



Issue No. 55 - April 2013

SICOT

e-Newsletter

- **Editorial by Keith DK Luk**
 - Should scoliosis screening for school children be introduced or continued?
- **SICOT Events**
 - 34th SICOT Orthopaedic World Congress - Hyderabad, India
- **Meetings by SICOT Members**
 - Ganga Operative Arthroplasty Course 2013
 - Combined 9th Congress of the Pan Arab Spine Society (PASS) & 4th Meeting of the Moroccan Spine Society (SMCR)
- **Articles by SICOT Members**
 - World Orthopaedic Concern Newsletter Summaries from Nos. 126, 127, & 128
- **SICOT Global Network for Electronic Learning - SIGNAL**
 - Article of the Month
 - Case of the Month
- **Fellowship News**
 - Report of the TTSH/SICOT Trauma and Hand Fellowship Award
 - B. Braun Aesculap/SICOT Orthopaedic Scholarships
- **Scientific Debate**
 - Achilles Tendon Rupture: Surgical or Conservative?
- **History of Orthopaedics**
 - Hippocratic Oath... A pledge, The journey, Our destiny (Part 1)
- **Worldwide News**
 - Residual pain due to soft tissue impingement after uncomplicated total ankle replacement
- **Industry News**
 - Tecres



Should scoliosis screening for school children be introduced or continued?

Keith DK Luk

President-Elect SICOT - Hong Kong

There are many causes of scoliosis including congenital malformation, neuromuscular diseases or as part of a syndromal disorder. However, the etiology of 80% of scoliosis is still not yet known. They appear and progress at the growth spurt during the early teens and are thus called adolescent idiopathic scoliosis (AIS). The reported prevalence of curves of Cobb angles $>10^\circ$ ranged from 0.1-7% but only 0.1-1.4% exceed 20° . If left untreated a small percentage of them may progress leading to severe clinical deformities, cardiopulmonary compromise, earlier onset of low back pain, and not the least, psychosocial burden on both the adolescents and the parents. Non-invasive bracing could be used to arrest progression when the curve is mild and detected early. For large curves or rapidly progressive curves in the skeletally immature, surgical correction and fusion of the spine may be necessary. Earlier detection and diagnosis of AIS would therefore hopefully minimize the risk and costs associated with surgery.

Screening for spinal deformity amongst the adolescents was first started in the late 1950s in Delaware, USA, followed by implementation in Canada, some European and Asian countries using different screening protocols. Participation was voluntary in the majority, except for Japan and some states in the USA. In 1996, the US Preventive Services Task Force (USPSTF) recommended 'neither support nor opposition' to scoliosis screening because of lack of sufficient evidence either way. Interestingly, they changed their recommendation to 'against screening' in 2004 without newer information, but mainly because there was a lack of evidence of an effective conservative treatment method even if the scoliosis were detected early. This recommendation has been heavily challenged and the value of scoliosis screening has remained controversial since. On a positive side, it has prompted a number of high quality studies and systematic reviews in the past decade including a series of published works from our centre in Hong Kong in the last few years.

An ideal population scoliosis screening program should be highly sensitive (at least 70%), specific and predictive (a positive predictive value - PPV of between 30-50%), with minimal referral rate, safe and inexpensive. The specificity and negative predictive values (NPV) are less of a concern because they are often high due to the lower prevalence of AIS. Although radiography is very sensitive in confirming the diagnosis it is obviously not the screening tool of choice because of the radiation risk and the cost. The forward bending test (FBT) is the most commonly used method. It is cheap, safe, rapid, and can be easily performed on a large population. However, it is operator dependent leading to many false positive and false negative cases. The angle of trunk rotation (ATR) at the rib hump measured with a scoliometer has been found to correlate well with Cobb angle on the radiograph. A cutoff value of 5° ATR is commonly used for diagnosing scoliosis. The Moire topography was developed and popularized in Europe. It makes use of a biosterometric technique by casting the shadow of a set of grid lines over the back of the upright subject. The contour lines on the back resemble the altitude lines on a map that delineates the height of the mountain and the depth of the valley, thus revealing the amount of asymmetry between the two sides of the back. This technique incurs a small investment on the grid but otherwise the recurrent cost is negligible. It is very safe because it is only an optical method. From the literature it is evident that any of the above methods when used alone would produce low sensitivity and specificity. However, when used in combination the results are very satisfactory.

I was responsible for initiating the scoliosis screening program in Hong Kong in 1995, taking advantage of the commencement of an annual physical check-up program offered by the Student Health Services then. A tier system was designed in which the family physicians involved were trained to perform the FBT and ATR measurement in tier 1. If the ATR is $>5^\circ$ the student will undergo the Moire topography at a tier 2 special clinic. Failing the cutoff criteria of >2 Moire line difference between the two sides of the back, an X-ray will be taken. The patient will only be referred to the tier 3 scoliosis clinic managed by a trained scoliosis surgeon if the curve has a Cobb angle of $>20^\circ$ (see appendix below). The program is offered to all school children starting from grade 5 (around 10 years old) and they will be screened annually until skeletal maturity. To date, more than 1.2 million episodes of examination have been performed and 115,190 of the students screened have already reached maturity. This is an important issue because we all know that if a girl is screened negative for scoliosis at the age of 10 it does not necessarily mean that she will not develop a scoliosis in the later years. There is only one other program in the literature that had followed their subjects to maturity but unfortunately their cohort size was very small with only 2,242 subjects.

In a meta-analysis conducted by our group where 36 cohort studies from different countries between 1977 and 2005 were included, the pooled referral rate for radiography was 5%, within which only 5.6% had Cobb angles of $>20^\circ$. These very low PPVs indicate that many students were unnecessarily referred. This can be easily explained by the heterogeneity in the screening tests, the referral criteria used and the diversity of follow-up rates. For example, when the FBT was used alone many more children would have been referred for radiographic assessment. On the contrary, our referral rate in Hong Kong for radiography was 2.8% with a very reliable 95% confidence interval of 2.7-2.9%. The sensitivity and PPV for detecting a $>20^\circ$ curve was 88.1% and 43.6% respectively. The corresponding specificity and NPV were over 95%.

The cost of a screening program is an obvious concern to the health care provider. Some studies included only the cost of the screening while others have included that of the diagnostics and subsequent brace treatment or even surgery. It is therefore hard to compare between countries where different health care systems are in place with different funding mechanisms. Suffice it to say the cost of screening one student in our Hong Kong cohort reported in 2012 was US\$55, which is very similar to US\$54 in a study from Rochester, Minnesota, USA, reported in 2000 after adjusting for inflation.

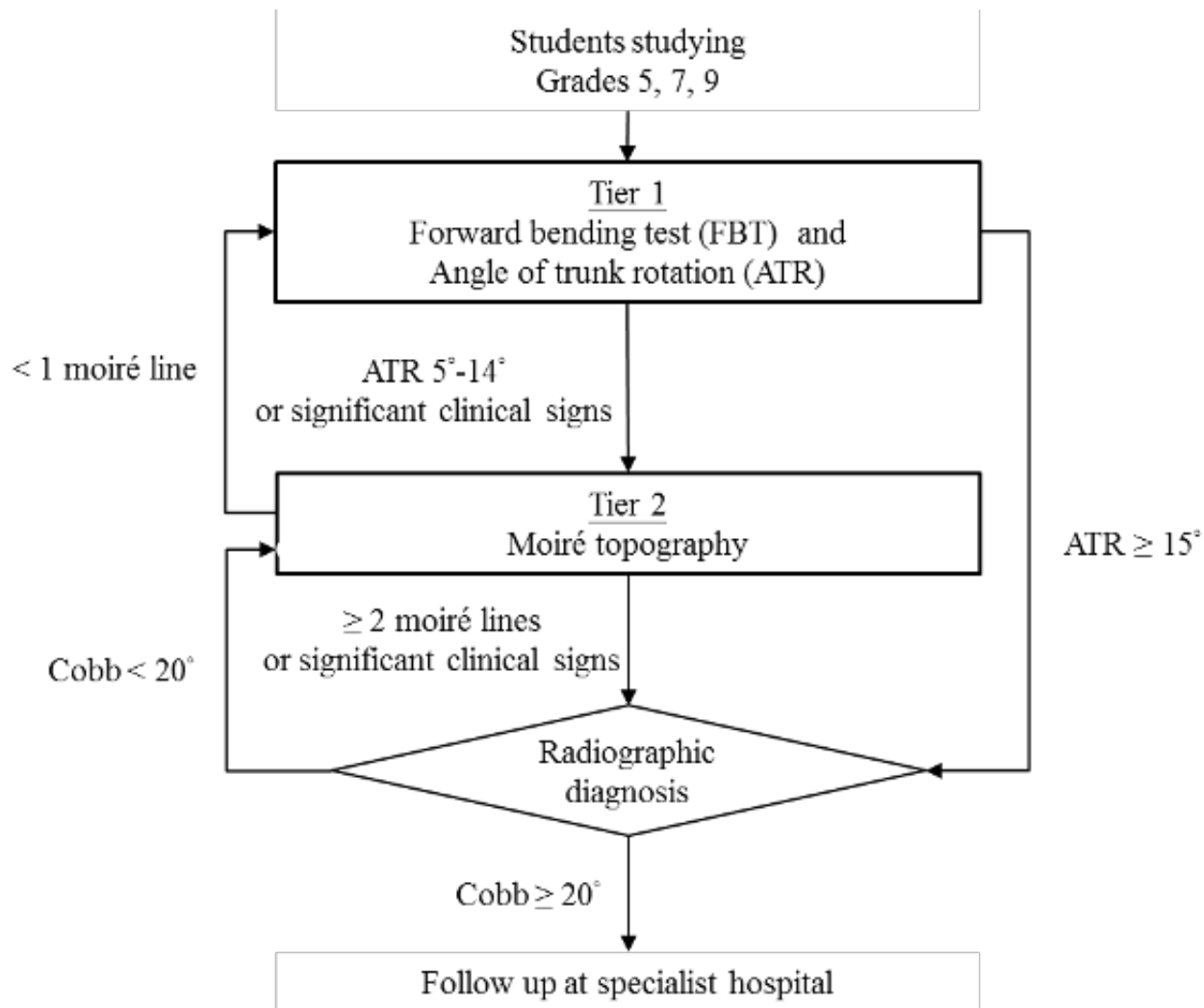
From our experience over the past 18 years we have found a tiered screening program using a combination of tools is not only effective in identifying AIS patients who require follow-up management but is also inexpensive and sustainable. What we have not been able to show is whether the rate of surgery has been successfully reduced as a result of the earlier diagnosis. Whether brace treatment is truly effective in changing the natural history of the curve progression is another subject that deserves further research. One thing for sure is that our community is now much better educated about this condition. When I was an orthopaedic resident in the late 1970s, most of the surgeries were performed on late presenters with curves of >70-100°, both because of ignorance of the parents and, regrettably, also some frontline doctors. Today, the majority of surgical cases are those who have failed conservative bracing with curve magnitudes in the low or mid 50s°. Neglected cases that upon first presentation deemed requiring major vertebral resections are now rare. The reverse trend is being observed recently in Norway where unfortunately they have given up their screening program since 20 years ago. Earlier and easier surgery may not be good news for the technical surgeon but is certainly the best news for the patients and their families.

We understand our SICOT community covers countries with very different systems with different health care priorities and financial constraints. However, in my mind scoliosis screening is very worth introducing or continuing, if resources permit. Prevention is better than cure, but if it is not preventable then an earlier diagnosis and timely intervention is the next best we can do.

Further reading:

1. Fong, D. Y., Lee, C. F., Cheung, K. M., Cheng, J. C., Ng, B. K., Lam, T. P., . . . Luk, K. D. (2010). A meta-analysis of the clinical effectiveness of school scoliosis screening. *Spine*, 35(10), 1061-1071. doi: 10.1097/BRS.0b013e3181bcc835
2. Lee, C. F., Fong, D. Y., Cheung, K. M., Cheng, J. C., Ng, B. K., Lam, T. P., . . . Luk, K. D. (2010a). Costs of school scoliosis screening: A large, population-based study. *Spine*, 35(26), 2266-2272. doi: 10.1097/BRS.0b013e3181cbcc10
3. Lee, C. F., Fong, D. Y., Cheung, K. M., Cheng, J. C., Ng, B. K., Lam, T. P., . . . Luk, K. D. (2010b). Referral criteria for school scoliosis screening: Assessment and recommendations based on a large longitudinally followed cohort. *Spine*, 35(25), E1492-1498. doi: 10.1097/BRS.0b013e3181ecf3fe
4. Lee, C. F., Fong, D. Y., Cheung, K. M., Cheng, J. C., Ng, B. K., Lam, T. P., . . . Luk, K. D. (2012). A new risk classification rule for curve progression in adolescent idiopathic scoliosis. *Spine Journal*.
5. Luk, K. D., Lee, C. F., Cheung, K. M., Cheng, J. C., Ng, B. K., Lam, T. P., . . . Fong, D. Y. (2010). Clinical effectiveness of school screening for adolescent idiopathic scoliosis: A large population-based retrospective cohort study. *Spine*, 35(17), 1607-1614. doi: 10.1097/BRS.0b013e3181c7cb8c

Appendix



SICOT Events

34th SICOT Orthopaedic World Congress (Hyderabad OWC 2013) 17-19 October 2013 * Hyderabad, India

- **Call for abstracts**

Abstract submission is now closed. Thank you for submitting your abstracts. Presenting authors have been notified of their abstract acceptance/refusal.

- **Registration**

Online congress registration is open [here](#)!

- **Diploma Examination**

Registration for the eleventh SICOT Diploma Examination in Hyderabad is now closed. Candidates have been notified of their selection or non-selection. [Read more...](#)

- **Awards**

Click [here](#) to find out more about the awards which are available to presenting authors at the Congress.

- **Accommodation & Tours**

Hotel booking for SICOT 2013 participants at Hyderabad is on! We have secured attractive discounted rates for a number of rooms in different categories of hotels close to the Hyderabad International Convention Centre. Shuttle transportation will be provided between the Congress venue and the official hotels at fixed times in the morning and evening for only those delegates who have booked through the official website:

[Online Hotel Accommodation Booking](#).

- **Exhibition & Sponsorship**

Don't miss out on this unique opportunity to promote your products and services to leading international orthopaedic surgeons, traumatologists and specialists in related fields. [Read more...](#)

Meetings by SICOT Members

- **Ganga Operative Arthroplasty Course**

The Ganga Operative Arthroplasty Course will be held in Ganga Hospital, Coimbatore, India, from 23 to 26 May 2013. This is one of the most unique courses where nearly 30 arthroplasty surgeries will be shown live. A consortium of national and international faculty members will share the wealth of their experience with the delegates. Registration is restricted to the first 250 delegates. [Read more...](#)

- **Combined 9th Congress of the Pan Arab Spine Society (PASS) & 4th Meeting of the Moroccan Spine Society (SMCR)**

The Combined 9th Congress of the Pan Arab Spine Society (PASS) and 4th Meeting of the Moroccan Spine Society (SMCR) will be held in the fabulous city of Marrakech, Morocco, on 28 and 29 June 2013. The main topics covered will be spine trauma, degenerative spine, spine deformities and MIS. There will also be a symposium on junctional pathologies and an AO Spine symposium on complications in spine surgery. [Read more...](#)

Articles by SICOT Members

World Orthopaedic Concern Newsletter Summaries from Nos. 126, 127, & 128

Michael Laurence

SICOT Emeritus Member - London, United Kingdom

The following are selected notes relating to current WOC activities (full scripts are available through www.worldortho.com and www.wocuk.org. Contributing membership obtainable through National branches).

Regular monthly editions will be sent to individual e-mail addresses, on request, from laurence.woc@gmail.com.

Global Frontiers in Surgery

This was the subject of an all day meeting at the Royal College of Surgeons (Eng) in London, on 16 January 2013. A busy, packed program covered opportunities for surgeons of every specialty to arrange teaching and training visits to areas with limited (or even absent) resources, with two principle objects; firstly, to reawaken the long-ago-learned art of managing without packaged and polished equipment; and secondly, to teach and train those who have to manage under those circumstances. Such visits are educational, but it is a two-way process – for the trainee from the West and for the established Consultant. Both will find themselves to have learned much.

Introducing the subject, R.C.S. Council member Martin Bircher spoke about the attention given to the subject by the Council with collaboration between the other Royal Surgical Colleges.

Recently retired Consultants attended the meeting in great numbers (N=242), with Registrars in training and senior students, together with abundant NGO societies (dozens) keen to prove their credentials and offer to fund volunteers. Prominent among the presenters were the Royal Colleges of England and Ireland, MSF, VSO, THET, WOC, COSECSA, CURE, Merlin; also many individual local organisations, all devoted to preaching a fundamental faith – to manage without Management. In a slot titled "Lightening Presentations" every organisation was given a strictly limited period of three minutes to convey the core of their message; and afterwards each had a stall in the main room for follow-up questions. All were extremely busy.

The general themes that emerged from the day included the following:

1. that there is an appalling world-wide imbalance in medical care;
2. there is more to medicine than iatropathic disease;
3. that shortage or lack of equipment does not mean impossibility to treat;
4. that a complete undergraduate program in the UK does not cover the most pressing of the World's epidemics;
5. that time spent engaged in S-S A (= countries as poor as Sub-Saharan Africa) is a positive item on a trainee's or a student's CV.

The economics of care with limited resources was honestly analysed; the domestic problems of uprooting families during training, the place for clinical research, the responsibility for consultant cover and a reappraisal of surgical priorities, dominated the discussion. Nor were anaesthesia, prosthetics and rehabilitation ignored. There was a general air of optimism and adventure.

The organisers, Prof Chris Lavy and Mr Martin Bircher, are to be congratulated on a constructive meeting, reviving a real interest in positive medicine rather than defensive damage limitation.

Afghanistan

The history of the Sandy Gall Afghan Initiative is an interesting example of the many and varied enterprises that offer medical support where facilities are in pathetically short supply. In Newsletter No. 126 we made an attempt to categorise the modes by which orthopaedic assistance was most usefully arranged. A little more thought leads one to the conclusion that every area, country, village and town is different from every other; and the nature of everyone who has been drawn to their help is also different. This is a classic example of how inappropriate any guidelines for the subject are, and how unusual situations lead to a common outcome.

Sandy Gall, now an octogenarian, was a high profile Newscaster for British Television and an award winning foreign journalist. His work took him all over the world until finally he came to rest in Afghanistan in the "nineteen seventies". As a war correspondent he watched and wrote about the struggle between the independent tribes and the occupying Russian army, and saw the impotence of military might to take and hold an unfamiliar terrain. He has written much about that war and its atrocities, both in his journalism and several books about the conflict. Like many correspondents, he was drawn to the under-dog, then the Mugahadeen. Most of the required surgery had been life-saving amputation. No prosthetic replacement service existed. Sandy arranged for one of the charismatic rebel leaders, who continued to hop about, literally, to be fitted out from Roehampton with a "leg". Quite soon, swathes of the male population, similarly disabled, crowded the clinic. Sandy Gall set up a clinic for amputees, with the generosity of German "Limb" Manufactures, with the surgical support of Peter Styles from Guildford, who had in his training, worked in the leading vascular unit in London.

Out of this particular epidemic, flowed a need for precision in the performance of amputation – no longer to save a life, but to fit a prosthesis, for which much surgical revision was required. By the time Peter had a heart attack and was obliged to pack up, a wide variety of totally different problem cases followed in the footsteps of their

fathers and brothers. John Fixsen joined the team with paediatric expertise, but he also had had considerable experience in adult amputation. By now, clubfoot, DDH and polio had joined the queue. They were fortunate that, as the politics of the situation in Afghanistan became complex, the interest of the Swedish Embassy in Kabul was enlisted, and continues its philanthropy to this day. John makes two or three three-week visits to Kabul each year and guides the development and provision of orthoses, prostheses and wheelchairs – the largest such unit in the country, still beset by mines.

It always takes time for an unsophisticated population to become convinced that “foreign unbelievers” are to be trusted. The prosthetic work was the catalyst for a clinic now performing a wide variety of elective procedures, both adult and paediatric, and has provided the means by which they might be enabled to return to peaceful and gainful employment. Time has elevated Sandy Gall into the affection of the population, and with him the doctors who have worked in his clinic. His problem is how to perpetuate the work and support it financially, when the time comes when he or his family no longer can. There is no doubt about the need for it. Too many such enterprises, with such an established reputation, have foundered on domestic difficulties, beyond outside understanding or assistance.

India

The Association of Rural Surgeons of India (ARSI) is to combine with the International Federation of Rural Surgery (IFRS) in organising a three-day Conference, to be held at the Shri Vigad Welfare Hospital in Bhachau, Kutch, Gujarat, in North Western India, 22-24 November 2013. This meeting has much support from the Times of India's Welfare Trust.

It will be the 21st such conference for ARSI, and the 5th for the International Federation (IFRS). A broad faculty includes representatives from Germany, Holland and Nigeria.

According to the announcement by Dr Ram Prabhoo, the scientific programme will cover clinical and research papers with emphasis on what is ingenious, inexpensive and essentially effective and safe. (The words “minor surgery” do not appear in the title - there is no such thing! Only minor surgeons! Ed). Vigorous discussion will be encouraged by an open forum system of presentation, with practical videotape displays of technique.

To build upon a solid base of the common and established treatments is a wise principle.

Philippines

From Louis Deliss, with reference to the untimely death of Jose Antonio Socrates in Palawan. “Soc had tried with mixed success in his attempts to train local Hilots (the Filipino traditional healers). Their firm belief that vigorous massage was essential to bone healing was difficult to break! But we continue to train the village health workers. Each village has a health worker paid by the village to look after the sick and disabled whilst the family goes to work. This training has been very successful. I am also exploring the possibility of a senior Orthopaedic trainee from the Philippine Orthopaedic Center in Manila to visit on a regular basis. This would help us and be a great addition to their training.

We do not expect to “replace” Soc, as all Orthopaedic surgeons are now trained to believe that fractures will not heal unless internally fixed. I will however continue to teach them the fundamental non-operative treatment methods, upon which all else in traumatology is built.”

Louis Deliss, Chairman British Palawan Trust, www.britishpalawantrust.org.uk

SICOT Global Network for Electronic Learning - SIGNAL

Article of the Month

April 2013

Tourniquet time affects postoperative complications after knee arthroplasty

Charlotta Olivecrona, Lasse J. Lapidus, Lina Benson & Richard Blomfeldt

Purpose Pneumatic tourniquets are frequently used in knee arthroplasty surgery. However, there is a lack of evidence to define safe tourniquet time in lower limb surgery. The primary aim of this study was to investigate whether tourniquet time influences the risk of postoperative complications after primary and secondary knee arthroplasty.

Methods This study was a prospective register study. Since we wanted dispersion in tourniquet time, we included a consecutive series of 577 primary knee arthroplasties, 46 revision knee arthroplasties, and 18 patellar supplementing knee arthroplasties from a clinical audit database over a period of five years. The following postoperative complications were recorded: superficial wound infections, deep wound infections, deep vein thrombosis, pulmonary embolism, nerve injuries, compartment syndrome, cuff pressure injuries, and bandage injuries.

Results Tourniquet time over 100 minutes was associated with an increased risk of complications after knee arthroplasty surgery (OR 2.2, CI 1.5–3.1). This increase in risk remained after adjusting for cuff pressure, sex, age, American Society of Anaesthesiologists (ASA) classification, smoking, diabetes, and surgery indication (OR 2.4, CI 1.6–3.6).

Conclusions Tourniquet time over 100 minutes increases the risk of complications after knee arthroplasty surgery and special attention is advocated to reduce the tourniquet time.

SICOT Global Network for Electronic Learning - SIGNAL

Case of the Month

April 2013

Authors:

Ratna Maheshwari, Shalin Maheshwari & Ashok Johari

Childrens Orthopaedic Centre, Mumbai, India

History

A two-year-old male child was brought with parental concerns of abnormal gait. On enquiry, patient had a history of premature delivery with high grade fever after birth and neonatal intensive care unit admission. The child had then been treated conservatively with intravenous antibiotics. Parents do not recall any other relevant medical history. They noted an abnormality in the child's gait in the last 6 months.

On examination, the child had waddling gait with high riding trochanters. Abductor insufficiency was present bilaterally.

This is his pelvic radiograph at two years of age.



What are your thoughts on looking at the radiograph? What are the differential diagnoses?

[Click here to read more...](#)

[Back to previous section](#)

There is a dislocation of both hips. The capital femoral epiphysis is not visible clearly on right side and has a small ossification centre on the left side. Shenton's line is broken and acetabular index has increased on both sides.

Working diagnosis:

1. Post infective hip sequelae
2. Developmental dysplasia of hip (DDH)

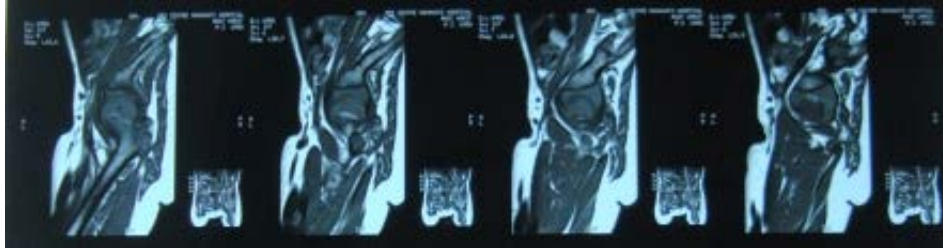
Blood investigations at presentation revealed no abnormality, markers for infection were within normal limits.

What would be your next step in the management of this patient?

1. **MRI**
2. **Ultrasonography**
3. **Arthrogram/Arthrotomy**

[Click here to read more...](#)

[Back to previous section](#)



MRI revealed presence of capital femoral epiphysis (CFE) with thinning of articular cartilage and irregularity of femoral head which suggest infective pathology.

Diagnosis of post septic hip sequelae was confirmed using an MRI and an Arthrogram at the time of intervention. However, a history of prematurity with low birth weight and a NICU admission are definite important pointers to the hip condition being a septic arthritis. Bilateral septic hip is not uncommon and has an incidence of 2-10% per 100,000 general population.

In hips with post septic sequelae in which the capital femoral epiphysis (CFE) is not visualized on radiographs, the presence of the CFE has to be confirmed by MRI, Sonography or arthrogram at closed reduction or arthrotomy at open reduction.

What are your management options for this child with bilateral post septic hip dislocations with CFE present bilaterally?

1. **Closed reduction**
2. **Open reduction**
3. **Open reduction with femoral/acetabular procedure**

[Click here to read more...](#)

[Back to previous section](#)

Closed reduction was attempted for both hips with spica immobilisation for around 2 months.



Closed reduction attempted.



On subsequent follow-up closed reduction was successful for the right hip, left hip appears subluxated.



Open reduction was performed for the left hip along with femoral shortening, varus derotation osteotomy and Dega's Periacetabular osteotomy at the age of 3 years 6 months. Intra-operatively, the head was found to be enlarged, oval and irregular with presence of Limbus. There was thick pulvinar in the acetabulum which was excised.



At age 8 years, there is a congruous reduction of the right hip but loss of epiphyseal height. There is coxa vara and decreased articulothrochanteric distance of the left hip.



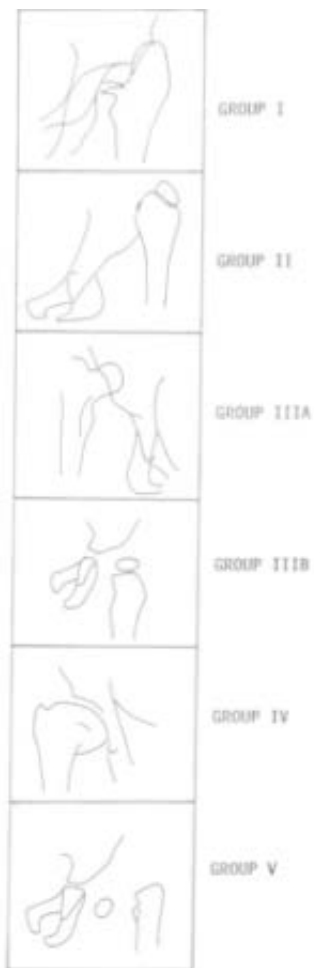
At 7 years' follow-up, patient doing well functionally, however left hip may eventually have to be managed with a Valgus Osteotomy with/without Trochanteric Advancement.




Discussion

Joint sepsis may be unavoidable in certain situations like that of a sick premature low birth weight newborn in the NICU with problems of septicaemia. Often these cases are missed and a delay in the diagnosis of bone and joint infections often take place leading to sequelae. **Hence a high index of suspicion is required here.** One must extract a careful history from the care takers. Refusal to move the lower limb is an important physical sign. Neonatal or infantile bone and joint infections have to be considered as one entity on account of the transphyseal vessels.

Delayed or missed diagnosis of septic arthritis of the hip in children may result in changes in the capital femoral epiphysis (CFE), neck, and acetabulum. Various authors have classified the residual sequelae, with the Hunka and Choi classification systems being commonly used. The group of dislocations with loss of the CFE has been well described; however, there is a group of dislocations when the CFE is present, which neither Hunka nor Choi have discussed. In 1988, Johari and, more recently, Forlin and Milani³ have described this entity. There is paucity in literature on the management of this group of post septic hip sequelae.

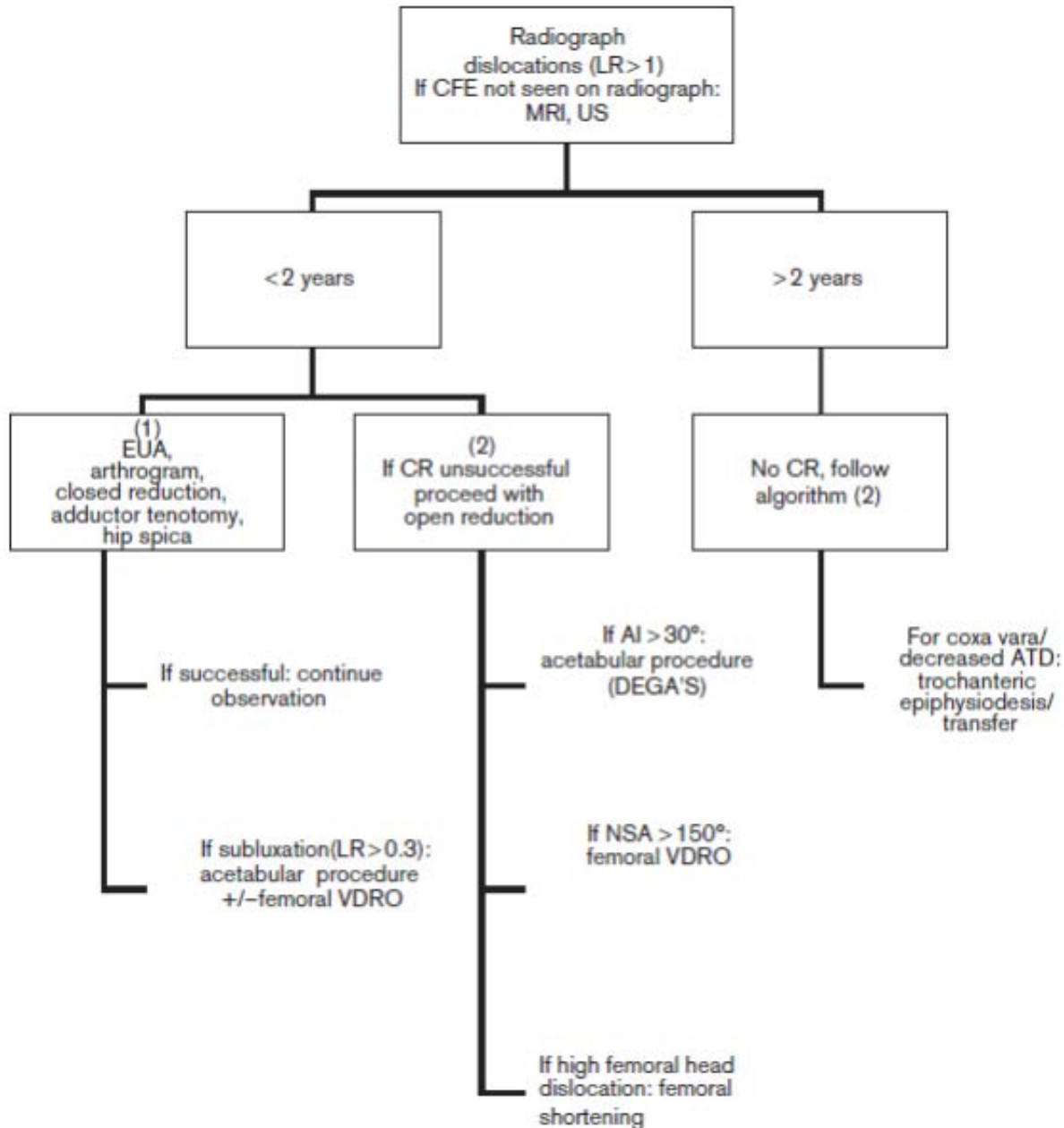
In children with sequelae of septic arthritis who present at an early age, the CFE may not be well visualized on radiographs because of the delayed ossification, and these hips may be mistakenly classified as dislocations with absence of the CFE. Differentiating between loss of the CFE and delayed ossification of the CFE is important for making appropriate management decisions. Radiographs in such cases should be evaluated for dislocation or subluxation, presence or absence of CFE, acetabular dysplasia and widening of the tear drop of Kohler, premature fusion of the triradiate cartilage, acetabular irregularity, articulothrochanteric distance (ATD), and neck shaft angle (NSA). It is important to obtain additional investigations in the form of MRI, ultrasound, or arthrogram. Choi et al.⁴ have also discussed the role of these modalities in the evaluation of septic hip sequelae.



 HEAD ABSENT	STABLE
	UNSTABLE
 HEAD PRESENT	 UNSTABLE
	STABLE
	STABLE/UNSTABLE

Johari^{1,2} Classification of Sequelae of Septic Hips

Below is an algorithm for the management of post septic hip dislocation or subluxation of hip with presence of CFE (Johari 3A and 3B)^{1,2}.



Algorithm for intervention in post septic dislocations. AI, acetabular index; ATD, articulo-trochanteric distance; CR, closed reduction; EUA, examination under anesthesia; LR, lateralization ratio; MRI, Magnetic resonance imaging; NSA, neck shaft angle; US, ultrasound; VDRO, varus derotation osteotomy

The category of septic hip dislocations with the CFE present is a distinct entity. A post septic hip dislocation signifies a high magnitude of damage in terms of infection breaking into the joint, increased intraarticular pressure and tamponade and loss of the capital femoral epiphyseal blood supply (AVN).

Closed reduction has a fairly high failure rate, and a significant number of these hips need open reduction along with a gamut of other procedures. Femoral varus osteotomy may contribute to coxa vara and should be performed selectively. In the short term, intervention results in a stable, functional, and mobile hip¹. Factors responsible for a poor result¹ are hip stiffness, avascular necrosis of the CFE, premature fusion of the triradiate cartilage, and cartilage thinning on MRI, femoral head flattening and coxa magna, cartilage erosions, and marked fibrosis and adhesions.

Longer follow-up is needed to assess the long-term outcome.

References:

1. Ashok N. Johari, Arjun A. Dhawale, Ratna A. Johari. Management of post septic hip dislocations when the capital femoral epiphysis is present. *Journal of Pediatric Orthopedics B* 2011, 20:413-42
2. Ashok N. Johari, Ratna A. Johari, Shalin K. Maheshwari. Management of late presentations of septic hip dislocation. *Current Orthopedic Practice* 2012; 24: 11-16
3. Forlin E, Milani C. Sequelae of septic arthritis of the hip in children: a new classification and a review of 41 hips. *J Pediatr Orthop* 2008;28:524-8.
4. Choi IH, Shin YW, Chung CY, Cho TJ, Yoo WJ, Lee DY. Surgical treatment of the severe sequelae of infantile septic arthritis of the hip. *Clin Orthop Relat Res* 2005; 434: 102-109

Fellowship News



Report of the TTSH/SICOT Trauma and Hand Fellowship Award

Waleed Riad Saleh

SICOT Associate Member - Assiut, Egypt

Many thanks to the Tan Tock Seng Hospital (TTSH), SICOT, and Dr Hitendra Doshi for giving me the chance to have such a great experience of Singapore life.

Yes, it is a lifestyle, not only a medical practice, because from the moment I arrived there I joined all aspects of Singapore life (medicine, culture, sports, sightseeing, etc.). My first steps here were a little bit hard because of a common problem in Singapore which is to find suitable accommodation (in terms of location and rental fee). Soon after, I regularly followed the schedule of the orthopaedic department at TTSH. Basically, I am a hand surgeon so from the first days I tried to improve my skills in some aspects of hand surgery.

Wrist arthroscopy was my first target because we have a lot of indications for it. Dr Winston Chew gave me a very good chance to learn it from a very basic to a highly specialised level. I learned different techniques of TFCC ligament and managing different types of degenerative wrist conditions.

I also assisted Dr Yong Fok Chuan in many cases of free tissue transfer to reconstruct traumatic soft tissue loss. In my country we have a very high incidence of road traffic accidents with residual post-traumatic morbidities and soft tissue loss. It was interesting to use the free vascularized gracilis muscle transfer for coverage rather than for function.

Dr Teoh Lam Chuan explained every step to me in all surgeries with a smiling face. I really enjoyed assisting him in hand trauma and internal fixation of different hand areas, and I appreciated the better outcomes with using the mini plates over K-wires.



In the operative theatre with Prof Teoh Lam Chuan

With regards to the trauma load, TTSH receives a tremendous number of trauma cases. I joined the trauma team in many cases of ORIF of long bone fractures. I assisted Prof Ganesan Naidu, Head of the Orthopaedic Department, in many cases of femoral nailing and hemi-arthroplasty of femoral neck fracture.

Sightseeing in Singapore is something different. Visitors enjoy Marina Bay, Chinatown, Orchard Road, Sentosa Island and other amazing Singapore areas, in addition to sightseeing in nearby countries such as Malaysia, Indonesia and Thailand.

Living in such a polyethnic country gave me a lot of knowledge in life and medicine, which added to my experience of accepting others and working in a multidisciplinary team.



In the operative theatre assisting in a shoulder arthroplasty case



With members of the TTSH Orthopaedic Department during the Department BBQ at the end of the year

B. Braun Aesculap/SICOT Orthopaedic Scholarships

Funded by SICOT & B. Braun Aesculap

The B. Braun Aesculap/SICOT Orthopaedic Scholarships are open to surgeons from eastern Europe who want to evolve their knowledge and skills into innovative concepts in orthopaedic reconstructive surgeries of the hip and knee.

The Scholarships consist of extensive exposure to innovative concepts in orthopaedic reconstructive surgery carried out at selected German hospitals with proven expertise in Short Stem THA and Computer Navigation.

Every fellow who is attached to this programme will be integrated into the surgical programme of a selected German hosting clinical institution in a daily routine by attending surgeries and clinical meetings.

1. Duration of this scholarship will be two weeks per attachment.
2. Fellows will receive allowance valued at EUR 2,000 per scholarship.
3. Fellows will be paid one economy round-trip flight to Germany up to EUR 1,000.

The **Short Stem Hip Arthroplasty Scholarship** is aimed at orthopaedic surgeons with standard operating skills who want to understand and specialize in short stem hip arthroplasty. The two-week scholarship is intended to provide a deep understanding of the short stem philosophy & concept, surgical planning & reconstruction in primary short stem THA, clinical indication and the surgical procedure itself. It includes Short Stem Design Philosophy, Biomechanical Principles in Short Stem THA, Bone Preserving Strategies in THA, Clinical Indication & Contraindication, Surgical Approaches, and Surgical Procedure & Instrumentation.

The **Image-Free Computer Navigation Scholarship** is aimed at orthopaedic surgeons who want to evolve their skills into the field of computer assisted total knee reconstruction. The clinical attachment shall be arranged at hospitals with proven expertise in the field of Image-Free Computer Navigation. The maximum two-week scholarship will provide deep insights into the benefit of Computer Navigation during primary TKA procedures, by attendance and assistance in surgical cases. Specific aspects of Image-Free Computer Navigation like patient registration, leg alignment and quantitative assessment in soft tissue management are essential parts of the clinical program.

Eligibility Criteria

Fellows may submit their application for scholarship participation under the following eligibility criteria:

- Fellows should be under 45 years of age
- Current Orthopaedic Practice in an Eastern European Country as following:
Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Russia, Slovakia, Slovenia
- Postgraduate degree in Orthopaedics and Traumatology
- A minimum experience (after qualifying degree) of three years in Orthopaedics
- Fluently speaking English language skills / B2 speaking level
- Health insurance for duration of visit
- SICOT Membership

Applicants must submit the following documents:

- Application letter with description of the actual position in the hospital, clinical experience & description of the department itself written in English.
- CV & scientific bibliography
- Copy of passport & medical license
- Certificate of health & vaccination

Application deadline: **30 June 2013**

Applications should be sent to fellowships@sicot.org (Subject: B. Braun Aesculap/SICOT Orthopaedic Scholarships)

Scientific Debate

A better option? Conservative management for Achilles tendon rupture

Abhishek Kini

Sportsmed Mumbai - Mumbai, India

The Achilles tendon is the strongest tendon in the human body. It is most commonly injured by sudden plantarflexion while push-off or forced dorsiflexion of ankle beyond its normal range. It almost always suggests a degenerative process within the tendon substance, which signifies an altered and compromised microstructure.

The choice of treatment for Achilles tendon tear has come a full circle with the turn of wheel favoring conservative and operative treatment alternatively with no definite conclusion. The prime argument against operative treatment put forward by the conservative camp is the high rate of post operative complications. The rate of complication in a surgically treated group is as high as 20% in a large study of 775 patients¹. These complications include skin necrosis, wound infections, sural neuroma, adhesion of scar to the skin along with the complications associated with anaesthesia.

Skin and wound complications are the most common and most difficult to treat in view of the scarce blood supply around the heel. Another alarming feature is the limited soft tissue coverage options over the tendo Achilles, which more often require microvascular free flaps as split skin grafts do not adhere over an exposed tendon.

Conservative management of Achilles tendon ruptures had been based on long periods of rigid immobilization with above or below knee casts applied with ankle in plantar flexion. These casts were regularly changed with gradual weaning of plantar flexion and progressive increase in weight bearing. Treatment ranged from 12 to 24 weeks and followed by physical therapy²⁻⁵. The tendon gap filled with fibrous scar leading to a lengthened tendon which in turn leads to decreased push off. The scarred tendon is also reported to have a higher re-rupture rate⁵.

This handicap of prolonged treatment has been recently overcome by a functional protocol where the patients are placed in a rigid cast for 3 weeks followed by an ankle-foot orthosis that holds the ankle in 15° of plantar flexion, allowing motion with physical therapy⁶. Our recent better understanding of tendon healing and its microstructural arrangement has made it possible to modify this even better. Recent evidence has shown that healing tendon when adequately loaded gives the required stimulus to early healing and gets the tendon collagen in orderly fashion, which provides strength to the tendon⁷.

This functional protocol overcomes the unwanted effects of traditional conservative management, i.e. delayed mobilization, joint stiffness, calf atrophy, reduced push-off strength with a better patient compliance. The strength of healed tendon by this protocol is comparable to surgically repaired tendon and the rate of re-rupture is also similar.

Nowadays, with a better microstructural understanding of tendon healing and its associated pathology (degeneration), are we justified in putting our patients with a tendo Achilles rupture under our knife? This is a question which is open to debate. But with shorter hospital stay, less absenteeism from work, regained levels of strength as surgical patients and lower rate of complications along with lower cost implications on health infrastructure, the favored choice of treatment is functional casting.

References:

1. Myerson M. Achilles tendon ruptures. Instr Course Lect. 1999;48:219-230.
2. Maffulli N. Current Concepts in the management of subcutaneous tears of the Achilles tendon. Bull Hosp Jt Dis. 57:152-158, 1998.
3. Lea RB, Smith L: Non-surgical treatment of tendo achillis rupture. J Bone Joint Surg Am. 1972;54:1398-1407.
4. Inglis AE, Scott WN, Sculco TP, et al. Ruptures of the tendo achillis: an objective assessment of surgical and non-surgical treatment. J Bone Joint Surg Am.1976;58:990-993.
5. Cetti R, Christensen S-E, Ejsted, Jensen R. Operative versus nonoperative treatment of Achilles tendon rupture. A prospective randomized study and review of the literature. Am J Sports Med. 1993;21:791-799.
6. Saleh M, Marshall PD, Senior R, et al. The Sheffield splint for controlled early mobilisation after rupture of the calcaneal tendon: a prospective, randomised comparison with plaster treatment. J Bone Joint Surg Br. 1992;74:206-209.
7. Virchenko O, Aspenberg P. How can one platelet injection after tendon injury lead to a stronger tendon after 4 weeks? Interplay between early regeneration and mechanical stimulation. Acta Orthop 2006;77:806-12.

Achilles Tendon Rupture: Is Surgical a Better Option than Being Conservative?

Mohd Yazid Bajuri

Universiti Kebangsaan Malaysia Medical Centre - Kuala Lumpur, Malaysia

Many studies have been done on Achilles tendon rupture but there are still controversies surrounding its pathology and treatment. Disagreement occurs especially in finding the best treatment due to similar outcomes either by surgery or conservative treatment.

For me, I am still in favor of surgically managing this common injury despite studies showing higher risk of overall

complications. Based on my experience, I found it has much lower risk of re-rupture of the tendon and early return to normal activities as compared to conservative treatment.

Achilles tendon rupture constitutes about 20% of all tendon injuries. It commonly occurs in middle-aged men and usually occurs during sporting activities¹. Most of the patients usually have sedentary lifestyles and have just taken up recreational or athletic activities.

The tendon is formed from the combined aponeurosis of the soleus and gastrocnemius muscles. It is the thickest, largest and one of the strongest tendons in the body with an average length of 15cm². The main blood supply comes from the vessels of the paratenon through the short and long vinculae. Thus it creates a watershed area of relatively avascular zone around 2 to 6cm proximal to its insertional point. It corresponds to the commonly rupture site accounting 80% of the cases. Its vascularity is also further compromised during passive stretching and isometric contraction³. The aetiology of Achilles tendon rupture is multifactorial. It is attributed to a degenerative process and mechanical factor. Degenerative changes are also seen following prolonged steroids and fluoroquinolone therapy and systemic diseases such as rheumatoid arthritis, systemic lupus erythematosus and gouty arthritis^{4,5}.

One of the attributed causes is based on the mechanical theory where there is a malfunction of the musculotendinous unit⁶. Some believe that poor sensory feedback from mechanoreceptors in the ankle joint impairs an individual's perception of foot position during movement which then leads to eccentric loading of the Achilles tendon^{6,7}.

Achilles tendon rupture is diagnosed mainly from a thorough history and clinical examination. Most are completely asymptomatic prior to the rupture and typically they share similar characteristic features. The mechanism of injury is mostly due to sporting activities such as after sudden accelerating or jumping⁸. In situations where the clinical findings are equivocal, radiological findings can help in pointing out the diagnosis. Modalities that can be used include ultrasound scan and magnetic resonance imaging (MRI).

An Achilles tendon injury can usually be classified as acute or chronic type. It can be a complete or incomplete injury at the insertion site (4-14%), intertendinous (72-73%), or at the musculotendinous junction (14-24%)⁹. Acute rupture occurs in a sporting injury in up to 75% of the cases. It is commonly caused by an indirect mechanism rather than direct impact. Direct injuries, however, are more likely to be open. Indirect injury occurs during landing, takeoff, or falling when the foot is forced into dorsiflexion¹⁰. Chronic injury occurs when acute rupture is missed or mistreated or when gap appears in the distal part of the tendon and the proximal part is retracted. Chronic injury can also occur as a result of an overuse phenomenon or part of a tendinosis process.

The aims of treatment in an Achilles tendon injury are restoration of normal length and tension and restoring the function of the calf muscle. Traditionally, Achilles tendon rupture was treated conservatively. Surgical treatment gained popularity in the early 1980s as many techniques of repair were invented.

The proponent of operative treatment for Achilles tendon rupture stressed on biomechanical factors to restore the normal length of the musculotendinous unit by closing the tendon gap. The reconstructed site has greater mechanical strength than the scar tissue thus decreasing the rate of re-rupture.

There are advantages to surgical treatment such as early return to work, low re-rupture rate, better calf muscle strength and overall functional outcome. Most recent reviews have recommended surgery as the main treatment^{11,12} as there is evidence of a reduction in the rate of re-rupture associated with surgery¹³. Most of the surgeries were performed as an open procedure, although percutaneous techniques have gained popularity¹⁴. It is thought that surgically repaired tendons have the benefit of a more rapid rehabilitation. This will lead to an improved muscle function, earlier return to sports and occupational activity. The majority who support surgically managed Achilles tendon rupture do so due to the higher rate of re-rupture after conservative management. In fact, a few studies have reported that the re-rupture rate following conservative treatment is as high as 10-12%, whereas surgery lowers the rate to <3%²⁴.

A recent meta-analysis of randomised trials treatment of ruptured tendo Achilles demonstrated no significant re-rupture rate when comparing conservative to surgical treatment, while offering the advantage of less complications by using functional rehabilitation. The drawback of this treatment is that only certain centres can offer this kind of treatment. However, the report also suggests that surgical repair should be more preferable in centres which do not employ early range-of-motion protocols as it decreases the re-rupture risk in such patients¹⁵.

A few studies have reported an earlier time to return to work for the surgically managed patient as compared to conservative treatment^{20,21}. In fact, in a recent meta-analysis it was noted that on average patients whose Achilles tendon rupture was repaired surgically returned to work 19 days earlier than patients who underwent non-surgical treatment¹⁵.

Although the functional outcomes between these two treatment modalities are almost similar^{21,22}, at the end of the day, the advantages gained in the surgically managed patients make the surgical option a better choice.

No matter what the treatment choice, a good established rehabilitation program involving physical therapy exercises to strengthen the Achilles tendon and the surrounding leg muscles is the most important factor that determines the long-term outcome. Most of the patients return to their previous level of activity within 4 to 6

months.

References:

1. Hattrup SJ, Johnson KA. A review of ruptures of the Achilles tendon. *Foot Ankle* 1985;6:34-8.
2. DeMaio M, Paine R, Drez D. Achilles tendonitis. *Sports Med Rehabil Series* 1995; 18: 195-204.
3. Astrom M, Westlin N. Blood flow in the human Achilles tendon assessed by laser Doppler flowmetry. *J Orthop Res* 1994; 12: 246-52.
4. Haines, J. Bilateral rupture of the Achilles tendon in patients on steroid therapy. *An Rheum Dis* 1983; 42: 652-4.
5. Zabraniecki L, Negrier I, Vergne P, et al. Flouroquinolone induced tendinopathy: report of six cases. *J Rheumatol* 1996; 23: 516-20.
6. Inglis AE, Sculco TP. Surgical repair of ruptures of the Achilles tendon. *Clin Orthop* 1981; 156: 160-9.
7. Simoneau GG, Derr JA, Ulbrecht JS, et al. Diabetic sensory neuropathy effect on ankle joint movement perception. *Arch Phys Med Rehabil* 1996; 77: 453-60.
8. Jozsa L, Kvist M, Balint BJ, et al. The role of recreational sport activity in Achilles tendon rupture. *Am J Sports Med* 1989; 17: 338-43.
9. Lea, Smith L. Non-surgical treatment of tendo Achilles rupture. *J Bone Joint Surg* 1972; 54-A: 1398-406.
10. Helal B. Achilles hell (cord). *Clin Sports Med* 1989; 1: 17-28.
11. Deangelis JP, Wilson KM, Cox CL, Diamond AB, Thomson AB. Achilles tendon rupture in athletes. *J Surg Orthop Adv* 2009;18:115-21.
12. Heckman DS, Gluck GS, Parekh SG. Tendon disorders of the foot and ankle, part 2: achilles tendon disorders. *Am J Sports Med* 2009;37:1223-34.
13. Khan RJK, Fick D, Brammar TJ, Crawford J, Parker MJ. Surgical interventions for treating acute Achilles tendon ruptures (review). *The Cochrane Collaboration: John Wiley and Sons*, 2008.
14. Gorschewsky O, Pitzl M, Pütz A, Klakow A, Neumann W. Percutaneous repair of acute Achilles tendon rupture. *Foot Ankle Int* 2004;25:219-24.
15. Alexandra S, Feroze S, Shahram A, Annette K, Mark G. Surgical versus nonsurgical treatment of Acute Achilles tendon rupture. *A Meta-Analysis of Randomized Trials. The Journal Of Bone & Joint Surgery Volume 94-A,Number 23: December 5, 2012*
16. Nyssönen T, Lüthje P, Kröger H. The increasing incidence and difference in sex distribution of Achilles tendon rupture in Finland in 1987-1999. *Scand J Surg.* 2008;97(3):272-5.
17. Hess GW. Achilles tendon rupture: a review of etiology, population, anatomy, risk factors, and injury prevention. *Foot Ankle Spec.* 2010 Feb;3(1):29-32.
18. Cary DV. How to diagnose and manage an acute Achilles tendon rupture. *JAAPA.* 2009 Aug;22(8):39-43.
19. Molloy A, Wood EV. Complications of the treatment of Achilles tendon ruptures. *Foot Ankle Clin.* 2009 Dec;14(4):745-59.
20. Metz R, Verleisdonk EJ, van der Heijden GJ, Clevers GJ, Hammacher ER, Verhofstad MH, van der Werken C. Acute Achilles tendon rupture: minimally invasive surgery versus nonoperative treatment with immediate full weightbearing– a randomized controlled trial. *Am J Sports Med.* 2008 Sep;36(9):1688-94.
21. Majewski M, Rickert M, Steinbrück K. [Achilles tendon rupture. A prospective study assessing various treatment possibilities]. *Orthopade.* 2000 Jul;29(7):670-6. German.
22. Willits K, Amendola A, Bryant D, Mohtadi NG, Giffin JR, Fowler P, Kean CO, Kirkley A. Operative versus nonoperative treatment of acute Achilles tendon ruptures: a multicenter randomized trial using accelerated functional rehabilitation. *J Bone Joint Surg Am.* 2010 Dec 1;92(17):2767-75.
23. Möller M, Movin T, Granhed H, Lind K, Faxén E, Karlsson J. Acute rupture of tendon Achillis. A prospective randomised study of comparison between surgical and non-surgical treatment. *J Bone Joint Surg Br.* 2001 Aug;83(6):843-8.
24. Kocher MS, Bishop J, Marshall R, Briggs KK, Hawkins RJ. Operative versus nonoperative management of acute Achilles tendon rupture: expected-value decision analysis. *Am J Sports Med.* 2002 Nov-Dec;30(6):783-90.

History of Orthopaedics



Hippocratic Oath... A pledge, The journey, Our destiny (Part 1)

Hitendra K. Doshi

SICOT National Delegate of Singapore

Historians agree that Hippocrates was born on the Greek island of Kos around 460 BC. According to Soranus of Ephesus, his father was a physician named Heraclides. He learned medicine from his father and attended the healing temple of Kos also known as Asclepeion to honour the Greek god Asclepius. His work had been mentioned by other physician's at the time such as Plato and Galen. Many of his contributions in medicine still hold true today. He described clubbing of the fingers in patients with chronic lung disease. He also described a technique to reduce shoulder dislocation which was known as the Hippocrates method. But his most well known contribution to the field of modern medicine is the Hippocratic Oath.

"I swear by Apollo, Asclepius, Hygieia, and Panacea, and I take to witness all the gods, all the goddesses, to keep according to my ability and my judgment, the following Oath.

To consider dear to me, as my parents, him who taught me this art; to live in common with him and, if necessary, to share my goods with him; To look upon his children as my own brothers, to teach them this art.

I will prescribe regimens for the good of my patients according to my ability and my judgment and never do harm to anyone. To please no one will I prescribe a deadly drug nor give advice which may cause his death. But I will preserve the purity of my life and my arts.

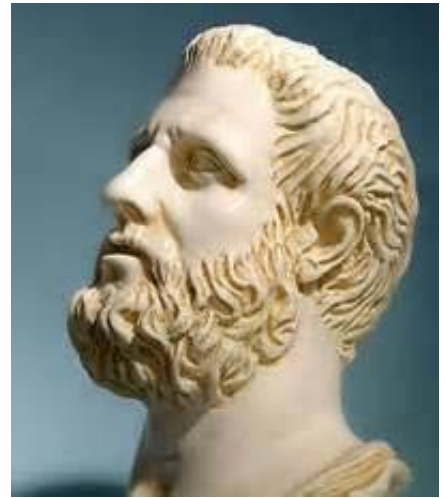
I will not cut for stone, even for patients in whom the disease is manifest; I will leave this operation to be performed by practitioners, specialists in this art.

In every house where I come I will enter only for the good of my patients, keeping myself far from all intentional ill-doing and all seduction and especially from the pleasures of love with women or with men, be they free or slaves.

All that may come to my knowledge in the exercise of my profession or in daily commerce with men, which ought not to be spread abroad, I will keep secret and will never reveal.

If I keep this oath faithfully, may I enjoy my life and practice my art, respected by all men and in all times; but if I swerve from it or violate it, may the reverse be my lot."

- Hippocrates



The Hippocratic Oath is one of the oldest binding documents in history traditionally taken by medical practitioners. It is widely believed that the oath was written by Hippocrates, the 'father of medicine', in the 4th century BC. Written in antiquity, its principles are held sacred by doctors to this day. No doubt the medical world has witnessed huge scientific, economic, political, and social changes. Nevertheless, it is interesting to note that "The Oath of Hippocrates" holds the American Medical Association's Code of Medical Ethics (1996 edition). Although modified in 1964 by Louis Lasagna, Academic Dean of the School of Medicine at Tufts University, to a commonly used 'modern version' of the oath, and a NOVA translation much earlier known as the 'classical version', it cannot be denied that the fundamental message is deeply rooted from the original version of the Hippocrates oath in Greek.

With this in mind, it proves that there must be an inherent noble essence laid down by the 'Father of Medicine' which doctors cannot separate from, either consciously or unconsciously. Hippocrates is regarded as the 'Father' of medicine because of the words of guidance and wisdom which has led to the manifestation of our medical practice. Hence, it will be apt to say that we are his 'children of medicine' which unfolds a unique bond that doctors inherently have with their 'father'. That bond is established the moment the oath is taken and it is maintained by practice thereafter. In order to make a conscious effort of putting the 'oath' into action, the significance of the oath has to be shelled out in layers and reflected upon. As one fathoms the depths of each line of the oath, it prods our inner conscience and forces us to think why we took the oath in the first place or was it merely as a ritual to uphold tradition. Deeper contemplation of the oath itself should evoke in our mind and belief that it is a noble solemnization of our birth as a doctor with 'love' being our religion and 'humanity' being our cast. Not going astray from the fundamental human values so beautifully laid down in the oath by Hippocrates, it is beyond doubt that doctors are destined to be noble souls, if they tread the righteous path laid down by the founding father of medicine.

The first sentence of the oath reads, "I swear by Apollo, Asclepius, Hygieia, and Panacea, and I take to witness all the gods, all the goddesses, to keep according to my ability and my judgment, the following Oath". Hippocrates clearly enlightens us that the first and foremost virtue is to give dignity to the oath. It is likened to a child making a promise to his mother and doing all he can to uphold that promise to please his mother. Making an oath in such a manner introduces a sense of 'sacredness' as it is being made to their ancient Greek gods and goddesses. Furthermore, it takes witness of all other superiorities regarded as gods and goddesses, ensuring that the pledge is known to all which adds grandeur and commitment to the oath taken. This clearly demonstrates an appreciation of a higher or more supreme force other than man himself. The value of 'humility' is exemplified and makes one realize that man as a doctor is merely an instrument to ensure the well-being of humanity. Having laid the fundamental sacredness of the oath with humility, Hippocrates goes on further to unveil the basic human values portrayed in the oath which are the pillars of the profession.

The value of 'pure love' is clearly expressed in the second line which reads "To consider dear to me, as my parents, him who taught me this art; to live in common with him and, if necessary, to share my goods with him; to

look upon his children as my own brothers, to teach them this art." To be able to consider others to be as dear, to be able to accept others in totality just as you accept yourself and your own dear ones, and to be able to share with others just as you would do with your own ones, reflects 'selflessness' and 'equanimity'. Hippocrates enlightens us on the noble quality of 'expansion of love' that will develop the attitude of selflessness which is free from attachment, expectation, selfishness and greed. Love that embraces all people regardless of creed, community or language portrays the spirit of equanimity and hence making it pure in nature. Thus, it is beyond doubt that 'pure love' is the most charming quality a doctor can have and hence the nobility of the profession.

Adopting the virtue of pure love based on the oath, is the catalyst in developing the attitude of carrying out duty with devotion. With such love, a smile will shine spontaneously and words will always be soft, sweet and tender. Such charisma will inject courage and happiness to patients and restore mental and emotional well being. Having understood the necessity to develop the mindset of universal love and to deliver the spiritual medicine of pure love, only then will pharmacological medication and surgical intervention augment and complete the treatment rendered to ensure well-being. This fundamental point is evident when one analyses the chronology of the values and guidance that unfold in the oath. It drives a point that 'pure love' is a prerequisite and of paramount importance before we venture further into the correct use of science and technology which is mentioned in the next phrase.

Hippocrates continues guiding us in the following phrase that reads..."I will prescribe regimens for the good of my patients according to my ability and my judgment and never do harm to anyone. To please no one will I prescribe a deadly drug nor give advice which may cause his death. But I will preserve the purity of my life and my arts.". Contemplating on this phrase reveals yet another powerful human value of 'righteousness'. Hippocrates emphasizes on doing good for the patient. It reflects a genuine intention but yet at the same time the good has to be done based on judgment and ability without any traces of harm. This statement makes a point that doctors cannot be mechanical in nature when carrying out a particular treatment or surgical procedure. Instead, there is a need to reflect and analyze, which is a mental process with effort, guided by the notion of causing no harm to anyone including the patient and the doctor himself. On the same note 'death' as mentioned in the oath does not merely refer to harm afflicted on the physical body. It can also be read to refer to the downfall of the emotional, mental, and spiritual aspects of health. We often resort to a 'judgment call' and decisions are made to determine our prescription of choice. Nevertheless, the message deeply rooted in the oath teaches us to make the 'call of discrimination' based on the right principles before me make such a 'judgment call' to ensure purity of the profession.

To be continued in the next issue of the SICOT e-Newsletter.

Residual pain due to soft tissue impingement after uncomplicated total ankle replacement

Kim BS, Choi WJ, Kim J, Lee JW.

Yonsei University College of Medicine, Seoul, Korea

Bone Joint J 2013;95-B:378-83

Abstract

Introduction: We report the incidence and intensity of persistent pain in patients with an otherwise uncomplicated total ankle replacement (TAR). Arthroscopic debridement was performed in selected cases and the clinical outcome was analysed.

Methods: Retrospective study, comparative case series. Primary end point: Residual ankle pain after arthroscopic debridement. Method of assessment: Visual analogue pain scale (VAS). Secondary end point: Functional outcome. Method of assessment: American Orthopaedic Foot and Ankle Score (AOFAS).

Results: Among 120 uncomplicated TARs, there was persistent pain with a mean visual analogue scale (VAS) of 2.7 (0 to 8). The intensity of pain decreased in 115 ankles (95.8%). Exercise or walking for more than 30 minutes was the most common aggravating factor (62 ankles, 68.1%). The character of the pain was most commonly described as dull (50 ankles, 54.9%) and located on the medial aspect of the joint (43 ankles, 47.3%).

A total of seven ankles (5.8%) underwent subsequent arthroscopy. These patients had local symptoms and a VAS for pain ≥ 7 on exertion. Impingement with fibrosis and synovitis was confirmed. After debridement, the median VAS decreased from 7 to 3 and six patients were satisfied. The median VAS for pain and the American Orthopaedic Foot and Ankle Society score of the ankles after debridement was similar to that of the uncomplicated TARs ($p = 0.496$ and $p = 0.066$, respectively).

Summary: Although TAR reduces the intensity of pain, residual pain is not infrequent even in otherwise uncomplicated TARs and soft-tissue impingement is the possible cause.

Research Analysis

Primary research question: What are the prevalence, character and intensity of residual pain after uncomplicated total ankle replacement (TAR) after excluding known causes for pain after TAR such as infection, septic or aseptic loosening, polyethylene dislocation, component mismatch and malalignment.

Secondary research question: What is the outcome for arthroscopic ankle debridement for soft tissue impingement post TAR?

Methodology: Retrospective case series.

Study population: 137 primary TAR in 122 patients (17 TAR excluded due to complications). Only 120 primary TAR in 107 patients was included in final patient cohort. Mean follow up was 40 months post operatively.

Outcome measurement: VAS for pain score, American Orthopaedic Foot and Ankle Society (AOFAS) ankle-hindfoot score and range of motion (ROM).

Statistical analysis: SPSS v19.0. Paired t-test.

Results: Significant improvement in pain intensity (VAS score) and functional outcome (AOFAS ankle – hindfoot score) after TAR in all patients. However, only 29/120 patients were completely pain free which comparably lower than previous reports in the literature. Also, 7 patients with pain on exertion associated with swelling, tenderness and no evident on plain radiograph underwent ankle arthroscopy and debridement for soft tissue impingement. The pain improved after the debridement except for one.

Comment by Syah Bahari

The result of Total Ankle Replacement (TAR) has improved over the last 10 years. However, the results are still not comparable to total hip or knee replacement. Residual ankle pain is among the complaints from patients who had TAR. There are various factors ranging from surgeon's experience, the choice of implant used and patient selections that are thought to contribute to this problem. Known complications such as deep infection, septic or aseptic loosening, component mismatch or misalignment, polyethylene dislocation, nerve injury causing neuroma and heterotrophic bone formation have been reported as a source for the residual pain.

The report of residual ankle pain after TAR from this study was significantly higher than other studies, which are mostly from a centre of excellence or from the designer of the implant. Thus, this report may give a "real picture" of the expectation for patients after TAR when performed outside the centres of excellence.

This study also addresses another possible cause for the residual pain which is impingement. Pain in the medial or

lateral ankle, also sometimes referred to as "gutter pain", is a recognised problem and has been published by Kurup et al (2008) and Barg et al (2011). Ankle impingement can be divided into bony or soft tissue. Diagnosing bony impingement is relatively straightforward but soft tissue impingement is difficult to diagnose as the radiograph is often normal. Unfortunately, this study did not state their algorithm in diagnosing ankle impingement. MRI is unhelpful due to the metal artefact. Ultrasound with diagnostic injection has been reported to be beneficial in diagnosing soft tissue ankle impingement. However, this has never been studied in TAR patients. Thus, in my opinion, diagnosis of soft tissue impingement in TAR patients is a diagnosis of exclusion.

The authors in this study were using arthroscopic debridement to clear the hypertrophic scar tissue and synovium. This technique was also supported by Shirzad et al (2011) and Richardson et al (2012). Potential advantages of an arthroscopic technique are minimally invasive surgery with early patient recovery and return to function. However, one needs to evaluate this technique with caution. It is often difficult to judge arthroscopically how much soft tissue debridement is required as the pathology is often not clear-cut. The reflective surface of the prosthesis may disorientate the surgeon. Risking damage to the prosthesis is also a concern. With an open debridement, one will be able to assess the ankle passive range of motion and may be able to determine how much soft tissue debridement is required. Scranton et al (1992) compared both techniques for ankle impingement in native ankle but no similar study was done in TAR patients. I think a prospective comparative study comparing both techniques is in order to answer these questions.



A History of Firsts



First to launch

CAL-CEMEX *The reinforced bone substitute*

Hybrid formulation β -TCP + PMMA

- superior mechanical resistance
- osteoconductivity
- special porosity



Editorial Department

Editorial Secretary: Hatem Said

Editorial Production: Linda Ridefjord

Editorial Board: Ahmed Abdel Azeem, Syah Bahari, Kamal Bali, Bassel El-Osta, Anthony Hall, Shalin Maheshwari, Maximilian Rudert

Rue Washington 40-b.9, 1050 Brussels, Belgium

Tel.: +32 2 648 68 23 | Fax: +32 2 649 86 01

E-mail: edsecr@sicot.org | Website: www.sicot.org

Disclaimer: Some of the views and information expressed in this e-Newsletter include external contributors whose views are not necessarily those of SICOT. SICOT is not responsible for the content of any external internet sites.