilized each subject's right lower leg and ankle with a plaster splint. Peak venous blood velocity of the femoral vein (PVF) was measured by using pulsed Doppler ultrasound during forced deep breathing. In the forced deep breathing protocol, the subjects took deep breaths, as fast as possible, at the pace of 15 breaths/min, 5 breaths/min, and 3 breaths/min in supine and sitting. **Results:** PVF during forced deep breathing at 15 breaths/min, 5 breaths/min, and 3 breaths/min was 1.9, 2.2, and 2.5 times higher, respectively, than at rest in a supine, and 2.8, 3.8, and 4.5 times higher, respectively, than at rest in a sitting ($P < 0.01$). **Conclusion:** Forced deep breathing resulted in a 1.9- and 4.5-fold increase of PVF in supine and sitting, respectively. Since PVF is the surrogate outcome measure of thromboprophylaxis effect, forced deep breathing could be a useful prophylaxis for DVT in patients with plaster-cast immobilization of the leg.

Abstract no.: 37768

SATISFACTION OF PRIMARY TOTAL KNEE ARTHROPLASTY, ONE-YEAR FOLLOW-UP.

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Currently, patient's satisfaction becomes more important. In each year, over 400 total knee arthroplasties (TKA) have been done in our institute but no patients' satisfaction has been stated. Beside, to improve the quality and effectiveness of our treatment, we therefore would like to evaluate the certain patients' satisfaction on TKA. We included the patients who had primary TKA in National Taiwan University by the same surgeon during 01/06/2012-31/12/2013, the ones with concomitant spine and/or hip problems were excluded. Pre and one-year post-operative knee examination were done by another orthopaedist, using Hospital for Special Surgery (HSS) Knee score. Validated Chinese WOMAC score and satisfaction questionnaire were done by the patients at one year follow up. We have included 61 patients (female=41, male=20), average age=71 years old. All post-operative X-rays show good prosthetic alignment. Post-operative HSS score significantly increases from 63.02 to 93.06. Pre-HSS in female=61.39, male=66.35, $p=0.009$ but no different of post-HSS. Whereas, overall satisfaction score is 3.38 (0=Unsatisfied, 4= very satisfied) but female=3.11 and male=3.63($p=0.005$). And WOMAC score, female=9.29, male=5.85, $p=0.031$ (The lower is the better), the overall is 8.16. The most complaint is pain then stiffness, the highest WOMAC score is heavy house work, follows by descending stairs as well as morning stiffness. In conclusion, the satisfaction of TKA in our institute is 83.5%, male is more satisfied than female. Although we are successful in TKA but the patients still have some sufferings. Thus, awareness of these issues will provide us to reach the better treatment quality.

Abstract no.: 37770**37770**

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introduction: The most common method of treatment of fractures of neck of femur in the elderly is modular cemented bipolar arthroplasty. methods: 40 patients operated for fracture neck femur by modular cemented bipolar arthroplasty from the January 2009 to January 2014 were included in the study. all patients were operated by posterior approach, 2nd generation cementing technique with restrictor, cement syringe and pressurization was used. results: the mean age of operated patients was 68 years. follow up ranged from 3 months to 5 years. there were 10 cases of infection- 3 deep and 7 superficial. No case of postoperative dislocation was noted. 2 patients developed mild PTE/DVT in spite the routine use of LMW heparin and active physiotherapy. 5 patients had developed electrolyte imbalance in the immediate post operative period which was actively treated by the physician. None of the patients have developed acetabular erosion/protrusion as yet. None of the patients have had aseptic stem loosening or subsidence of the femoral component as of now. 1 patient died in the post operative period (less than 4 weeks after surgery) due to medical complications of diabetes and IHD. Of the 40 patients, 28 patients did have some or the other medical comorbidity like diabetes, IHD, renal disorders, etc. We had 50% excellent results, 20% good results, 12.5% fair results and 12.5 % poor results. conclusion: modular cemented bipolar arthroplasty is a very good and reliable method with low complication rates for early ambulation following fractures of the neck of femur in the elderly.

Abstract no.: 37774

ROAD TRAFFIC ACCIDENTS AN EPIDEMIC IN DEVELOPING WORLD

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Incidence of road traffic accidents (RTA) is on the rise all over the world. The situation is worse in developing world. The aim of the paper is to highlight, in detail, the causes of the road traffic accidents and resultant impact of this tragedy over the families and the nations. Impact of this tragedy can be judged by the following WHO reports. Nearly 1.3 million people die every year on the world's roads and 20 to 50 million people suffer non-fatal injuries due to RTA. 91% of the world's fatalities on the roads occur in low-income and middle-income countries, even though these countries have approximately half of the world's vehicles. The economic loss of RTA has been estimated between 1% and 3% of the respective GNP of the world countries. In my views, at present, it is an epidemic; and in future, it is going to be the pandemic. According to WHO 2013 report, if no action is taken, RTAs are predicted to result in the deaths of around 1.9 million people annually by 2020. RTA has its own natural history and follows the same epidemiological pattern as any other disease. RTAs are a tragedy created by humans themselves. While bad road conditions and vehicles are responsible for about 10% of accidents, human error is said to be responsible for remaining 90%. Prevention is better than cure. Governments should teach and enforce the traffic rules. People should learn and follow the traffic rules.

Abstract no.: 37776

DUAL THREE-DIMENSIONAL CORRECTIVE OSTEOTOMY FOR A SEVERE PLANOVALGUS DEFORMITY IN RA FOOT

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Introduction: We report for advanced valgus foot deformity associated with rheumatoid arthritis , an effective fixation was obtained conducted two joint correction osteotomy . Case : 78 -year-old woman . Arthritis patients of 20 years . who was underwent joint surgery of several places before. She underwent a left subtalar arthrodesis two years ago , but it continues still pain without enough bone union . Further , skin healing failure caused by correct valgus deformation had occurred ulceration . In this time we were performed varus correction and pedicle flap this time. Osteotomy the taronavicular joint and screw fixed, and to correct the osteotomy talocrural joint and fixed with an intramedullary nail surgery . Skin graft using a pedicled flap from the posterior surface of leg in the skin defect of the ankle outer portion . The brace is attached after 4 weeks of post-operative outside fixed began walking heel partial load . Currently after half year postoperative pain disappeared , fixity on Xp is also in good condition . Discussion: in Rheumatoid arthritis , Varus /valgus foot deformation treatment associated with the destruction of the ankle joint, that a valid bone union often can not be obtained even in the arthrodesis. It is not possible to obtain an effective ankle If you do not do correction in consideration of the balance of the four joint talocrural joint, talocalcaneal joint, calcaneocuboid joint, the taronavicular joint in advanced valgus foot deformity.

Abstract no.: 37777

CHARACTERISTICS OF SURGICALLY TREATED METATARSAL FRACTURES AND OUTCOMES: OUR INSTITUTIONAL EXPERIENCE

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Introduction: Aim of our study was to examine the prevalence of metatarsal fractures, indications for operative treatment and outcome, in a big Trauma Centre. Methods: Over a 2,5-year study period, 160 consecutive patients that presented in our institution with metatarsal fractures were eligible to participate. Exclusion criteria included pathological fractures, polytrauma patients and age < 13 years. Outcome was assessed radiologically and by clinical examination. Results: Twenty-two patients required operative treatment (13,75%), having an average age of 33 years (range 14-75). Twelve patients were male and nine involved the right foot. Average time of follow-up was 7.35 months (range 2-7) with an average of 5.7 appointments per patient (range 3-15). Eleven patients had an injury to the Lisfranc complex and underwent open reduction and internal fixation. Five patients had multiple metatarsal fractures. For the rest of the single metatarsal injuries, five were operated because of a non-union of the 5th metatarsal and one because of a displaced 2nd metatarsal shaft fracture. All of the fractures progressed to union after the operation. Metalwork was removed in four patients because of persisting pain. No DVT/PE episode was observed. Complications included cellulitis in two patients, wound break down in one patient and foot numbness in another patient. Conclusions: Operative treatment was associated with complex foot fracture patterns (Lisfranc injuries) and multiple involvement of metatarsal injuries. Operative treatment is indicated to restore the overall foot anatomy and stability. Patients are expected to have a good outcome with a low rate of complications.

Abstract no.: 37781

FUNCTIONAL OUTCOME OF PATIENTS TREATED FOR PERI-PROSTHETIC FRACTURES FOLLOWING PRIMARY HIP ARTHROPLASTY

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INTRODUCTION: Peri-prosthetic fractures can occur both during and after surgery. Management of these difficult fractures pose significant challenge to surgeons. Care of Peri-prosthetic fractures may require implant revision as well as fracture stabilization. Clinical outcome of these cases is often less successful than routine THA. **MATERIALS&METHODS:** This is a study of 20 patients with Peri-prosthetic fractures following primary hip arthroplasty. Vancouver classification of Peri-prosthetic fractures were used. Functional outcome was calculated using modified Harris hip score. **RESULTS:** 10 patients had a B1 type fracture, 8 had a B2 type of fracture and 2 patients had a C type of fracture. 40% of patients were treated with revision stem and 60% treated by ORIF. 60% of the B1 fracture treated with ORIF had good results. All patients with B2 fractures treated with ORIF had fair results. 75% of B2 fractures treated with revision stem fixation had good results. On an overall basis 87.5% of the patients with revision stem had a good result, 50% of the patients who had a ORIF had a good result. 8 patients had a limb length discrepancy out of which 85% were treated with ORIF. **CONCLUSION:** When treating a periprosthetic fracture Vancouver classification provides excellent information about the fracture pattern and choice of treatment. Revision total hip arthroplasty for treatment of a periprosthetic fracture showed good result in most of the cases. The limitation of this study includes small number of cases and there were no type A and B3 fracture seen in this study. This study has short term follow up, It needs further follow up to comment on survivorship of the implant.

Abstract no.: 37782

RE-OPERATION RATE FOLLOWING OPERATIVE TREATMENT OF DISTAL RADIAL FRACTURES IN THE PAEDIATRIC SETTING

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Introduction: The aim of our study was to evaluate the incidence of failure and re-operation of operatively treated paediatric distal radius fractures, and compare them with international set standards. Methods: This is a retrospective case series of all paediatric patients (aged <16y.o.) presenting in our institution with a distal radius fracture that was managed operatively, between January 2011 and October 2013. Results: 312 patients were identified (211 male) with a mean age of 10.2 years (SD 3.5 years). Isolated distal radius fractures were present in 170 patients (54.5%), whereas 142 had associated distal ulna fractures. Simple MUA was performed in 186 patients (59.6%), whereas K-Wires were used in 108 patients (34.6%) and volar plating in 18 patients (5.8%). Failure of the fixation was reported in eight patients (2.7%). Six patients had a failed MUA (time to re-operation 12 days) that was revised to MUA and K-Wires in four of them and repeat MUA in the other two. One patient with a failed MUA and K-Wires had a volar plate applied 13 days after the first operation. One patient treated with volar plating went into non-union and eventually underwent revision plating and bone grafting 233 days post initial operation. Conclusions: The incidence of failure following operative management of distal radius fractures in our institution was 2.7%. Children undergoing fixation with K-wires are less likely to require re-operation. It is in the surgeon's judgment to decide the most appropriate treatment modality, taking into account the fracture configuration and age of the patient.

Abstract no.: 37789

EFFICACY AND SAFETY OF TRANEXAMIC ACID IN CONTROL OF BLEEDING FOLLOWING PRIMARY HIP ARTHROPLASTY

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Introduction: Our aim was to evaluate the efficacy and safety of tranexamic acid in control of bleeding following primary hip arthroplasty (HA). Methods: 150 single surgeon consecutive patients undergoing primary HA (69 patients had a cemented HA and 46 patients had an uncemented HA), who received two standardised bolus doses of 500mg of Tranexamic Acid were included. The first dose was administered at induction and the second dose was administered just before wound closure. Data, which included haemoglobin (Hb), haematocrit (Hct), length of hospital stay (LOS) and complications, was collected prospectively by an independent observer. Routine blood tests were done on the 2nd post-operative day. Post-operative drains were not used. Results: Mean patient age was 68 years (33-89). The mean LOS was 4.58 days (SD 2.08 days). The mean drop of Hb was 3.02 g/dl (23.2%) (SD 1.19 g/dl). The mean drop of Hct was 0.092 (23.5%) (SD 0.037). Nine patients developed symptoms of anaemia and were transfused with 2 units of blood each. Four patients, who complained of calf pain or swelling of the lower limb postoperatively, were investigated with ultrasound scan for possible deep vein thrombosis (DVT). The diagnosis of DVT was confirmed in 2 patients. Conclusion: We believe that the use of two standardised intravenous bolus doses of 500mg of Tranexamic Acid reduces peri-operative blood loss, the need for blood transfusion and the need for post-operative drains. We did not notice any increase in thromboembolic or any other systemic complications in our study.

Abstract no.: 37790

SAFETY AND EFFICACY OF PRE-OPERATIVE MRSA SCREENING IN ELECTIVE ORTHOPAEDIC ADMISSIONS

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Introduction: MRSA remains one of the foremost nosocomial pathogens. Routine pre-operative MRSA screening in elective orthopaedic patients started at our hospital in May 1996. Pre-operative MRSA screening policy for elective orthopaedic patients varies between different hospitals. At our trust MRSA standard Operating procedure recommends pre-operative MRSA screening done within 6 weeks of date of surgery for elective orthopaedic patients which is in line with BOA good practice guide. The patient has to be retested for MRSA if the date of surgery falls beyond 6 weeks of the initial negative MRSA screening. Objectives: To Determine 1)The incidence of MRSA in pre-op elective orthopaedic patients. 2)The number of patients had MRSA retests after an initial negative test. 3)The results of MRSA retests. Methods: Electronic patient records were reviewed to find out the results of MRSA tests and the number of patients had retests for MRSA after an initial negative swab for the same planned admission during a 12 month period. Results: 13556 MRSA tests were done between 01.12.12-30.11.13. 51 patients tested positive for MRSA at the initial screening. 1762 patients had retesting for MRSA after an initial negative MRSA test and out of this 1760 patients had a negative final MRSA test. The mean duration between the initial negative MRSA test and the final negative MRSA retest was 106 days. Conclusion: 99.9% of MRSA retests were negative after an initial negative MRSA tests in elective orthopaedic admission. There was not a single case of MRS septicaemia.

Abstract no.: 37793

ADVANTAGES OF EXTERNAL FIXATION IN SURGICAL TREATMENT FOR DISLOCATIONS AND FRACTURE-DISLOCATIONS OF ACROMIAL END OF CLAVICLE

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We observed 167 patients with dislocations and fracture-dislocations of acromial end of clavicle, who were treated at trauma department 2 of Research Institute of Traumatology and Orthopedics, Astana, Republic of Kazakhstan from 2000 to 2011. The age of patients was 16 - 70 years, most of patients were of working age. Depending on profession patients were grouped as follows: workers - 45.2 %, employees - 24.6%, pensioners - 5.1%, students - 25.1%. Isolated injury occurred in 136 (81.3%) patients, concomitant injury in 19(11.4) and multiple trauma in 12 (7.3%). Causes of injuries: household injuries - 53.5%, street - 3.9%, manufacturing - 1.4%, accident 21.2 %. 75 (44.9%) patients of main group received a new device developed in the clinic ("Apparatus for treatment of dislocations of the acromial end of the clavicle" provisional patents for the invention of the Republic of Kazakhstan N12149 on 3.09.2002). Among 92 (55.1%) patients of control group unit Chi Hai was used in 44 (24.6%), spoke with wire in 48 (28.6%). Evaluation of results of surgical treatment was carried out by scheme E.R. Mattis. Results of treatment: good and satisfactory results were achieved in 96.9% of patients of main group, 80.0% and 77.1% indicators for control group patients. Comparative analysis of results of surgical treatment of dislocations and fracture-dislocations of acromial end of clavicle has revealed the following advantages of external fixation of clavicle: low invasiveness of developed method of osteosynthesis, preventing the possibility of immobilization of shoulder joint contractures.

Abstract no.: 37794

SECRETS OF SUCCESS OF ILIZAROV SURGERY IN PAEDIATRIC WORLD (UPPER & LOWER LIMBS)

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Introduction: We treated different cases of upper & lower limbs(Non-humerus 17, cubitus varus 07, cubitus valgus 03, Diaphyseal aclasis 06, bowlegs 16, wind swept deformity 05 and non-union femur & tibia 26) from 1995 to 2013 in different hospitals of Bangladesh.

Result: The outcome of all the diseases according to severity was excellent and good.

Conclusion: The versatile Ilizarov external fixator is extremely applicable for upper and lower limb deformities in paediatric world.

Abstract no.: 37796

RESULTS OF PFNA2 IN INDIAN POPULATION

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A prospective study is presented of 136 unstable proximal femoral fractures treated with proximal femoral anti-rotation 2 (PFNA2) nail with a follow up of 1 year. Of the patients (100/136) 73.5% were females. Average age was 67.8 yrs. Fractures were classified using the AO classification (A1, A2 & A3). The mean surgical duration was noted to be 27 min and average length of hospital stay was 5 days. Pre-injury activity level was achieved in (109/136) 80% patients. Radiological union happened in (132/136) 97% patients. Screw cut out was not seen, implant failure occurred in 3 patients and infection resulting in implant removal was seen in 1 patient. 10 patients complained of lateral thigh pain due to prominent blade causing irritation. We concluded that PFNA2 is a good implant for treating unstable proximal femoral fractures in the Indian population.

Abstract no.: 37798

37798

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Early arthritis of the knee is a burning topic and there has never been more debate about what is the best way to tackle it. In our experience we used the methods accepted widely as recommended treatment for the procedure and compared them. Ten patients in each group (male : female 1:4) one having viscosupplementation alone and another group with arthroscopic debridement and chondroplasty where necessary and subsequent viscosupplementation were selected and retrospectively followed up over a period of three years. Their pre and postoperative WOMAC scores were recorded and compared. The results interestingly show a significant improvement ($p < 0.1$) in WOMAC score in either group at six months and one year follow up. However there is a decline in the score at two years for the group having only viscosupplementation as compared to the group with washout and viscosupplementation but this is not significant ($p < 0.1$). Thus in conclusion either methods are acceptable in patients who have arthritis but are too young to have a total knee replacement.

Abstract no.: 37802

STEROID TREATMENT CAN INHIBIT NUCLEAR LOCALIZATION OF MEMBERS OF THE NF- κ B PATHWAY IN HUMAN DISC CELLS STIMULATED WITH TNF- α

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Steroid applications are able to repress inflammatory activity in various conditions, including herniation of the nucleus pulposus (HNP), by inhibiting tumor necrosis factor (TNF)- α , but the effects of long-term use is unknown. Here, we investigated the effect of dexamethasone (DEXA) on TNF- α -stimulated intervertebral disc cells by monitoring the expression and localization of NF- κ B in the cytoplasm and nucleus. Cultured human intervertebral disc cells were left untreated, or treated with only TNF- α , only DEXA, or with TNF- α and DEXA simultaneously. Cytoplasmic and nuclear proteins were extracted and western blotted after 10 min, 1 h, or 2 h, to evaluate expression of p50, p65, p52, and p100, protein components of NF- κ B. Immunofluorescence analysis was used to determine the subcellular localization of the proteins at 1 h. DEXA had limited effects on NF- κ B expression in TNF- α -stimulated disc cells within the first 10 min. At 1 h, DEXA prevented the TNF- α -stimulated translocation of p50, p52, and p65. After 2 h, DEXA reduced the nuclear expression of p50, p65, and p52. Thus, DEXA resulted in delayed expression of NF- κ B components and inhibited the translocation of p50, p52, and p65 to the nucleus, which would prevent expression of the corresponding genes. Therefore, following stimulation with TNF- α , transcriptional regulation of NF- κ B in disc cells is mainly mediated via the classical pathway, but also to some extent via the alternative pathway. Hence, blockade of sub-acute inflammatory changes can be achieved by early injection of steroids, whereas long-term injection of a steroid may initiate autophosphorylation.

Abstract no.: 37803

VALIDATION OF TRANSEPICONDYLAR AXIS AS AN ACCURATE MEASURE FOR FEMORAL COMPONENT ROTATION IN TOTAL KNEE ARTHROPLASTY

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Purpose:To validate accuracy of transepicondylar axis (TEA) as a reference for femoral component rotation in primary TKA.**Methods:**A prospective study done from dec 2010 to 2012 at tertiary centre.A total of 55 knees in 50 patients were included(41 females and 9 males).All cases randomly allocated into 2 groups.Group 1 navigated 16 knees and group 2 non navigated 39 knees in 34 patients.Navigation chosen for patients who were affordable and gave consent.All surgeries were carried out by one senior arthroplasty surgeon.All patients undergoing primary total knee replacement were included and all revision cases were excluded.The mean age in navigated 62 ± 6.3 years and mean age in non navigated is 67.74 ± 6.1 years.In bilateral cases both knees were operated by non navigated method.In 1 patient, navigation procedure was abandoned intraoperatively due to difficulty in marking correct axis in view of osteophytes and so was excluded from study.Intraoperative assessment of TEA was done by palpating most prominent point on lateral and medial epicondyle and passing a k wire through it in Non navigated.Postoperative TEA assessed by CT scan, condylar twist angle (CTA) and posterior condylar angle (PCA).**Results:**Mean femoral component rotation in non navigated $4.09^\circ \pm 0.61^\circ$ and $3.38^\circ \pm 0.28^\circ$ in navigated knees,both of which were within normal limit.Difference in two groups was not statistically significant.3 patients required an additional lateral release.No postoperative patellar maltracking.No postoperative infection.Post operative fat necrosis was seen in 1 patient which required exploration.**Conclusion:**TEA is an accurate reference for femoral component rotation in patients undergoing primary TKA.

Abstract no.: 37805

**OUTCOME OF ARTHROSCOPIC BANKART REPAIR USING KNOTLESS
PUSHLOCK ANCHORS : 5- YEAR FOLLOW-UP RESULTS**

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Introduction: The Bankart lesion is the most common form of labro-ligamentous injury in patients with traumatic dislocations of the shoulder and anatomic repair has been shown to significantly reduce the risk of recurrent instability. Various methods have been described each with its own advantages and disadvantages. We describe 5-year results of arthroscopic Bankart repair using knotless anchors. Patients and Methods: There were 38 patients, with involvement of the dominant arm in 28 patients. Recurrent dislocation was the most common indication in 21 patients, followed by first dislocation in 9 patients and second dislocation in 8 patients. All patients were done under general anesthesia and regional block in beach-chair position. Standard portals were used and repair done using 2.9 mm pushlock knotless anchors (Arthrex™). Patients had sling for 4 weeks and followed by a strict physiotherapy rehab protocol. Patients were followed up at 6 weeks and 3 monthly thereafter. Results: Only one patient had symptoms of recurrent instability, but was not keen on further surgery. Two patients had limitation of external rotation to 10 degrees. The mean Carter-Rowe score was 77.3. 90% of patients were happy to recommend surgery. Conclusion: Arthroscopic Bankart repair appears to produce good mid-term results for patients with shoulder instability.

Abstract no.: 37809

WARD TO CLINIC: HOW LONG IS THE JOURNEY?

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Introduction: Surgical treatment and post-operative care of patients is a continuing process from surgery to subsequent follow-up in clinics. Sometimes there are long delays for post-operative patients from ward discharge to clinic appointments. This can lead to loss of continuity of care, poor outcomes, patient concerns and complaints. Methods: A retrospective audit was done over a one month period. All patients done on the trauma list over one month period were included. Patients with fracture neck of femur were excluded as they usually did not require follow-up appointments. Data was collected from theatre database and PAS. Duration in days from date of surgery (DOS) to date of clinic (DOC) was assessed. Results: The overall mean delay from date of surgery (DOS) to date of clinic appointment (DOC), for the 109 patients during the study period was 28.26 (3-89) days. Recommendations: Introduction of a new in-patient fracture clinic referral form (Implemented). The new pink form would differentiate post-op patients, from A&E patients referred using a yellow form. Doctors would fill the new form instead of ward clerks to ensure accuracy. The new pink forms would be given directly to fracture clinic co-ordinator, thereby avoiding potential delay from ward clerks to request clinic appointments. Conclusions: The new audit pathway will ensure continuity of care of patients. It will help us assess post-operative patients, in a timely manner in the clinic. It will also help us to pick-up any post-operative.

Abstract no.: 37810

WAITING TIMES FOR RADIOGRAPHS IN ORTHOPAEDIC OUTPATIENT CLINICS: HAS ANYTHING CHANGED? (COMPLETED AUDIT CYCLE)

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Introduction: Radiographs are an essential part of treatment for patients presenting with orthopaedic conditions and fractures. However, there are concerns from patients and clinicians regarding the prolonged waiting times for radiographs in orthopaedic outpatient department (OPD). An initial audit showed that nearly 45% of patients waited over 60 minutes for radiographs. Subsequently recommendations were implemented and this has led to improvement in practice. Methods: A prospective re-audit was done over a one month period and all planned orthopaedic and fracture clinics were included. Weekend clinics and clinics at peripheral hospitals were excluded. A similar proforma was used as the initial audit, to assess the waiting times for radiographs. Results: With 463 patients during the study period, the mean waiting time was 38.03 minutes. The number of patients who had radiographs within 20 minutes improved from 14.4% to 31.5%. The number of patients who waited an hour reduced from 44.5% to 38.4%. Actions taken: The fracture clinic proforma has been modified to highlight patients who would need radiographs during their next clinic visit. This information would allow the administrators to give them earlier clinic slots. Where possible, patients living near peripheral cottage hospitals are encouraged to have radiographs there, to reduce the workload and waiting times in the main hospital. Opening of a dedicated x-ray unit in orthopaedic clinic has helped to improve our waiting times target. Conclusions: This completed audit cycle has demonstrated an improvement in reducing our waiting times for radiographs in orthopaedic OPD

Abstract no.: 37811

**LONG-TERM ANALYSIS OF ASD DEVELOPMENT IN 156 PATIENTS
POST LUMBOSACRAL CORPODESIS**

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Development of adjacent segment disease in post spinal fusion patients is increasingly reported in publications. Our study evaluated 156 post operative lumbosacral corpodesis from 1992 to January 2004 in a homologous patient group and evaluated degenerative changes above the vertebral fusion site with periodic follow-up and quality-of-life. All patients were diagnosed with spondylolisthesis with Mayerding I-II stage. Mean follow-up time was 15,7 years. Oswestry index and VAS was measured: pre and post surgery, with follow-up examinations at 1 year, 5 year and last visit. X-ray measurements included lumbar lordosis, sacrum angle magnitude, above the spinal fusion site the intervertebral angle and disc gap height. Preoperative lordosis 56.5° decreased postoperatively, but significantly increased gradually, last visit 68.9°. No significant difference found in sacral angle magnitude. Above spinal fusion site, intervertebral angle 13.1° showed no significant difference early post surgically, but gradually increased, on last visit 16.8°. The intervertebral disc gap height had no change early post-op 31.1%, but was reduced on last visit 25.6%. Pre-operative VAS 8.2 significantly decreased post op 4.2, but gradually increased at last visit 7.2. Post-operative Oswestry index decreased from 358 to 202 points, but increased on last visit 266. In conclusion, our long term follow-up study shows lumbosacral corpodesis stabilizes spondylolisthesis well, but gradually increased lumbar lordosis, intervertebral angles and decreased disc gap height above the spinal fusion. Results are supported by VAS and Oswestry index, and significantly correlates progressive development of ASD and vertebral instability, and recommend improved analytical investigations and surgical pre-operative planning.

Abstract no.: 37812

EARLY FUNCTIONAL OUTCOME AFTER MINIMALLY INVASIVE TOTAL KNEE ARTHROPLASTY USING SUBVASTUS APPROACH: A PROSPECTIVE STUDY IN THE INDIAN POPULATION

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INTRODUCTION: The mini-subvastus surgical technique avoids both quadriceps arthrotomy and patella eversion. It preserves patellar blood flow and enhances recovery.**METHODS:** The study comprised 80 patients who underwent minimally invasive total knee replacement using subvastus approach over a period of two years between 2011 and 2013. The mean follow up was 24 months (6-36 months). The early functional outcome was assessed with the postoperative ability to do straight leg raise test, knee range of motion, length of hospital stay, intra and post operative blood loss, radiological outcome and the knee society score. **RESULTS:** Out of the study group, 70 patients were able to perform straight leg raise test from first day. 90% of pts achieved knee flexion upto 90 degrees on 3rd pod while the rest achieved it by end of 5th pod. 95% of pts scored excellent in the knee society score with 5% scoring good. **CONCLUSION:** After minimally invasive TKA using a subvastus approach, patients had an excellent overall prognosis, with prompt early functional recovery.

Abstract no.: 37813

MEDICINES NOT PRESCRIBED AND HENCE NOT GIVEN?

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Introduction: Patients undergoing surgical intervention should have complete medical records including a complete drug chart. Knowledge and prescription of routine medicines and allergies is essential for optimal post-operative care. However, in many instances patients admitted for surgical intervention, particularly planned care, undergo surgical intervention without the regular medicines prescribed on the drug chart. It is a patient safety issue and could be medical negligence, if patients do come to harm. Methods: A prospective audit was done over one month period in July 2013 to assess the completeness of the drug chart. All patients undergoing planned orthopaedic and trauma surgery were included. A standard proforma was used which was completed by ODPs in anaesthetic room, prior to anaesthesia. Results: Of the 92 patients, there were 42 females and 50 males. Fifty five patients underwent planned care surgery and 38 were in-patients. Among 55 patients undergoing planned care surgery, 25(45%) had empty drug charts, 50 (90%) did not have regular medicines prescribed, 29(52%) did not have DVT risk assessment and 16(29%) did not have DVT prophylaxis prescribed. Actions taken: A dedicated junior doctor on POCU, pre-operatively to complete the drug charts. The WHO checklist to include if drug charts are complete. Surgery to be delayed, till drug charts are completed. Conclusions: Our recommendations and actions for Ghost (empty) drug charts, for patients undergoing surgical intervention, will provide a pathway for safer surgery, reduce the risks for patients and improve their outcomes.

Abstract no.: 37815

HOW COMPLETE ARE OUR COMPLETED ELECTRONIC DISCHARGE NOTIFICATIONS?

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Introduction: Electronic Discharge Notifications (EDNs) represent end of the hospital journey for the patient and beginning of his care in the community. It gives valuable information to the GP, transfer hospital or patient themselves. It is also a summary of hospital stay, complications and change of medication. Above all, it is essential to maintain continuity of care. However, there are instances when the EDNs are incomplete and this could lead to loss of continuity of care to patients and also loss of revenue to the trust. Methods: A prospective audit was done to assess the outstanding EDNs for one orthopaedic team. All pending EDNs on "consultant view" on EDN portal, since Jan 2013 were included. EDNs for other teams and inpatients were excluded. The issues on the outstanding EDNs were analysed on "ward view". The problems were logged on a standard proforma and analysed. Results: There were 13 incomplete EDNs. One EDN was outstanding for the month of Jan: 1 each for April and May, 5 for June, 1 for July and 4 for August 2013. Actions taken: To define roles in the team. To do EDN for all patients even if not admitted. To check on completed EDNs after 24 hours, to correct any pending issues. Pharmacy to access and change errors in dispensing. Conclusions: Our recommendations and actions for incomplete EDNs, would ensure continuity of care of patients on discharge and therefore improve patient safety.

Abstract no.: 37819

OSTEOTOMY NEW TREATMENT DEFORMATION OF THE PROXIMAL FEMUR

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Introduction : Nonunion and posttraumatic deformations proximal femur are difficult to treat the problem. typical is varus deformity distortionary biomechanics of the hip joint and limb shortening . Modern surgical treatment includes valgiziruyuschuyu intertrochanteric osteotomy with plate fixation or external fixation device . Osteosynthesis plate traumatic accompanied by extensive access and significant blood loss . External fixation allows dosage or stage correction after percutaneous osteotomy and provides minimally invasive fixation, but paired with maximum discomfort and inflammation in the high frequency region transosseous elements . Attractive is closed intramedullary osteosynthesis , hip. Methods : During 2010-2013 yy operated on 38 patients with nonunion femoral neck (10/ 38), trochanteric region (15/ 38) and posttraumatic deformities of the proximal femur (13 /38) . A method of correcting the shape of the proximal femur , including the use of distractor pelvis and hip - rod joystick incorporated into the neck and femoral head . Intertrochanteric osteotomy after marking drill performed percutaneously chisel. After reaching the correction carried closed intramedullary osteosynthesis of proximal femoral nail or reconstruction. Results: Minimally invasive intervention, minimal blood loss and lack of external supports provide rapid mobilization of patients. Varus deformity was corrected in all cases. In 25/38 cases achieved fusion, completely restored and the length of the lower limb support ability. In 4/38 cases of nonunion of the femoral neck was the destruction of the femoral head, which resulted in the need for replacement.

Abstract no.: 37820

RESULTS OF SURGICAL TREATMENT OF COMPLEX ELBOW FRACTURES IN THE ELDERLY: A DGH EXPERIENCE.

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Introduction: Complex elbow injuries are not uncommon in the elderly. With increasing life expectancy we are likely to see these injuries more often. These injuries in the elderly age group pose a unique surgical challenge: osteopenia and or poor bone stock, articular involvement, comminution, and medical co-morbidities to name a few. Methods: A retrospective study was done to review all patients with complex elbow injuries since 2008. Patients who were managed by the senior author and over the age of 60 were included. Data was obtained from theatre data base, operative records and medical notes. A standard proforma was used to collect data and outcome assessed using quick DASH, Mayo and Oxford elbow scores. Results: With a mean age of 73.8 (60-88) years, there were 18 patients with a female preponderance. The left arm was involved in 9 patients. Thirteen patients had complex fractures of the distal humerus and 5 patients complex fractures of the proximal ulna and radius. Three patients also had associated elbow dislocations. Three patients had elbow replacements, 9 patients plating of the distal humerus, three patients ORIF of proximal ulna with radial head replacements and one treated non-operatively. With a mean follow-up of 26.2 (1-57) months, the mean quick DASH score at latest follow-up was 12.5 (2.3-27.5), Oxford elbow 41.06 (27-48) and Mayo elbow score 85.6 (70-100). Conclusions: With proper understanding of the fracture geometry and careful pre-op planning, surgery for complex elbow fractures in the not so young patients appears to produce good functional results.

Abstract no.: 37821

ORTHOPEDIC IMPLANT FAILURE AS A CONSEQUENCE OF METAL INTOLERANCE

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In medicine, implants are widespread used mainly as orthopedic and dental implants. Although the majority of implants is well accepted, significant minority of implants is not accepted from unclear reasons. In patients in whom other causes of implant failure were excluded it is therefore appropriate to determine if they tolerate the material from which their implant is made. For evaluation of metal intolerance the Melisa test was used. Aim of the study: To minimize the risk of implantation failure after orthopedic surgery in patients after not exactly successful implantation therapy with need of reimplantation or in patients with increased risk of implantation failure due to polyvalent allergy. Material and methods: Nineteen patients were examined. In concordance with Helsinki declaration and after signature of informed consent every examined patient underwent blood sample collection for Melisa test performance. Results: In this group of patients, intolerance to nickel was the most common (68%). Intolerance to chromium was found in 58% of patients, to iron and gold in 47% of patients, to molybdenum in 37% of patients, to titanium, aluminium and cobalt in 21% of patients. Few case studies will be presented. Conclusion: On the basis of immunologic examination results more suitable implant material from available materials regarding to individual susceptibility of the patient was selected for reimplantation. Acknowledgement: The study was supported by research project PRVOUK-P28/LF1/6 of Ministry of Education, Youth and Sports, Czech Republic and by projects NT 13087-3 and NT 14164-3 of the Internal Grant Agency, Ministry of Health, Czech Republic.

Abstract no.: 37822

EARLY SURGICAL STABILIZATION PATHWAY FOR UNSTABLE ANKLE FRACTURES

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The optimal operative protocol with respect to early surgical fixation of acute unstable ankle fractures and mobilization remains elusive. Our goal was to analyze the outcome of our treatment protocol of early surgical stabilization of isolated unstable ankle fracture at a major trauma centre. All patients with isolated unstable ankle fracture were included from April 2012 to April 2013. All patients underwent a standard surgical protocol: aim for definitive surgical fixation (open reduction and internal fixation) within 24 hours but if significantly swollen then temporary stabilization with an external fixator followed by a staged definitive fixation. All patients underwent assessment of their wound, ankle range of motion, and radiographs of the fracture; they also completed the SF-36 health outcome survey at a minimum six months follow up. Results: In total 172 consecutive unstable ankle fractures were included in line with inclusion criteria. Early definitive fixation (ORIF) was achieved in 91% patients with only 9% patients required temporary stabilization. Mean time to fixation from injury was two days and in the external fixation group the time to ORIF was 8.8 days. The mean length of stay post fixation in both groups was one day. Conclusion: Early surgical fixation of unstable ankle fractures (ORIF) affords a shorter length of hospital stay, however a delay of greater than 24 hours from the time of injury subsequently increases the time to definitive fixation by up to a factor of four which demonstrates the importance of the timing of surgery for these common injuries.

Abstract no.: 37824

MENTAL CAPACITY ASSESSMENT: ARE WE UP TO THE STANDARDS?

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Introduction: There are lot of instances when patients and doctors have to make decisions regarding various interventions. Patients are encouraged to make their own decisions, but doctors have to make decisions for people who lack capacity. The Mental Capacity Act, 2005 provides a statutory framework for patients who lack capacity to make decisions. Many patients with fracture neck of femur are elderly and lack capacity. Hence assessment of mental capacity has been included as part of the routine assessment.

Methods: A prospective audit was done to assess if patients with fracture neck of femur on orthopaedic wards were assessed for capacity to make decisions. Mini-mental scores (MMTS) and adequacies of consent form 4 were assessed.

Results: There were 30 patients with a mean age of 84 (60-96) years. Three patients did not have the Mini-mental scores test (MMTS) done. Eleven patients had a MMTS of 10, 3 patients a score of 7 and four score 0. Four patients did not have mental capacity assessment form completed. Of the patients who needed consent form 4, three forms did not have best interests decision filled, three forms did not have counter-signature by a senior surgeon.

Recommendations: All patients with fracture neck of femur should have assessment of their mental capacity and MMTS. Mental capacity assessment training should be included as part of induction of doctors.

Conclusions: This audit confirms that assessment of mental capacity and completion of consent form 4 is not up to the expected standards required by Mental Capacity Act.

Abstract no.: 37828

INCIDENCE OF AVASCULAR NECROSIS FOLLOWING FIXATION OF SEVERE FRACTURE DISLOCATIONS OF THE PROXIMAL HUMERUS

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Introduction: To study the incidence of avascular necrosis (AVN) following internal fixation of severe fracture dislocations of the proximal humerus. Method: In this retrospective study, 21 fracture dislocations of the proximal humerus over 7 years (2007 to 2013) were identified using the Upper limb fracture database. All these fractures represent a true dislocation of the humeral head. 20 patients were available for study. All the fractures were fixed with humerus locking plate (Philos). Follow-up examination and radiological findings at regular intervals were recorded. Patients were reviewed prospectively for up to date radiographs and outcome scores (Oxford and Constant) Results: 20 patients, age ranging from 15-87 years (mean 59.8) were reviewed. Mean follow up was 3 years, with a minimum follow-up of 12 months for all cases. Fracture union was confirmed in all 20 cases. Humeral head collapse occurred in one case at 6 months post-fixation due to AVN (5%). 7 patients had post fracture dislocation sequelae, requiring further surgery. Mean Oxford score at final presentation was 32.7 with range of 26 to 48 and mean Constant score was 54.2 with range of 30 to 85. Conclusion: Severe fracture dislocations of proximal humerus are a challenge to treat. Our study demonstrates good union rates with a 5% AVN rate that should to be seen on the background of a severe injury to the proximal humerus.

Abstract no.: 37829

RESULTS OF REVISION TOTAL HIP REPLACEMENTS: MEDWAY EXPERIENCE

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Introduction: Revision hip surgery can be challenging to surgeon, but rewarding to patients. It is technically demanding and needs expert surgical skills, careful pre-op planning, specialist extensive kit and could be associated with higher complication rate and less successful than primary joint replacements. It is not the same as replacing a worn out mechanical part, because of problems like bone loss, osteolysis, infection, shortening, soft tissue contractures and muscle weakness. Patients and methods: There were 60 patients with a mean age of 73.6 (53-93) years. 51 patients were ASA II-III grades. Recurrent dislocation was the most common indication. Results: 56 patients underwent single stage revision and four patients two stage revision surgery. The mean duration of surgery was 86-449 (237) minutes. Extended trochanteric osteotomy was done in 14 patients. Bone graft was used in 23 patients. Post-operatively they were managed by a multi-disciplinary team. The mean length of stay was 4-90 (17.3) days. Nearly half the patients required post-operative blood transfusion. Three patients had intra-operative fractures of the greater tuberosity or calcar. Four patients had superficial wound infection which resolved with antibiotics. Conclusion: Revision total hip replacement appears to give good quality of life to patients, but surgeons should be wary of the increased complication rate.

Abstract no.: 37831

WRIST PAIN DIAGNOSTIC MAXIMS

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Wrist pain is one of the most frequent complaints in orthopedic departments all over the world. Though x-ray and MRI simplify the diagnostics the problem of misdiagnostics and subsequent improper treatment is quite important. One of reasons of that is underestimation of the patient's complaints, especially after the radiological investigation which didn't reveal any bone changes. The other is the lack of understanding of the wide range of reasons leading to wrist pains by many orthopedic surgeons. We developed the algorithm of clinical diagnostics of the wrist pain syndrome. First it's necessary to classify the reason for the condition: we subdivide them into three groups: mechanical – it could be acute and chronic injuries of ligaments and bones, aseptic necroses, tumors etc. The second group consists of neurologic disorders, including peripheral nerves and vertebral and central nervous system pathology. The third group is the systemic disorders: different endocrine imbalance, gout, systemic inflammatory syndrome etc. The detailed history may help very much. Also the specific movements and sport activity often lead to specific injuries as the chauffers' fracture, golfer's fracture, boxers' fracture. The second step in the algorithm is a good anatomy knowledge of orthopedic surgeons. Any pain site corresponds to one or another anatomic formation, so it's quite easy to define that the pain is localized in scaphoid, or triangular fibrocartilage complex or the hook of the hamate etc. Also there are a lot of simple specific tests. Thus the proper clinical investigation helps to set the right diagnosis

Abstract no.: 37832

PREDICTORS OF EARLY DISCHARGE AFTER TOTAL KNEE REPLACEMENT

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Advances in total knee arthroplasty (TKA) have increased the number of patients able to go home after surgery. However, it is often difficult to predict which patients can safely go directly home after surgery. This study evaluated factors associated with patient disposition and predictors of early discharge (LOS < 2 days) to home after TKA. A Series of 800 consecutive TKA underwent surgery between January 2011 and December 2011 in one institution. 743 were unilateral consecutive primaries TKA which met inclusion criteria. 57 bilateral knees were excluded. Predictors were used that included social, medical and surgical variables. Binary logistic regression was used for statistical analysis. 366 patients (50.2 %) met criteria for successful completion of FT protocol. Factors associated with successful of completion were age < 65 y/o OR 1.15 95 % CI (1.03 - 1.3), ASA score OR 29 95% CI (1.7 – 498) and surgical approach (midvastus vs parapatellar) OR 0.12 CI (0.0 – 0.4). Factors associated with failure to complete FT protocol and discharge directly to home included Charlson Comorbid Score OR 0.4 CI (0.17 – 0.97) , BMI OR 0.62 CI (0.44 – 0.87) and Medicare insurance (p<0.01). Social factors such as patient living alone, 2 stories homes, the availability of help at home, did not have any influences in the results of FT. Young Healthy patients (lower ASA and Charlson Comorbiity Score) undergoing midvastus approach TKA, are more likely to successfully complete a FT protocol and can be safely discharged to home.

Abstract no.: 37838

PROPHYLACTIC PROXIMAL FEMUR SCREW FIXATION

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Objective. The evaluation of prophylactic proximal femur screw fixation. Materials and methods. We applied prophylactic femoral neck screw fixation in 76 patients (54 female, 22 male) aged older than 65 with different severity of osteoporosis. The cause of each case was low-energy trauma. 27 patients with subcapital femoral neck fracture underwent total hip arthroplasty (Biomet Magnum 2a); 49 patients with intertrochanteric fractures underwent proximal femoral nailing (Gamma-3, Stryker). Contralaterally we applied prophylactic femoral neck screw fixation under the C-arm control. We used 2 parallel cannulated screws. The results and discussion. The post-op period in all patients was not complicated. The day after the operation the patients were allowed partial weight bearing with crutches. The control examination after 2 and 4 years did not reveal any fractures on contralateral side. Conclusions: The prophylactic femoral neck screw fixation in elder patients with proximal femoral fractures reduce the risk of fractures on the contralateral side.

Abstract no.: 37840

TOTAL HIP ARTHROPLASTY IN PATIENTS WITH POST TRAUMATIC COXA VARA

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Objective: The evaluation of total hip arthroplasty in patients with varus proximal femor deformity acquired after previous injuries. Materials and methods. We operated on 80 patients, applied 80 arthroplasties on hips with acquired varus deformity. Coxa vara in 50 patients was caused by the previous injury, and in 30 patients – by concomitant diseases. In every case we apply the total hip endoprosthesis Biomet-magnum 2a. Results and discussion. In every patient we obtained good and satisfactory results. The full functional rehabilitation was registered by 6-12 months after the surgery. The more difficult and prolonged rehabilitation period was observed in patients with degenerative diseases and in patients with long and ineffective post-injury rehabilitation period. Conclusion. Total hip arthroplasty in patients with post-traumatic coxa vara allows to achieve a good functional result and restore the lost function in injured extremity.

Abstract no.: 37841

HIP ARTHROPLASTY AS ALTERNATIVE TREATMENT OF UNSTABLE TROCHANTERIC FRACTURES

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Introduction: The purpose of this work is to present hip arthroplasty (bipolar, total) as a reasonable alternative to osteosynthesis in comminuted trochanteric fractures in elderly persons. Methods: During 2011 - 2013 in our hospital have been performed hip arthroplasty to 21 patients with trochanteric fractures. The mean age was 70 years old, 7 men and 14 women. We classified the patients by type of fracture: Evans 3 - 6 cases, Evans 4 - 7 cases, Evans 5 - 8 cases. In the case of 6 patients have been used total hip arthroplasty and in 15 cases bipolar hip arthroplasty. In 11 patients were used an additional fixations as cerclage and tension wiring. Hardinge anterolateral approach has been used with the patient in lateral decubitus. For the clinical evaluation were used the Harris hip score. Results: The patients were followed up at 2, 6, 12 months after surgery and 10 of them up to 2 years. There was no case of a deep infection, with loosening of the prosthesis or aseptic cement loosening of the prosthesis. The average Harris hip score at one year was 80 points (60-89). Hemiarthroplasty is the treatment of choice in infirm patients with multiple comorbidities and cognitive impairment. Conclusion: Cemented total hip replacement comparative to osteosynthesis in comminuted trochanteric fractures in elderly persons is more recommended and provides early good functional results. Help to prevent any related tromboembolic complications caused by prolonged hipomobilization.

Abstract no.: 37842

THE SYRINX CAVITY SHUNTING PROCEDURES

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Disturbances spinal liquorodynamics are one of rather often arising mechanisms of development of violation of the CNS function, have universal character at the congenital and acquired pathology of cranio-vertebral transition with the presence of an occipito-cervical stenosis, development of a post-traumatic or idiopathic syringomyelia, a degenerative stenosis, tumor defeats. Use of the modern methods MRI of diagnostics liquorodynamics, the developed techniques of the somatosensory evoked potential (n.trigeminus), motor evoked potential (m.diaphragma) of disturbances conductivity research the cranial part of a spinal cord allowed to propose the differential approach to surgical treatment of 51 patients with disturbances spinal liquorodynamics with the features of the use of valves, arrangements of shunting system and performance of decompressive, stabilizing or reconstructive operations. Cysterno-vertebral or cysterno-peritoneal shunting with use of valvate systems of high and middle pressure is executed in 38 cases of the most expressed development of a syringomyelia. Partial or complete recovery of liquorocirculation, regress of neurologic symptoms is reached for 25 patients from a 30 having manifestations of deficiency. Insufficient efficiency of surgical treatment was caused by irreversible defeat of structures of CNS, at a vertebro-spinal injury - by the concomitant neurotrophic violations and the combined damages.

Abstract no.: 37843

POSTOPERATIVE CHANGE IN MENISCAL SIZE IN CONCURRENT MENISCUS REPAIR WITH ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION

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Introduction: Meniscus repair can restore meniscal function that transfers the axial compressive force to the circumferential tensile strain. However, few reports investigate the relationship between concurrent meniscus repair with anterior cruciate ligament (ACL) reconstruction and postoperative meniscal position. The aim of this study was to evaluate medial meniscus size and clinical results in patients who underwent ACL reconstruction and concomitant all-inside medial meniscus repair. **Methods:** Nineteen patients underwent ACL reconstruction and concurrent medial meniscus repair for a peripheral longitudinal tear using the Fast-Fix meniscal repair system. We determined medial tibial plateau length (MTPL) and width (MTPW) by radiographic images. The Lysholm score, anteroposterior instability, meniscal healing, and magnetic resonance imaging (MRI)-based medial meniscal length (MML) and width (MMW) were evaluated. Correlations between the MRI-based meniscal size, radiographic measurement, and height were investigated. **Results:** All the patients showed complete healing of the repaired meniscus in arthroscopic evaluation. The Lysholm score and anteroposterior instability were significantly improved. A better correlation was observed between MMW and MTPW than between MML and MTPL. Concurrent all-inside medial meniscus repair with ACL reconstruction significantly increased MML percentage (%MML, 100 MML/MTPL) but did not affect MMW percentage (%MMW, 100 MMW/MTPW). **Conclusions:** Concurrent all-inside medial meniscus repair with ACL reconstruction had satisfactory clinical results. %MML was increased by concurrent medial meniscus repair without affecting %MMW. Our results suggest that medial meniscus repair associated with ACL reconstruction may restore meniscal function by adjusting the anteroposterior length of the torn medial meniscus.

Abstract no.: 37846

**ADVANCED PRACTICE PHYSICAL THERAPIST IN ORTHOPAEDICS.
RESULTS ON ACCESSIBILITY OF CARE AND RESISTANCE TO ITS
IMPLEMENTATION IN A COMMUNITY HOSPITAL IN CANADA.**

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Objectives: Majority of patients newly referred in orthopaedic must wait several weeks in order to be seen by an orthopaedic surgeon (OS). Between 50%- 80% of these patients do not require surgery. Advanced Practice Physical Therapist (APP) diagnoses, triage and conservatively treat patients. We evaluated the implementation and performance of the APP for the assessment and orientation of the patient as a new model of care. Methods: Three distinct practices between the APP and the orthopaedic surgeon were implemented: autonomous (OS in the operating room available upon request), in parallel (APP and OS providing care independently), or collaborative (both would provide care to all patients). We compared diagnosis and clinical management decision (surgery vs conservative treatment and/or further investigation requirements) to determine the level of agreement between APP and OS. We evaluated gains in efficacy, accessibility of care and resistance from administrators, patients and clinical staff. Results: Agreement between APP and OS in the diagnosis and clinical management decisions remained high (>91%). Both autonomous and parallel practices resulted in gains in accessibility of care, but with greater resistance from patients and the staff. Collaborative practices resulted in gains in efficacy only, with less resistance to acceptance from the staff and the public. Conclusion: APP are able to safely and efficiently manage patient's with a musculoskeletal disorder. This new model of care could have a major impact on health care accessibility. OS are able to dedicate more time to complex cases and to add surgery time to their schedule.

Abstract no.: 37858

MINIMALLY INVASIVE SURGERY FOR SIMPLE BONE CYSTS USING HYDROXYAPATITE CANNULATED PIN

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Purpose: This study evaluated the outcome of minimally invasive technique using a ceramic hydroxyapatite cannulated pin (HA pin) for simple bone cysts (SBCs). **Methods:** Since 1998, we have treated sixty-two patients with SBCs with continuous decompression by inserting HA pin after curettage and multiple drilling (Group 1, 36 patients) or with artificial bone filling after curettage (Group 2, 26 patients). Among these patients, a retrospective analysis was performed for factors implicated in the recurrence using log-rank test and COX proportional hazards analysis. **Results:** Overall recurrence-free survivals were 84% with the mean follow-up of 31 months. Remaining or developing of the cysts was seen in 8 patients after the surgery and seven of them underwent additional surgery. Recurrence rate was significantly lower when the cysts seen in the bone out of long bone, in the place distant from epiphysis, and in the patients with 12 years of age or more (log-rank test). Multivariate analysis indicated that the age under 12 years was independent risk factor for the recurrence. There was no significant difference between Group1 and 2 in the recurrence rate, however, mean operating time was significantly short in Group 1. (57.5 minutes vs 94.5 minutes) **Conclusion:** Our results suggest that cannulation using HA pin is a less invasive technique with a high cure rate. However, the recurrence rate was still high if the cysts were located in long bone, remained adjacent to epiphysis or occurred in children younger than 12 years. Further analyses including its etiology are crucial.

Abstract no.: 37859

RESULTS OF USE OF TANTALUM CUP-CAGE CONSTRUCT FOR ACETABULAR BONE DEFECTS

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Tantalum Cup-cage Construct is a technique to address massive acetabular defects. We describe the results of cup cage construct used for acetabular revision at our centre. 12 cases of failed total hip arthroplasty were revised using a tabecular metal cup-cage construct on the acetabular side. Seven out of these cases were second stage reconstruction for a septic failure of THA. A cementless femoral stem was used in all of these patients. The patients were assessed clinically and radiologically at 6 monthly intervals. The average age of the patients was 68 (range, 62-74). There were 8 males and 4 females. The mean follow-up was 3.2 (2-5) years. The mean Harris Hip Score improved from 34 points preoperatively to 80 points at the last review. There was no migration, or, loosening or osteolysis around the acetabular cup and cage at the time of final follow up and all acetabular components were well osteointegrated. All femoral stems also showed evidence of osteointegration. In the face of a severe acetabular osseous deficiency incapable of providing support to the acetabular component, additional fixation of a cage over the tantalum shell helps in anatomic restoration of hip centre and provides stability and support to the tantalum cup till osteointegration. Tantalum cup-cage construct can be used to address massive acetabular bone deficiencies.

Abstract no.: 37862

THE COURSE AND BRANCHING PATTERN OF THE MEDIAN NERVE IN THE FOREARM

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Determination of the course, distribution and branching patterns of the median nerve in forearm is aimed. Fifty forearms of 25 (23 male and 2 female) formaldehyde fixed cadavers were dissected and the course and branching patterns of the median nerve were recorded. Atypical course of the median nerve sliding over the medial epicondyl was found in 6 of 50 forearms (12 %). The terminal motor branches to the forearm muscles were formed very earlier before leaving the nerve trunk and could be followed macroscopically for long distances till the proximal sites. Individual variations of branching of these nerves were very often and the most often 6 variation patterns were present in 33 of 50 forearms. Martin Gruber anastomosis was detected in totally 6 forearms (12%); one cadaver bilaterally, on left side in one, on right side in three forearms unilaterally. Complex motor functions specific to human hand are very important for functionality and life quality of the individual. Maintenance of these functions is an important issue in routine clinical practice mainly for practitioners in orthopedics, neurology and physical therapy and rehabilitation. The advance in medical technology needs more details than the classical anatomy textbooks contain and detailed anatomical studies of the forearm and the median nerve maintain their importance.

Abstract no.: 37863

ALLOGRAFT PROCUREMENT AND ROLE OF BONE BANK IN THE PRESERVATION OF STERILE ALLOGRAFT BONE FOR TRANSPLANTATION.

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Inadequate bone stock is a serious problem in the setting of modern orthopaedic Procedures. The standard alternative to autograft is bone-bank fresh frozen allograft bone. With the development of its use in the reconstruction of massive skeletal defect or reconstruction of the joint, demand for allograft bone increased in modern orthopaedic practice. Obtained from cadaveric donors, allograft is processed by standardized tissue-banking sterilization and distribution protocols. In addition, the processing, preservation and sterilisation of bone may influence its biophysical properties. Objective: To disseminate the knowledge regarding procurement and preservation sterile bone allografts for transplantation to recipients when indicated without the risk of disease transmission. Procurement from a brain dead organ donor is the most likely means of obtaining a long bone for orthopaedic use. Careful Donor Screening of the allograft for any transmissible diseases. Bacteriological testing of the graft during harvesting and just before transplantation must be done. The bone bank freezer must have battery backup with double door and in built temperature monitoring device. There should be proper and meticulous record keeping of both donor and recipient. Safety audits must be conducted regularly. Large bone segments can be further processed into smaller units for their use in other clinical indications. A successful use of allograft is an interaction between three parties. An expert surgeon, needy patient and a working bone bank. Surgeon selects and screens the donor. It then prepared and bone bank provide safe and sterile bone allografts for transplantation to recipients.

Abstract no.: 37866

MODIFIED KOCHER AND LANGENBECK APPROACH IN THE MANAGEMENT OF COMPLEX AND NEGLECTED ACETABULAR FRACTURES

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Combined standard anterior and posterior surgical approaches may be required for adequate exposure of fractures of acetabulum. In the present study we aimed to evaluate quality of reduction, radiologic and functional outcome of patients admitted with acute and neglected transverse; and other acetabular fractures operated either through modified Kocher and Langenbeck approach alone or in combination with ilio-femoral approach. Mean age was 30.07 years in 20 patients. The distribution of fractures was : 10 transverse, 4 both column, 3T-shape, 1 transverse with posterior wall, 1 posterior wall with posterior column, 1 anterior wall and posterior hemi-transverse. The average operative time was 184 minutes for combined approach and 110 minutes for modified Kocher langenback approach. Average blood loss during the operation was 415 ml and 70 ml respectively. The postoperative reduction was graded as anatomical in 15 patients, imperfect in 4 and poor in one. One patient had avascular necrosis of the head of the femur and one sciatic nerve palsy. The final follow up radiographs were graded as follows: excellent in 15, good in 4, and poor in one patient. The functional outcome was excellent in 15 patients, good in 3 patients, fair and poor in 1 patient each. Modified Kocher and Langenbeck approach may be a good alternative to standard Kocher-Langenbeck when combined with an anterior surgical approach. The procedure is less invasive, shortens operative time, minimises blood loss and decreases the fatigue of the surgeon.

Abstract no.: 37867

HIP BIOMECHANICS FOLLOWING MID HEAD RESECTION

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The Mid Head Resection arthroplasty employs a strategic osteotomy through middle of the femoral head has been proposed as an alternative option in young patients requiring hip arthroplasty but considered unsuitable for hip resurfacing. We examined the postoperative radiographs to assess whether Mid head resection restored the biomechanical parameters of the hip. The femoral offset, the cup offset and limb length were all restored to within 5 mm of the contralateral hip in 20 out of 28 cases overall and in 15 of 18 hips with neutral positioning of the femoral component. There was a small overall reduction in the mean femoral offset by 2 mm and an increase in mean limb length by 2 mm. Valgus positioning of the femoral component resulted in a reduction in femoral offset and lengthening of the limb. Mid Head Resection restores femoral offset and limb length reliably if the osteotomy level is planned and executed precisely and femoral component is placed in neutral position.

Abstract no.: 37870

COMPARISON OF INTEGRA TM PYRODISK TM AND TRAPEZIECTOMY FOR BASAL THUMB ARTHRITIS IN A NON SPECIALIST CENTRE

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Introduction: Various techniques for the surgical management of thumb carpometacarpal (CMC) joint arthritis are described in the literature. Aim: The aim of this study was to see if there is any difference in the outcome following Integra TM Pyrodisk TM compared to trapeziectomy with and without LRTI. Methods: Over the last 4 years Integra TM Pyrodisk TM replacement was done in 8 patients. A similar age and sex matched patients who underwent trapeziectomy and trapeziectomy with LRTI. The APL segment was used to perform a dynamic suspension arthroplasty by looping it around the FCR tendon. Both these group of patients were immobilized in a back slab for a period of two weeks and the patients who underwent Integra TM Pyrodisk TM were put in pop cast for 4 weeks. Patients had radiographs as indicated postoperatively, DASH, PRWHE score and VAS score. Results: Mean follow-up was 12.6 months. Post Trapezoictomy, The average preop DASH score was 47 and PRWHE score was 67 and postop DASH score 16 and PRWHE score was 24. Post Trapezoictomy + LRTI, The average preop DASH score was 51 and PRWHE score was 71 and postop DASH score 17 and PRWHE score was 22. Post Pyro disc, the average preop DASH score was 49 and PRWHE score was 77 and postop DASH score 17 and PRWHE score was 21. The average post-operative grip strength was 9.5 kg. Both tip and key pinch between thumb and index finger averaged about 50% that of normal subjects.

Abstract no.: 37879

RESULTS OF USE OF SROM STEM IN TREATMENT OF ARTHRITIS IN DYSPLASTIC HIPS.

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We report the results use of modular S-ROM stem in patients who had arthritis secondary to dysplastic hip. 30 patients underwent a hip replacement using the S-ROM femoral stem. The average age of the patient at surgery was 47 (range 23–74 years). They were followed up for an average of 5.2 years (range 3-7 years), clinical scores recorded by a clinician other than the surgeon and radiographs were examined by an independent radiologist. 10 patients required a significant autologous bone graft while 8 patients required femoral shortening at the time of their THR. The average pre-op Harris Hip Score was 35 and 81 at final follow up. None of the S-ROM stems were loose or needed revision, at latest follow-up. 5 hips had osteolysis in Gruen zone 1, 2 hip had osteolysis in zone 7, and one hip had osteolysis in zone 1 and 7. There was no evidence of osteolysis around or distal to the sleeve. The S-ROM stem had good results in patients who had arthritis secondary to dysplastic hip.

Abstract no.: 37880

ORTHOBIOLOGICS - EMERGING MANAGEMENT OPTION FOR EARLY OSTEOARTHRITIS KNEES.

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Growth Factors Rich Plasma (GFRP) or Platelet Rich Plasma (PRP) is an emerging treatment therapy called "" Orthobiologics"" . Alfa granules in platelets contain numerous growth factors which enhance tissue recovery dramatically by catalyzing the body's natural healing response. PRP also attracts Mesenchymal Stem Cells, which differentiate into variety of cell types during tissue repair processes & induce the production of different cell types as the need of the parent tissue. 100 cc of patient's blood is double centrifuged in the refrigerated blood component separator centrifuge giving about 15 cc of buffy layer having GFRP. Since Feb. 2010, more than 600 knees of different grades of osteoarthritis have been injected with GFRP and the results compared with other different treatment options. 1. Knee Lavage Vs Autologus GFRP Injection (200+200 cases) 2. Knee Lavage + Autologus GFRP Injection in 1 knee Vs GFRP Injection only in other knee (200+200 cases) 3. Visco-supplimentation Vs Autologus GFRP Injection. (20+20cases) Results were analyzed up to 2 year as per VAS scale. Knee Lavage and GFRP Injection have almost similar efficacy at 1 year, but at 2 years Knee lavage is a better option. GFRP therapy has shown better results compared to visco-supplimentation at 2 year. Combination of knee lavage with GFRP injection showed much better results than GFRP or Knee lavage alone. It's concluded that Knee Lavage followed by GFRP injection is the most cost effective therapy & gives the best long term results which are inversely related to the grade of osteoarthritis.

Abstract no.: 37883

A COMPARATIVE ANALYSIS OF SLIDING HIP SCREW AND CEPHALO-MEDULLARY NAIL; VALUE OF REDUCTION, LATERAL WALL INTEGRITY AND TIP APEX DISTANCE IN PER-TROCHANTERIC FRACTURES

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This study covers the comparative analysis of Sliding hip screw and Cephalo-medullary nail; value of reduction, lateral wall integrity and tip apex distance in per-trochanteric fractures. The world-wide incidence of hip fractures has been estimated to rise from 1.26 million in 1990 to 2.6 million by 2025 and 4.5 million by the end of 2050. Based on current UK population trends, the incidence of hip fractures will likely to rise from 86,000 to 120,000 by 2015. Sliding compression hip screw and plate system and Cephal-omedullary nail are considered gold standard in the treatment of per-trochanteric fractures. The failure of fixation of extra capsular fractures neck of femur results in increased morbidity to patients and has a major cost implication for health care system. In our level one trauma centre we on average treat 450-500 fracture of hip per year and 35% are per-trochanteric. We use sliding compression hip screw and Cephalo-medullary nail as implants of choice. We have performed an analysis of all the patient data from hospital hip data base for the past two years and identify patients with extra capsular neck of femur fracture treated with sliding hip screw or Cephalo-medullary nail. Inclusion criteria for study remained that patients who had the surgery and either sliding compression hip screw or Cephalo-medullary nail (PFNA) , patients who had attained mobilization and had a minimum follow up of 3 months, all readmitted patients for any complication requiring surgery due to implant related complications.

Abstract no.: 37888

EARLY DETECTION OF OSTEOPOROSIS BY DUAL ENERGY X-RAY ABSORPTIOMETRY

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Summary An early detection of osteoporosis through DEXA procedure will not only improves the disease management practices but also would help in impeding national productivity losses by mass screening and awareness. **Objective** • To measure efficacy of DEXA procedure in early detection of osteoporosis and prevention of its complications. **Methods** The research was encompassed case series observational study and was designed to confirm the bone mineral density by dual energy x-ray absorptiometry (DEXA). The duration of study was three years from November 2010 to October 2013. Subjects aged between 30 (when the risk of osteoporosis is low) to 60 (when osteoporosis is almost sure to be found). **RESULTS** Three hundred thirty patients were evaluated there were 23 (6.96%) male and 307 (93.03%) female. Normal male were 09 (39.10%), osteopenia 11 (47.80%) and osteoporosis 3 (13%). Normal females were 72 (23.50%), osteopenia 140 (45.60%) and osteoporosis 95 (30.90%). P-value was more then 0.005 and not significant. Mean age was 48.73, minimum 30, maximum 60 and SD 7.247. Population category distribution was 243(76.6%) from urban and 87(26.4%) rural. In urban areas normal were 56(23%), osteopenia 38(43.70%) and osteoporosis 74(30.50%). In rural areas normal 25(28.70%), osteopenia 38(43.70%) and osteoporosis 24(27.60%). P-value was 0.567. Out of 330 there were 81(24.54%) normal, 98 ((29.69%) osteoporosis and 151 45.75%) osteopenia. **Conclusion** Osteopenia was the most common diagnosis mostly in young age group and early diagnosis of this problem can help prevent osteoporosis.

Abstract no.: 37895

RESULTS OF USE OF SHORT METAPHYSEAL CEMENTLESS FEMORAL STEMS

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We present the short term results of short metaphyseal cementless stem(''Proxima'TM, Depuy) . 30 patients in age group (25-40yrs), 20 males,10 females were implanted with a short metaphyseal cementless stem (''Proxima'TM, Depuy) and cementless acetabular cup. The average follow up was 4.5 years. Clinical evaluation was done using Harris Hip Score, Radiological evaluation and Bone Mineral Density were evaluated at 2weeks, 6 months, 12 months and yearly thereafter. A new zonal method suitable for short stem was used for radiological evaluation.The mean Harris Hip score improved from 48 to 90 at final follow up. All the stems showed evidence of osseointegration at one year follow up. There was no decrease in bone mineral density around the stems.The Short Metaphyseal cementless femoral stem is a bone conserving as well as bone preserving option for young patients

Abstract no.: 37898

OUTCOMES OF INTERNAL FIXATION WITH PERI-LOC PROXIMAL HUMERUS LOCKING PLATE FOR PROXIMAL HUMERAL FRACTURES

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Aim: To assess the post-operative patient reported outcomes and complications in patients who underwent open reduction and internal fixation using the PERI-LOC proximal humerus locking plate. **Methods:** Patients who underwent open reduction and internal fixation with the PERI-LOC proximal humerus locking plate were identified from the theatre management system. The radiographs of the patients were reviewed and the fractures were classified according to Neer's classification. Oxford shoulder score and quick DASH score was obtained for each patient. **Results:** Thirty patients were identified between December 2007 and June 2013. The median age was 64 years (range 34-86 years). Average length of stay was 3.37 days. There were 63% females and 37% males. Fifty eight per cent of patients had their right shoulder operated on and 42% had their left shoulder operated on. Forty two per cent of patients had a 2-part fracture, 42% had a 3-part fracture and 16% had a 4-part fracture. The average oxford shoulder score was 38.16 ± 9.73 (mean, SD). The average quick DASH score was 24.11 ± 22.38 (mean, SD). One patient required a transfusion post-operatively. There were no other immediate post-operative complications. There was no reported wound infection requiring antibiotics or plate-related complications. Three patients underwent arthroscopic capsular release for post-operative stiffness. **Conclusion:** The post-operative Oxford Shoulder Score and quick DASH score showed patients returned to normal day-to-day function with little impairment after operative fixation with the PERI-LOC proximal humeral locking plate with minimal complications.

Abstract no.: 37900

VERTEBRAL COLUMN DECANCELLATION IN KYPHOTIC DEFORMITY OF CRIES DORSOLUMBAR SPINE

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Introduction:kyphosis is a known complication of tuberculosis of spine.Different surgical procedure is mentioned for correcting kyphotic deformity.The puspose of this study is to evaluate the result of VCD in healed caries spine with kyphotic deformity.Total number of patients was 27.The average follow up was 25 months.Method:After midline incision and subperiosteal dissection bone was exposed from tip of spinous process to the tip of transverse process.Desired screws were placed.Base of tranverse process was nibbled of to get view of pedicle.It was was identified and with soft dissection lateral surface of body was get exposed. the desired vertebra was decancellated with help of curette and burr keeping the medial border intact.The same procedure was repeated on other side.lamina and facets are resected as per amount of deformity.After putting the rods on both side compression was achieved.finally bone graft is placed and closure is done.patient was given brace for 4 to 5 months. result:the average preoperative kyphosis was 55 degree and postoperative 25 degree.Bony union achieved in all. There was temporary deterioration of neural status in five.no major vascular complication.NO significant hardware problem.Three pts. had superficial and one had deep wound infection but all settled.One pt. had dural tear.Conclusion:The VCD is a good option for correcting a post tubercular deformity of dorsolumbar spine.

Abstract no.: 37902

CEMENTLESS TOTAL HIP ARTHROPLASTY IN PATIENTS WITH AVASCULAR NECROSIS OF THE FEMORAL HEAD: SHORT TERM RESULTS

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Introduction: The outcome of cementless total hip arthroplasty (THA) in patients with femoral head avascular necrosis (AVN) is encouraging in terms of improvement in function and quality of life. However, the rate of reoperation and complications were reported higher in some studies. **Methods:** 43 patients with end stage AVN underwent 61 THA through direct anterior approach between January 2010 and January 2012. There were 40 female and 3 male in this cohort. The mean age of patients at the time of surgery was 34.5 years. 20 patients underwent simultaneous bilateral THA. Three patients underwent THA in one hip and core decompression in the contralateral hip. All patients received cementless acetabular and femoral components. **Results:** The average Harris hip score (HSS) improved significantly from 42 preoperatively to 91 postoperatively at the latest follow up (mean follow up: 18.5 months). All patients were satisfied with the result of surgery. No early postoperative complication was observed except for wound dehiscence in one patient that was managed non-operatively. There was no reoperation or revision in this group of patients. **Conclusions:** Our results showed that uncemented THA in patients with femoral head AVN, at least in short term follow-up, is a successful operation which improve the patient's quality of life measures and is not associated with higher rate of complications or reoperation. Further study is needed to determine the long-term outcome.

Abstract no.: 37905

"TIME INTERVAL FOR REVISION SURGERY FOLLOWING RECURRENT LUMBAR DISC HERNIATION" THE DEMOGRAPHIC INFLUENCE

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Background: The diagnosis and management of recurrent disc herniation is associated with increasing cost especially if it involves surgical intervention. The recurrent disc herniation could be multifactorial and hence we looked at the influence of patient demographics on the time interval between primary and revision surgery for recurrent disc herniation. Objective: To evaluate influence of patient demographics with time interval of Revision Surgery. Material and Methods: We reviewed 140 patients who underwent revision surgery for recurrent lumbar disc herniation between 2011-2013. We excluded patients who had revision surgery within 6 months and after 5 years following primary surgery. Results: There were 41 male and 35 female patients with an average age of 43.5 years and BMI of 28.8 kg/m² (range: 17.9-49.9). 17/76 patients (22%) had BMI less than 25 Kg/M² whilst 59/76 (78%) had BMI more than 25 Kg/M² with 54% of these group had BMI more than 30 Kg/M². The mean time interval between primary and revision surgery was 19.12 month (range 6.13- 59.53). A general linear model regressing the effects of age and BMI showed no significant association with the time interval (p=0.589 for age; p=0.133 for BMI). The effect of gender was 0.242 (95% CI: -0.002, 0.485), corresponding to a 27% increase in time interval for females compared to males (95% CI: -0.2%, 62.4%). Conclusion: The time interval between consecutive operations for recurrent disc herniation has no strong correlation between age and BMI but borderline significance with gender of patient.

Abstract no.: 37906

TOTAL HIP ARTHROPLASTY THROUGH DIRECT ANTERIOR APPROACH: AVOID COMPLICATIONS.

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Introduction: There are many claimed advantages for total hip arthroplasty via the direct anterior (DA) approach, including quicker recovery and return to unassisted ambulation, along with reduced soft tissue damage, surgery time, pain, and risk of dislocation with early elimination of hip precautions. However, steep learning curve could be considered as a disadvantage for this approach. **Methods:** 292 THA was performed in 221 patients. 28 patients received simultaneous bilateral THA. There were 86 men and 135 women in this cohort. The mean age of patients at the time of surgery was 45.6 years (15 -80). The mean BMI of our patients was 28.4 kg/cm². All patients were followed prospectively for any complications. The mean incision time was 58 minutes for unilateral and 118 minutes for bilateral cases. Only three patients in bilateral group required blood transfusion. **Results:** The average follow up for this cohort was 124 months. Harris hip score and SF-36 were improved significantly and the WOMAC was significantly lower in postoperative period. However, we had 8(7%) early complications including 2 dislocation(1.8%), 2 infections(1.8%), 2 greater trochanteric fracture(1.8%) and two stem penetration. All of these complications occur in first 50 cases **Conclusions:** We conclude that DA approach is associated with better early outcome after THA in terms of faster rehabilitation; however, surgeons should notice its steep learning. Surgeons need to be appropriately trained through visitation and cadaveric course before doing this approach to minimize potential complications

Abstract no.: 37912

TOTAL HIP ARTHROPLASTY IN NEGLECTED CHILDHOOD DISLOCATIONS AND OLD HEALED SEPTIC HIPs

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Neglected childhood dislocations resulting from trauma and old healed septic hips, although are a rare cause of coxarthrosis, lead to extreme morbidity and painful hips in adolescence. The major difficulties encountered are acetabular dysplasia, high hip centre, decreased neck shaft angle with increasing dysplasia, excessive femoral neck anteversion, a short femoral neck, narrow femoral canals, a high riding trochanter, soft tissue contractures and bony deformities of the femur, either due to previous surgery or disease sequelae. Eighteen patients (age 17-46 years, mean 22 years) having painful or unstable hips were operated between 2005-2010 in our centre. females (n=10) male (n=8). Neglected childhood trauma to hip (n=12) and sequelae of old septic arthritis to the hip (n=6) was the cause of arthritis. Pain was the major reason operated in 15 patients. Hartofilakidis classification to assess the dysplasia as low (n=8), high (n=3) and dysplastic (n=7). average follow-up was 3.8 yrs (range 2-7) yrs. Harris hip scores improved from 50 to 90 points. There were no hip dislocations, heterotrophic ossification, sciatic or femoral nerve palsy, infection or peri-prosthetic fracture. there were no aseptic revisions. Acetabular cup was placed at a high hip center in three cases. Average femoral shortening needed was 2.6 cm (range 2-4.5cm). Average leg length discrepancy was 4.5cm (2.5-6cm) pre-operatively & av 1.2 cm (0.5cm -2cm) post-operatively. Conventional THR may achieve good results in low dysplasia. High grade dysplasias may require straighter, narrower and tapered stems. THR in secondary osteoarthritis after childhood hip sepsis if performed after a period of quiescence achieves equivalent results

Abstract no.: 37913

IS THERE ANY RELATIONSHIP BETWEEN HOPELESSNESS AND MYOFASCIAL SHOULDER PAIN IN WOMEN?

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Introduction: One of the major complaints of patients consulting with primary healthcare providers is shoulder pain. The most common causes of this problem are subacromial impingement syndrome, and myofascial pain produced by myofascial trigger points. The purpose of this study was to evaluate the hopelessness status of women with myofascial shoulder pain using Beck Hopelessness Scale and to compare them with women suffering from traumatic shoulder pain. Methods: Beck Hopelessness Scale was used to detect the hopelessness level. Data were collected with face to face interview technique by a nurse in this prospective study. Hopelessness status of 30 women with myofascial shoulder pain (group M) and 30 women with traumatic shoulder and ankle pain (group T) were evaluated. Age, occupation, education level, economical status and dissension between parents were also examined. Results: The average scale evaluated in the study was 7.4 for (myofascial group) and 3.8 (for traumatic group) and the difference between groups was statistically significant ($p=0.02$). There was a relationship between low education level, low income, dissension between parents and the hopelessness in myofascial group. Hopelessness status of women with myofascial shoulder pain should be evaluated because they may need social and psychological support in addition to medical treatment to overcome their complaints.

Abstract no.: 37914

TRADITIONAL BONESETTERS AS PART OF THE HEALTH SYSTEM IN SUDAN

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Introduction: Traditional bone setting is an ancient practice in the developing countries without any governmental supervision or medical guidance. TBS are quite popular in Sudan, while many fractures do heal properly with traditional treatment, bonesetters often do not appreciate the dangers of tight splintage and wrong procedures. OBJECTIVES: To assess knowledge and practice of traditional Bonesetters (TBS) on basic orthopedic care principles and their willingness to be trained, to incorporate them in the healthcare delivery system. METHODS: Analytic cross sectional study in which an interview based questionnaire was used. Internal consistency of the questionnaire was determined by employing Cronbach's alpha which was found to be 0.702. RESULTS: The Study showed that 72% Have poor knowledge, 19% Have average knowledge and only 9% Have good knowledge about basic principles on orthopedics. 53% Were found to have poor practice, 31% Were found to have bad practice and 16% Have good practice. There's Significant association between knowledge/practice and there's no association between level of education and knowledge. Majority Of the bonesetters agreed to be trained as well as cooperate with healthcare professionals. CONCLUSION: The study mainly highlights the importance of the knowledge of the basic orthopedics care to maintain a safe practice, and that traditional bonesetters are willing to be trained as well as cooperate with healthcare professionals. RECOMMENDATIONS: Extensive studies among bonesetters in all states are recommended. Further research is required regarding the acceptability of the modern health practitioner to the idea of integration of traditional bone setting practice with the Modern health practice.

Abstract no.: 37916

**RETROSPECTIVE ANALYSIS DEMONSTRATES NO ADVANTAGE TO
OPERATIVE MANAGEMENT OF DISTAL ULNA FRACTURES
ASSOCIATED WITH DISTAL RADIUS FRACTURE**

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Background: Distal ulna fractures are often found in conjunction with distal radius fractures. They have no clear consensus on their optimal management. The purpose of this study is to compare the radiological and clinical outcomes of operatively and non-operatively treated distal ulna fractures associated with distal radius fracture. Methods: Patients treated 5-year period in our trauma center for wrist fracture were identified and medical records were analyzed. Twenty three patients met inclusion criteria for the study. Mean follow-up was 28 months. All of the patients were female and mean patient age was 72 years. All radiuses were fixed by volar locking plate. Nine ulnas were treated by plate osteosynthesis, 5 ulnas were treated by wire or screw fixation, and 9 ulnas were treated non-operatively. Data were collected on demographics, injury mechanism, fracture pattern, type of treatment, radiological findings and clinical outcomes. Radiological findings, including ulnar variance, were evaluated. Clinical outcomes were compared between groups using the quick Disabilities of the Arm, Shoulder, and Hand scores; active range of motion; grip strength. Results: There were no significant differences between the groups in the quick Disabilities of the Arm, Shoulder, and Hand scores. In wire fixation group, 3 patients had become ulnar non-union. Active range of motion had been limited in plate osteosynthesis group compared with non-operative group. Conclusions: In this population distal ulna fractures can be successfully managed non-operatively when they occur in combination with distal radius fractures.

Abstract no.: 37917

**ACCURACY OF PEDICLE SCREW PLACEMENT USING SPINAL ROBOT -
EXPERIENCE FROM FIRST 50 PATIENTS**

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Objective of Study : The study was conducted at Nova Orthopaedic & Spine Hospital, New Delhi to evaluate accuracy and safety of Spinal Robot for pedicle screw placement. Methods. 50 patients posted for spinal surgery requiring Pedicle Screw fixation were prospectively enrolled in the study. Each patient underwent a CT Scan before surgery. Planning for all pedicle screws was done on Robotic software one day prior to surgery. The robot was mounted to the spinous process and the system moves to the exact entry point according to the trajectory of the surgeon's preoperative plan. After the procedure all patients received routinely a postoperative CT Scan. Screws placed exactly within the pedicle were evaluated as group A, screws deviating 2 mm were evaluated as group B, 2mm to 4mm(group C); 4mm to 6mm(group D); and more than 6 mm (group E). Results. A total of 352 pedicle screws were placed. Measurements derived from postoperative CT scans demonstrated that 96.4% of the screws fell within the safe zone while remaining 2.7% of the screws breached between 2 and 4 mm, while only 0.9% deviated by more than 4 mm from the pedicle wall. No permanent neurologic deficit was observed in any of the operated patients . Conclusion : Robot significantly increases accuracy and safety for pedicle screw fixation. Limitation. Our sample was small consisting of 50 patients only. Most of our cases were operated using clamp disposable kit. Most of the pedicle screws were in lumbar spine

Abstract no.: 37919

DORSAL MINIMAL ACCESS INTERNAL FIXATION OF BONY TIBIAL AVULSIONS OF THE POSTERIOR CRUCIATE LIGAMENT; SURGICAL TECHNIQUE AND RESULTS

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Purpose: The purpose of this paper is to describe a minimal access technique for open fixation of displaced bony tibial avulsion fractures of the posterior cruciate ligament attachment. **Methods:** The technique involves direct reduction and screw fixation through a midline dorsal approach between the two heads of the Gastrocnemius using a 2-3 cm incision along the posterior knee crease carefully placed using fluoroscopic assistance. The length of the incision and surgical time were recorded. Clinicoradiological outcome and patient specific functional outcome scores were assessed at 1-year post surgery. **Results:** 14 males and 8 females underwent the procedure. All patients were followed up for 1 year. The mean length of the incision was 2.6 cm (range: 2 – 3.5 cm). The mean surgical time was 40 minutes (range: 25 – 50 minutes). No infections were seen. All fractures had united on a routine CT scan taken at 6 months. No screw loosening, breakage or back out was seen. The mean IKDC score was 86.4 (83.9 – 90.8) at 1-year post surgery. **Conclusion:** Internal fixation of tibial bony PCL avulsions can be safely performed using the minimal access technique through the dorsal midline approach achieving satisfactory clinical and functional results.

Abstract no.: 37924

INACCURATE TARGETING OF PROXIMAL SCREWS IN A RECONSTRUCTION NAIL CAUSED BY SOFT TISSUE TENSION: THE CAUSE, PREVENTION, AND TIPS FOR INTRAOPERATIVE DETECTION

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Introduction: The goal of this study was to identify the underlying cause of screw malalignment while using the targeting device of 2 reconstruction nail systems. Our hypothesis was that excessive soft tissue tension on the drill/guide sleeve can cause a misalignment of the targeting device. **Material and Methods:** The Expert Asian Femoral Nail (A2FN) and Proximal Femoral Nail Antirotation (PFNA) reconstruction nail systems were evaluated to compare the characteristics of each nailing system and their reactions to soft tissue tension at the time of proximal reconstruction screw placement. Soft tissue tension was simulated by placing a fulcrum under the distal drill sleeve and exerting a load on the targeting device via the addition of weights. The occurrence and degree of guide malalignment was determined while gradually increasing the weight. **Results:** When soft tissue tension was simulated on the drill/guide sleeve of the A2FN, the drill sleeve deviated from the proximal screw hole proportionally to the weight applied and the K-wire guide passed outside of the nail at a weight of 7 kg. However, the drill sleeve of the PFNA was aligned exactly to the center of nail axis and the K-wire passed cleanly through the proximal locking hole regardless of weight applied. **Conclusions:** Inaccurate guidance of the screw targeting device can be caused by soft tissue tension. Thus, the authors recommend that careful attention should be placed on minimizing the soft tissue tension at the time proximal reconstruction screws are placed while using the targeting device of the A2FN system.

Abstract no.: 37926

**PERCUTANEOUS NEGATIVE SUCTION DRAINAGE OF KNEE
HEAMARTHROSIS**

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Blisters commonly occur in patients suffering from acute fractures around the knee joint. Localized tissue hypoxia and cleavage injury are the main mechanisms which produce these blister. These blisters alter the management and definitive repair significantly. They frequently lead to skin breakdown which, may result in chronic ulcers, skin necrosis, infection, prolonged hospital stay and VIC. In certain cases, patient may loose not only a limb but life as well if not managed emergently. We share our experience of treating a 62-year-old male. The patient sustained knee injury two days back and was admitted in another hospital where patient developed multiple blisters all around the knee and with distal ischemia. The surgeon advised fasciotomy. Patient preferred taking LAMA. He came to us for second opinion and for the further management. This patient was taken for emergency percutaneous negative suction drainage of the knee heamarthrosis under sedation and local anesthesia. Limb was splinted with a posterior plaster slab. The next day, fracture was fixed with external fixator. The blisters started to recede after 2 days of drainage. After 5 days, the depressed fracture was elevated and gap was filled with bone graft. All blisters healed within two weeks of injury. After learning from this case, we follow the dictum that prevention is better than cure. We treat all intra articular knee injuries with emergency percutaneous negative suction drainage with an aim of preventing blisters and as a therapeutic option if blisters have developed. Since then we have treated 12 such patients.

Abstract no.: 37927

BEST PRACTICES IN INTRAOPERATIVE NEUROMONITORING (IONM) IN SPINE DEFORMITY SURGERY: DEVELOPMENT OF A CHECKLIST TO OPTIMIZE RESPONSE

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Introduction: This project undertook the development of a consensus-based checklist to guide surgeon responses to IONM changes for patients with stable spines and the development of a consensus-based guideline for optimal IONM practices in the US. **Methods:** Following a literature review of risk factors and recommendations for responding to IONM changes, four surveys were administered to 21 experienced spine surgeons and one neurologist experienced in IONM use. Areas of equipoise were identified and the nominal group process was used to determine items to be included in the checklist. The authors re-evaluated and modified the checklist at three face-to-face meetings, including a period of clinical validation using a modified Delphi process. The group was also surveyed on current IONM practices at their institutions. This information and existing IONM position statements were used to create the IONM optimal practices guideline. **Results:** Consensus was reached for the creation of five checklist headings containing 26 items to consider in the response to IONM changes. Consensus was reached on five statements for inclusion in the optimal practices guideline; the final guideline promotes a team approach and makes recommendations aimed at decreasing variability in neuromonitoring practices. **Conclusion:** The final products represent the consensus of a group of expert spine surgeons. The checklist includes the most important and high yield items to consider when responding to IONM changes in patients with a stable spine, while the IONM guideline represents the group consensus on items that should be considered optimal practice among IONM teams with the appropriate resources.

Abstract no.: 37931

TOTAL HIP ARTHROPLASTY FOR THE JEHOVAH'S WITNESSES

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The Jehovah's Witnesses was a new religion of the Christianity denomination that began in the United States. Now it has more than 7.9 million followers worldwide. Total hip arthroplasty can be challenging in Jehovah's Witnesses, because they refuse to receive transfusions of allogeneic whole blood or its constituents as well as transfusion of preoperative autologous blood donation. We reported our experiences with the strategies to prevent blood loss and to avoid transfusion for these patients who underwent total hip arthroplasty. Our strategies has four points. If the patient had anemia, we treated it at first. We used tranexamic acid on the operation field to reduce blood loss and if the patient accepted we availed intraoperative blood salvage. We consulted with the anesthesia before the operation and decided a border line of blood loss depending on individual cases. We informed the patient that we would stop the operation if intraoperative blood loss exceed it. Databases from our institution were reviewed to identify 21 patients (25 hips) who were Jehovah's Witnesses and had a primary total hip arthroplasty between 1992 and 2013. There were 19 women and 2 men who had a mean age of 64.6 years, and a mean follow-up of 65 months. The mean intraoperative blood loss was 123 ml. There were no complications occurred in perioperative period without allogeneic transfusion. There was one revision case for aseptic loosening of the cup. Our study demonstrated safe and transfusion-free total hip arthroplasties for Jehovah's Witness patients who underwent our strategies.

Abstract no.: 37935

ANATOMICAL VARIATION OF ABDUCTOR POLLICIS LONGUS IN INDIAN POPULATION: A CADAVERIC STUDY

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Introduction: Many authors have reported the anatomical variation of abductor pollicis longus (APL) around the wrist and its association with de Quervain tenosynovitis, first carpo-metacarpal arthritis and trapezio-metacarpal subluxation. From Indian subcontinent, there is only one original article and few case reports on the variability of APL tendon insertion. Material and Methods: Fifty formaldehyde preserved cadaveric wrists were dissected to look for the anatomical variation of APL in Indian population. Results: The APL was found with single tendon in 2, double in 31, triple in 8 and quadruple in 8 extremities. A maximum of six tendon-slips were found in one cadaveric wrist. There was variation in the insertion of APL tendons. In 44% cases (68 of 126 tendons), the tendons were inserted into the base of the first metacarpal bone. This was followed by insertion into the trapezium in 42% cases (52 of 126 tendons). Conclusion: Bi-tendinous APL is commonly observed on the dorsal compartment of wrist in Indian population and these tendon-slips are commonly attached to the first metacarpal base and trapezium. This variation must be understood by the Indian Orthopedic surgeons as the response to treatment of de Quervain tenosynovitis and reason for first carpo-metacarpal arthritis can be dependent on this anatomical variation.

Abstract no.: 37941

EVALUATION OF 1 YEAR FOLLOW UP RESULTS OF 3RD GENERATION POSTERIOR DYNAMIC STABILIZATION SYSTEM (TRANSITION) FOR THE LUMBAR SPINE

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Objective of Study: The study was conducted to evaluate the clinical results of 3rd Generation Posterior Dynamic Stabilization system(Transition) in patients with lower back disorders. **Summary of Background Data.** The dynamic neutralization system for the spine is a nonfusion pedicle screw stabilization system, which was developed in an attempt to overcome the inherent disadvantages of rigid instrumentation and fusion. **Materials and Methods:** A total of 53 patients were enrolled in the study. Each patient underwent instrumentation with “Transition” system between 1st March 2012 to 28th February 2013. The primary indication for surgery was degenerative disc disease with associated “instability. All patients were prospectively followed up with a questionnaire for a period of one year from the date of intervention. The data was tabulated and analyzed at one year follow up. **Results:** At the end of 1-year follow-up period, around 80% patients reported improvement in one or more symptoms as indicated by VAS scores. There were 4 implant failures (pedicle screw breakage in 3 and flexible rod breakage in 1). **Conclusion:** The results of the present study indicates that in properly selected patients, 3rd Generation flexible system (Transition) is a useful tool as 80% patients reported improvement in one or more of their symptoms. **Limitation of Study :** The study has a small subset of patients with a follow up of around one year. Further follow up and more number of patients are required to compare the efficacy of the implant with its predecessors.

Abstract no.: 37947

VERSATILE PRP IN DIFFERENT ORTHOPAEDIC CONDITIONS

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Platelet Rich Plasma is an emerging treatment therapy, called “Orthobiologics” or Regenerative Therapy. PRP contains 5 fold increase in the platelets and bioactive growth factors which amplify the natural healing process. PRP attracts Mesenchymal stem Cells which can differentiate into variety of cell lineage. During the last 5 years, we have used PRP therapy in variety of Orthopaedic conditions with great success. Patient’s 100 ml blood is double centrifuged under specific conditions and platelets are separated and ready for use. Activation of platelets is relied upon its direct contact with the collagen at the injury site in vivo or its contact with the fibrin and thrombin of the clot at the surgery site. I am presenting my study in cases of Non-Unions, Non Specific Restrictive Shoulder Arthropathy and in cases of Early Osteoarthritis Knees. We compared the results of Bone Grafting v/s PRP plus bone grafting in non-unions of long bones in 20 cases each and concluded that, in combination group, the union was enhanced by 4-6 wks. Intra-articular & sub-acromial injection of PRP in shoulder in restrictive shoulder arthropathy in elderly showed encouraging results when compared to conventional Steroid injection therapy. My majority study is in cases of early Osteoarthritis knees. I have injected more than 600 knees with Autologous PRP in different grades of O/A knees and compared the results with saline Knee Lavage and hyaluronic acid injections. We have concluded that PRP injection following saline knee lavage gives best results as far as pain relief is concerned.

Abstract no.: 37948

EVALUATION OF EIGHT PLATES AS GROWTH MODULATION IN THE MANAGEMENT OF ARTICULAR MALARTICULATION

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During growth from birth to adulthood child's knee alignment varies from varum of 15 deg at birth to valgum of adult value ie. 6-7deg at 7 years via neutral alignment at 18-20 months. Maximum valgus is at 3-4 years of age which is 120 deg. Eight plate acts on principle of tension band & hence called tension band plate. Thus, it acts as guided growth system. the objectives of this study were 1. To calculate the total correction in TFA joint orientation angle, MAD & implant angles (i.e. total correction in deformity) 2. To know the rate of correction of deformity per month. Total 15 patients were undertaken.; out of these 5 were having genu varum deformity and 10 were having genu valgum deformity. Lateral Distal Femoral Angle (LDFA) corrected from 74.790 ± 1.02 deg to 87.860 ± 1.97 deg with the rate of 0.592deg per month. Same LDFA for varum deformity improved from 100.830 ± 0.98 deg to 91.000 ± 1.50 with the rate of 0.415deg per month. Medial Proximal Tibial Angle (MPTA) for valgus deformity changed from 98.930 ± 1.500 to 89.140 ± 0.80 deg with the rate of 0.48deg per month. For varus deformity it improved from 76.670 ± 1.43 deg to 100.830 ± 0.980 rate of 0.548deg per month. We removed eight plate when MAD came to 0 and TFA was around 7degree of valgus. deformity correction around knee joint by eight plate application is not only very effective but also a very safe method giving early and good results.

Abstract no.: 37950

MCKEE TYPE IV CAPITELLAR FRACTURES FIXED USING THE OLECRANON OSTEOTOMY APPROACH

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Capitellum fractures are rare elbow injuries accounting for less than one per cent fractures around the elbow. McKee et al described a coronal shear fracture of the capitellum with the fracture line extending medially to include a substantial portion of the trochlea. This distinct injury was described as a type IV fracture. The significance of the type IV fracture is the potential instability of the elbow joint because of involvement of the lateral trochlear ridge and the difficulty in accurately visualizing and reducing the medial extent of the fracture. Eight McKee type IV capitellar fractures were treated with the olecranon osteotomy approach. All fractures were fixed using headless screws. Posterior impaction was identified in a high percentage of cases. This prevents the fracture fragments from fitting into their bed. At the latest follow up, all fractures had united. Reoperations were required in three patients. One patient required hardware removal from the olecranon. Two patients required arthrolysis for stiffness. Two patients had excellent outcome, four good outcome, and two poor outcome. The olecranon osteotomy approach allows good visualization of the fracture fragments as well as correction of impaction.

Abstract no.: 37951

TOTAL KNEE ARTHROPLASTY IN POSTTRAUMATIC ARTHRITIS

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Introduction: Surgical treatment for posttraumatic arthritis secondary to distal femur or proximal tibia periarticular fractures is uncommon and complex. Total knee arthroplasty is a valid option. Objectives: functional and radiological review of TKA after post traumatic arthritis. Methods: Retrospective review of 14 patients who underwent TKA for posttraumatic arthritis, between 2008 – 2012. 11 female and 3 male. Average age: 56 years. 11 were secondary to proximal tibial fracture and 3 to distal femur; 3 were extraarticular and 11 were intraarticular fractures. Initial treatment was non surgical in 2 patients and open reduction and internal fixation in 12 patients. Average numbers of surgeries before arthroplasty 2, 19 (1 – 7). Patients were followed with the Knee Society Score (KSS) as well as radiological follow up. Average preoperative range of motion was flexion 60° (45 – 90) and extension 15° (0 – 90). Total KSS 30 (20 – 40). Results: Average follow up 30 months (15 – 50). ROM improved flexion 95° (60 – 120) and extension 5° (0 – 10). KSS for pain 35 (25 – 50) and functional KSS 45 (25 – 50). Total KSS 80 (50 – 95). Mechanical axis was restored in all cases. Complications 21%. Conclusions: TKA after posttraumatic arthritis is a technically demanding surgery. Although complications rate is higher than TKA for the treatment of primary knee osteoarthritis, it is a good procedure for complex reconstructions, relieves pain and improves patient functional outcomes.

Abstract no.: 37953

A RARE SOFT TISSUE TUMOR OF THE FOREARM

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Clinical presentation of our Patient: 16yr old male came with left forearm swelling and restriction of movements for 2 months, insidious in onset and gradually progressive with intermittent pain. On examination: 6x4 cm swelling dorsal aspect of the forearm, ovoid in shape, firm to hard consistency, forearm supination and pronation were restricted. Blood investigations revealed elevated ESR and total count. Investigations: based on X-ray and MRI we came to the conclusion of a soft tissue sarcoma. Proceeded with a J needle biopsy. Biopsy reported? fibromatosis. Surgical Plan: wide excision with appropriate reconstruction in stages. (bridge plating of ulna defect with extensor mechanism reconstruction) Final diagnosis biopsy revealed a leiomyoma of the soft tissue with bony involvement. Conclusion: Leiomyoma is a benign tumour of the smooth muscles. Commonly seen in the genito-urinary / gastrointestinal tract, rarely in the skin and even more rarely in the soft tissues. More common in female genital tract. Bony involvement of soft tissue leiomyoma is not known. leiomyoma of soft tissue is rare. Bony involvement of the same has not been reported to the best of our knowledge. This case is presented for its rarity.

Abstract no.: 37958

**TENSION BAND WIRING FOR PROXIMAL FEMORAL VARUS
OSTEOTOMY FIXATION IN CHILDREN**

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Objective: A stable and safe fixation is a concern for proximal osteotomy of the femur in children, and the tension band wiring is a simple and eligible option. The study's purpose is to evaluate outcomes and bone remodeling after using the tension band wiring technique to fixate proximal femoral varus osteotomies in children. **Methods:** The study enrolled 20 patients who underwent femoral varus osteotomy to treat Legg-Calvé-Perthes disease and other causes of necrosis of the femoral head. The mean patient age at the time of surgery was 7.4 ± 2.3 years (4.3-13.8y), and the follow-up period averaged 10 ± 4.3 years (4.7-20.8y). Changes in the neck-shaft angle and its evolution over time were analyzed through radiographs obtained preoperatively and during the follow-up. Two observers measured the neck-shaft angle independently, and the reliability was assessed using intraclass correlation coefficients (ICCs). **Results:** ICC analysis showed good reliability. There was significant reduction in the neck-shaft angle ($p < 0.001$) between the preoperative and immediate postoperative periods, with an estimated difference of 14.3° . Between the immediate postoperative and early postoperative periods, the estimated difference was 2.1° , which indicated a significant increase in the neck-shaft angle ($p = 0.003$). Between the early postoperative period and the final evaluation, there was a significant increase ($p < 0.001$), with an estimated difference of 7.0° . No implant failures or other complications were observed, but one case of peri-implant femoral fracture occurred more than 17 years post-surgery. **Conclusions:** The tension band wiring technique proved to be a simple and effective method for fixating proximal femoral varus osteotomy in children.

Abstract no.: 37959

" FUNCTIONAL STUDY OF CEMENTED TOTAL HIP ARTHROPLASTY BY MOORE'S APPROACH "

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Pain in the hip joint is one of the most important causes in disabling human locomotion. Total hip arthroplasty represents the greatest single advance in modern orthopaedic surgery. Replacement of damaged cartilage surfaces with artificial bearing materials improve function and relieve pain. The present study was conducted to study functional outcome and the complications associated with cemented total hip replacement. **Methods:** In this study 20 patients, with 20 diseased hips, aged between 45 and 75 years, with diseased and destroyed hips were treated with cemented total hip replacement by Moore's approach, in our institution and followed up for a period of 6-24 months. **Results:** Patients were evaluated both functionally and radiologically. Functional evaluation with Harris hip score (modified) showed excellent results in 14 hips, good in 5 hips, fair in 1 hip. No poor results were noted. Radiological evaluation at the latest follow up of all cases showed no signs of aseptic loosening or implant failure. **Conclusion:** This study shows that cemented total hip replacement is a cost-effective procedure in elderly patients . With proper patient selection, adequate planning, armamentarium and meticulous surgical technique, we have achieved results comparable to other authors. In a nutshell, in our institute, this procedure done with utmost technical precision has provided us with very good clinical results. Functional results are excellent and complications are minimal if done with utmost care and precision. Long term studies are necessary to study the late complications and to prove the efficacy of the implants and procedure.

Abstract no.: 37976

CHÊNEAU TYPE BRACE TREATMENT POSSIBILITIES IN PATIENTS WITH SURGICAL IDIOPATHIC SCOLIOSIS SPINE DEFORMITIES

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The purpose was to evaluate Chêneau type brace treatment effectiveness in patients with IS surgical spine deformities. Materials and methods. Clinical and radiological data of 283 patients with IS were studied. Thoracic deformity type was in 122 patients, thoracolumbar - in 79, combined - in 82. The initial value of pathological arcs was 41-135 degrees. Brace treatment was started at the age of 5-16 years, all patients had active spine bone growth. Duration of brace treatment was from 3 to 12 years, it was stopped at the final stage of spine bone growth. Follow-up term of patients - 2-10 years. Results and discussion. The analysis showed that the Chêneau type brace treatment is an effective method of treatment for IS in growing patients with initially surgical spinal deformities. In 157 (56 %) patients with initial arcs of 41-71 degrees under brace mode by the bone growth completion was obtained stable spine deformity correction, which did not require surgical treatment, since the value of the arcs does not exceed 40 degrees, and the spine had sustained frontal and sagittal balance. In the remaining 126 (44 %) cases (initial arc 41-135 degrees) the brace therapy allowed to restrain deformity process in the patient general physiological development and perform scheduled surgical treatment stage in the most favorable period of spine bone growth completion (these patients were successfully operated at the age of 16-20 years).

Abstract no.: 37978

MEGA TUMOUR OF HUMERUS. SECOND LARGEST MUSCULOSKELETAL TUMOUR IN THE WORLD.

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Large musculoskeletal tumours are not a rarity but it is unusual to see mega tumours of more than 10kgs in size because mostly the people come for the treatment before such size is reached. Guinness world record for the largest bone tumour belongs to India. The documentation is 16.5 kg bone tumour removed from the right thigh of 35 years male at Himalyan Institute of Medical sciences Dehradoun on 100 02. The tumour was 45 cm long and 30 cm wide. I am reporting a case of such mega tumour (Chondrosarcoma) of humerus in a 40 years male. The size was 40cm long and 28 cm wide with circumference of 87cm. Patient was carrying this bulk for last 3 years without any generalized complication, but with a paralyzed limb. X-ray showed complete destruction of upper half of humerus with calcification in the tumour mass. CT- Angio showed normal blood flow in vessels with the tumour mass pushing the thorax medially. There appeared involvement of scapula also. No systemic complication was reported. DE bulking of tumour mass was done by four quarter amputation. We removed the clavicle, scapula and whole of the upper limb. Post-Operative period was uneventful. The tumour weighed 16k. At 3 years follow up, patient is healthy without any sequel of tumour and working in a govt. setup. The case is being presented highlighting the ignorance of the society towards the treatment need for such problems and because of the unusual size and weight of tumour.

Abstract no.: 37980

COTREL-DUBOUSSET TYPE METHODOLOGY APPLICATION IN CORRECTION OF SUPEREXPRESSIVE IDIOPATHIC SCOLIOSIS SPINE DEFORMITIES

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The purpose was to identify CD type methodology opportunities and efficiency in patients with IS spine deformities. Materials and Methods. Clinical and radiological data of 42 patients with IS are studied, which were operated at the age of 17-48 years by CD methodology. Spine deformity initial angle arcs were 121-157 degrees. Thoracic deformity type were in 33 cases, thoracolumbar - 4, combined - 5. «Bending test»-radiographs showed arcs value 96-128 degrees (15-22 % functional correction). All patients underwent training spine traction by Cotrel method before surgery for 2-4 weeks. «Test elongation»-radiographs showed arcs value 86-109 degrees (21-32 % traction correction). All patients performed spine dorsal mobilization, correction and stabilization with the use of implantable titanium construction «BelCD» in combination with autologous bone spondylodesis. The follow-up period after surgery was 1-14 years. Results and discussion. All patients rated the result of surgical treatment only positively. On anterior-posterior spine radiographs after surgery deformity arcs angle was 58-86 degrees; the arc reduce total value has reached 54-70 degrees with the front correction effect of 32-56%. Significant improvement of the spine sagittal profile was showed on lateral radiographs. Pathologic arcs apical vertebral derotation of 14-18% defined in the horizontal plane. MRI data showed the spinal cord dural sac compression reduction. Clinical status illustrated significant improvement of trunk proportionality with frontal and sagittal balance recovery. Also, in addition to orthopedic indicators, the somatic cardiorespiratory and abdominal-digestive status improvement and stabilization marked with underweight normalization.

Abstract no.: 37985

THE ROLE OF ACE INHIBITOR IN FRACTURE HEALING: AN EXPERIMENTAL STUDY

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Background: Hypertension and osteoporosis are two major chronic diseases affecting the person in the later stage of life. They are associated with disturbances in calcium metabolism, including increased urinary calcium, vitamin D insufficiency and decreased bone mineral density. Hence, there is an increased risk of fractures in this population. In recent times, tremendous research is being done on various modalities for augmenting fracture healing. Angiotensin Converting Enzyme (ACE) inhibitors have shown promise as an effective therapeutic option for this complex situation. Tissue renin angiotensin aldosterone system (RAAS) exists in tissues that have the capacity for both the local generation and action of Angiotensin-II. Local RAAS has been implicated in inflammation, regeneration, apoptosis, cell growth and regeneration. It plays a deleterious role in actions of hypertension and diabetes. Hence, ACE inhibition could be a possible novel therapeutic modality in those with fractures, so that it can accelerate the fracture healing process. **Methods:** In a wistar rat tibia fracture model, animals were treated with the ACE inhibitor ramipril or vehicle only. Fracture healing was analysed by radiology and histology after 4 weeks of treatment. **Results:** Ramipril treatment improved periosteal callus formation and bone bridging of the fracture gap although it was not significant statistically. In this study, we intended to combine histology and radiology in analyzing the outcome on fracture healing. **Conclusions:** We show for the first time that inhibition of ACE is not significantly capable of accelerating bone healing and remodeling.

Abstract no.: 37990

FLUROSCOPIC REMOVAL OF A STUCK DRAIN WITH ILIZAROV WIRE

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Accidental suturing of negative suction drain during deep closure of incisional wound is a rare complication. It is a very embarrassing situation for the surgeon and the patient to know that the drain is caught in a deep suture. The only way out is to take the patient to OT for removal of drain under anesthesia. The author has an experience of removing a stuck drain in such a situation after a spine surgery by cutting a suture indirectly by ilizarov wire which was passed through drain tube. The suture was cut indirectly and the drain was pulled out without leaving any part of it. This procedure is done under fluoroscopy and sedation. The purpose of this care report was to share the experience and do the procedure as mentioned if the need arises. Usually the traditional way was to open the wound again and remove the drain requiring additional risk of anesthesia and the chances of increased infection due to opening of a surgical wound because it is difficult to know where the drain is caught in the suture.

Abstract no.: 37993

INFERIOR DISLOCATION OF HIP - A CASE SERIES

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Inferior dislocation of the hip is the rarest among the types of hip dislocation. Very few cases have been reported in the anglophonic literature. Most of the reported cases earlier involved the pediatric age group. No single case series could be found in the literature. Surprisingly, we came across 4 cases with a varied age profile (range 10 to 56 years – Mean age 33.8years) which could be considered as inferior dislocation of the hip. The patients complained of pain and kept the thigh flexed and abducted. The diagnosis was confirmed by radiographs which revealed the long axis of the femur varying in alignment with respect to the spine from parallel to an angle almost 90 degrees away from the axis. Closed reduction was successful in all of them, either under sedation or under general anaesthesia. Skin traction for a period of 6 weeks was used in all the cases and the follow up of these cases revealed excellent results. We present the details of these cases along with a detailed review of literature discussing the various modes and mechanisms of injury producing inferior dislocation of the hip.

Abstract no.: 37994

THE INDIVIDUAL APPROACH TO CORRECTION LEG LENGTH WITH TOTAL HIP REPLACEMENT

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Introduction: Among the many problems of hip replacement surgery, the operated limb length compensation is not paid enough attention. According to the literature and our own experience, the difference in the length of the limbs on the value of more than 3 cm can lead to severe compensatory- adaptive changes of the musculoskeletal system and end persistent human anatomical and functional disorders . Objectives: The aim of this study was to optimize the length of the limb at the hip joint in a shortening of more than 3 cm in view of the objective and subjective factors to improve treatment outcomes. Methods: During the studied 109 patients before and after total hip arthroplasty with the initial shortening of the lower limb more than 3 cm with the Harris hip score and the "" Questionnaire patients' expectations ,"" in which patients reported their main hope of the operation: pain relief, restoration of movements, alignment limb length, the overall increase in the ""quality of life"". Results: A study of more than 95 % of patients with limb shortening eliminated happy outcome of joint replacement, although in some patients significantly decreased range of motion and pain appeared on the front of the thigh. During the analysis of the "" Questionnaire patient expectations "" before the operation was heavily weighted towards the restoration of limb length in certain age groups, and in the postoperative period, the majority of patients would prefer a better mobility.

Abstract no.: 37996

BILATERAL INFERIOR DISLOCATION OF HIP - A CASE REPORT

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Inferior dislocation of hip is the rarest among the types of hip dislocation. Very few cases have been reported in the anglophonic literature. Most of them earlier involved the pediatric age group. Surprisingly, we came across a 30-year-old patient with a bilateral inferior hip dislocation. He had sustained a road traffic accident and the attitude of both hip joints was flexion and abduction. The diagnosis was confirmed by radiographs which revealed the long axis of the femur at an angle of 110 and 100 degrees respectively away from the axis. Closed reduction under sedation was successful. Skin traction for a period of six weeks was advised and the follow-up revealed excellent results. We present the details of this case along with a review of literature discussing the various modes and mechanisms of injury producing inferior dislocation of the hip.

Abstract no.: 37997

THE USE OF HIP PROTECTOR DEVICE INCREASES THE CONFIDENCE OF WALKING AND REDUCES THE RISK OF HIP FRACTURES IN ELDERLY PATIENTS

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Introduction: Hip fracture is known to cause high mortality and morbidity with loss of independence. The incidence is increasing with the expanding elderly population. A study was conducted to determine the effectiveness and the compliance of the patient with hip protector device. Methods and Methodology: One hundred and fifty elderly people (age >65 years irrespective of gender) were enrolled in the study and were given the Hip Protector Device (Designed by Indian Institute of Technology, New Delhi, India) with prior counseling. The outcomes were measured in terms of Fall efficacy score, Elderly mobility scale, Katz index of Independence in Activities of Daily Living and Mini-Mental State Examination. They were followed up telephonically at 3 months and hospital visit at 6 months and one year. Result: There overall compliance for wearing the device was good with increasing confidence in walking as evidenced by significant reduction in fall efficacy score as well as Mini-Mental State examination and significant improvement in Elderly mobility scale as well as Katz Index of Independence in Activities of Daily Living. There was significant reduction in the incidence of hip fractures who have had falls. Conclusion: The hip protector device increases the confidence in walking and preliminary reduction in incidence of hip fractures. However better patient education and proper counseling is a must. Key words: Hip protector device, Hip fracture, Mini-Mental State Examination, Elderly Mobility scale, Fall Efficacy score, Katz Index of Independence of activities of Daily Living.

Abstract no.: 37998

**FOUR-YEAR RESULTS OF ARTHROSCOPIC TREATMENT OF
CARTILAGE DEFECTS OF THE KNEE USING MICRODRILLING AND
ATELLOCOLLAGEN GEL AS A SINGLE STAGE PROCEDURE**

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Introduction: We describe a single stage arthroscopic procedure for the treatment of articular cartilage defects in the knee. The novel procedure involves microdrilling and application of atellocollagen and fibrin gel. The aim of the study was to evaluate the clinical outcomes at 4 years. **Materials and Methods:** A prospective study of 30 patients with symptomatic ICRS grade III/IV chondral defects which were assessed clinically and radiologically. The lesions were located on the MFC, LFC, trochlea or patella, ranging from 2-8cm². The surgical procedure involved debridement of the lesion, microdrilling and application of atellocollagen and fibrin gel under CO₂ insufflation. Patients were clinically assessed using the Lysholm, IKDC and KOOS scores. Radiological assessment used the MOCART score. **Results:** At 4 year follow-up, the mean scores were as follows: • Lysholm score was 80.46 ± 24.7, as compared to 51.7 ± 27.1 pre-operatively (p < 0.05). • KOOS (symptomatic) was 89, as compared to 66.2 pre-operatively. • IKDC (subjective) was 78.6, up from 41 preoperatively. • MOCART score for all lesions was 71.3 **Conclusion:** Our technique shows encouraging clinical and radiological results at 4 year follow-up as assessed by reliable validated scores.

Abstract no.: 37999

EVALUATION OF THE RESULTS OF DISTAL FEMORAL ALLOGRAFT-PROSTHETIC-COMPOSITE AND COMPLICATION RELATED TO THE ALLOGRAFT IN THE TREATMENT OF DISTAL FEMORAL GIANT CELL TUMOURS.

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Giant Cell Tumor (GCT) of distal femur is the most common benign aggressive bone tumor after skeletal maturity. Wide resection is the treatment of choice for recurrent with soft tissue involvement and tumors with high grade or frankly malignant tumors. Reconstruction of distal femur following wide resection of the tumour can be done using endoprosthesis or using structural distal femoral allograft-prosthesis-composite. 11 patients with distal femur GCT treated with distal femur Allo-Prosthetic-composite following wide resection of the tumour using Rotating Hinge knee (RHK) system. Patients were regularly followed up to determine the knee range of motion, knee society score and radiological assessment done to look for complication related to the allograft. There were 11 patients (5 male) with mean age of the study group was 27.5 years with average follow up of 48 months (Range 24 to 60 months). At the latest follow up all the patients were alive with well fixed allo-prosthetic-composite to the host bone. The mean knee Range of Motion was 100 degrees with mean Knee Society Score was 82.5. Clinico-radiological evaluation demonstrated 100% union at host-graft junction and 0% infection and/or recurrence of the tumor without any graft failure, fracture or resorption of the allograft. Resection of and reconstruction of giant cell tumors with distal femoral allo-prosthetic-composite is a better option considering the restoration of bone stock and excellent clinic-radiological of function of the knee. However, demanding bone banking techniques, effective measures to prevent infection and stability at the allograft-host junction are crucial for excellent result.

Abstract no.: 38001

**OLD POSTERIOR DISLOCATION OF ELBOW TREATED BY ILLIZAROV
EXTERNAL FIXATOR**

Niranthar Ganesh NIRANTHAR GANESH

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Introduction : A case report of 25yrs old female history of self fall had posterior dislocation of right elbow .had fixed flexion deformity of 15 degrees and cubits varies deformity ..
Result : illizarov external fixator is a versatile method of correcting deformity and achieved full rom .. And cubits varus corrected .

Abstract no.: 38006

**COMPARISON BETWEEN BIO ABSORBABLE SUTURE ANCHORS TO
TITANIUM SUTURE ANCHORS IN BANKARTS REPAIR**

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It is the comparison between bio absorbable and titanium suture anchors in bankart repair using arthroscopic method . Result shows good and no complication with bio absorbable suture anchor than titanium suture anchor . With good rom achieved than titanium anchors

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Abstract no.: 38008

SHORT-TERM RESULTS OF ACL RECONSTRUCTION WITH SEMITENDINOSUS AND GRACILIS TENDON AUTOGRAFTING

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Introduction. Anterior cruciate ligament injuries are common, mostly in sportsmen and may lead to disability of patients. Methods. 49 patients (44 male, 5 female) with ACL rupture were underwent reconstruction from semitendinosus and gracilis tendons. Age of patients were from 16 to 58 y.o. 23 patients obtained trauma during playing football, 12 patients obtained during different fights: judo, kurash and others. Traumas of the rest 14 patients were not related to sport. Isolated ACL ruptures were in 24 patients. In 25 cases ACL rupture was combined with trauma of other elements of the knee (in 15 with medial meniscus, in 7 with lateral meniscus, in 3 with both meniscuses). Remoteness of trauma ranged from 2 months to 5 years. After surgery patients begin exercises, weight bearing allowed in 2 days after surgery. Results. Patients were evaluated in 3 month after surgery. Lysholm scale was used for it. Excellent results occurred in 17 patients, good results in 30 patients, satisfactory results in 2 patients. Conclusion. ACL reconstruction with semitendinosus and gracilis tendons is one of the common used method of reconstruction in these traumas. This method is relatively less traumatic. This method provides stability of knee and contributes an early rehabilitation of patients.

Abstract no.: 38015

"REVERSE SEGOND FRACTURE" WITHOUT PCL INJURY: A REPORT OF AN EXTREMELY RARE CASE

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Introduction: Reverse Segond fracture, which was described as the association of an avulsion of deep capsular portion of medial collateral ligament and tears of both posterior cruciate ligament (PCL) and medial meniscus, is an extremely rare injury, unlike Segond fracture. The aim is to report successful surgical treatment of a case with "Reverse Segond Fracture" with intact PCL. Methods: The patient was a 16 years old male, who admitted to emergency department of our Level I trauma center after a pedestrian traffic accident. The main complaint was pain on left knee and shoulder. Physical examination revealed mainly limitation in range of motion (ROM) of relevant joints. Radiology revealed Reverse Segond fracture in the left knee and associated left clavicle mid-shaft fracture. Imaging with MRI and CT revealed neither PCL injury or additional ligamentous pathologies of knee. MRI only revealed medial meniscus tear. Conclusions: In surgery, avulsed bony portion of Reverse Segond fracture was fixed to tibia with a suture anchor and a cannulated screw securely under medial meniscus. Medial meniscus tear was fixed with PDS suture. Clavicle was internally fixed meanwhile. Knee ROM was started early on postoperative first day, then progressively. The patient was mobilized partially-weight bearing after 1.5 months and returned to his active daily life after 2.5 months. He was without any residual complaints after a final follow-up period of 14 months. To the best of knowledge, this is the first report of successful surgical treatment of a case with "Reverse Segond Fracture" without PCL tear.

Abstract no.: 38022

A PROSPECTIVE CLINICAL STUDY TO EVALUATE THE OUTCOME AFTER CENTRALIZATION IN CHILDREN WITH RADIAL CLUBHAND

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Background: Centralisation of ulna in radial club hand is a well accepted surgical procedure. There is a paucity of literature describing the functional outcome after this procedure. Methods: Thirty children(40 wrists) with only type III and type IV radial club hand without severe anomalies were included in the study. Centralisation of ulna over the carpus without damaging the physis was done using K-wires. After the procedure children were followed up for minimum of 2 years. Results: There was a good improvement in cosmetic appearance of hand of all children except three children who had fair improvement. The range of wrist flexion - extension arc averaged at 45 degrees. Children had minimal pain as measured using Visual Analogue Scale. The average Jebsen-Taylor score was 44 seconds for all activities. Radiographs showed intact ulnar physis in most of the children except in three children who had varying degrees of growth arrest. Ulnar length increased by an average 4.6cm postoperatively at the end of two years. Conclusion: We conclude that centralisation of ulna done at appropriate age with minimal fixation without damaging the ulnar physis can lead to better cosmetic and functional outcome in radial club hand.

Abstract no.: 38026

LUMBAR SPINE OSTEOTOMY HOW TO OBTAIN THE APPROPRIATE LORDOSIS

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I INTRODUCTION : A retrospective study is to evaluate the criteria to obtain an economical balance of the spine in case of fixed spine deformity operated by lumbar osteotomy. II Material and Methods 21 patients underwent 23 lumbar osteotomies, minimum follow-up of 2 years. The mean age was 41 years. 17 patients were unbalanced and 4 were in compensatory unbalance. The procedures: - Smith Peterson -13 - Pedicle subtraction osteotomy -9 - vertebral column resection -1 The study to perform the surgical procedure to obtain the optimal lumbar lordosis was carried on a tracing paper. III –Results 5 patients remain unbalanced 10 were in compensatory unbalance 8 were well balanced Two of the 5 unbalanced patients were re-operated and recovered a balanced spine. Complication: 2 neurological one with complete recovery and one with partial recovery. IV Conclusion 1- Measuring the exact values of the spino pelvic parameters of the patient (Pelving incidence, Sacral Slope, Pelvic Tilt, Lumbar Lordosis, Thoracic Kyphosis, Sagittal Vertical Axes). 2- Evaluating the sagittal alignmen (balanced spine, compensated unbalanced spine, unbalanced spine). 3-determining the correction angle requested to restore a good sagittal balance (SVA less 5cm, PT< 25°). 4- Selecting the appropriate surgical technique we could obtain the appropriate and economical balance of the patients.

Abstract no.: 38028

**ATRAUMATIC SPONTANEOUS DISLODGEEMENT OF RING OF
CONSTRAINED LINER WITH DISLOCATION OF PROSTHESIS- CASE
REPORT AND REVIEW OF LITERATURE**

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Background-. Use of constrained liner system helps to manage instability and dislocation after primary and revision total hip arthroplasty. However it is nonetheless associated with some incidence of failure. Here we report a case of atraumatic spontaneous dislodgement of ring of constrained liner- an uncommon mechanism of failure. Method- In the present report we present a case of a patient of revision hip arthroplasty presented to us 3 years after surgery with atraumatic spontaneous dislocation of the hip with dislodgement of the ring. Urgent admission of the patient and open reduction of the hip joint was done, the liner was found to be well in place and locking ring of the liner was found to be intact but dislodged from its position. Reduction of the hip prosthesis and impaction of the ring without change of any components was performed. Patient was mobilized with full weight bearing from the day following surgery with the help of abduction brace. Result- patient was under regular follow-up at the interval of 3 weeks, with the latest follow-up of 6 months patient is mobilized with full weight bearing without abduction brace. Conclusion- This case report highlights the unique failure mechanism of constrained liner.

Abstract no.: 38035

**ALL PEDICLE SCREW CONSTRUCT OF THE MAIN THORACIC CURVE
IN ADOLESCENT IDIOPATHIC SCOLIOSIS. IS IT ALL ADVANTAGE ?**

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I Introduction : A retrospective study to evaluate the correction of the main thoracic curve in Adolescent Idiopathic Scoliosis (AIS) by the all pedicle screw,(PS), (HO) hybrid (HY) and hooks alone constructs. II Material and methods: 83 (AIS) patients, with main thoracic curve, Lenke1:67%, Lenke 2 : 23%, Lenke3 :10%.were operated by posterior approach. Minimum f-up of 2 years. Mean age 14 years. Instrumentation type: PS 24 pat(29%) hybrid 29 patients as 35% and all hooks 30 patients as 36%. In coronal plan the mean angle was 57,6°. The mean T5-T12 kyphotic angle was 26.8°. III Results: At last follow-up In the coronal plan: The correction was : In PS group from 56.7° to 19.8° (66%) In Hy group from 62.2° to 31.6° (50%) In Ho group from 53.9° to 26.4° (49%) The T5-T12 thoracic kyphosis was corrected from : 28.9° to 20.3° by the PS construct 27.1° to 23.7° by the Hy construct 24.6 ° to 25.5°by Ho construct. V Conclusion In coronal plan the PS was better with a strong statistical correlation. In the sagittal plan the correction with the PS is the most correlated the loss of thoracic kyphosis. The better correction of the coronal plane is at the sagittal contour. This was demonstrated by the pearson correlation test.

Abstract no.: 38038

THE SECOND FRACTURE: ITS HISTORY, RELEVANCE AND THE NEED FOR INTERPRETATION WITH CAUTION

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Avulsion of the lateral capsular ligament of the lateral tibial plateau was first described by Paul Segond in 1879. It was first described radiologically by Milsch in 1936. The injury was identified following cadaveric experiments using varus strain and forced internal rotation. The Segond fracture has for many years been considered pathognomonic for anterior cruciate ligament (ACL) injury. METHODS AND RESULTS: A literature review on the association of Segond fracture and ACL injury was conducted. Segond fracture occurs in only 3-9% of ACL injuries and 6-13% of clinically unstable acute knee presentations. A clinical case is described in which a patient presented with a gross knee effusion and Segond fracture following a high energy motorcycle injury. However, MRI demonstrated an intact ACL. The lateral collateral ligament was ruptured and precipitous surgery was performed. An injury to the posterolateral corner was identified which was repaired using an augmented LARS ligament (modified Larson technique). A case of Segond fracture with intact ACL in an adult has never been reported in the literature. There have been two reports in children where weaker physeal bone leads to a different injury profile. CONCLUSIONS: The Segond fracture, its natural history and its pathogenesis are discussed. The Segond fracture is currently considered pathognomonic for ACL injury, but we discuss the reasons why this association may lead to missed serious extra-articular injury and why careful evaluation is necessary.

Abstract no.: 38053

**DISTAL FEMORAL OSTEOTOMY FOR SECUNDAR RENAL
OSTEODYSTROPHIA GENU VALGUM**

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Genu valgum is a condition that may be associated with renal osteodystrophy. Because bone changes from renal osteodystrophy can begin many years before symptoms appear in adult with kidney disease it is called also "silent cripple". We present the case of a 29 years old male with moderate to severe bilateral genu valgum secondary to renal osteodystrophy, a condition that affects about 90% of those who undertake dialysis. The very high levels of creatinine - 8,9 mg/dl and urea - 101mg/dl, in the condition of every two days dialysis, conduct to the complete diagnostic of the bone changes in a late stage of renal failure when glomerular filtration falls below 25% and the increased secretion of PTH is no longer able to maintain the normal phosphate levels. To improve the heavy motion conditions of the patient, distal femoral varization osteotomies were made for both knees, at an interval of 18 months one from another. The interval was dictated by the radiological union signs at the level of supracondylar osteotomy site. A whole members radiography was taken before and after surgery at 6 weeks, for osteotomy planning, respective for asses of postoperative correction. Functional knee motion and gait have improved. Osteotomies may be a good solution for knee and hip deformities in young patients with demands related to social conditions. Evaluation of bone healing is mandatory, dictating the grade of weight bearing. Late bone healing may delay the rehabilitation process or lead to mechanical complications at the osteotomy site.

Abstract no.: 38055

TOTAL HIP REPLACEMENT IN PROTRUSIO ACETABULI: OUR CLASSIFICATION AND SURGICAL TECHNIQUE OF DEALING WITH THE PROBLEM

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Total Hip replacement in Protrusio acetabuli is a demanding procedure due to significant medial and proximal migration of the joint centre, deficient medial bone and reduced peripheral bony support. We describe our own system of classification into three major types and the management thereof. Sixty hips (47 patients) with protrusio acetabuli having different etiologies and operated in between 2008 and 2012 were followed up for a minimum of 24 months. The clinical outcome were obtained using Harris Hip Score and radiological outcome with follow up X-rays. The clinical and radiological results of Total Hip Arthroplasty were found to be satisfactory. This system of classification and the management accordingly seems to serve as a new protocol in the management of protusio acetabula with promising results.

Abstract no.: 38064

INJURY PATTERNS OF BOMB BLAST INJURIES

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BACKGROUND: Bomb blast injuries (BBI) present a unique challenge to treating surgeons with their unique pattern and association with high complication rates. Our purpose was to document the injury pattern and mortality rates of all bomb blasts in 2013 in Peshawar, Pakistan. **METHODS:** Retrospective data was taken from A & E Department of Lady Reading Hospital, Peshawar. **RESULTS:** A total of 41 bomb blasts took place during the study period in which 1053 people were injured and resulted in death of 289 people (27%). In-hospital mortality was 21% while rest was either dead at the scene or died during transport from the scene. Majority of in-hospital mortality occurred in trauma room. Total injuries were 764 but no record was available for 294 patients (39.4%). 141 (30%) were minor injuries (i.e. cut, laceration, etc), 122 injuries (26%) were extremity (orthopaedic) while 118 were related to general surgery (abdominal) (25%). **CONCLUSIONS:** BBI result in high mortality and complication rates. Most of mortality occurs at the scene. Majority of patients sustain cuts, laceration, abdominal and/or skeletal injuries. Most common cause of mortality is related neurosurgery.

Abstract no.: 38067

ANKYLOSING SPONDYLITIS - MISSED DIAGNOSIS

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Magnetic resonance imaging (MRI) scan is increasingly being used instead of plain spinal radiographs as the initial and only investigation in patients with low back pain. However, MRI scan of the lumbar spine does not routinely include the sacro – iliac joint (SIJ). This paper reports on twenty-five patients referred to our unit with lower back pain that was presumed to be non-inflammatory in nature. All patients had only an MRI scan of the lumbar spine as the primary investigation for their symptoms. Presence of subtle inflammatory changes, that had been overlooked previously, were seen on review of the initial MRI scans performed at the parent institute. This was confirmed by the presence of sacro-iliitis consistent with inflammatory arthropathy changes on subsequent imaging of the SI joints (pelvic x-rays/CT scans). The use of MRI scan as the only investigation in these patients with low back pain may have resulted in an error of diagnosis from failure to visualise the SI joints on these scans. This study highlights the danger of missing the diagnosis of spondyloarthropathy as a direct consequence of this change in imaging practice. We propose either acquisition of conventional radiographs of the SI joints or a routine inclusion of SI joints in the MR sequences for all patients presenting with lower back pain.

Abstract no.: 38069

**MANAGEMENT AND OUTCOME OF TRAUMATIC EPIDURAL
HEMATOMA IN INFANTS AND CHILDREN**

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Object:The aim of this study was to evaluate our treatment methods of epidural hematoma injuries retrospectively and elucidate the relationship between the trauma mechanism, the radiographic injury pattern, the consequent therapy and the functional outcome and to further deduct and verify prognostic criteria.**Methods:**120 infants and children with traumatic brain injuries (TBI) were treated from 1992 to 2009.Data regarding accident, treatment and outcomes were collected retrospectively.To classify the outcomes the Glasgow Outcome Scale (GOS) scores at the hospital discharge and at the ambulant follow- ups were used. A score of five or four was classified as “favorable“ and if the GOS scores were three or less they were classified as “unfavorable“. **Results:** 41 cases were diagnosed as epidural hematoma and were included in our study. 21 epidural hematoma were treated surgically and 20 epidural hematoma were handled in a conservative way.Two patients (5%) died in the hospital within 24 hours, 39 patients (95%) survived.One of the operative treated patients (2%) was in a vegetative state, another one suffered severe disability. 32 patients (78%) showed a good recovery at the follow-up. **Discussion:** Age, severity of TBI, and neurological status were the main factors influencing the outcomes after TBI due to acute EDH. We state that a prompt surgical evacuation of the hematoma results in an excellent outcome, but also the conservative treatment depending on the CT-scan diagnosis (midline shift, status of the basal cisterns and other pathologies in connection with the traumatic brain injury) shows its advantages due to the outcome.

Abstract no.: 38072

CAN INTRAOPERATIVE FLUOROSCOPIC RADIOGRAPHS REFLECT POSTOPERATIVE CT FINDINGS IN ACL RECONSTRUCTION?

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Fluoroscopy is useful in tunnel positioning during ACL reconstruction when arthroscopic landmarks may be difficult to identify. The purpose was to compare the tunnels placement of intraoperative fluoroscopic radiographs and postoperative CT findings in ACL reconstruction. We used the modified quadrant method for femur and Amis and Jakob line for tibia. We included 16 single bundle and 30 double bundle ACL reconstructions. In single bundle ACL reconstruction, there were no significant differences of femoral and tibial tunnels placement on fluoroscopy and CT. In double bundle ACL reconstruction, there were no significant differences of femoral and tibial tunnels placement on fluoroscopy and CT, too. Intraoperative fluoroscopic radiographs could reflect postoperative CT findings in terms of tunnels placement of ACL reconstruction.

Abstract no.: 38074

EVALUATION OF POSTOPERATIVE PAIN ASSESSMENT AND MANAGEMENT IN CEREBRAL PALSY (CP): COMPARISON BETWEEN PATIENTS WITH CP AND ADOLESCENT IDIOPATHIC SCOLIOSIS (AIS)

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Introduction: Pain is a near universal experience in patients with CP. Adequate assessment of pain is critical to optimize its management. This study examines the differences in pain evaluation and control for patients with CP compared to those with AIS following posterior spinal instrumentation and fusion (PSIF). Methods: A single-center retrospective study identified 16 CP patients (aged 5-18 years) undergoing PSIF from 2008 to 2011 and 16 age-matched AIS patients undergoing the same procedure. Patients intubated for greater than 48 hours postoperatively were excluded. We used the FLACC scale (the Faces, Legs, Activity, Cry, Consolability Behavioral Pain Scale) to assess patients who are not able to communicate their pain, and the Wong-Baker FACES pain scale in those who can. The total opioid dose and method of administration were normalized to morphine equivalents by weight (MEq/kg). Results: While evaluated significantly more often, the CP group recorded lower pain scores than the AIS group. CP patients received significantly more MEq/kg on postoperative day (POD) 1 (when intubation rate was higher for CP patients) and significantly less MEq/kg on POD 2&3. Overall, there was no significant difference. Conclusion: Measured using the current instruments, CP patients had lower pain scores than their AIS counterparts, arguably justifying their receiving less MEq/kg on POD 2&3. However, since scores from different instruments are not directly comparable, we cannot determine whether the CP group indeed experienced less pain. Therefore there is insufficient evidence to either support or refute the current practice in pain management for CP patients postoperatively.

Abstract no.: 38075

KYPHOSIS AND IMPLANTATION:MODELLING A CLINICAL PHENOMENON

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Recent literature documents increased failure rates with increased thoracic kyphosis. This project was designed to test resistance to kyphotic pullout forces of pedicle screws(PS), the VEPTR, and the rib construct (RC), but Synthes Spine refused to make VAPTRs available for the study. Twelve pig spines with intact rib cages were harvested from 2 month old pigs with average weight 21.6±1.5Kg. 6 spines were instrumented with 4 pedicle screws in T3 and T4, comparable to those placed in growing rods, and 6 were instrumented with rib constructs from ribs 3-6. All spines were potted proximally and distally. A kyphotic bending force was applied using a MTS(858 Mini Bionix II, Eden Prairie MN) mechanical testing system. For the pedicle screw group, fixation failure occurred on all 6 tested spines, with screw pullout. Average deflection angle at failure was 118.6±1.3 degrees. Average bend force at failure was 118.6±25.7N. For the RC group, no fixation failure was noted on any of 6 tested spines, all reached maximum deflection allowed by testing system. Average deflection angle was 50.3±9.1 degrees. Average maximum bending force was 119.7±13.9N. The rib construct provides superior proximal fixation for resistance to kyphotic bending force. Further testing with rotational forces are planned.

Abstract no.: 38077**38077**

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This goal of this study is to evaluate the clinical and radiological outcomes of proximal tibial comminuted fractures treated with medial MIPPO. According to the AO/OTA classification, there were 30 patients of 41-A3 and 13 patients of 41-C2. Thirty six patients had closed fractures and 7 patients had open fractures. We assessed clinical outcomes, radiologic results and postoperative complications. All the fractures were united at an average of 18.3 ± 8.1 weeks except 3 patients with nonunion. Three patients had nonunion, but complete bony union was achieved by autogenous cancellous bone grafting. According to Schatzker and Lambert assessment, excellent results showed in 22 patients and good results revealed in 21 patients. The average of tibial plateau angle was $89.1^\circ \pm 2.7^\circ$ and the average of posterior tibial slope angle was $10.5^\circ \pm 4.6^\circ$. In the assessment of lower limb alignment, the average of femorotibial angle was $175.1^\circ \pm 2.9^\circ$ and the mean deviation of mechanical axis was $46.5 \pm 12.7\%$. In terms of complications, 3 patients had nonunion and 7 patients complained about skin irritation around plate. However, there was no skin necrosis, infection and limited range of motion in 7 patients with skin irritation. Medial MIPPO for proximal tibial comminuted fractures provides favorable clinical outcomes and good radiological alignments.

Abstract no.: 38086

**CAPSULAR INJURY WITH PRESUMED FIBROSIS IMPROVED BY
DISTRACTION AND ROTATION IN A LATERAL POSITION**

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We present an innovative use of a common technique undertaken prior to hip arthroscopy to treat degenerative hip capsule pathologies. Our patient who is a female of 54 years of age presented four years ago with stiff hips despite physiotherapy. She had inadvertently performed the splits eight years prior to this while playing badminton. On clinical assessment she lacked abduction and rotation of her hip in either direction during 90 degrees of flexion. Given that her hips were overall congruent and that no mass or impingement lesion was demonstrated radiologically or clinically, it was agreed with the patient to proceed with manipulation of her hips. During the procedure she was setup for a hip arthroscopy in the lateral position with a view to obtaining an air arthrogram. On the traction table her hips were manipulated in turn under distraction and rotation – each hip was put through 40 degrees of internal and external rotation. Post manipulation the patient reported the intervention as “‘life-changing’ with a remarkable improvement in her range of motion. She felt more confident and later that year, was even able to ski without pain or restriction and continues to do so. Given the excellent result seen in our case where, recognised sequelae of early osteoarthritis led to debilitating symptoms and poor quality of life, we feel this is a simple yet very effective method to treat such patients in whom conservative measures are not helping and any significant surgical intervention would not be appropriate.

Abstract no.: 38100

IS SHOULDER HEMISURFACE REPLACEMENT THE RIGHT FIRST CHOICE FOR GLENOHUMERAL ARTHRITIS?

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Aim: To evaluate the clinical and functional results of shoulder hemisurface replacements at our institute and compare the results with the published literature. **Methods:** Retrospective study over a six year period in 39 patients who underwent shoulder hemisurface replacement. We collected data for the indications of surgery, state of the rotator cuff, Constant-Murley score, Oxford shoulder score, post operative range of movement, patient satisfaction, and complications. **Results** The patient satisfaction rate was 95% with an average follow up of 48 months. Shoulder movement improved by 23%, 32%, and 75% in flexion, abduction and external rotation respectively. The average improvement in the patients Constant-Murley score was from 22 to 57 points, and Oxford shoulder score from 13 to 36 points. A postoperative mean Constant-Murley score of 57.2 and Oxford shoulder score of 36.4 was achieved. Two patients were unsatisfied due to glenoid wear and pain, a recognised complication with shoulder hemisurface replacements. **Conclusions** Shoulder hemisurface replacement is a viable option for patients with glenohumeral osteoarthritis, but less so in cases with cuff tear arthropathy. We believe that hemisurface replacement is a viable and first choice option in our hands given the 95% satisfaction rates at 4 years follow up. Our results are comparable to studies done in the literature to date. We support the use shoulder hemisurface replacement in cases of glenohumeral arthritis because of the limited glenoid exposure required, humeral bone stock preservation, avoidance of the potential complications associated with glenoid replacement and long stemmed humeral implants.

Abstract no.: 38105

RADIOGRAPHIC ASSESSMENT OF UNION IN TREATMENT OF PERIPROSTHETIC FRACTURES: PLATE VS STRUT GRAFT

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We retrospectively compared a cohort of patients (n=13) who underwent either a plate or strut graft fixation for their peri-prosthetic femoral fracture. Serial radiographs taken over an average period of 3 years were reviewed by two specialist registrars. Using the Hamer grading and 'number of cortices healed on two views' techniques, we compared healing times. For the strut graft group (n=7) full union at 3 years was noted in 57% of patients. Inter-observer differences were noted for the Hamer technique but not when cortices were assessed. In the plate group (n=5) full union was only noted in 20% of patients. This time inter-observer differences were noted for both radiological scoring methods. However, both observers reported full union at similar times for both techniques and scoring methods. Despite our small numbers, we believe no conclusive method of assessing progression of healing on simple radiographs is available as supported by the literature. Furthermore, our study suggested better radiological union rates in the strut graft group, an area which requires further research.

Abstract no.: 38120

INTRODUCTION OF A LOCAL PROTOCOL FOR PREOPERATIVE URINARY CATHETERISATION IN HIP AND KNEE ARTHROPLASTY.

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Introduction: There are approximately 160,000 hip and knee arthroplasties every year in England and Wales (NJR). Patients are regularly catheterised preoperatively for these elective procedures, but there are no established guidelines or protocols in place for this practise. We set out to substantiate current practise in a local district hospital (DGH) and set into place a local protocol to benefit our patients. Method: Data was collected on elective hip and knee arthroplasties over a month in a DGH. The following parameters were collected; anaesthesia type, gender, medical history, hospital stay, urinary catheter status and post-operative urinary retention rates. We introduced a researched protocol identifying the high risk patient group for developing post-operative urinary retention. Then collected the same data parameters over a 3 month period. Results: In the initial data we found a haphazard patient choice for urinary catheterisation and a zero retention rate in uncatheterised patients. We also found longer hospital stay in patients with catheters. We developed a protocol which is based on a recommendations by Dutta et al (2008) which identified factors that lead to an increased risk of developing post-operative urinary retention. After the protocol was introduced there was a retention rate of 6.45% (n=2) and an overall reduction in pre-operative catheterisation of 96.77%. Conclusion: Our researched protocol proves beneficial to both the patient, preventing an unnecessary procedure with is uncomfortable and a possible source of infection, and the department by reducing costs in terms of the product and reducing theatre and admission time.

Abstract no.: 38121

GENETIC POLYMORPHISM AND PHENOTYPIC VARIATIONS IN HIP MORPHOLOGY; A SYSTEMIC LITERATURE REVIEW WITH PARTICULAR REFERENCE TO FAI MORPHOLOGY

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Morphological variations in the hip joint have been associated with the development of osteoarthritis (OA), and there is accumulating evidence for the inheritance of these morphological traits. There is also high inheritance rate of OA, and many of the genes that have been associated with OA are also involved in skeletal development. Therefore it's possible that these genes are causing OA indirectly by altering the morphology of the joint leading to abnormal load bearing and joint degeneration. Femeroacetabular Impingement (FAI) is also caused by specific morphological variations of the hip (the femur and or the acetabulum) and it's one of the known causes for OA in young patients. There is emerging evidence for the inheritance of FAI but no genes or chromosomal loci have been associated with its pathogenesis. Understanding how these deformities develop during skeletal growth and how genes influence hip morphogenesis may provide an opportunity for early screening and even possible interventions. Here we conducted a systemic literature search for articles on genes and hip morphogenesis focusing on FAI. Most of the studies identified were either genetic wide association or family linkage studies relating to acetabular dysplasia or proximal femur geometry. No studies were identified linking genes or chromosomal loci to FAI. We summarise the results of these studies and attempt to propose a possible link between certain genes and FAI.

Abstract no.: 38122

TRANSVERSE ACETABULAR LIGAMENT IS LACK OF MECHANORECEPTORS IN SEVERE COXARTHROSIS

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Background The classic literature describes the transverse acetabular ligament (TAL) as a distinct anatomic structure with abundant mechanoreceptors and free nerve fibers; however, recent literature didn't evaluate the fate of the mechanoreceptors in the TAL in severe coxarthrosis. The purpose of this study is to evaluate the microscopic anatomy of TAL, including a specific investigation of neurologic status of this ligament with immunohistochemical analysis. **Methods** Thirty-five TAL specimens were harvested from patients undergoing total hip arthroplasty because of end stage coxarthrosis. Formaldehyde fixed specimens were evaluated for the presence of mechanoreceptors and free nerve endings by a immunohistochemical analysis that was previously described by Mihalko. **Results** No mechanoreceptors were identified in the TAL specimens whereas good vascularity with abundant free nerve fibers (3.1 sensory fibers / hpf) within fibrous connective tissue were observed. **Conclusions** This study's findings demonstrate that the TAL is lack of mechanoreceptors in severe coxarthrosis. However, the finding of free nerve fibers in the TAL suggests a potential role as a hip pain generator.

Abstract no.: 38123

A 7-YEAR REVIEW OF TELEPHONE CLINIC FOLLOW-UP AFTER CARPAL TUNNEL DECOMPRESSION

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Introduction: Following carpal tunnel decompression (CTD), patients are subsequently seen in out-patient department. However with increasing pressure on out-patient provision in the NHS, there is a need for alternative methods of determining patient satisfactory and surgery outcome. We investigated the feasibility of using telephone clinics in the routine follow-up of patients following CTD, and reviewed the service since its implementation. Methods: Between 2004-2011, a questionnaire was developed to assess levels of patient satisfaction with the service and identify patients who required referral to hand therapy, or to out-patient clinic. In addition, a cost analysis was performed. Results: 93% (2336 of 2497) were satisfied with treatment and review process. Reasons for requesting consultation was altered sensation 27%, no change in symptoms 27%, scar tenderness 17%, weakness 13%, swelling 10%, pain at base of thumb 3%, and ulnar nerve dysaesthesia 3%. Revision rate was less than 1%. Cost analysis calculation estimated a potential saving of 227,022 UK Sterling over the 7-year period. Conclusions: This model of follow-up benefits both patients and hospital. It is a time effective method of assessing surgery outcome. We recommend that patients undergoing similar hand surgery should use a telephone clinic follow-up.

Abstract no.: 38124

EVALUATION AND MANAGEMENT OF INJURIES OF THE TIBIOFIBULAR SYNDESMOSIS

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Injury to the tibiofibular syndesmosis often arise from an external rotation force acting on the foot leading to eversion of the talus within the ankle mortise, and increased dorsiflexion or plantar flexion. Such injuries can present in the absence of a fracture. Therefore, diagnosis of these injuries can be challenging, and often stress radiographs are helpful. MRI scans can be a useful adjunct in doubtful cases. The management of syndesmotic injuries remains controversial, and there is no consensus on which ankle fractures require syndesmotic fixation, the number, the size and the type of screws that should be used for fixation, the number of cortices to be engaged for fixation, the level of screw placement above the ankle plafond, or the duration for which the screw needs to remain in situ to allow the tibiofibular syndesmosis to heal. This article reviews the mechanism of injury; clinical features and investigations performed for syndesmotic injuries, and brings the reader up-to-date with the current evidence in terms of the controversies surrounding the management of these injuries.

Abstract no.: 38125

TREATMENT OF 6CM TIBIAL GAP NON-UNION USING ILIAL CORTICO-CANCELLOUS GRAFT AND DYNAMIC COMPRESSION PLATE

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Gap non-union of the tibia is not uncommon. Depending on the size of the graft, several techniques of operation can be applied for its treatment. The aim of this work is to show that tibial bone gap of 6cm can be treated using ilial cortico-cancellous grafts compressed within the gap using dynamic compression plate and screws in a 57 year old woman. A 57 year old woman presented with gap non-union of the right tibia 2 years following a road traffic injury. She was hypertensive but had no other morbidity. She mobilised on bilateral arm crutches and occasionally on wheelchair. X-ray of the right tibia showed gap non-union of the midshaft of the tibia. She was treated using ilial cortico-cancellous bone grafts compressed in the gap using broad dynamic compression plate. She now mobilises normally, 1 year post-operatively.

Abstract no.: 38127

UNCEMENTED TOTAL HIP REPLACEMENT FOR ELDERLY OSTEOPOROTIC PATIENTS

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Background: The most debated topic in hip arthroplasty for elderly patients (>60 years) is whether to use cemented or uncemented prosthesis. In elderly osteoporotic patients the bone quality is poor leading to inadequate osteointegration and early component instability. Due to the physiology of ageing cemented hip replacement is associated with bone cement implantation syndrome, fat embolism, cardiopulmonary complications whereas uncemented hip is associated with fallacies due to bone- implant integration. Our study is a short term follow up of uncemented hip replacement for elderly osteoporotic patients. **Materials And Methods:** Thirty patients were followed up with mean age of 69 years (60-78 years); 17 were right sided while 13 were left side hips. BMD DEXA scan before surgery was used to evaluate osteoporosis. Harris hip score was used preoperatively and postoperatively. Patients were followed up 1 month, 3 month, 6 month, and 1 year, assessed using Harris hip score and radiological evaluation of prosthesis. **Results:** During the mean follow up of 12 month (6-26 months), no death occurred. None of the patients had post operative cardiovascular complications. None of the patients had acetabular protrusion or heterotopic ossifications. All the patients were ambulant after the procedure. **Conclusion:** Uncemented hip arthroplasty for elderly osteoporotic patients shows better functional and radiological results in short term followup. Uncemented arthroplasty avoids complications because of cementing like BCIS and other major complications.

Abstract no.: 38128

THE EFFECT OF INTRADERMAL SUTURE, STERISTRIPS AND AN OCCLUSIVE SKIN ADHESIVE ON POSTOPERATIVE WOUND DRAINAGE AFTER TUMOR ARTHROPLASTY OF THE HIP

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Introduction: Persistent post-operative wound drainage is a known risk factor for periprosthetic infection. We aimed to establish if a change in method of wound closure could improve the duration of postoperative surgical wound drainage, duration of antibiotic administration and length of hospital stay after tumour resection and endoprosthetic reconstruction of the proximal femur. Material and methods: A prospective collection of data in all patients who underwent tumor resection and endoprosthetic reconstruction of the proximal femur in our department in 2013 and a retrospective collection of data in similar patients from 2012 were performed. Patients who received wound closure with intradermal suture, steristrips and an occlusive skin adhesive in 2013 (n=22, mean age = 68 (54-87) years) was compared to a control group (matched in type of tumour and degree of bone resection) receiving standard wound closure with staples (n=22, mean age = 64 (48-80) years) in 2012-13. Statistics: Student t-test for un-paired data. Results: Mean duration of postoperative wound drainage was reduced from 6.5 (3-18) days to 3.4 (2-6) days ($p<0.0005$), mean duration of post-operative administration of antibiotics was reduced from 6.5 (3-18) days to 4.0 (2-7) days ($p=0.005$) and mean hospital stay was reduced from mean 7.9 (4-18) days to 6.2 (3-12) days ($p=0.07$). Conclusions: A simple change in the wound closure routine showed a significant reduction in wound drainage and postoperative antibiotic administration. Further prospective randomised studies are warranted.

Abstract no.: 38129

ONESTEP TECHNIQUE FOR MINIMALLY INVASIVE PLACEMENT OF PEDICLE SCREWS WITH O-ARM AND STEALTH NAVIGATION

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MIS techniques for pedicle screws placement use C-arm fluoroscopy with radiation exposure to surgeons and multiple instrument passes through pedicles. We report a new technique for MIS pedicle screw placement. We started with a 2-step technique using a navigated pedicle awl followed by screw placement, but have modified it to the 1-step technique described here. 31 adult patients (168 screws) underwent pedicle screw placement using the 1- (9 patients/56 screws) or 2-step (22 patients/112 screws) technique. Technique: A 1cm incision is made over the L4 or L5 spinous process, for placement of a navigation frame. 3D O-Arm images are captured and transferred to the Stealth system. An incision is made using a navigation probe to first identify deep bone anatomy, utilizing a generated projection. The blunt probe is placed at the pedicle entry point. Screw length and width are measured with a projection. A cannulated screw with integrated guide wire are placed by docking the screw and wire to the pedicle entry point, tapping first the wire 5mm into the bone, then the screw, followed by wire removal and navigated insertion of the screw. Results: Two screws (1.2%) were revised after the second O-Arm spin with the 2-step technique. No postoperative complications or adverse outcomes were noted. Conclusions: O-Arm/Stealth Navigation with MIS technology allows for safe placement of posterior spinal instrumentation without radiation exposure to the staff. It also provides intraoperative evaluation of instrumentation and decreases the number of instrument passes through the pedicle.

Abstract no.: 38130

ARTHROSCOPIC REPAIR OF LARGE AND MASSIVE ROTATOR CUFF TEARS

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Repair of large and massive rotator cuff tears can be difficult. In spite of the multitude of trials, many surgeons are unable to close the defect in the cuff. The difficulty faced in attempting to close large defects has led some surgeons to deal with such tears with simple debridement and decompression without repair. With continuous improvements in arthroscopic technique and instrumentation, there has been more interest in arthroscopic treatment of these massive tears. The purpose of this study was to evaluate the outcome of arthroscopically repaired large and massive rotator cuff tears. Patients and Methods: Twenty five patients with large or massive rotator cuff tears underwent arthroscopic repair. Large tears are defined as defects in the cuff measuring from 3 to 5 cm and massive tears measuring greater than 5 cm. Patients were followed up postoperatively with the University of California at Los Angeles score (UCLA). Results: Seventeen patients had large tears and eight had massive tears. Follow-up averaged 36 months (range, 28 to 46 months). Based on the University of California Los Angeles shoulder rating, 90% of patients had good or excellent outcomes. Although two patients were considered failures based on the UCLA score, 98% of patients were satisfied with the result. There was no significant difference in final scores when comparing the massive tears to the entire group, but all preoperative scores were higher for those with large tears than the massive tears. Conclusions: Arthroscopic management of large and massive tears results in good or excellent outcomes in 90% of patients.

Abstract no.: 38132

MINIMALLY INVASIVE TECHNIQUE FOR PLACEMENT OF SACROILIAC (SI) ARTHRODESIS IMPLANTS USING O-ARM AND STEALTH NAVIGATION

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Techniques for sacroiliac arthrodesis require surgeon and staff radiation exposure, as well as complicated pelvic imaging. We report a novel MIS SI fusion technique using O-Arm/Stealth Navigation eliminating radiation exposure to the staff. 45 patients (50 joints) underwent surgery and were reviewed for complications associated with instrumentation placement. Technique: patients are positioned prone and a nick is made 10mm proximal and anterior to the PSIS for attachment of a navigation frame. O-Arm images are obtained and transferred to the Stealth Station. An incision is made based on projected implant trajectories with the navigation such that all implants can be placed with minimal soft tissue interference. A navigated cannula is loaded with a guide pin and the pin is driven across the joint, monitoring the depth at the back of the cannula. A projection of the implant size is made and saved on the Stealth Station. The cannula is removed, leaving the wire in place. A soft tissue protector is advanced over the wire to the ilium. The path is drilled, and the implant is placed. The guide wire is removed and these steps are repeated. Once implants are placed, a final O-Arm image is obtained. Results: 2 guide wires broke intraoperatively, 1 was left in bone and the other was removed. No additional complications were noted. After modification of the pin and drill, no breakages have occurred in the last 25 procedures. Use of O-Arm/Stealth Navigation in MIS SI joint fusion is safe, accurate and effective for implant placement.

Abstract no.: 38133

THE EFFECT OF FEMOROACETABULAR IMPINGEMENT (FAI) ON KINEMATICS AND KINETICS OF THE HIP JOINT

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Recently gait analysis technique has been used to assess the impact of Femoroacetabular Impingement (FAI) on the hip and lower limb movements. There have been a fairly limited number of studies published so far reporting unexpected and inconsistent results, which calls for more research to be conducted in this arena. In the light of the limited data available, it has been challenging to reconcile the contradictions in some of these results, and therefore no coherent conclusions could be drawn. We performed a systemic review of the literature available in an attempt to explain some of the abnormal kinematic and kinetic patterns associated with FAI by highlighting similarities between the gait seen in early osteoarthritis (OA) and that of FAI.

Abstract no.: 38152

HAS THE CHANGING TREND IN THE MANAGEMENT OF IATROGENIC VASCULAR INJURIES DURING HIP REPLACEMENT SURGERY IMPROVED THE RATES OF MORTALITY AND MORBIDITY?

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Introduction: Vascular injuries are well recognised complications of hip arthroplasty surgery. They are associated with high mortality and morbidity. Traditionally open exploration of injured vessels has been the main strategy of management, however there has been an increasing reports of percutaneous endovascular managements methods. Method: We systemically reviewed the literature published over the last 21 years in order to assess the reported trends in vascular injuries in hip arthroplasty and their management strategies. The results were compared with the results of old literature reviews (conducted using a similar research methodology) published prior to this period. Results: A total of 55 articles describing 130 vessels injured were found. The Common Femoral Artery was the most injured vessel. Penetration (laceration) injury to blood vessels was the most prevalent injury (45.3%), and the commonest presenting feature recorded was bleeding (occult or frank including sock); 54.1%. The delay to diagnosis was associated with the type of the vascular lesion ($p<0.001$) and the clinical presentation ($p=0.001$). Percutaneous endovascular intervention (angioplasty, stenting, graft, and embolisation) was used in a 3rd of blood vessels injured and more prominently over the last 12 years. Main complications included deaths (7.8%), amputations (1.7%), and persistent ischemia (7.8%). Discussion: The types of vascular lesions are similar to what is reported in old reviews in the literature. There is a similar reported time-delay in recognising these injuries and a similar reported rate of mortality. However, there has been a lower reported rate of amputations and permanent disability.

Abstract no.: 38156

MANAGEMENT OF DIABATIC CHARCOT NEUROATHROPATHY THROUGH A MDT REFERRAL PATHWAY

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Background: The diabetic population in United Kingdom has almost doubled in incidence since 1996 (1.4 to 2.6 million). The care of diabetic foot complications is now evolving into a more holistic approach, involving a multidisciplinary team including a diabetologist, vascular and orthopaedics surgeons overseeing treatment. Purpose: We present our preliminary results of management of Charcot neuroarthropathy through this team approach by a consultant led diabetic foot service at a district general hospital. Primary outcome measures: Below knee amputation rates Secondary outcomes: Duration Surgical interventions rates Results: A total of 24 patients were treated with acute Charcot neuroarthropathy presenting with or without ulcers over the past five years (Jan 2007 to date). The majority of patients (84%) in this cohort were able to progress to a custom made shoes with a planti-grade ulcer free foot at an average 5.5 months. Immobilization and total contact cast application achieved gradual healing of Charcot process in 50% patients with Eichenholtz 1 and early Eichenholtz II stages. The surgical intervention involving mid foot reconstructions, arthrodesis and ulcer debridement, accounted for 34% of the patients none of which had ulcers post-operatively. Three patients (12%) had below knee amputation. Conclusion: In selected patients with advanced Eichenholtz stages, early surgical intervention may be necessary to prevent ulcer formation , maintain the shape of the foot to lower the amputation rates. Long-term follow up of this patient group will determine cost effectiveness and further refinement to this treatment strategy.

Abstract no.: 38158

INTRAOSSEOUS FIX FOR TALONAVICULAR FUSION: A UNIQUE DESIGN FOR FOOT AND ANKLE ARTHRODESIS.

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Arthrodesis is recommended for isolated degenerative disease of the joint or as a part of triple arthrodesis in cases of global hindfoot arthritis. In general good results have been published, however non-union of the talo-navicular joint remains a factor, affecting the overall outcome. Arthrodesis across the joint requires bony compression, stability and good blood supply. The best compression across the joint is provided by a partially threaded compression screw, however the cortical bridge in the navicular is fragile and not supported. An extramedullary plate across the arthrodesis gives adequate stability but virtually no compression with added complications of soft tissue irritation by implant. We report on our first 12 cases of talonavicular arthrodesis using a unique intraosseous fixation device called IOFIX. This device consists of an intraosseous titanium post in the navicular. Through the post a lag screw is introduced into the head and neck of the talus. Compression across the navicular is achieved using the entire surface of the talo-navicular interface. Using this intraosseous device surgical exposure can be minimized, uniform compression and stability is achieved. The fragile cortical bone bridge is supported and the device has a zero profile. Between 2013 and 2014, 12 patients (12 feet) underwent talonavicular arthrodesis. All patients had radiological evidence of bridging trabeculation in 6 weeks. There has been no non-unions, no metalwork failure with significant improvement in pain scores. We believe that this unique Intraosseous compression system is the future of foot and ankle arthrodesis.

Abstract no.: 38168

SCREW MIGRATION AFTER "IN SITU" FIXATION IN SLIPPED CAPITAL FEMORAL EPIPHYSIS

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Aim: We analyzed the relation between the screw position and the number of threads engaging the epiphysis with the screw migration, time until physeal closure and additional slippage after ""in situ"" fixation. **Method:** the medical charts of 51 patients (54 hips) were reviewed, the average age was 12,4 years. Screw position, number of threads in the epiphysis and the head-shaft angle were analyzed in frontal and Lauenstein view in the immediate postoperative and until the growth plate closure. **Results:** All the screws were in zones 1 or 2 as described by Carney et al. The average number of threads engaging the epiphysis were four in the Lauenstein view. the average Time for physeal closure was 15,5 months and could be related only with the patient age. Screw migration happened in 87% of cases but was not related to additional slippage. **Conclusion:** Although the screw migration is a frequent event it was not related with slippage worsening. The screw position and threads had no influence in the growth plate closure.

Abstract no.: 38170

**SARCOMA AWARENESS FOR JUNIOR DOCTORS - A PILOT STUDY
AND NATIONAL PROJECT**

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Objectives: The undergraduate medical curricula in the UK have no designated modules on sarcomas resulting in low levels of sarcoma awareness in medical students and junior doctors. The aims of both the pilot study and national project were to increase sarcoma awareness in this group via a voluntary online study modules and questionnaires. **Methods:** During the pilot study, participants were invited to take part and complete an online questionnaire. Key resources were provided and participants were asked to complete a further online questionnaire to assess improvement in knowledge. The national project targeted a wider group of participants. **Results:** The pilot study showed an overall increase sarcoma knowledge following access to the recommended resources; with the mean questionnaire scores rising from 60% to 76%. The average improvement was 16.6%. These results were found to be statistically significant ($p < 0.001$). Both medical students and junior doctors participated in the national project, over a wider geographical area. The scores ranged from 20%-94%, with a mean score of 75%. Top scoring participants were selected to partake in funded short-term clinical fellowships. **Conclusions:** The pilot study results demonstrated that voluntary sarcoma study modules can increase sarcoma awareness in this target group. The national study allowed us to target a wider spread group, despite a small sample number. Increased awareness could help in early detection, appropriate referral, and reduction in unplanned excisions and better care for sarcoma patients and our work in this area will continue.

Abstract no.: 38173

TRAUMA RELATED AMPUTATIONS IN CIVILIAN PRACTICE

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A recent national report in the United Kingdom suggested that amongst civilians, trauma accounted for 9-10 per cent of approximately 6000 amputations performed annually. The demographic profile, caseload and outcome of trauma-related amputations in the civilian population were poorly defined. The aim of our study was to describe the demographic details, surgical treatment and complication rate of a cohort amongst civilian population undergoing amputation of a limb after trauma. **Methods** This study was performed at a Level 1 Major Trauma Centre, and registered with the Department of Safety & Quality. The local trauma registry was utilized in combination with data submitted for national trauma auditing between September 2010 and February 2013 for all patients undergoing amputation of a limb following trauma **Results** The study cohort included 23 limb amputations, representing 0.2% of all trauma admissions. The mean age was 49.7 years . A mean of 3.2 (range 1-6) surgical interventions were performed per patient, with an average length of stay of 38.7 days. Over 60% of patients reported post surgical complications. Patient's compliance with limb fitting prosthesis was 82% at a minimum six months after amputation although the limb fitting prosthesis time was 8.2 weeks. **Conclusion:** Whilst civilian trauma-related amputations represent a small caseload, they necessitate substantial resources and exhibit a high complication rate. This study suggests that differing clinical protocols may be applicable in civilian trauma-related amputations and highlights the importance of a centralized care and surgical expertise to enhance the outcomes for these complex injuries.

Abstract no.: 38181**38181**

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Introduction: congenital vertebral anomalies invariably result from disturbed asymmetric growth. This work pretends to review the causes and natural history of congenital lumbar scoliosis, based on a case report. Methods: A 15 year-old girl was referred to our clinic with lumbar pain; her back skin showed no hair patches, lipomata, dimples or scars; neurological evaluation was normal (no clubfoot, calf atrophy, absent reflexes or asymmetric muscle masses of the lower extremities). Results: anteroposterior spine radiographs showed a right lumbar scoliosis (35° Cobb's angle) due to a single fully segmented L3 hemivertebra; lateral spine radiographs demonstrated mild lumbar lordosis rectification, with preserved remaining physiological spine curves; CT scan confirmed the hemivertebra's slight lateral body protrusion, at the scoliosis' apex; echocardiography and renal ultrasound revealed no anomalies. Discussion: these deformities may be separated into four groups – failure of formation (block vertebra, wedge vertebra, simple hemivertebra (incarcerated/unsegmented), semi segmented/fully segmented or multiple hemivertebra), failure of segmentation (unilateral unsegmented bar), mixed defects, and complex unclassifiable patterns; due to the high incidence of other organ defects in patients with congenital scoliosis, they are recommended to undergo systemic clinical assessment. Conclusion: The risk of progression is related to type of anomaly, site within the spine, patient's age, and number of curves. Lumbar hemivertebra have a slower rate of progression than their thoracic counterparts (about 1° per annum), little affected by puberty; therefore, careful assessment, and monitoring, are essential; early intervention may be desirable.

Abstract no.: 38187

COMPUTER TOMOGRAPHY ASSESSED MUSCLE MASS AS AN INDICATOR OF LONGEVITY IN PATIENTS WITH SPINAL METASTASIS.

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BACKGROUND: Loss of muscle mass (sarcopenia) and function in ageing are associated with reduced functional ability, quality of life and reduced life expectancy. In cancer patients, age related muscle loss may be exacerbated by cachexia and poor nutritional intake. Individuals with widespread disseminated disease are most prone to increasing functional decline, increased morbidity and accelerated death. However subjective assessments of physical performance have been shown to be poor indicators of life expectancy in these patients. **AIMS:** To develop an objective measure to aid calculation of life expectancy in cancer by investigating the association between objectively measured lean muscle mass and longevity, in 41 patients with known spinal metastases from all cause primaries. **METHODS:** Lean muscle mass was calculated as total psoas area (TPA)/height (m)². Two blinded doctors independently calculated TPA from CT images at the L3 level, performed routinely within 7 days of diagnosis of spinal metastases. Time to death was recorded from retrospective analysis of hospital notes. **RESULTS:** Of patients within the highest tertile for muscle mass 85% were alive at one year, compared with 50% in the lowest tertile. **CONCLUSION:** Death within one year in individuals with spinal metastases is significantly higher in patients with low lean muscle mass at presentation.

Abstract no.: 38189

OUTCOME FOLLOWING INTERBODY FUSION V/S POSTEROLATERAL FUSION FOR SPONDYLOLISTHESIS. IS THERE A DIFERENCE?

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Background: Surgical treatment of low-grade spondylolisthesis has been a matter of debate. We present the results of a retrospective cohort that underwent either transforaminal lumbar interbody fusion (TLIF) or postero-lateral instrumented stabilization and fusion (PLF) for grade I/II degenerative or lytic spondylolisthesis. Methods: We identified 78 patients who had surgery for grade I or grade II spondylolisthesis. This was a retrospective case notes review of this group. Notes were made about demographics, age, gender, level and grade of spondylolisthesis, surgical procedure, length of follow up, complications and overall patient satisfaction (Back and leg pain). Results: 48 patients underwent PLF and 30 had TLIF. In the TLIF group we had 17 females and 13 males. Average age was 53 years (28-78 years). In the PLF group we had 34 females and 14 males. Average age was 62 years (35-90 years). 3 cases had L3,4 level involvement, 43 had L4,5 and 32 had L5,S1 level affected. We had 66 grade I and 12 grade II spondylolisthesis. We had 3 wound infections one in TLIF and two in PLF group. All needed washouts and all settled with antibiotics. Overall 90% patients (27 of 30) were satisfied with the intervention in TLIF group. In PLF group overall 91.6% (44 of 48) patients were satisfied with the intervention. Reasons for dissatisfaction were residual back pain in 6 patients and residual leg pain in one patient. Conclusions: Based on this review we conclude that both TLIF and PLF provide similar satisfactory results in low-grade spondylolisthesis.

Abstract no.: 38193

NICKEL SENSITIZATION IN TOTAL JOINT ARTHROPLASTIES

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Dissatisfaction with total joint arthroplasty is a ubiquitous complaint that plagues any joint arthroplasty surgeon who is in practice. The problem centers around how one addresses these concerns to the patient and what diagnostic tools are currently available to the practitioner in this present day and age. The current knowledge base of very sensitive Lymphocyte Stimulation Test (LTT) which is a specific test that can serologically identify nickel, cobalt, chromium, and even trace elements such as polyethylene and methylmethacrylate wear products. In this discussion of clinical and surgical approach, the author will investigate current testing techniques and their sensitivity along with the scientific basis developed. Review of the literature both past and present will also be provided. Finally, a variety of revision components and techniques will be reviewed in brief along with outcomes concerning the author's experience in such complex cases. As more information becomes available regarding nickel allergies and metal sensitization given the widespread use of total hip replacement with metal-on-metal bearing surfaces, it behooves the orthopaedic community to stay abreast of developments and changes with regard to potential sensitization to byproducts of wear. A substantiated and scientific-based clinical judgement to not only guide one's practice profile but also to advise patients and families of their condition can never be undervalued. With the review of literature provided, it is hoped that this would substantiate and solidify one's judgement as to the validity or lack thereof of nickel allergic sensitization in a small group of patients.

Abstract no.: 38195

ENDOPROSTHETIC REPLACEMENT IN THE MANAGEMENT OF COMPLEX AND COMPLICATED TRAUMA

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Fractures resulting from trauma is a leading cause of disability in developing countries. Although most fractures heal uneventfully, a few can present with significant complications or complexity for which treatment with routine osteosynthesis is not possible or has failed. We present our experience of using endoprosthetic replacements in the management of such severe fracture complications or complex primary fractures. Eight patients including five males and three females were treated with modular or custom made endoprotheses between 2011 and 2013. The age range was 37-83yrs (mean:54yrs). Minimum follow up was 12 months. The indication was non union with bone loss in four patients, complex peri-prosthetic fracture in one and metastatic pathological fracture with bone loss in three patients. The patients were assessed clinically and radiologically at 6 weeks, 3 months, 6 months and yearly. Functional assessment was performed with MSTS scoring system. Two patients had distal femoral endoprosthetic replacements, four had proximal femoral replacements and one distal humeral and one total humeral replacements. Complications occurred in two patients including delayed wound healing requiring soft tissue flap cover in one and hip dislocation in one patient. All the patients regained pain-free joint mobility and skeletal stability at follow up. All returned to employment. Mean MSTS functional score pre-operatively was 29 % and 67 % post-operatively. Endoprosthetic replacement of long bones is a useful adjunct in the management fracture complications and complex bone trauma.

Abstract no.: 38197

ASSOCIATION OF CYBA GENE POLYMORPHISMS WITH PRIMARY KNEE OSTEOARTHRITIS

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A new emerging role of oxidative stress in the pathology of osteoarthritis has been reported, lacking however elucidation of the underlying mechanism. NADPH oxidase, being a complex enzyme produced by chondrocytes, presents the major source of reactive oxygen species (ROS) and main contributor of increased oxidative stress. The p22phox subunit is essential to the normal functioning of the NADPH oxidase. There are polymorphisms of the p22phox gene (CYBA) that modify the function of the NADPH oxidase. The present study aims to evaluate the association of CYBA gene C242T, A640G and -A930G polymorphisms with primary knee osteoarthritis. One hundred fifty five patients with primary symptomatic knee osteoarthritis participated in the study along with 139 matched controls. Genotypes were determined using polymerase chain reaction and restriction fragment length polymorphism (PCR - RLFP) technique. Allelic and genotypic frequencies were compared between both study groups. NADPH p22phox -A930G polymorphism was significantly associated with knee OA in the crude analysis ($P=0.018$). No significant difference was detected for C242T and A640G polymorphisms ($P>0.05$). The association between -A930G polymorphism and knee OA disappeared when the results were adjusted for obesity ($P=0.078$, OR: 0.54, 95%CI: 0.272-1.071). The interaction between all three polymorphisms was not significant. The present study shows that NADPH oxidase p22phox gene C242T and A640G polymorphisms are not risk factors for knee osteoarthritis susceptibility. The -A930G polymorphism might be associated with knee osteoarthritis, especially in non-obese population, a finding that needs further investigation.

Abstract no.: 38198

COMPLEX SHOULDER INJURIES IN SPORTS

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A 26-year-old Olympic wrestling athlete presented with a pectoralis major muscle injury, glenohumeral instability, and acromioclavicular joint dislocation separately. The patient underwent surgical treatment to repair these injuries. The pectoralis major muscle was reconstructed with a semitendinosus tendon graft using the endobutton technique, as described by Pochini et al. Treatment of the traumatic anterior instability was performed using the technique described by Bristow–Latarjet, and the acromioclavicular joint dislocation was repaired using the modified technique of Weaver–Dunn with the aid of an anchor. The athlete exhibited a rapid recovery and could return to normal activities 6 months after surgery. At present, 18 months postoperatively, the patient is asymptomatic.

Abstract no.: 38201

A COMPARISON OF OUTCOME BETWEEN ISOBARTM TTL AND CONVENTIONAL TRANSFORAMINAL LUMBAR INTERBODY FUSION (TLIF)

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Background: Symptomatic lumbar degenerative disc disease has been primarily treated with spinal fusion. Rigid instrumentation to achieve fusion is considered as gold standard. Dynamic stabilization systems have been in existence and have evolved over several years. This prospective cohort study compares the outcomes of hybrid dynamic stabilization using Isobar™ TTL at one level and fusion at the other level to conventional two-level TLIF. Methods: A cohort of 15 patients who had hybrid dynamic stabilization using Isobar™ TTL was compared with a cohort of patients who underwent conventional two-level TLIF. Outcomes were then measured at 1 year post-operatively. Functional clinical outcomes were measured using Visual Analogue Scale (VAS), Oswestry Disability Index (ODI) and Short form-36 Physical Component Score (SF-36 PCS). Radiographic parameters were recorded. Results: 1 year post-operatively, the VAS and ODI score was similar in both groups with a mean value of 30 and 20.34 respectively. SF-36 score was higher in the Isobar group with a mean value of 48.54 compared to 44.28 in the conventional TLIF group. Radiographic analysis showed slight decrease in the lumbar lordosis and disc angle above the fixation level in the Isobar group. However the adjacent-level disc height was better preserved in the Isobar group. These changes were however, not statistically significant due to the small sample size of 15 patients in each group. Conclusion: Benefits were noted in hybrid dynamic stabilization using Isobar™ TTL in comparison to conventional rigid fusion, especially with a better preservation of adjacent-level disc height.

Abstract no.: 38204

SURGICAL MANAGEMENT OF CONGENITAL TORTICOLLIS IN CHILDREN OLDER THAN 7 YEARS WITH AN AVERAGE 10 YEAR FOLLOW-UP

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The aim of the present study is to present the experience of a tertiary referral centre in the surgical management of late presenting cases of CMT. Between 1990 and 2010, 31 cases (16 male and 15 female) of late presenting CMT were surgically managed in our department. The mean age of patients was 9.5 years (range 7 – 12 years). In 28 cases, release of the distal insertion of the sternocleidomastoid muscle was performed and in 3 cases of older children, a further release of the mastoid origin was required. The surgical technique for the distal release involved a 2 cm incision superiorly and parallel to the clavicle, release and removal of 2 – 3cm of sternocleidomastoid muscle, subcuticular sutures and a drain for 24 hours. Postoperatively, head halter traction was applied for 10 days. Subsequently a cervical brace was applied for 5 weeks followed by a soft collar for 3 months. All patients had physiotherapy including both active and passive stretching for 6 months postoperatively. The average follow up of the patients was 10.5 years (range 2 – 18 years). The final result was assessed against the criteria of Cheng and Tang. All patients had an improved ROM, 84% of the patients achieved an excellent final result and 16% a good one. Our results demonstrated that in children older than 7 years with a neglected / late presenting CMT, surgical release combined with appropriate orthosis and a structured physiotherapy regime can lead to satisfactory results.

Abstract no.: 38210

BMI DOES NOT AFFECT OUTCOME OF OPERATIVELY TREATED INTRA-ARTICULAR DISTAL RADIUS FRACTURES

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Introduction: Obesity and overweight (OO) have progressively increased worldwide along the last three decades. OO is associated with a variety of co-morbidities such as type-2-diabetes, cardiovascular complications, respiratory diseases, cancer, liver cirrhosis but also osteoporosis with risk of fractures. Most common fractures in humans are distal radius fractures (DRF). We reviewed operatively treated patients with intra-articular distal radius fractures (DRF) using volar plating according to their body-mass-index (BMI). Methods: We performed a seven-years-follow-up of 53 consecutive patients (mean age 61±18) after operatively treated DRF with a volar locking plate system. Patients were divided into normal (<BMI 25) or overweight (>BMI 25). Results: There were 24 (45%) normal-weight patients with a mean BMI of 22±2 and 29 (55%) patients with a mean BMI of 29±3. There were no significant differences between the two groups regarding the results of the scores of Gartland&Werley, Castaing and DASH. Conclusion: Although OO represents a co-risk factor for fractures as well as associated co-morbidities such as diabetes are risk factors of impaired bone healing, we did not find any differences between normal and overweight patients after volar plating of DRF. These results need to be confirmed in larger cohort studies including also morbidly obese patients.

Abstract no.: 38220

LOW-LEVEL LASER THERAPY FOR THE TREATMENT OF CHRONIC PLANTAR FASCIITIS: A PROSPECTIVE STUDY

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Background:Traditional nonoperative for plantar fasciitis management is successful in about 90% of patients. Chronic plantar fasciitis develops in about 10% of patients and is a difficult clinical problem to treat. A newly emerging technology, low-level laser therapy (LLLT), has demonstrated promising results for the treatment of acute and chronic pain. The current study sought to prospectively evaluate the clinical effectiveness of LLLT in patients with chronic plantar fasciitis. **Methods:** Thirty patients were administered LLLT and completed 12 months of follow-up. Patients were treated twice a week for three weeks for a total of 6 treatments and were evaluated at baseline, 2 weeks post-procedure, 6 and 12 months post-procedure. Patients completed the Visual Analog Scale (VAS) and Foot Function Index (FFI) at study follow up periods. **Results:** Patients demonstrated a mean improvement in heel pain VAS from 6.8 out of 10 at baseline to 0.7 out of 10 at the 12 month follow-up period. Total FFI score improved from a mean of 106.2 at baseline to 32.33 at 12-months post-procedure. No complications were noted. **Discussion:** In this prospective study, patients with chronic plantar fasciitis improved after treatment with low-level laser therapy for up to the six month follow-up. Thereafter the treatment effect was maintained but additional improvement was minimal. LLLT offers a pain free, cost effective alternative to other treatments of chronic plantar fasciitis and requires no invasive procedure, and no activity limitations. Although further studies are warranted, this study shows that LLLT is a promising treatment of chronic plantar fasciitis.

Abstract no.: 38222

**ANATOMICAL EVALUATION OF THE SCREW PLACEMENT WITH
SACRAL PLATE RELATED TO NERVE INJURY IN LUMBOSACRAL
FIXATION -CLINICAL STUDY WITH CT SCAN-**

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Stabilization of the spine using the devices like pedicle screws as fixation is popular method for treatment of spinal deformities. Sacral plate is one of a choice for Lumbo-sacral fixation. Meanwhile, Anterior cortical penetration of screws holds a certain danger of L4 root and L5 root injury. We reported the risk of nerve root injury by the second screw in first sacral vertebra, S1, (Alar screw) with sacral plate system using cadavers last year . Here, We investigated those with clinical CT scan data of patients who were performed the fixation with sacral plate system. The COLORADO2™ sacral plates were used to 17 clinical patients from 2003 to 2010. The distance to nerve roots from the tip of screws and screw insertion angle were measured. Then, anatomical risk of nerve root injury was assessed. Although L4 or L5 nerve injury risk by Alar screws at anterior surface of Alae were observed in 26.5% and 11.7% of cortical penetration of screws were revealed indeed, no nerve root injury was observed in clinical symptom. When the sacral plate like this system was used for Lumbosacral fixation, the second screw position is determined automatically by first S1 screw placement with device. Therefore, the operator needs to pay high attention to the placement and direction of the first S1 screw. Moreover, It is recommended that anterior cortical penetration not be used during screw fixation of the sacrum if the risk of nerve injury is considered high in preoperative CT scan imaging.

Abstract no.: 38226

CENTRAL CORE DISEASE: ASSOCIATION WITH NEUROMUSCULAR SCOLIOSIS AND MALIGNANT HYPERTHERMIA AND MANAGEMENT STRATEGIES

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Introduction: Central-core-disease (CCD) is a rare congenital myopathy associated with malignant hyperthermia. Hypotonia, delayed motor-milestones, musculoskeletal disorders like scoliosis are associated. It needs special attention in intra- and post-operative management from surgeon and anesthetist. We share this rare congenital myopathy and discuss management. **Methods:** A 15-yr-old girl presented with gradual development of deformity of back since childhood (3-yr) and rapid increase for 2-yr. Born full-term by LSCS with history of birth asphyxia and kept in incubator for 2-days. Gross motor milestones were delayed. Diagnosed as "central-core-disease" at 7yrs. Family history was negative. She had long myopathic facies; high-arched palate and left dorsolumbar scoliosis (apex: D11-D12). There was hypotonia and generalized muscle wasting. Power was MRC grade: 4/5 at major joints. Deep tendon reflexes could not be elicited. MRI showed no cord anomalies. Pulmonary function test (PFT): FVC-52%, FEV1-54% and FEV1/FVC-108%. Echocardiography: ejection fraction (EF)-60%. Growth sparing posterior instrumentation was done. Induction and maintenance of anesthesia was done with intravenous propofol (TIVA). Inhalational anesthetics were avoided. Neuromonitoring involved SSEPs and MEPs. **Results:** Duration of surgery-8hrs. Extubation was difficult. She was shifted to ICU. Chest radiograph showed bilateral effusion for which chest tubes were put. She developed generalized edema and proteins were found low (serum albumin-1.8mg%). Albumin infusion was given with supportive measures. Gradually, edema resolved. She was weaned off ventilator. Postoperative radiographs showed improvement in Cobb's angle from 110° to 60°. **Conclusions:** Though central-core-disease (CCD) is a rare entity, one should be aware as a cause of neuromuscular scoliosis; especially the possibility of malignant hyperthermia as it can be fatal. Neuromonitoring needs SSEP as MEP may not be reliable. Close inter-specialty coordination and ICU backup is important for successful outcome.

Abstract no.: 38230

COMPARISON ON MECHANICAL STABILITY BETWEEN PERPENDICULAR AND OBLIQUE POSITIONING OF THREADED RODS FOR STANDARD ILIZAROV RING EXTERNAL FIXATOR

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Successful distraction osteogenesis relies on biological response of healing bone and gradual mechanical distraction of bone ends. Multiaxial external fixator with oblique connecting rods has been popularised due to its ability to perform simultaneous correction of deformities in multiple planes. Oblique connection of 6 standard Ilizarov threaded rods in oblique configuration has been suggested to provide definitive fixation of bone ends during consolidation phase when the proximal and distal rings were not parallel to each other. We conducted this study to investigate the mechanical stability between 6 oblique connection rods and standard perpendicular rods using Ilizarov components. Multiple models of Ilizarov external fixator frame with either 4 perpendicular threaded rods, 6 perpendicular threaded rods, and obliquely placed 6 threaded rods with multiple angles (bring rod angles from 60° to 90°) were being tested with Instron machine under axial, tilting and rotational forces. We found that decreasing the ring rod angulation will reduce stiffness of axial loading between the frames but increase the tilting and rotational stiffness. Considering available literature that supports positive influence for bone healing with axial micromotion and negative influence by translational and rotational motions, 6 obliquely placed threaded rods may provide better mechanical environment for bone healing compared to 4 perpendicular rods.

Abstract no.: 38231

38231

Sujith VELLATHUSSERY CHAKKALAKUMBIL
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6 year old boy reported to casualty with pain and inability to bear weight following a fall. Clinical and radiological evaluation revealed dislocation of hip which was reduced and check Xray was taken. The x-ray showed expansion of distal part of femur – “ERLENMAYER FLASK “ deformity and skeletal survey showed metaphyseal dysplasia of both femur, humerus, proximal end of ulna and medial end of clavicle and diagnosis of Pyle`s disease was confirmed. DISCUSSION: Pyle`s disease or Metaphyseal dysplasia is due to disturbance of enchondral bone growth, increased osteoblastic activity resulting in “Erlenmayer flask” deformity. Considered to be familial-autosomal recessive inheritance. Usually affected individuals are of normal stature, healthy but tendency for pathological fracture exists. Common site affected is distal femur. Bone growth at nerve foramina can result in neurological symptoms, blindness and loss of hearing.

Abstract no.: 38235

AVASCULAR NECROSIS OF THE FEMORAL HEAD -

Tomas TRC

., . (CZECH REPUBLIC)

Introduction The treatment of avascular necrosis of the femoral head is rather controversial. Conservative treatment has been reported as completely unsuccessful in older patients, not very successful in younger ones. Surgical hip preserving treatment (non-prosthetic) brings better results especially in early stages and in younger patient, wher it could be morover the only solution to the situation. **Method** We have controlled group of 56 patients (children and adolescents), where core decompression has been performed in the period from 1983 to 2010. Surgical procedure was core decompression with „pressfit“ grafting of the cacellous bone at the same session. The procedure has been performed with special instrumentarium that allows miniinvasive/percutaneous insertion. Clinical, subjective evaluation, Jacobs score, radiological (X-ray and MRI) assesment has been performed. **Results** Radiological results are controversial as well as in other studies , discrepancy between clinical and radiological results has been observed. Jacobs score shows some improvement which depends on the age of particular patient and the stage and extension of necrosis. We have not observed the difference between idiopathic and postcytostatic or steroid induced necrosis. **Discussion** The method of treatment by core decompression is not a new one, possible improvement could bring by „press fit“ grafting. Miniinvasive/percutaneous surgical technique is simple and brings the profit to our young patients. Results are not really excellent but some improvement in early stages and in younger patients are encouraging, the THR can be delayed. We need bigger cohort of the patients as a partof prospective study..

Abstract no.: 38240

CYCLIC TENSILE STRAIN INCREASES CCN2/CTGF EXPRESSION IN HUMAN MENISCUS CELLS

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Background: The intrinsic zone-specific properties of the menisci are determined by biomechanical environments, such as tension, compression, and shear stress. **Aim:** In this study, we examined mechanical stretch-dependent expression of multifunctional growth factor CCN2/CTGF, and investigated the role of CCN2 in human meniscus cells. **Material and Methods:** Meniscus cells were isolated from macroscopically intact lateral menisci. Inner and outer meniscus cells were prepared from the inner and outer halves of menisci. Uni-axial cyclic tensile strain (CTS) was applied using a STB-140 system. CTS-induced expression of CCN2 and $\alpha 1(I)$ collagen (COL1A1) was assessed by quantitative real-time PCR analysis. The distribution of CCN2 and Smad2/3 in stretched cells was investigated by immunohistochemical analysis. Smad2/3-dependent CCN2 transactivation was measured by luciferase reporter assay. The relationship between Smad2/3 and CTS-induced CCN2 transcription was investigated by chromatin immunoprecipitation. **Results:** CTS stimulated gene expression of CCN2 and COL1A1 in inner meniscus cells, but not in outer meniscus cells. Recombinant CCN2 increased COL1A1 expression only in inner meniscus cells. CCN2 synthesis and nuclear translocation of phosphorylated Smad2/3 in inner meniscus cells were stimulated by CTS. The CCN2 promoter activity was synergistically enhanced by overexpressed Smad3 in stretched inner meniscus cells, but was not by Smad2. Chromatin immunoprecipitation revealed that CTS increased the association between Smad3 and the Smad-binding element on the CCN2 proximal promoter in inner meniscus cells. **Conclusion and clinical implications:** Our results suggest that stretch-induced Smad3 phosphorylation and CCN2 transactivation may have crucial roles in preserving the feature of the human inner meniscus.

Abstract no.: 38264

DOUBLE BUNDLE ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION; NOT FOR ALL; AN MRI STUDY

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Objectives: To evaluate the incidence of anatomic restrictions which may prevent performing a double-bundle reconstruction of a torn anterior cruciate ligament (ACL). When the femoral notch width (FNW) is less than 12mm and the tibial insertion site (TIS) is smaller than 14mm in diameter, double-bundle reconstruction cannot be performed due to technical difficulties. The hypothesis was that significant rate of patients do not meet the criteria for double bundle ACL reconstruction. **Methods:** Retrospectively studied 658 knee MRI examinations, corresponded to 635 patients. We measured the femoral notch width (FNW) on coronal T1-w spin echo images at the level of decussation of ACL and posterior cruciate ligament and the ACL tibial insertion site (TIS) length on sagittal fat suppressed proton density turbo-spin-echo images at the point of maximum length. **Exclusion criteria** included patients with open physes, severe osteoarthritic changes (Grade III or greater) and multi-ligamentous injuries. **Results:** 8.1% of patients to have open physes, 9.1% severe osteoarthritic changes and 0.6% multi-ligamentous injuries. The above were excluded from the analysis. In our study group, 15,3% of subjects proved to be non-proper candidates for double-bundle ACL reconstruction technique depending on the results of measurements. Of them, 13.7% had short TIS length, 1.3% had narrow femoral notch width (FNW) and 0.3% had both. **Conclusions:** A significant rate of patients do not meet the anatomic criteria for double-bundle ACL reconstruction. MRI is able to depict this subgroup of patients and is important pre-operative tool to decide if double-bundle ACL reconstruction can be performed.

Abstract no.: 38266

LATERAL POSITIONING: KEY TO SUCCESSFUL TALUS REDUCTION IN ANKLE FRACTURES AND DISLOCATIONS

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Ankle fractures account for 9% of fractures representing a significant portion of the trauma workload. Previous studies have demonstrated minimal residual displacement of the talus can cause a significant increase in intra-articular contact stress. It is therefore generally accepted that ankle fractures with talar shift must be reduced at the earliest opportunity to diminish the incidence of pre-operative swelling and further intra-articular damage. Previously described technique of patient laying supine with hip and knee flexed at 90degrees, and the ankle in dorsiflexion can occasionally fail to restore the ankle mortise. Biomechanically, when the ankle is dorsiflexed, the widest part of the talus engages in the ankle mortise, at the same time the hindfoot goes into slight valgus and the foot goes into slight pronation and external rotation. In combination, this causes the talus to abut against the fibula, further displacing and shortening it. We propose an alternative technique with the patient lying in a lateral position with their injured leg uppermost. The foot is allowed to hang in its natural resting position of slight plantar flexion and inversion. This allows the distal fibula to be distracted into length and shifting the talus medially, offloading it from the lateral malleolus. In our case series, this technique successfully reduced the injured ankles into an acceptable position which otherwise would require immediate operative management, avoiding the potential need of temporary external fixation out of hours because of suboptimal position. It also minimises preoperative swelling allowing early definitive fixation on a planned trauma list.

Abstract no.: 38274

SURGICAL MANAGEMENT OF THORACIC OUTLET SYNDROME

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Introduction Thoracic outlet syndrome (TOS) refers to a Complex symptoms in upper extremity caused by compression of the brachial plexus, subclavian vesseles. Different surgical approaches were described for management of TOS. however, no “gold standard” procedure for this complicated and multi- disciplinary problem. **Methods** 15 Patients suffering from TOS (for 1.5 to 10 years after beginning the symptoms) were selected for a treatment of the complex symptom of pain. Four of the 15 patients were suffering from signs of vascular compression, eleven patients showed slow progressive neurological deterioration (ulnar distribution) with partial muscle atrophy. The surgical treatment of 15 cases TOS in 15 patients . Patients included 14 women and one man with average age 20.1 years. The causes of Compression were Cervical Rib (N = 15), with soft Tissue anomalies (N = 12), patients underwent a surgical treatment using a supraclavicular approach followed by brachial plexus neurolysis, sclanectomy and release of the subclavian vesseles with Rib resection. Post-operative results were classified into good, fair, poor results. **Results** Surgical results were studied, with follow up 12 to 24 months prior to surgery; all patients had partial or severe limitation in physical activities. Post-operative follow up showed that 13 (86.6%) of the 15 patients returned to normal daily activities with Complete relief of symptoms (good). In 2 patients (13.3%) pain decrease and medication were stopped but there some discomfort at the scar. Thirteen of 15 patients returned to full employment. There were no poor cases.

Abstract no.: 38283

**THREE TIMES SURGICAL TREATMENT DURING ONE MONTH FOR
PATIENT WITH CROWE TYPE-IV HIGHLY DISLOCATED HIP**

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In total hip arthroplasty (THA) for the treatment of Crowe type-IV developmental dysplasia, it can be technically challenging to locate the true acetabulum and restore limb length. We report the challenging case of a 74-year-old female patient who suffered from both dislocated hips (Crowe IV). After a traffic accident, she could not walk by herself due to left hip pain. We performed THA without subtrochanteric femoral shortening for left highly dislocated hip, subsequently the hip pain disappeared but did not achieve ambulation by herself because postoperatively leg lengths varied by more than 3.5 centimeters. Six months after the operation, we performed cementless THA combined with a subtrochanteric femoral shortening for right dislocated hip into gluteal muscles. One week postoperatively, cementless cup with grafted autologous femoral head was dislocated proximally. 20 days postoperatively, we performed revision surgery with bone allograft and a Kerboull-type acetabular reinforcement device. Unexpectedly, 3 days later cemented cup with the reinforcement device and allograft blocks was dislocated because of pelvic discontinuity. 29 days postoperatively, we treated with metal mesh, impacted bone allograft and cemented cup. 3 months postoperatively after the final operation, she has no hip pain and walks with two canes. We believe the difficulty of achieving initial success stemmed from the porotic condition of femur and pelvis as a result of her avoiding sufficient weight-bearing. We considered that we should not hesitate to use additional acetabular reinforcement device as well as bone allograft in the primary THA for Crowe type-IV developmental dysplasia.

Abstract no.: 38287

**ORAL THROMBOPROPHYLAXIS FOR ANKLE FRACTURE IN
AMBULATORY TRAUMA PATIENTS BEING MANAGED NON
OPERATIVELY AS OUT PATIENTS**

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Background: Relationship between temporary limb immobilisation and venous thromboembolism (VTE) has been documented since 1944. Lower-limb immobilisation has been implicated as an aetiological factor in approximately 1.5 -3% of all VTE events. The actual incidence of VTE in patients with temporary plaster immobilisation is estimated anywhere between 5 - 39%. Guidelines from various health advisory boards across the globe including NICE, SIGN and CEM are not clear. However Cochrane Library Meta-analysis advises administration of LMWH during the entire period of immobilization of the lower extremity. However the compliance with injectable thromboprophylaxis can be an issue. **Material and Method:** In our teaching hospital a scoring system is used based on NICE guidelines for ambulatory patients with ankle fracture being managed as outpatients by temporary lower limb immobilisation. Patients are classed either high or low risk for developing VTE event and high risk patients are offered ORAL thromboprophylaxis after assessing bleeding risk. This is a retrospective study in which 150 patients with ankle fractures being managed as out-patient with lower limb immobilisation were assessed and given thromboprophylaxis with ORAL anticoagulants accordingly. Blood test was done before starting treatment. These patients were followed up to three months following injury. Three patients (i.e. 2%) developed symptomatic VTE. **Conclusion:** This scoring system works in significantly reducing the incidence of VTE in patients with ankle fracture. More patients need to be assessed before arriving at a definite conclusion.

Abstract no.: 38313

DROP FOOT AND MEDITATION POSTURES .

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AIM/PURPOSE:The peroneal nerve is susceptible to different types of injury.Drop foot among practitioners of meditation who spend long periods of time in various meditation postures, like Lotus posture, is not very frequent .We present a middle age man with drop foot, permanent peroneal nerve injury, after meditations years.**METHODS:**45 year old man from Mallorca was a long period of time in India , doing meditation postures during a lot of hours , every day .After these years he began suffering drop foot . He was treated with rehabilitation and brace , but he did not improve . We performed Hsu and Hoffer technique a four-incision technique: Posterior Tibial Tendon Transfer through the interosseus membrane .The tendon is passed subcutaneously, maximizing power, and fixation to the midfoot with bioabsorbable interference screw ; also we performed percutaneous Achilles tendon lengthening.He used a walker boot with six weeks non-weight-bearing, after he began physical therapy .**RESULTS:**The patient was satisfied with the results of the surgery, with an AOFAS score increasing from 24 to 86 after 7-year-follow-up. He walks very good and he does not need brace ; and plays sports , mountaineering.Now he has a very good quality of life .**DISCUSSION/CONCLUSIONS:**Meditation postures should be in our mind like another etiology for drop foot .Before ankle fusion ,we must think in possibility of transfers techniques if it is possible.We must be aware of the consequences of transferring tendons. No flat foot deformity after posterior tibial tendon transfer in this patient .

Abstract no.: 38314

SALVAGE SURGERY IN FOOT AND ANKLE PATHOLOGY

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Introduction:The amputation of a limb should be the last choice in severe foot and ankle pathology. We describe a series of patients with large bone and soft tissue defects and severe sequelae of foot and ankle pathology treated using a multidisciplinary approach, where we performed salvage surgery. **Methods:**We present five cases of patients with severe sequelae of pathology of the foot and ankle, two men and two women. The pathologies were very different: severe polytraumatized, osteomyelitis,... Study together with plastic surgery, infectious internal medicine and vascular surgery was performed. The median follow-up was one year. The five patients were operated by the same specialists. **Results:**In four of the five patients salvage surgery results were very good, in a patient evolution was unfavorable and transtibial amputation was performed. In four patients with good results, we get a non-painful, plantigrade foot. One of them walks without calcaneal. The patients were able to increase the results with the AOFAS scale, but most importantly, was to avoid amputation in three patients. **Conclusions:**Amputation is not always the best for the patient. To maintain a functioning, non-painful and plantigrade foot - ankle is, at times very difficult. We believe it is our duty to give every possible opportunity and fight to the end to save the lower extremity. In complex pathology of foot and ankle, with severe bone and soft tissue defects, we should refer to a specialized multidisciplinary unit. Salvage surgery, with good planning and a good multidisciplinary team surgery is a very good option to avoid amputation.

Abstract no.: 38316

**ENHANCED RECOVERY FOR NECK OF FEMUR FRACTURE: A
CURRENT CONCEPT AND REVIEW OF PERIOPERATIVE
INTERVENTIONS**

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Neck of femur (NOF) fracture is a common and life threatening injury. Prompt treatment and mobilisation of this cohort of patients will reduce perioperative complications and cut the cost to the health care providers. The current economic environment requires short hospitalisation and early discharge without compromising patient safety. The current concept of enhanced recovery is widely accepted with successful outcomes in elective hip and knee arthroplasty. This can be applied to enhance recovery for neck of femur injuries with the potential to improve outcome and reduce cost. The aim of this review is to actively encourage the use of the individual interventions mentioned below in unison and work towards a unified national enhanced recovery programme for neck of femur fractures. Using a thorough electronic literature review we compiled a list of evidence based interventions that aim to reduce length of stay and encourage early active mobilisation. Pre-operative interventions included pre-operative injury scoring, patient education, fascia iliaca block, pre-operative nutritional support, surgery within 24 hours of admission and a liberal transfusion policy. Intra-operative interventions included epidural analgesia and anaesthesia, high concentration Oxygen, optimal fluid management and minimally invasive surgery. Post-operative interventions included wound infection prophylaxis, intensive physiotherapy and early mobilisation, and early discharge planning. We acknowledge that more research is needed in order to adequately assess the benefits of enhanced recovery in neck of femur fractures and hope that this thorough evidence based literature review is the first step needed.

Abstract no.: 38323

TITANIUM ELASTIC NAILING FOR FEMORAL FRACTURES IN OLDER ADOLESCENTS AND YOUNG ADULTS. A PROSPECTIVE COMPARATIVE STUDY VERSUS INTERLOCKING NAILING

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Neither there are reports of using Titanium Elastic Nail (TEN) beyond 18 years nor reports dedicated to those older than 13. Thirty-one fractures in 30 patients with a mean age of 19.1 years were prospectively compared to 27 fractures in 26 patients with a mean age of 19.0 treated with interlocking-nail (IN) with 2-years minimum follow-up. There was no statistically significant difference between TEN and IN in union (11.7 ± 2.4 versus 10.8 ± 2.1 weeks); coronal angular deformity (CAD) ($1.1 \pm 2.7^\circ$ versus $.4 \pm 1.0^\circ$); shortening (0.9 ± 2.3 mm versus $.3 \pm 1.2$ mm); sagittal angular deformity (SAD) ($.9 \pm 2.4^\circ$ versus $.4 \pm 1.3^\circ$) or rotational deformity (RD) ($1.3 \pm 3.1^\circ$ versus $.5 \pm 2.1^\circ$). IN-group had earlier full weight-bearing (2.8 ± 1.9 versus 11.7 ± 2.4 weeks, $P=.000$) and earlier return of activity (19.1 ± 1.4 versus 17.6 ± 1.6 weeks, $P=.003$). TEN-group had shorter operative-time (44.6 ± 9.5 versus 103.0 ± 31.1 minutes with $P=.000$), shorter hospitalization ($1.1 \pm .3$ versus $2.7 \pm .7$ days, $P=.000$), less postoperative pain ($P=.000$) and was less costly by 29.1% ($P=.000$). Four of TEN-group had painful nail-end and two had calcar penetration. Heterotopic ossifications occurred in nine cases in IN-group. Mean follow-up was 29.6 months (TEN) and 30.1 (IN). We had no lengthening, nonunion, re-fractures, infection or deaths. TEN can be safely added to treatment options in this age group.

Abstract no.: 38325

**FEMORAL LENGTHENING USING ORIGINAL LOW PROFILE ILIZAROV
FIXATOR IN ADOLESCENTS**

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This study was designed to test clinical applicability of original low profile Ilizarov frame for femoral lengthening in adolescents. The original Ilizarov frame consists of two full rings fixed by two tensioned wires for each with an osteotomy in the distal metaphyseal area. We added a third dropout wire to each ring for more stability instead of using the modified cumbersome femoral frame with two rings and proximal arch. Thirteen femoral lengthening procedures were performed. Mean age of our patients was 15 ± 2.7 years and mean length gain was 74 ± 18 mm with two patient had concomitant correction of valgus deformity. The planned lengthening was achieved in all patients with healing index 22.8 ± 4.4 days/cm. All cases were followed up for at least 36 months. Advantages of this low profile frame are mainly the less bulky external fixator with fewer transosseous elements and therefore pin site problems.

Abstract no.: 38336

TOTAL PROXIMAL INTERPHALANGEAL JOINT ARTHROPLASTY FOR OSTEOARTHRITIS VERSUS RHEUMATOID ARTHRITIS - A SYSTEMATIC REVIEW

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A systematic review of the literature was conducted comparing the outcomes after total proximal interphalangeal joint arthroplasty for the treatment of osteoarthritis and rheumatoid arthritis. We followed the PRISMA guidelines in conducting and reporting this systematic review. A total of 16 studies were included. We compared functional outcome, patient satisfaction, pain, range of movement, grip strength and re-operation rate. The analysed data was heterogeneous, with different prostheses used, outcomes measured, and time to follow up, so meta-analysis was not possible. This review suggests that those undergoing proximal interphalangeal joint arthroplasty for osteoarthritis have a relatively better functional outcome and lower re-operation rate compared to patients with rheumatoid arthritis. This may reflect the systemic nature of rheumatoid arthritis. Careful patient selection is necessary when offering total proximal interphalangeal joint arthroplasty to rheumatoid patients but remains a valid treatment option.

Abstract no.: 38343

OUTCOME AND MIDTERM SURVIVORSHIP OF BIRMINGHAM HIP RESURFACING ARTHROPLASTY

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Few independent studies have reported the outcome of resurfacing arthroplasty of the hip. The aim of this study was to report the clinical outcome and midterm survival of an independent series. We report our series of 32 cases of Birmingham hip resurfacing (BHR) arthroplasty with an average followup of 7.4 years. All patients were males with mean age of 54.2 years. Survivorship of the total cohort with aseptic revision as the endpoint was 93.7%. 2 cases had to be revised one for symptomatic metallosis and the other a pseudotumour. There were 4 cases of neck thinning (all less than 10% of its width), 4 cases of metallosis and 1 pseudotumour. No case of neck fracture or loosening were noted. 29 of 32 hips (90.6%) had an excellent or good outcome according to the Harris hip score. There was a significant increase in Hip disability and Osteoarthritis Outcome Score (HOOS) of 13.6%. This study confirms the midterm reports that metal-on-metal hip resurfacing using the Birmingham Hip provides, particularly in younger male patients wishing to maintain a high level of function, with low risk of revision at midterm followup. Keywords - Outcome, Survivorship, BHR, midterm

Abstract no.: 38346

CORRELATION BETWEEN DXA AND ULTRASOUND DENSITOMETRY

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Introduction: the aim of this study was to compare the DXA and ultrasound method for detecting the presence of osteoporosis. Methods: we used a DXA osteodensitometry device (General Electric) and an ultrasound finger device (DBM Sonic 1200/E) for comparing the results of 333 women patients with fractures. The mean age of patients was 43,2 years (26 to 76). A number of 183 patients were postmenopausal women. The fractures were localized on spine, shoulder, humeral diaphysis, distal forearm bones, hip, knee, ankles and foot. Results: we found with DXA, using the T score, 122 cases of osteoporosis, 95 cases of osteopenia, and 116 normal cases. Using the ultrasound device we found 86 cases of osteoporosis, 105 cases of osteopenia, and 142 normal cases. There were different results between the two devices. For a T-score lower and equal with -2.5, on DXA, we find a mean of T-score , on US device, of -1.9. For DXA T-score lower than -1.0 and greater than -2.5 we find a mean US device T-score, of -1,3. Conclusion: less expensive than DXA, US osteodensitometry, likely to be use easier, need to be correlated with DXA results in order to obey to a good clinical practice.

Abstract no.: 38352

POSTERIOR PLATING OF DISPLACED FIBULA FRACTURES IN ANKLE INJURIES

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Thirty one patients prospective study was done who were treated in my hospital with posterior plating of displaced weber b fibula fractures with minimum six months follow up. unbent five hole one third tubular plate sometimes six hole was applied to posterolateral aspect of fibula using anteglide technique twenty one patients lag screw fixation was done through plate. None of my patient had nonunion or malunion None of these patients had hardware prominence reported as with lat plating . No implant loosening was seen especially in osteoporotic patients as sometimes seen with lat plating .few of our patients reported peroneus tendinitis. That resolved in six weeks time. Ninety five of our patients reported satisfactory to good results conclusion for post malleolus of fibula posterior plating offer any adv over lat plating and provide stronger construct.

Abstract no.: 38355

ACUTE CORRECTION OF SEVERE ADOLESCENT TIBIA VARA BY V-SHAPED OSTEOTOMY USING ILIZAROV FIXATOR.

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Introduction: Management of severe adolescent tibia vara includes various realignment osteotomies with different fixation methods, lateral hemiepiphyseodesis, gradual asymmetrical proximal tibial physeal distraction, resection of a physeal bar, and elevation of the medial tibial plateau. Material and Methods: A prospective study of 13 patients (19 limbs) with adolescent severe tibia vara is presented. The average age was 13.2 yrs. The v-shaped osteotomy utilized in this study is performed such that one osteotomy limb is used to elevate the depressed medial tibial plateau, that is then fixed by the proximal Ilizarov ring; the other limb of the osteotomy corrects the varum, and internal rotation deformity of the tibial metaphysis. Following which another two distal Ilizarov rings are used to complete the construct. The average time in the frame was 10 weeks \pm 1.17. Follow up was for an average of 16 months \pm 4.84. Results: All cases maintained the correction and ultimately achieved union. There was a statistical improvement in the measured angles of deformity. The angle of depression of the medial tibial plateau improved from a mean of $36.05^{\circ} \pm 9.21$ pre-operatively to a mean of $7^{\circ} \pm 6.10$ post-operatively. Two cases had an under-correction of the tibia vara that demanded gradual distraction of the frame. Another patient with severe internal tibial torsion (30°) required another distal tibial de-rotation osteotomy. Conclusions: This newly described acutely performed osteotomy performed through a limited skin incision and fixed by circular external fixator seems to provide for a dependable method of correction for severe adolescent tibia vara.

Abstract no.: 38364

**CAPABILITY OF CORRECTION OF THE KNEE FLEXION CONTRACTURE
IN PATIENTS WITH MYELOMENINGOCELE AFTER WIDE POSTERIOR
RELEASE**

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Introduction: the knee flexion deformity is considered a relevant change due its high capability in create difficulties for the maintenance of the activities of daily living in patients with myelomeningocele included in all functional levels. Flexion contracture presents the most usual deformity of the knee. Prevention using orthosis and rehabilitation is critical, however, could not avoid the appearance and evaluation of the deformities. Surgical treatment is indicated especially in deformities over 15 to 20 degrees. Considering the myelomenigocele is one of the included causes on flaccid palsy, the pathophysiology of the deformity consists in joint changes with emphasis on capsular involvement. Purpose: the aim of this study is to measure the ability of immediate correction of the deformities mentioned using the surgical technique of wide posterior release. Methods: we analyzed 11 patients with myelomeningocele, summing 19 knees undergoing surgical correction of knee flexion deformities with the technique of wide posterior release. Were analyzed 5 thoracic level patients, 3 of the upper lumbar level and 3 of the lower lumbar level, summing 8 patients of high level and 3 of low level. Results: the results have showed statistically significant difference between pre and post-treatment, with a mean angle difference of 29.2 degrees. There was no statistically significant association with age, sex, laterality or pathology location. Conclusion: finally, the conclusion is the wide posterior release of the knee offers an average of 29,2 degrees of immediate surgical correction and may be performed as a safe procedure with acceptable complications rates.

Abstract no.: 38365

DOES MEDICARE 3-DAY RULE INCREASE LENGTH OF STAY?

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Medicare will only cover transfer to a skilled nursing facility if it follows a hospital inpatient stay of at least 3 days. This rule was instituted several years ago to prevent improper and excessive utilization of the skilled nursing benefits under Medicare. The purpose of this study was to evaluate whether or not Medicare 3-day rule increase length of stay after total joint arthroplasty. From a consecutive cohort of 800 TKA done during 2011 we analyzed patients who were discharged to in-patient rehab after surgery. A total of 322 patients were discharged directly to inpatient rehab facility after surgery. There were 209 Medicare patients and 113 Private patients. The LOS was 2.3 days for privately insured patients and 3.02 for Medicare recipients ($p < 0.05$). No difference was found between the two groups with regards to age, BMI, and ASA score. We found Medicare rule increased the LOS of patients that needed inpatient rehabilitation when compared to patients who were privately insured. In the current medical economic climate, we recommend that this outdated rule be revised in order to decrease cost and expenditure. There are always going to be individuals who will not be able to go directly home after surgery and will need in patient rehab. Private insurance patients can start rehab and recovery earlier in their course, but Medicare patients lag behind since they have to stay in the hospital longer.

Abstract no.: 38366

INTRAMEDULLARY NAILING FOR SEGMENTAL FEMORAL SHAFT FRACTURES

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[Objectives] Our study concerns our treatment of segmental femoral shaft fractures of involving a big third bone fragment, which is relatively rare. [Methods] A total of 5 cases which we treated since 2005 are examined retrospectively, consisting of 3 males and 2 females with an average age being 39.8 years old. The timing of surgery, operative procedures, bone healing, and functional prognosis are discussed. [Results] Causes of injury are traffic accident (3 cases) and fall (2 cases), all of which are caused by high force impact. They are 4 open fractures and one closed fracture. Among open fractures, there are 3 Gustilo II and one Gustilo IIIA. The timing of surgery was as follows; immediate surgery was done by internal fixation in 2 cases; another case was treated 2 days after the injury, yet another case was treated 7 days after, and the last one causing aortic injury was treated 14 days after. For all cases, we used an intramedullary nail (anterograde 3 and retrograde 2). As regards reduction, in the two cases of immediate internal fixation, we used open wound for reduction, whereas in the other three cases, we made a small incision for open reduction, since closed reduction appeared to be impossible. The bone union was observed in all cases without any post-operative infection. No malfunction was observed. [Conclusion] Solid fixation by using an intramedullary nail produced good results of treatment for segmental femoral shaft fractures. We consider immediate internal fixation desirable to treat open fractures.

Abstract no.: 38375

PAIN RELIEF IN PATIENTS WITH HIP FRACTURE- A CASE CONTROL STUDY COMPARING TRADITIONAL SYSTEMIC METHODS AND FASCIA-ILIACA BLOCK

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INTRODUCTION: About 75,000 hip fractures occur annually in the UK and the incidence is expected to increase. Acute pain control, traditionally managed with systemic analgesia, is crucial to outcome. Often there is a delay in pain-relief administration. Furthermore, there is a risk of systemic side effects. We performed a prospective case-control audit to analyse the role and efficacy of alternative forms of analgesia like fascia-iliac blocks (FIB). **METHODS:** 104 consecutive hip fracture patients were prospectively recruited and equally divided into; cases (patients receiving FIB) and controls (patients receiving systemic analgesia). Adequately trained junior doctors performed all blocks. The outcome measures included the time of initial analgesia, total pre-operative dose of analgesia, regularly measured pain scores from admission to 24 hours pre-operatively and any complications. **RESULTS:** The pain scores were significantly lower ($p < 0.05$) in patients receiving FIB at 2, 8 and 16 hours pre-operatively. The timing of initial analgesia was also quicker in patients with FIB (25 compared to 40mins). FIB patients required fewer doses of systemic analgesia. The block was successful in 83% patients. There were no complications. **DISCUSSION:** The implementation of European Working Time Directive, Hospital at Night, shift-system and the reduction in the number of medical staff has increased the burden on Emergency Departments. Junior doctors are often at the forefront of service delivery and can actively contribute to adequate pain management of hip fracture patients. FIB is not only safe and effective analgesia but also provides an opportunity for junior doctors to improve current clinical practice.

Abstract no.: 38382

FUNCTIONAL OUTCOMES OF SUTURE BRIDGE VERSUS BONE TUNNEL TECHNIQUE FOR CHRONIC ANKLE INSTABILITY IN ATHLETES

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Introduction: This prospective study was conducted to compare the functional outcomes of two different ligament reattachment techniques for chronic ankle instability in athletes. **Material & Methods:** Forty-five athletes under 30 years of age were followed for more than 2 years after undergoing the modified Brostrom procedure. Twenty-four suture bridge technique and 21 bone tunnel technique were performed by one surgeon. The functional evaluation consisted of the Karlsson score, Tegner score, Sefton grading system, and the period to return to various exercise (jogging, spurt running, jumping, one leg standing for > 1 minute, walking on uneven ground, going-down stairs). As evaluation for mechanical stability, measurement of talar tilt angle and anterior talar translation was performed through stress radiographs. **Results:** There were no significant differences on Karlsson score, Tegner score, Sefton grade, and range of motion. On the contrary, there were significant differences on the period to return to jogging, spurt running, jumping, going-down stairs. Talar tilt angle had decreased significantly than preoperative evaluation in both groups, and there were significant differences between two groups at 3 and 6 months postoperatively ($p=0.026$, 0.011 respectively). As the most common complication, there were 4 cases of skin irritation by suture materials in bone tunnel group. **Conclusion:** The modified Brostrom procedure using suture bridge technique showed satisfactory functional outcomes comparable to conventional surgical technique. With advantage of less skin irritation and more mechanical stability in early rehabilitation period, suture bridge technique seems to be effective treatment option for chronic ankle instability in athletes.

Abstract no.: 38383

CLINICAL OUTCOMES OF DISTAL METATARSAL OSTEOTOMY USING BIOCOMPRESSION SCREW FOR ADVANCED HALLUX RIGIDUS

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Introduction: This study was performed prospectively to evaluate the clinical outcomes of distal metatarsal osteotomy using bio-compression screw as the joint preservation method for advanced hallux rigidus. Methods: Forty-two cases(38 patients) 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 AOFAS scores. The range of motion(ROM) of the first MTP joint, the period to return to running exercise, the satisfaction score, and the reoperation rate were evaluated. As radiographic evaluation, the interval of first MTP joint space and the period to union were measured. Results: The AOFAS hallux score had improved significantly from preoperative average 48.4 points to 88.6 points at the last follow-up. Dorsiflexion of the first MTP joint had improved significantly from preoperative average 9.4° to 33.5° at the last follow-up. The period to return to running exercise was average 3.6 months. Subjective satisfaction score of patients was average 94.8 points. There was no case of subsequent fusion or additional operation, and no complication associated with a bio-compression screw. The interval of the first MTP joint space was had improved significantly from preoperative average 1.2 mm to 3.4 mm at the last follow-up. All cases achieved union of osteotomy site, and the period to union was average 10.2 weeks. Discussion and Conclusion: Distal metatarsal osteotomy using bio-compression screw is effective surgical method for advanced hallux rigidus, because of restoration of joint motion, and reliable pain relief, and needlessness of implant removal.

Abstract no.: 38386

**EFFECT OF OPERATION FOR LESSOR TOES DEFORMITY
CONCOMITANT WITH HALLUX VALGUS ON CLINICAL OUTCOMES**

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Introduction: There are no definitive principle about necessity of lessor toe deformity correction in patients with hallux valgus. This study was performed to evaluate the impact of lesser toes operation on the overall clinical outcomes. Methods: Forty-six cases underwent surgery for hallux valgus concomitant with lesser toe deformities were followed up for at least 2 years. Lesser toe deformities consisted of 9 crossover toes, 10 claw toes, 12 hammer toes and 15 bunionettes. The clinical evaluation was performed with AOFAS score, patient's satisfaction score, pain VAS score. Hallux valgus angle(HVA), intermetatarsal angle(IMA) were measured. In addition, the preoperative expectation of patients about lesser toe deformities, postoperative satisfaction, complication rate, hospitalization period, medical expenses, and frequency of outpatient follow-up were analyzed. Results: AOFAS score had improved significantly to 91.8 points, and 43 cases(93.5%) achieved satisfactory results. Pain VAS score of big toe and lesser toe had improved to 1.2, 0.8 points. HAV and IMA had improved to 14.2°, 8.5°. All cases achieved union, and the period to union was average 7.5 weeks. On preoperative expectation of patients, the correction of lesser toe deformities was ranked third. Patient's satisfaction score was average 92.8 points, and the importance of lesser toe operation was 30.2%. When compared to hallux valgus operation only, there were average 2.5 days of additional hospitalization, 2.4 times of additional outpatient follow-up, 1.8 times of additional medical expenses. Conclusion: Combined operation for hallux valgus and concomitant lesser toe deformities showed good clinical results, with high preoperative expectation and postoperative satisfaction.

Abstract no.: 38399

THE SYSTEM OF EXTERNAL FIXATION IN THE TREATMENT OF INJURIES AND DISEASES OF THE HAND

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We present the results of the treatment of trauma, injuries and diseases of the hand of complications that have been achieved by using external fixation devices, which are designed to follow the main principle and the rule of hand surgery - the unity of form and function. Objective: Demonstrate the effectiveness of apparatuses external fixation in hand surgery. Materials and Methods: The material for the analysis were 3146 medical records of the patients underwent treatment in the Hand Surgery Center between 1996 and 2013 with application of the apparatuses of external fixation. The apparatuses for external fixation are widely used for treating hand pathology. Results: Primary reconstruction procedures considerably reduce the treatment period. Application of the apparatuses for external fixation enables stable fixation and the possibility to train motion to recover the functioning of tendons. The apparatuses are widely used at our clinic for osteoplasty, for management of pseudoarthrosis and non-unions of hand bones, for lengthening of amputation finger and metacarpal stumps, and for shaping the fingers. The apparatuses of external fixation aid a lot in cases of closed injuries to extensor tendons at the level of proximal interphalangeal joints in the second to fifth fingers, contractures, tumours and cystic lesions of the hand. Conclusions: Using the external fixation in the treatment of injuries, the consequences of injuries and diseases of the hand leads to good functional outcomes, fewer postoperative complications and significantly often creates the possibility of outpatient treatment.

Abstract no.: 38402

HOW INTERNATIONAL ARE THE LEADING ORTHOPEDIC JOURNALS: A LOOK AT THE COMPOSITION OF THE EDITORIAL BOARD MEMBERS OF THE TOP ORTHOPEDIC JOURNALS.

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Background: Researches from the developing world contribute only a limited proportion to the total research output published in leading orthopedics journals. Some of them believe that there is substantial editorial bias against their work. We assessed the composition of the editorial boards of leading orthopedic journals. METHODS: The editorial boards of 18 leading orthopedic journals according to their impact factor were retrieved from their website. We evaluated in which countries the editorial board members were based and classified these countries using the World Bank income criteria. RESULTS: Individuals from number of countries can be found on the editorial boards of the investigated journals, but most of them are based in high-income countries. While 1,302 of the 1,401 editorial board members are based in countries with a high income according to the World Bank criteria, 37 are based in an upper middle income, 2 in lower middle income and none in a low-income economy. CONCLUSION: The percentage of editorial board members in leading orthopedic journals is dominated by high-income countries with serious underrepresentation from low-income countries.

Abstract no.: 38403

TESTICULAR DISLOCATION ASSOCIATED WITH HIP DISLOCATION.

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Traumatic testicular dislocation is a rare injury. Testicular dislocation associated with hip dislocation is exceedingly rare; to date, no case has been reported. We report a case of testicular dislocation and hip dislocation in a young adult following road traffic accident. Timely closed reduction of both hip and testicular dislocation produced good results in our patient. High index of suspicion and careful examination can help facilitate early Early identification and subsequent closed or surgical management. Timely management is of utmost importance to maintain normal spermatogenesis in the dislocated testes. Knowledge of such an association by orthopedic surgeon will prevent delay in diagnosis.

Abstract no.: 38405

**IATROGENIC FRACTURES OF TALUS AND MEDIAL MALLEOLUS
FOLLOWING TIBIAL NAILING.**

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Intramedullary interlocking nailing is the gold standard for treatment of tibial shaft fractures. The growing use of intramedullary nailing has resulted in an increased number of tibial nailing in daily clinical practice. Despite adequate surgeon experience, tibial nailing is not without complications if proper techniques are not followed. A case of iatrogenic talar neck and medial malleolus fractures during intramedullary nailing of tibia in a 24-year-old male is reported. It is believed to be caused by forceful hammering of insertion zig with foot dorsiflexed. To the best of our knowledge, no such case has been reported in the literature. It is possible to reduce the risk of this complication by adoption of preventive measures.

Abstract no.: 38406

SKELETAL TUBERCULOSIS FOLLOWING PROXIMAL TIBIA FRACTURE.

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Over the past several years, there has been a rise in incidence of tuberculosis in both developing and developed countries. Tuberculosis complicating a fracture is uncommon. In this article, we report the case of a 10-year-old patient with a proximal tibia fracture who developed discharging wound over the fracture site after 2 weeks of initial trauma. The fracture was showing no signs of healing. A diagnosis of tuberculosis of proximal tibia was made on the basis of polymerase chain reaction and histology. After antituberculous treatment was started, the sinus healed and the fracture united. To the best of our knowledge, such a presentation has not been documented

Abstract no.: 38412

LONG TERM OUTCOME AFTER SEVERE TRAUMATIC BRAIN INJURY

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Introduction: Survivors of Severe Traumatic Brain Injury may suffer from psychological and physical consequences. The best investigated time period within this topic is the first year after trauma. Few studies focused on the outcome of patients five and even more years after TBI. The aim of this study was to investigate the long term outcome of these patients. Methods: 68 patients who suffered from severe TBI (Glasgow Coma Scale score [GCS] 3-8) between 1999 and 2008 were enrolled between 2012 and 2013. Questionnaires that investigated the Glasgow Outcome Scale Extended (GOSE) and the Quality of Life after Brain Injury (QOLIBRI) were mailed to the patients. Long term results were compared to parameters that had been recorded during their hospital stay. Results: In general the quality of life of the investigated population appeared to be good. There was a strong correlation between values of the QOLIBRI and the GOSE. It was found that an unfavorable or favorable outcome defined by GOSE values at hospital discharge had prognostic value for the quality of life 9.5 years after trauma. "Age" showed a significant correlation with the QOLIBRI while "time since injury", "GCS" and "sex" did not. The group of the moderately disabled patients and those with lower good recovery had the highest variability in QOLIBRI-values. Most of the patients in this study were in younger or middle age and would have profited from better psychosocial reintegration.

Abstract no.: 38420

**THE SIGNIFICANCE OF MRI IN THE APPLICATION OF OSTEOPOROSIS
VERTEBRAL COMPRESSION FRACTURE**

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Introduction: In recent years, the spinal MRI has been widely used in the diagnosis of osteoporosis vertebral compression fracture (OVCF) by the rise of minimal invasive surgery, because the fresh OVCF, shows a high signal on short time inversion recovery (STIR) weight, is suitable for cement augmentation operation (Kyphoplasty or Vertebralplasty). But there's rare report focus on the change of signal post treatment. **Methods:** In this study, 45 OVCF patients who underwent a Balloon Kyphoplasty surgery are included to take a MRI inspection for image signal analysis, a X-ray film for vertebral height measurement and a VAS & ODI test for a comparative study of daily living, while equal amounts of patients who a received conservative treatment are included as controls. **Results:** Only 5 post-operation patients show a diminution of edema on MRI in one month (5/45). Contrary to radiology outcome, 41 patients get a pain relief (average VAS score compare is 3.2 post/7.4 pre) and motor function improvement (average ODI compare is 66 post/34 pre). **Conclusions:** MRI test, especially STIR weight test, is a rational method as one of the major indications for cement augmentation operation. The vertebral could not expedite the absorption of edema after the surgery, but could alleviate the back pain symptom rapidly and accelerate daily living rehabilitation.

Abstract no.: 38421

THE GIANT CELL TUMOR OF THE TENDON SHEATH: NOTHING YOU KNOW IS ENOUGH

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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.: 38422

SUPRACONDYLAR FRACTURE OF THE HUMERUS IN CHILDREN: MID-TERM REVIEW AFTER CLOSED MANIPULATION WITH ASSESSMENT OF DEFORMITY, DISABILITY AND COMPLICATIONS.

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Supracondylar fractures accounting for 3% of all paediatric fractures. Majority of these fractures were treated with closed reduction alone. Closed reduction / open reduction and percutaneous pinning are preferred treatment for displaced or unstable fractures. Percutaneous pinning is associated with more complications and xray exposure. Controversy continues over the appropriateness percutaneous pinning of Gartland 1 and 2 fractures. Objective: Identify the mid-term outcome of paediatric supracondylar fracture, after closed reduction under anaesthesia with posterior strapping/ casting in a Sri Lankan cohort. Methodology: Children (age ≤ 18 years) with supracondylar fracture of the humerus (AO Type 13A, 13B and 13C) and treated with close reduction alone. 300 cases selected and reassess in the clinic after 1st, 2nd and 3rd yrs. Known complications analyzed. Functional range and cosmetic appearances assessed with Flynn's score and Mayo Elbow Performance Score. Results: The results analyzed into radiographic, functional, and cosmetic outcomes. 92% of the patients treated with a closed reduction and casting, while 5% needed closed reduction with percutaneous pinning, 3% needed an open reduction. Of those treated with a closed reduction alone, 93% had an excellent or good functional result. Using Flynn's score and Mayo Elbow Performance Score the cosmetic results and functional results were better than radiographic appearances. Conclusion: Closed reduction and cast/ strapping immobilization is an effective method to treat type I and II supracondylar fractures in children. The method gives stability, healing and avoids iatrogenic ulnar nerve injuries and pin site infections. It saves operating time in busy trauma setup.

Abstract no.: 38423

THE EFFECTS OF THE ETHYL-2-CYANOACRYLATE AND BUTYL-2-CYANOACRYLATE IN THE PROCESS OF BONE HEALING IN RATS. A PROSPECTIVE CONTROLLED STUDY.

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The objective of this study is to compare the clinical and biomechanical results of the use of the Ethyl-2-Cyanoacrylate (SuperBonder™) and the Butyl-2-Cyanoacrylate (Histoacryl™) in the treatment of long bones fractures in rats, simulating tubular bones fractures (phalanges, metacarpals and metatarsals) in humans. Methods: Forty-two male rats, Wistar lineage, were osteotomized (femur, tibia and humerus) bilaterally. The right osteotomies were treated with SuperBonder™ (SB group, n=21) or Histoacryl™ (HA group, n=21), placed directly between the fractured ends. The left osteotomies were handled without any exogenous substance (natural bone healing process), acting as controls. Seven animals from each group were euthanized in three moments: 30 days (n=14), 60 days (n=14) and 90 days (n=14). The specimens, after removal of the soft tissues, were send for analysis. The right femurs underwent biomechanical axial compression tests, and the tibias were send to the three point bending biomechanical tests. The variables: maximum load resistance (N), yield point (N) and stiffness coefficient (N/mm) were studied in both cases. The clinical examination was performed by biweekly body mass (g) weight tests. Results: There were no changes related to animal weight (p=0.61). The animals in SB group had maximum load (N) (p<0.001), yield point (N) (p=0.03) and stiffness coefficient (N/mm) (p=0.01) higher than animals from HA groups. The Histoacryl™ adhesive decreased the stiffness coefficient, increasing the consolidation length of the osteotomies. Conclusions: The Ethyl-2-Cyanoacrylate (SuperBonder™) is biomechanically more efficient than Butyl-2-Cyanoacrylate (Histoacryl™) in the treatment of tubular bones fractures in rats.

Abstract no.: 38429

ORTHOPAEDIC MANIFESTATIONS OF HEREDITARY SENSORY AUTONOMIC NEUROPATHY TYPE 4 - A RARE CASE REPORT

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Introduction and epidemiology : Hereditary Sensory Autonomic Neuropathy type 4 (HSAN 4)is a very rare entity. The presentation of this disease can be one 1 in 10 million live births. There have been very very few case reports of this disease. Pathogenesis : This disease affects the peripheral nerves and causes severe insensitivity to pain. It is a genetic disorder with mutation of the NTRK 1 gene. The child has self-mutilatory tendencies and this combined with the insensitivity to pain result in the orthopaedic manifestations of septic arthritis and osteomyelitis. The cause of death in these patients is mostly malignant hyperthermia and sepsis. Clinical features : Patients present with episodes of hyperthermia, anhidrosis and insensitivity to pain. Our patient was a 2 year old girl who presented with bilateral septic arthritis of the elbows and pressure sores of the spine region. The insensitivity to pain was clinically demonstrated. Investigations : Nerve conduction velocity studies were done and peripheral nerve biopsy report which showed small unmyelinated fibres and abnormally large mitochondria. The target gene mutation was identified by genetic analysis. Management : The patient was treated with regular dressings and intravenous antibiotics based on culture and sensitivity reports. The patient eventually died after a 4 month period after diagnosis. Discussion : Due to the rarity of this condition the management becomes challenging. At present from the data available a conservative management is advocated. We were able to diagnose and provide support after which the patient succumbed to sepsis.

Abstract no.: 38431

PROXIMAL TIBIAL OSTEOTOMY FOR OSTEOARTHRITIS OF THE MEDIAL COMPARTMENT OF THE KNEE - A RETURN TO THE PAST?

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Purpose . The aim of our work was to study the results of osteotomy for osteoarthritis of the medial compartment of the knee. **Methods** . We treated 67 patients who underwent high osteotomy for medial osteoarthritis of the knee 1 -3 stages on Kolgrane - Lawrence . To assess the treatments results, we used scale Lysholm, and VAS - scale IKDS 2000 before and after 6, 12 is the 24 months after the operation. **Results**. Excellent and good results were achieved in 67.5 % of patients. In 86% of patients after 24 months improved clinical outcomes compared with the preoperative state. 67.5 % of the patients returned to the level of sports activity until the disease 24 months after surgery. In one case, as intraoperative complication was observed as intraarticular fracture of the lateral tibial plateau. One patient was detected with early infection of the zone of osteotomy (14 days after surgery). **Conclusions** . Proximal tibial osteotomy for medial surface revealed effective procedure. Our results indicate that most patients achieved the best results in the period from 12 to 24 months.

Abstract no.: 38433

**OPPORTUNITIES AND PROSPECTS OF OZONE THERAPY IN
PATHOLOGY OF THE MUSCULOSKELETAL SYSTEM**

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Objective: to study possible applications of ozone therapy in the pathology of the musculoskeletal system , including the rehabilitation of patients after injuries and operational benefits. Materials and Methods: Since April 2005, started the implementation of the developed techniques of topical ozonated oxygen in the joints of the extremities in conjunction with the administration of medicines (Traumel, Zeel-T), the treatment of patients with deforming arthrosis, transkhondralnymi injuries after injuries of the limbs and in the postoperative period after elimination of contractures scar adhesions tendons and nerves. There is a first experience of applying the method in cancer of the upper limb. Results and discussion: Defined by a particular circuit ozone therapeutic procedures for a particular patient. This scheme, according to individual indications and contraindications, not exclude, but rather involves a range of other therapeutic procedures in the form of infusion-transfusion therapy, physical therapy, exercise therapy. Nine-year experience of the ozone therapeutic units of our institution showed the need for doctors in the state in addition to specialized training past nurses. Ozone-oxygen mixture normalizes metabolic processes in the joints, and in combination with anti-inflammatory drugs gives, antiproliferative effect, improves nutrition and regeneration of cartilage and prevents the development of adhesions and acts as a mechanical factor, eliminating the obliteration of the existing cavities. We noted the acceleration of reparative processes after osteoplastic surgeries. Conclusion. Ozone therapy is actively supporting traditional methods of treating many injuries and diseases of the musculoskeletal system of the person, and in some cases replace them.

Abstract no.: 38434

A RARE CASE OF TOM SMITH'S ARTHRITIS - A LATE SEQUELAE OF SEPTIC ARTHRITIS

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Introduction : Septic arthritis of the hip commonly affects new borns / infants / children. It resolves spontaneously when diagnosed at the right time and treated appropriately but neglected septic arthritis of the hip can lead to a condition called Tom Smith's arthritis, a dreaded sequelae of septic arthritis which has a very poor prognosis. **Pathogenesis :** Septic arthritis of the hip in neonates / infants / children undergoes different stages. After the stage of effusion which involves pyrexia, the developing femoral head undergoes lysis and dysplasia. In due course the femoral head is subluxated / displaced and the child presents with walking difficulties and pain. **Clinical features :** The classical features are that of difficulty in walking and pain with a Trendelenburg gait. There is limb length shortening due to the subluxation of the femoral head. Our patient is a 4 year old female who presented with all the classical signs aggravating for the past 6 months and a history of effusion around the hip joint for which the patient underwent irregular treatment. **Investigations :** A radiograph was taken which showed a proximally and laterally displaced femoral head with dysplasia along with proximal femoral osteomyelitis. **Management and discussion :** An open reduction was done to reduce the femoral head and samples were taken from the osteomyelitic proximal femur. The reduction was secured using K-wires and the patient was immobilized in a hip spica. On follow up the reduction is maintained and the osteomyelitis is controlled.

Abstract no.: 38436

**LONG TERM OUTCOME OF PRIMARY TOTAL KNEE ARTHROPLASTY
USING P.F.C SIGMA TM - FIXED BEARING CRUCIATE RETAINING
ENDOPROSTHESIS OVER 10 YEARS AT A DISTRICT GENERAL
HOSPITAL**

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Background: We present the outcome following primary total knee replacement using the P.F.C Sigma TM Cruciate Retaining Fixed Bearing System (DePuy, Leeds, United Kingdom), at our unit with a minimum of 10 years follow up. Method: We reviewed 89 primary total knee replacements prospectively with regards to their pre- and post-operative Oxford knee scores, diagnoses, range of knee motion, and perioperative, or long term complications. These patients were reviewed annually. Result: 89 primary total knee replacements were performed in 72 patients. The mean age was 71.9 years and the mean follow up was 12.1 years (range 10 – 14.1 years). 19 patients died during this study period. None of our patients were lost to follow up. There were no intraoperative complications. The mean range of flexion was 111.2 degrees of flexion at their latest follow- up. There was an improvement in the mean preoperative (16.2) versus postoperative (42.5) Oxford knee scores. None of our patients developed symptomatic deep venous thrombosis or pulmonary embolism. Radiological appearance has been satisfactory in all patients at subsequent follow up, except one patient showing polyethylene wear. This patient required revision surgery 12 years following the index procedure. 1 patient developed deep infection 10 years after the primary procedure. This patient refused revision surgery. With component revision surgery selected as the end point, the survival probability for the total study group at 10 years is 100%. Conclusion: Our long-term experience with PFC Sigma fixed – bearing knee replacements is excellent with good outcome scores.

Abstract no.: 38441

PRIMARY RECONSTRUCTIVE - RESTORATIVE TREATMENT OF PATIENTS WITH CHONDROSARCOMA METACARPALS

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The aim of the study was to prove the feasibility of the primary organ reconstructive surgical interventions in patients with chondrosarcoma metacarpals. Between 1992 and 2013 treated 9 patients with chondrosarcoma metacarpals. Primary neoplastic lesions were observed in 6 patients 3 - secondary. All patients were younger (19 to 33 years) - 8 women and 1 man. Diagnosis of tumors underwent clinical and special methods of investigation. Affordable and one of the informative methods of diagnosis is radiography. In the diagnostic process also used ultrasonography, computed tomography. Finally, the question is solved by means of histological examination of the resected tumor drug. Removed or resected bone lesions with soft tissue must complete excision of the tumor components with the creation of opportunities absence wound contamination by tumor cells with all the rules ablatics. In all cases, the primary plastic defects of bone grafts performed metatarsal IV with the creation of a new metacarpophalangeal joint and mandatory mini- graft fixation by Ilizarov. Terms fixation device were dependent on the level of the operational benefits (from 37 to 52 days). Results: Brush function in all patients recovered fully in 2 - 2.5 months after surgery. Long-term results were followed from one to twenty years. Local recurrences were observed. Lung metastases were detected in one patient (death within 6 years after surgery). Three women after surgeries gave birth to healthy children. Conclusion: Oncology hand surgery is registered as an independent scientific and practical problem with strategic , tactical and technical characteristics.

Abstract no.: 38445

COMPARISON OF THE TEN YEAR OUTCOME OF FIXED BEARING AND MOBILE BEARING KNEE REPLACEMENTS IN A DISTRICT GENERAL HOSPITAL

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Background: We prospectively reviewed a consecutive series of 101 patients with mobile bearing total knee replacement (TKR) and 72 patients with the fixed bearing cruciate retaining TKR. Method: Patients were assessed for diagnoses, range of motion, pre- and post-operative Oxford knee scores and complications. Results: In the mobile bearing group of 113 knees in 101 patients, 97 had minimum 10-year follow up. By ten years, 16 patients had died of unrelated causes. Mean Revised Oxford Knee score improved from 16 pre-operatively to 42 at last follow up. The mean range of flexion was 115 degrees (75 - 130). One patient dislocated the bearing and needed manipulation. One patient reported superficial infection which resolved with antibiotics. One patient had deep vein thrombosis and one had non-fatal pulmonary embolism. In the fixed bearing group, 89 TKR's were performed in 72 patients. The mean age was 71.9 years and the mean follow up was 12.1 (10–14.1) years. 19 patients died during this study period. The mean range of flexion was 111.2 (80-135) degrees of flexion at latest follow-up. There was an improvement in the mean Oxford knee score from 16.2 preoperatively, to 42.5 to date. One patient required revision surgery at 12 years for polyethylene wear. One patient developed deep infection 10 years after the primary procedure but declined revision surgery. At ten years no revisions were performed in either group. Conclusion: This series has highlighted excellent results with both fixed and mobile bearing CR knees with one hundred percent survival at ten years.

Abstract no.: 38446

TREATMENT OF SUBUNGUEAL EXOSTOSIS IN THE FINGERS

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Introduction: Subungual exostosis (SE) is a benign osteocartilaginous tumor found on the distal phalanx of a digit, arising underneath or beside the nail bed. The etiology and pathogenesis of SE is not clearly established. Involvement of the finger occurs very rarely. We report our experience in the surgical treatment of subungueal exostosis with a fish-mouth-type incision. Materials and Methods: Between 1997 and 2010, six patients with subungueal exostosis in the fingers were treated. The patients underwent surgical excision under regional anesthesia. In the aspect of the distal fingers were made a midlateral incision or fish-mouth-type incision. The lesions were removed entirely with a rongeur, flush to the normal tuft. Results: Histology from a excised tissue showed evidence of mature trabecular bone with a fibrocartilaginous cap. There has been no recurrence till date. Discussion: The treatment of SE is surgical. The excision is either through the nail bed or via a midlateral incision. A delay in treatment results in nail elevation, pain and ulcerates the nail bed. In such a case, it is difficult to use a fish-mouth-type incision. Dissection is difficult because the tumor has usually thinned the nail bed and the skin. This approach permitted a good exposition for complete removal of the tumor. An aggressive resection may lead to permanent nail dystrophy. Complete removal of the cartilaginous cap was done in all patients. Incomplete surgical resection may cause local recurrence.

Abstract no.: 38449

VERTEBROPLASTY FOR STEROID-INDUCED OSTEOPOROTIC FRACTURES IN CHRONIC OBSTRUCTIVE LUNG DISEASE: A SOLUTION FOR PAIN AND RESPIRATORY PROBLEMS

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All the patients were using oral steroids or inhaler steroid modality daily. The mean age of the patients was 62,6 (46-70). 8 of the patients were female and one was male. 7 of the patients used inhaler corticosteroid more than 1 year and 2 of the patients were treated with oral corticosteroids for more than 1 year. Mean time period between compression fracture and operation was 31.3 (15-60) days. Vertebroplasty was done to total 21 vertebrae in 13 operations. Bipedicular Vertebroplasty was preferred in all patients. Levels were one level T10, T9, T8, T7 two levels T11, six levels T12, L1 three levels L2. One patient was operated on 8 vertebrae, 5 different times in 4 years. 7 of 13 operations were one level, 5 were 2 levels and 1 patient was operated 3 levels. In 4 vertebrae of 3 patients cement leakage was observed in spinal canal, with no signs of neurological deficit. Average mean VAS score was 9 preoperatively, 2 at postoperatively 1st Day, 1,9 at 1st month and 1.3 at 3rd month. Postoperatively respiratory function tests of the patients improved. In non-steroid induced osteoporosis, generally 8-10 weeks of conservative treatment is always the first option. This is not a valid indication for chronic obstructive lung disease. Because these patients have intractable pain, this inhibits respiration. They have difficulties to use dosing inhaler because sitting is also intolerable. As a conclusion, early Vertebroplasty is preferred treatment in patients with steroid induced osteoporosis and chronic obstructive lung disease.

Abstract no.: 38450

TUNNEL SYNDROME IN THE HAND SURGERY

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The evaluation of test results and treatment of 162 patients with tunnel syndrome of the upper extremities - carpal tunnel (112 cases), Guyon canal (39 cases) and joint destruction radial and median nerves (11 patients) who were treated in 1996 -2013 years. The main ethiology factor of this disease is an acute trauma and posttraumatic complications (60,6%). 22,5% and the next cause of tunnel syndrome is tumors. The origins of 16,9% of all pathology are chronic specific and nonspecific diseases. The treatment tactic depends on the causes of the compartment syndrome. In a study of applied clinical, X-ray, ultrasonography and tomographic methods, Treatment tunnel syndrome, caused by the tumor and tumor diseases, only operation. The results were assessed in terms of 6 months to 17 years in 114 patients treated. Six patients were operated on again because of recurrence of cancer. Pain syndrome in all the examined patients reduce or docked. In the neurological status marked decrease parastezii, reduced sensory disorders. All examined patients remove restrictions clenching hand, breeding and extension of the fingers. Conclusions: - Treatment of patients with tunnel syndrome caused by tumors and tumor-like formations, should only be operative. - Selection of the operational benefits in the treatment of this disease should be individualized and appropriate to the nature of the tumor process, combining the principles of limb salvage orthopedic and oncologic principles of radicalism and ablatic. -Surgery for tunneling neuropathy caused by a tumor or tumor-like process should be carried out in a specialized hospital.

Abstract no.: 38455

**CLINICAL AND RADIOLOGICAL LONG-TERM OUTCOME AFTER
MATRIX-INDUCED AUTOLOGOUS CHONDROCYTE
TRANSPLANTATION - A PROSPECTIVE FOLLOW-UP AT A MINIMUM OF
10 YEARS.**

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MARLOVITS

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Background: A prospective clinical investigation was carried out in order to clarify whether matrix-associated autologous chondrocyte transplantation (MACT) results in objective and subjective clinical improvement 10 years after surgery. Methods: Sixteen patients with chondral defects of the knee were treated with MACT and evaluated for up to 10 years after the intervention. The International Knee Documentation Committee (IKDC) form, the Knee Injury and Osteoarthritis Outcome Score (KOOS), the Tegner Activity Score, the Noyes Sports activity rating scale and the Visual Analogue Scale (VAS) for pain as well as magnetic resonance imaging (MRI) using the MOCART score and functional evaluation by low extremity symmetry index (LSI) formed the basis of this study. Results: Significant improvements ($p < 0.05$) from baseline to 120 months postoperatively were observed for the IKDC score (44.1 (SD 26.9) to 59.0 (SD 27.4)), the Noyes sports activity rating scale (37.7 (SD 30.1) to 62.1 (SD 31.3)) and the KOOS subscales "Quality of Life" and "Pain", whereas no statistically significant improvement was detected for the Brittberg score, the Tegner activity scale and the VAS scale. After 10 years, the mean MOCART score was 70.4 ± 16.1 . The mean LSI for the 1-leg hop test was 95.6% (± 16.2) and for the triple hop test for distance 91.3% (± 12.2). No adhesions or effusions were seen regarding the clinical and radiological outcome. Conclusion: The significantly improved results on three scores after 10 years suggest that MACT represents a suitable option in the treatment of local cartilage defects in the knee.

Abstract no.: 38456

THE GIANT CELL TUMOR OF SOFT PARTS OF THE HAND: ABOUT 10 CASES

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The giant cell tumor of soft parts of the hand is subject to terminological and etiological debate unresolved. They are located usually at hand. They are second rate after arthroscopic synovial cysts. The treatment is exclusively surgical. We report a retrospective study of ten cases of giant cell tumors of the soft parts of the hand collected in the trauma orthopedics 2 Mohammed V Military Hospital of Instruction Rabat over a period of 5 years from 2008 to 2013. The reason for consultation was essentially the presence of a painless swelling followed by the functional gene. Palmar localization was predominant. The radiographic assessment was performed seeking bone erosion. IRM showed a well-defined soft tissue mass. All patients underwent surgery and the macroscopic appearance showed an encapsulated, firm lobulated and gray-pink or tan mass. In the postoperative course we noted a hypoesthesia pulp cases, no cases of inter phalangeal joint stiffness or necrosis was also found recurrence was taken surgically. After analysis of the literature, the authors will describe the clinical, therapeutic and evolutionary aspects of this lesion.

Abstract no.: 38458

GENDER DIFFERENCES IN POLYTRAUMA PATIENTS

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Introduction: The study was intended to examine epidemiological and clinically relevant gender-specific differences in multiple trauma patients at a level 1 trauma centre. Methods: Data of 646 cohort cases were collected prospectively and analysed retrospectively. Demographic data, types of accidents, injury severity and injury pattern, frequencies of preclinical intubation, haemodynamic variables on admission, time of mechanical ventilation and of intensive care treatment, as well as the incidence of acute respiratory distress syndrome (ARDS), multi organ failure (MOF) and mortality were extracted from our database and reviewed. An analysis of covariance was done to compare mean values with gender as independent variable and age as covariate. To check for associations with dichotomous variables, we constructed logistic regressions models for gender as independent variable and age as covariate. Results: There were 210 female and 436 male patients. Females showed a higher mean age (44,6 vs. 38,3 years; $p < 0,0001$) than their male counterparts. Women were more likely to be injured as passengers or suicidal falls whereas men more likely suffered trauma as motorcyclists. Following intensive care treatment, female patients resided significantly longer at the casualty ward than men (27,1 days vs. 20,4 days, $p = 0,013$) although we found no significant difference regarding injury severity, haemodynamic variables on admission, incidence of MOF, ARDS and mortality. Conclusion: The positive correlation of age and hospital length in female trauma victims showed women at risk for a less efficient prolonged in-hospital rehabilitation time. This fact requires more attention in the future with adapted psychological and rehabilitative measures.

Abstract no.: 38459

ANALGESIC PAIN LADDER: WHERE DO WE STAND?

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Introduction: Analgesia is routinely used as part of patient treatment. We investigated the awareness of the WHO analgesic pain ladder amongst a multidisciplinary team and the results are presented. Method: A five-part questionnaire was devised based on the WHO pain ladder. This was distributed amongst the orthopaedic multidisciplinary team, which included consultants, middle grades, senior house officers, physiotherapists, nurses and pharmacist. Subsequently, a short presentation on the WHO analgesic ladder was given and another similar questionnaire was distributed. The total scores achieved before and after the awareness were calculated. The minimum possible score was 0 and maximum possible score was 18. Results: The minimum and maximum scores achieved before the awareness were 5 and 18 respectively and only one person scored 18. The minimum score was 13 and the maximum was 18 after the awareness and most of them scored 17 or 18. Conclusion: Although analgesia is commonly used, continued awareness will help in educating and refreshing knowledge. This will also help in better analgesic control for patients.

Abstract no.: 38462

**A 5 YEAR REVIEW OF THE CLOSED COMPLAINTS RECEIVED IN T & O
DEPARTMENT QUEEN ELIZBATH HOSPITAL BIRMINGHAM**

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Introduction The NHS complaints procedure is the statutorily based mechanism for dealing with complaints about NHS care and treatment and all NHS organisations in England are required to operate the procedure. **Complaint** This is an expression of dissatisfaction requiring a response made orally or in writing or electronically which cannot be resolved at the point of contact or through PALS **Complainant** A patient, relative, friend, carers or member of public who wishes to make a complaint about the Trust service. This collection is a count of written complaints made by (or on behalf of) patients, received between 01/01/07 to 31/12/11. **Aim** To reduce the number of complaints by improving the practice **Objective** To assess complaints – any common trends **Methodology** Derek Ball, Head of Patient relations compiled all closed complaint reports □ Data collected from complaint department for last 5 years (01/01/07 to 31/12/11) □ Data include complaints from Selly Oak Hospital & QEHB. □ Both civilian & military patients were included. **Results** Common trend **Fracture clinic:-** - Delay awaiting results-(4/11) - Long delay in # clinic before being seen-(2/11) - Cast extending beyond toes, c/o difficulty in movement-(4/11) - Delay in clinic-(9/10) - Delay in x-rays-(1/11) **Recommendations** □ New trauma and elective patients should have separate dedicated clinics. □ A & E booking of new trauma to be revised for specific clinics e.g shoulder/foot & ankle/Upper limb/Knee

Abstract no.: 38467

RECURRENCE OF MALIGNANT MELANOMA NAIL: ABOUT A CASE

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Malignant melanoma represents 1.8 to 8.1 % of cutaneous malignant melanoma; its management is now open to practitioners from different specialties. The initial surgical procedure is an essential step in the cure. The biopsy of the lesion must be complete in order to accurately determine the depth of invasion in the case of malignancy. We report a case of malignant melanoma in nail location in a women 55-years-old. The initial surgery was a transphalangienne proximal amputation. The evolution after two years was marked by a recurrence. The magnetic resonance imaging showed an extension up to the carpal tunnel. The Remote Extender balance objectifying a costal location. Surgical revision was a wide excision surgery with healthy gross margins. The treatment of recurrences is palliative and aims to provide a comfortable life for the patient. The principle of treatment involves surgical excision of the lesions. This removal is conducted with healthy macroscopic margins. Some authors recommend a healthy margin of 1 cm to which they report a median survival of two years. The high risk of local spread during handling in transit metastases involves careful surgical technique and protocol. Therapeutic alternatives, such as isolated limb perfusion, are being studied and seem to provide effective response even if temporary.

Abstract no.: 38468

WALK-IN INJECTION ARTHROGRAM SERVICE FOR FOOT & ANKLE CONDITIONS

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Introduction: Intra-articular injections of the foot and ankle are used in various clinical scenarios both for diagnostic and therapeutic purpose. In the current study we aim to determine the service satisfaction amongst patients treated by an Orthopaedic Surgeon or a Musculoskeletal Radiologist. Methods: The injections were performed by two Consultant Orthopaedic Surgeons and one Consultant Radiologist. 37 patients with isolated forefoot and mid-foot pathologies were prospectively recruited between January 2011 and December 2012. Six weeks following the injection, patients completed a satisfaction survey. Results: A quarter of the patients were treated for forefoot conditions. 26% of patients treated by radiologist were given a date of the procedure within a week of Orthopaedic consultation; 70% had a hospital length of stay for an hour or less and overall 90% were very satisfied with the Radiology service. In the group who underwent injection by a surgeon, 30% of the patients were given a date of the procedure within 4 weeks of Orthopaedic consultation. The length of stay was more than four hours in 36 % of patients and only 57% were satisfied with the service. The intra-articular injection service provided by a Radiologist reduced hospital stay and overall resulted in better patient satisfaction. The total cost of an injection service performed by a surgeon is £200 and by a radiologist is £100. This study demonstrates the usefulness of a dedicated musculoskeletal radiologist providing an intra-articular injection/arthrogram service, thereby enabling the overburdened foot and ankle surgeons to concentrate on reconstructive procedures.

Abstract no.: 38470

CONTRALATERAL NEUROMUSCULAR TRAINING IN ACUTE ANKLE SPRAIN

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Aim of the study is to evaluate the theoretical foundations of the neuromuscular control to implement the conservative treatment of acute ankle sprains. The literature research included the PubMed electronic database until 2014: relevant studies dealing with acute ankle sprain treatment and neuromuscular control were identified. The current body of literature as well as recent systematic reviews show: i) no standardized evidence-based treatment but fastest recovery and the least rate of reinjuries with early functional treatment; ii) evidence of a bilateral response pattern, at both the ankle and proximal joints, after unilateral foot and leg displacement; iii) the occurrence of a bilateral impairment of postural and balance control, following unilateral injury; iv) experimental evidence of improvement in strength in the trained and untrained ankle via crossover effect. Concluding: lateral ankle sprain are common injuries in athletics and daily activities. Since the mid-1960 sensory-motor control has been considered an important factor in ankle stability. Feed-forward/anticipatory mechanisms enable neuromuscular system to act faster than feed-back/reflexive mechanisms. Evidence of a cross-over effect suggests the chances of enhancing the conservative treatment during the initial phases of rehabilitation. Training of muscle strength and endurance and neuromuscular performance can start on uninjured limb during the phase of protection of injured ankle. There is a theoretical advantage in cross training but a high-quality study is needed to assess the real effects of (muscle and neuromuscular performance) uninjured limb training program combined with early phases of conservative treatment in ankle injuries.

Abstract no.: 38475

INJECTION FOR FOOT AND ANKLE CONDITIONS - ARE THEY EFFECTIVE? RESULTS OF A PROSPECTIVE STUDY.

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Introduction: Foot and ankle injections are routinely done for conservative management of foot and ankle conditions, however there is no evidence in the literature about the effectiveness of foot and ankle injections. The aim of our study was to assess the effectiveness of the foot and ankle injections. Materials and methods: We prospectively reviewed the results of the 25 foot and ankle injections done over a period of 6 months from July 2013 to December 2013. The most common indication for injection was arthritis of the joint involved. 0.5% bupivacaine and 40 mg of kenolog was used for the injection. A visual analogue score was used to determine the efficacy of the injection. Results: The mean follow up was 5 months (2- 9 months). 21/25 (84%) patients had significant pain relief following the foot and ankle injection. 4 patients went on to have further procedure. Of the four failed injections three were ankle injection and one was a tarsometatarsal injection. Of the three failed ankle injections, one went on to have further injection, one patient was listed for fusion and the other had an ankle arthroscopy. The failed tarsometatarsal injection had a fusion and had good result following the fusion. The ones who had good symptom relief were either discharged or given an open appointment. Conclusion: Our study has shown that mid foot and forefoot injections provide good symptom relief than the ankle injections, which are more likely to fail requiring further procedures.

Abstract no.: 38494

TROCHANTERIC BURSITIS, OSTEOARTHROSIS AND TOTAL HIP ARTHROPLASTY ASSOCIATION

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Introduction: total hip arthroplasty (THA) is the most successful reconstruction procedure of the hip. Nevertheless, there are no relevant data in the literature on the incidence of trochanteric bursitis (TB) in patients who underwent THA. However, the incidence of postoperative BT is approximately 4.6%. The gold-standard diagnostic for BT is obtained by pathologic evaluation of the bursa. This research performs an epidemiological study of trochanteric bursitis at the time of performance of total hip arthroplasty. Methods: the study was carried out with 62 patients, sequentially, undergoing total hip arthroplasty for primary osteoarthritis. Demographic parameters were obtained. The bursae were collected and evaluated histologically. Results: it was observed 56,5% female patients and 43,5% male, with mean age of 65 years. Trochanteric bursitis was confirmed histologically in 17% of cases. Conclusions: 17% of patients undergoing total hip arthroplasty for osteoarthritis presents trochanteric bursitis.

Abstract no.: 38499

AUTOBANKING OF FEMORAL HEADS FOR LATER REVISION THA

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Introduction- An increasing number of hip revisions may require bone grafting to replace bone deficiencies. The autologous iliac crests have not always enough bone stock and bone banks no not exists in all centers. The authors report a technique of banking the femoral head inside the iliac crest to use it as bone graft in future surgeries. Methods- 36 patients had the femoral head inserted in the iliac crest at the time of primary THA. The femoral head was inserted into 3 different pieces. The procedure did not require any fixation. Results- 24 men and 12 woman, with mean age of 28 years. The bone stock in the iliac crest is clearly identifiable by palpation. Radiographic assessment show good integration in all cases. After 10 years only one patient underwent THA revision and his own bone proved to be sufficiency. Conclusions- Autobanking has the potential to provide bone graft in future surgeries. It is an effective alternative specially for young people for whom revision is predictable.

Abstract no.: 38504

BIPOLAR CLAVICLE DISLOCATION - CASE REPORT AND LITERATURE REVIEW

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Bipolar clavicular dislocation is an uncommon traumatic lesion that affects both sternoclavicular (SC) and acromioclavicular (AC) joints. It also has been named as panclavicular dislocation, bifocal clavicular dislocation and traumatic floating clavicle. Injuries occur as the clavicle rotates about its midpoint, resulting in a posterior dislocation of the AC joint and anterior dislocation of the SC joint. Standard treatment of this complex lesion remains controversial due the rarity of injury. Conservative therapy remains an option in asymptomatic individuals. Open reduction and internal fixation of the both joints have been described in younger individuals with higher functional demands or individuals with persistent pain or instability. We report a case of traumatic floating clavicle in a man aged 21 years. He was involved in a motorcycle accident and had a major trauma on lateral aspect of the shoulder. Physical examination showed slight swelling and tenderness over the medial and lateral ends of the right clavicle and scapula and an obvious anterior dislocation of sternoclavicular joint. Radiographic examination and 3-D CT scan showed posterior dislocation of the lateral end and confirmed the anterosuperior dislocation of the SC joint. The patient underwent open reduction and fixation of both ends of the clavicle with a costoclavicular transfer ligament on medial aspect and subcoracoid suture and K-wire fixation of the AC joint.

Abstract no.: 38506

OUTCOMES OF ROTATOR CUFF REPAIR IN WORKERS' COMPENSATION PATIENTS IN ARGENTINA

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Outcomes after rotator cuff repair in Workers' compensation patients have been reported to have worst results than in general population. In this prospective study we analyzed clinical outcomes, time to return to work and percentage of disability. From a series of 165 workers with arthroscopic rotator cuff repairs performed by a single surgeon, 88 patients were selected based in inclusion criteria (primary operation, 6 month follow up, same insurance company). UCLA Score, visual analogue scale for pain, function and life quality were recorded. All scores improve at the time of follow up. Forward elevation improve to 137 degree, abduction 128 degree. Percentage of disability was 11,5% mean. There are few reports in the literature of results in workers population who expect a financial compensation from the insurance company. In this population results seems to be worst than in general population. However in our series we found significant improve in subjective and objective evaluation after rotator cuff repair in this population.

Abstract no.: 38510

CERVICAL HEMIVERTEBRA RESECTION IN CERVICAL CONGENITAL SCOLIOSIS

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ALDERICO GIRÃO CAMPOS DE BARROS, Gustavo Borges GUSTAVO
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Clinical manifestations of cervical hemivertebrae include torticollis, shoulder asymmetry and decreased neck movements. Orthoses in unbalanced curves are ineffective and current treatment with in situ arthrodesis does not correct the deformity. This is a retrospective clinical and radiographic analysis of four patients who underwent cervical hemivertebrectomy. The parameters used were the angular value and clinical and radiographic cephalic tilt. In the presence of unbalance, this technique showed good correction and acceptable neurologic risk.

Abstract no.: 38514

**INFECTED NON UNION HUMERUS SHAFT TREATED BY ILIZAROV RING
EXTERNAL FIXATOR**

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AIM: To analyze the usefulness of ilizarov external fixator for infected non union of humerus.**METHOD AND MATERIAL:**In our study ,we have treated 15 patients(10 males and 5 female)of infected humeral non union with Ilizarov external fixator with an average of 46.6 years (25-60 years).six of our patients were earlier treated with Dynamic Compression Plate and another four with interlocking nail. Five patient had pathological fracture due to chronic Osteomyelitis . Average number of surgeries each patient underwent before application of Ilizarov external fixator was 2 with a minimum of 1 to maximum of 5 surgeries.**RESULTS:**In a patient fixator was removed due to non compliance after which he was lost follow up.In another patient poor results were due to re fracture two times after ilizarov treatment finally infection after plating The external fixator period ranged from 1 month 3 weeks to 9 month 3 weeks. . Excluding that patient who lost follow up the average external fixator period was 6.5 months. The average number of surgeries each patient underwent is 2(maximum of 5 and minimum of 1), which includes fixator application & additional procedure such as change of pins. In one case corticotomy was performed. In two patient Compression-distraction-compression was done. Fractures united in all. Infection was controlled in all 13 patients.**CONCLUSION:**Inspite of problems in few patients the ilizarov method seems to be very good method as other options are limited.

Abstract no.: 38515

TENSION BAND WIRING FOR FRACTURES OF THE MEDIAL MALLEOLUS WITH A LIMITED APPROACH

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Introduction: Fractures of the medial malleolus is a common condition. It is generally treated with tension band wiring in many cases. The standard approach for this is a vertical incision which is made antero-medially. Sometimes this incision breaks down due to factors like tension, poor blood supply and /or infection. This complication may require further plastic surgeries such as skin grafting or flaps. Method: We have operated on four patients with fractures of medial malleolus with a limited approach. The Distal Part of Anteromedial Incision over the Medial Malleolus is taken similar to the incision for fixation of the medial malleolus with only a screw. This is about 2 to 3 cms long extending from just proximal to the fracture site anteriorly, curved distally and posteriorly just beyond tip of medial malleolus to posterior tibial margin. The procedure performed is by a percutaneous technique of fixation of the tension band wire by drilling two holes percutaneously and passing the stainless steel wire under the skin to the incision on the fracture and the wire is twisted to fix the fracture just as the routine method of tension band wiring. Results: There have been no skin problems with this approach in the all the four patient and the clinical and radiological results have been excellent. The skin incision is also finally also smaller. This limited smaller approach may replace the larger approach in future due to its advantage of a smaller incision with lesser skin complications.

Abstract no.: 38517

MULTIPLE GROSS DEFORMITY CORRECTION OF LOWER LIMBS - A RARE CASE REPORT

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Introduction: Multiple deformities of hip & knee joints in both lower limbs make the patient bed ridden & are very difficult to treat due to severe contractures. Methods: A 29 year old male patient had sustained fall from 60 feet, sustaining injuries to head, right hip & left thigh. He was comatose for 8 months. He was operated several times for head injury and other injuries with standard procedures. His deformities were treated by soft tissue release and skeletal traction but failed. The patient had severe fixed flexion deformities of both hips & knees with equinus of right ankle. Treatment and results: Ilizarov external fixator was first applied to both lower limbs to correct the flexion deformities of the knees by gradual distraction. The deformities were corrected in two to five months. Due to the ankylosed right hip, the right lower limb was suspended in Balkan frame. Excision arthroplasty was done & the leg could be brought down on to the bed. Tendo-Achilles lengthening was done bilaterally. Bilateral knee ankle foot orthosis was applied. Ambulation was started 8 months after the first surgery. He walked on his own feet 5½ years after the fall. Conclusion: It is extremely difficult to treat patients with such deformities, which are resistant to treatment. It is also difficult to decide which surgery to perform first. This is to show that even severe knee deformities can be corrected by Ilizarov method, in spite of multiple problems with associated deformities.

Abstract no.: 38519

PROXIMAL FOCAL FEMORAL DEFICIENCY A CASE REPORT

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Introduction: Proximal focal femoral deficiency (PFFD) is a developmental disorder of the proximal segment of the femur and of acetabulum resulting in varying degrees of femoral hypoplasia with limb shortening and pelvic abnormalities. We report one such case of unilateral PFFD involving the right femur, with significant limb length discrepancy at presentation, treated with three level corticotomies and Ilizarov External Fixator application. Material and methods: A 12 years old female patient presented with complaints of improper growth of her right lower limb since birth. She had PFFD involving the right proximal femur, with shortening of nearly 20 cm. Ilizarov external fixator was applied for this patient, along with three level corticotomies and gradual distraction. Ambulation was started early. After a period of 28 months, the Ilizarov fixator was removed. Results: She is now able to walk without a caliper and full weight bearing. Conclusion: with the Ilizarov method at our disposal, we do have some answers for these kinds of difficult situations, where amputation was many a time the only answer, if at all anything was offered for treatment other than living with the deformed small useless limb.

Abstract no.: 38524

A NEW MINI EXTERNAL FIXATOR FOR SEVERE HALLUX VALGUS TREATMENT; A BIOMECHANICAL STUDY

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Introduction: Proximal and shaft osteotomies are biomechanically more unstable in comparison to distal osteotomies. Conventional screw fixation in proximal osteotomy is not sufficient for early weight bearing due to biomechanical insufficiency. The purpose of this study is to compare the stability of conventional screw fixation and our new design mini external fixator. Methods: 18 metatarsal sawbones had prepared for biomechanical study. First all specimens osteotomized proximally with a saw blade and divided into two groups. 9 of these metatarsals fixed with a Headless Compression Screw (Acutrax, Acumed, Beaverton, OR) and remaining metatarsals had fixed with our new mini external fixator. All the specimens tested with an "MTS 858 Mini Bionix 2" universal dynamic test system and axial compression, distraction, torsion and bending tests had applied. The measurements of these tests recorded and controlled by a "MTS Multipurpose Testware" software. Displacement of the osteotomy site was measured by a "static optical camera and 3D correlation system". Dynamic, axial and torsional loading capacity of the system was 100Hz, 25kN and 200Nm, respectively. Construct stiffness and the amount of interfragment angulation were calculated on the 1st, 10th, 50th, 100th, 200th, 300th... and 1000th load cycles. Results: Statistically significant difference was found between 2 groups in the stability of fixation ($p<0.001$). This study demonstrated that mini external fixator provided superior osteotomy stability in comparison to the conventional screw fixation. To our knowledge this is the first technical report that compares the external fixator and screw fixation in the treatment of hallux valgus.

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A NEWLY DESIGNED MINI-EXTERNAL FIXATOR FOR CORRECTION OF SEVERE HALLUX VALGUS DEFORMITY; A PRELIMINARY CADAVER STUDY

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Introduction: In this cadaver study we aimed to evaluate our new designed mini external fixator (EF) for the fixation of proximal metatarsal osteotomies. **Methods:** We applied our EF on eight feet of four fresh frozen cadavers. We applied the fixator in parallel to first metatarsal shaft, from the dorsal aspect. Fixator attached to bone with five mini-schanz screws (2,5 mm in diameter) in this position. Then we applied a mini longitudinal incision to medial aspect of osteotomy site. The bone osteotomized proximally by a drill and a curved osteotom. Later the appropriate placement of the schanz screws controlled by flouroscopy. The deformity correction was made by the proximal swivel-clamp of the fixator. The distal lengthening apparatus of the fixator was allowing the compression and distraction of the osteotomy site in a 10 mm interval. After that EF and screws were removed and the mean distance between the screw route and the tendons and neurovascular structures were measured. **Results:** We had effectively corrected HV deformities with the help of swivel-clamp of the EF. Postoperative flouroscopy images reviewed and the mean correction of HV deformity was 12,6 (8-17) and IMA was 7,6 (5-9) degrees detected respectively. Deformity correction was evident both clinically and radiologically. None of the screws damaged neither neurovascular structures nor the tendons. We had had satisfactory clinical and radiological results with our EF. We could able to apply the EF percutaneously. The fixator allowed distraction or compression and also gradual deformity correction after the operation.

Abstract no.: 38526

DOES INCIDENCE OF ACETABULAR DYSPLASIA RELATED WITH HYPERLAXITY?

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Introduction: The patients with global joint laxity generally diagnosed with a shoulder Bankart or SLAP lesion. We determined incomplete acetabular coverage in some of our patients' pelvic radiography who have also hip pain out of their shoulder complaints. We hypothesed that increased incidence of acetabular dysplasia may be related with hyperlaxity. Methods: We studied on twenty-six young patients, who had a clinically demonstrated hyperlaxity, and SLAP-Bankart lesions shown on MRI. ISIS, Beington scores and positive sulcus signs were checked. Anteroposterior neutral pelvic x-ray were taken for all patients. CEA (center edge angle) and AA (acetabular angle) values were measured on computer based radiologic examination. Results: When CE angle (<22,6 degree) was used as a criteria for acetabular dysplasia, dysplasia rate of our patient group was 3,84% for right hip and 3,84% for left hip and 3,84% for overall. When AA (>42,2 degree) was used as dysplasia criteria, dysplasia rate of patient group was 30,76% for right hip, 57,69% for left hip and 57,69% for all patients. We detected that CE values were significantly lower ($p=0,009$) and AA values were significantly higher ($p<0,001$) when compared with the average values of previous studies. The frequency of acetabular dysplasia in Turkish population was determined nearly 2,4%, based on previous studies. Another study showed the prevalence of dysplasia as 4.3% for right hip and as 1.1% for left hip. Based on these values we believe that acetabular dysplasia incidence is higher in patients with hyperlaxity. Further studies are needed to clear this topic.

Abstract no.: 38532

WHY ILIZAROV AND WHERE I CAN USE IT

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Ilizarov, who revolutionized the treatment of open fractures, saved many limbs and lives for the past 65 years with his Nobel technique, and made a new unforgettable chapter in the history of Orthopedics around the world. This technique has been used extensively and is used all over the world and its uses, applications, and benefits are increasing day by day. We represent the classic uses of Ilizarov, it's modifications, and some of our own published techniques developed over the years using this Nobel technique.

Abstract no.: 38533

ORTHOPAEDIC ISSUES IN A WARZONE; EXPERIENCE FROM AFGHANISTAN

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War has always been an impetus for change. As wars advance and we produce new technology to kill people, we also produce new methods and tactics to save people. The treatment of war wounds is an ancient art, constantly refined to reflect improvements in weapons technology, transportation, antiseptic practices, and surgical techniques. Throughout most of the history of warfare, more soldiers died from disease than combat wounds, and misconceptions regarding the best timing and mode of treatment for injuries often resulted in more harm than good. Since the 19th century, mortality from war wounds steadily decreased as surgeons on all sides of conflicts developed systems for rapidly moving the wounded from the battlefield to frontline hospitals where surgical care is delivered. And according to US statistics 70% of the injured has extremity trauma and about 80% need Orthopaedic intervention, thus Orthopaedic surgeons play a very important role in war zones and thus we need to start having some knowledge about these injuries as the globalization has taken an effect any orthopaedic surgeon can get involved in getting war related patients to treat. We here present our experience from Afghanistan and some tips we developed which are now part of our daily practice now.

Abstract no.: 38534

EVALUATION OF CYTOKINES IN PATIENTS UNDERGOING TOTAL HIP REPLACEMENT

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Multiple cytokines are involved in the inflammatory reactions. The main pro-inflammatory cytokines involved in response to Total Hip Replacement are IL1- β , TNF- α and IL-6. We studied a group of patients (n=80) who underwent primary THR (Group A, n=44) as well as the revision cases (Group B, n=36), to evaluate the pro-inflammatory cytokine response as measured by their serum levels. The serum samples were taken preoperatively and postoperatively at 2 weeks and 6 months following surgery. We found significantly higher levels of all the three studied cytokines at the pre-op stage in both group A and group B patients (IL1- β , $p < 0.0001$; TNF- α , $p < 0.0001$ and IL-6, $p < 0.0002$, Mann-Whitney U test done for pre-op time point) in comparison to the post- op stage. The values were decreasing in the post-operative stages. The serum levels of IL1- β and TNF- α were higher in the Group B patients in each stages as compared to the Group A patients. However, for IL-6 an inverse trend was observed with Group A patients having higher serum levels of IL-6 in the pre-op stage as compared to Group B patients ($P < 0.0002$). A salient finding on following up both group A and group B patients upto 6 months after THR was the significant steady decrease in IL-1 β levels after THR in both group A and group B patients ($P < 0.0001$). Our findings suggest that IL-1 β may be used as a marker to monitor the inflammatory status of patients undergoing THR.