

ROUNDUP³⁶⁰

Foot & Ankle

Injecting the tendon sheath – how good are you?

■ So how good are you at accurately placing that soft-tissue injection by palpation alone? Perhaps not as good as you think? Researchers from **Rochester (USA)** have looked at this for the peroneal tendon sheath and injected 20 cadaver lower limbs with and without ultrasound guidance. A different colour of liquid latex was used for each technique. A blinded investigator graded the accuracy of the injection then dissected the specimens. The injections undertaken using ultrasound guidance were 100% accurate while those using palpation only achieved a mere 60%.¹ The results speak for themselves. None of us is as good as we think. Now where did 360 leave that ultrasound probe?

Total ankle replacement – we need to do better

■ A team from **Shanghai (China)** has recently published a large meta-analysis of the Scandinavian Total Ankle Replacement (STAR). They identified 16 primary studies with a total of 2088 implants, inserted between 1995 and 2011. The pooled five-year survival of the implant was 85.9% and the pooled ten-year survival was 71.1%. The main reasons for implant failure were aseptic loosening (5.2%), malalignment (1.7%) and deep infection (1.0%).² 360 feels, as do the authors, that these results are encouraging. However, although the five- and ten-year survival rates are acceptable, the failure rate is still high. Perhaps a combination of bet-

ter surgeon experience and patient selection might improve these results over time?

Heterotopic ossification and ankle replacement

■ An unfortunate feature of so many different types of joint replacement is heterotopic ossification. Yet how about in ankle replacement? If you see ossification, can it cause symptoms? Surgeons from **Seoul (Korea)** have recently assessed 90 ankles in 81 consecutive patients who had undergone a total ankle replacement. Correlation analysis was used to investigate the association between heterotopic ossification and outcome. However, they found no significant association between the two. Indeed, the degree of heterotopic ossification in the posterior ankle joint did not correlate with posterior ankle pain at all.³ Perhaps this also applies to other joints, thinks 360? Certainly this ankle study suggests that caution should be exercised when attributing symptoms to the presence of heterotopic ossification, particularly if you intend to excise the heterotopic bone later.

Replacement or arthrodesis?

■ So if all is not perfect with a total ankle replacement, why have one at all? Does it do any better than an ankle arthrodesis, a procedure that has been available for many, many decades? A team from **Vienna (Austria)** has investigated this by looking at 41 patients, 21 with an

arthrodesis and 20 with a replacement. The patients were examined at a mean of 34.5 months after surgery and their activity levels were determined. For those who had undergone an arthrodesis, 86% were active in sports pre-operatively. This figure was 76% for the ankle replacement group. Post-operatively, the figure for both groups was 76%. The authors thus concluded that there was no significant difference between the two groups concerning activity levels after surgery as well as participation in sports. The 10% drop in sporting activity seen in the arthrodesis group was not statistically significant.⁴ For 360? A silly question, we know. But if so many patients were playing sport before their operation, whether they were scheduled for arthrodesis or replacement, why have surgery at all?

Achilles tendinopathy and an eccentric exercise regime

■ A chronic Achilles tendinopathy can severely affect sporting performance and many different conservative treatment options have been proposed for it. Eccentric exercises have the most evidence of success but all results are presently short term. Consequently a team from **Leidschendam, Rotterdam and Leiden (The Netherlands)** has looked at this treatment as part of a five-year follow-up study. The study population comprised 58 patients (70 tendons) who were approached five years after the start of a three-month heel-drop exercise programme according to Alfredson. By five years 39.7% of patients were

completely pain free. However, 48.3% had received alternative treatments. There were also 11 dropouts from the study.⁵ 360's conclusion is that this treatment appears to do fairly well but is not perfect, so the jury is still out on its efficacy.

Healing the torn Achilles – early loading may be good

■ How can we best encourage the torn Achilles tendon to heal? Some interesting laboratory work has come from **Linköping (Sweden)** where researchers undertook a rat study. One group of rats was run on a treadmill for 30 minutes each day, on days two to five after transection of the Achilles tendon. Another group underwent similar treadmill running on days eight to 11 after transection. There was also a continuously unloaded group. The results showed that just four loading episodes increased the strength of the healing tendon. The positive effect on early healing was unexpected, considering that the mechanical stimulation was applied during the inflammatory phase. These results suggest that short episodes of early loading may improve the outcome of tendon healing, which is clearly of interest to clinical practice.⁶

Grafting the calcaneal bone cyst

■ Do you need to widely open a calcaneal bone cyst to curette and graft it? Surgeons from **Bitlis (Turkey)**, an area perilously close to the October 2011 earthquake, have investigated this by analysing the outcome of 26 patients; 13 underwent traditional open curettage with bone

grafting and 13 underwent endoscopic curettage with percutaneous bone grafting. The mean age of patient was 22.9 years and the mean follow-up was 28.7 months. Although only a pilot study, the success rates in terms of radiological healing were good for both groups with 92.3% for the open group and 100% for the endoscopic.⁷ It thus appears the endoscopic version is as good, if not better than, the open technique and should perhaps, thinks 360, be the way forward for all?

Fifth metatarsal – avulsion fractures in athletes

■ An avulsion fracture of the fifth metatarsal can certainly be a problem for elite athletes. Although conservative treatment may be successful, should symptoms persist then excision of the avulsed fragment might be considered. Surgeons from **Lexington (USA)** have reported this technique for six elite athletes. The fragment was simply removed and the remaining edge of the bone was contoured and smoothed. All six experienced an uneventful operation and recovery, returning to competitive play at a mean of 11.7 weeks after surgery. There were no complications.⁸ 360 was pleased to see these results as operating on elite athletes can so easily diminish their performance.

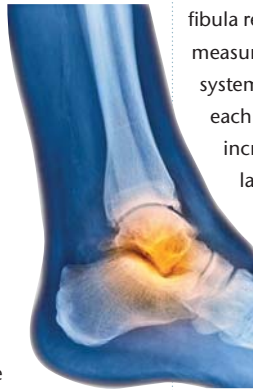
Percutaneous distal osteotomy for bunionette formation

■ The fifth metatarsal is also the location of a bunionette, which may

sometimes be significantly symptomatic. A team from **Verona (Italy)** has reported on 30 consecutive percutaneous distal osteotomies of the fifth metatarsal for the treatment of this condition. The patients were assessed at a mean of 96 months after surgery. In 73% of feet there was complete resolution of pain at the fifth metatarsophalangeal joint without any functional limitation. In 20% there was some decrease in function and a need to use comfortable shoes. Meanwhile, in the remaining 7% there was mild asymptomatic malalignment. No nonunions or recurrences were seen.⁹ Clearly a procedure worth considering, thinks 360.

Repairing the torn tibiofibular syndesmosis

■ From **Sapporo (Japan)** comes an interesting paper on the repair of injuries to the tibiofibular syndesmosis. Repair with a suture button is a relatively new technique for injuries to this region. This was a laboratory study using six fresh-frozen cadaver legs. After initial tests of intact and injured models, suture-button fixation and screw surgical techniques were performed



sequentially for each specimen, with single suture-button fixation, double suture-button fixation, anatomical suture-button fixation, and metal screw fixation. Anterior and medial traction forces, as well as an external rotation force, were applied to the tibia. The diastasis of the syndesmosis and the rotational angle of the fibula related to the tibia were then measured using a magnetic tracking system. The researchers found that each traction and rotation force increased the diastasis and fibular rotation angles in the injury models irrespective of the suture-button technique used. The anatomical fixation directed from the posterior cortex of the fibula to the anterolateral edge of the tibia allowed dynamic stabilisation of intact cadaver specimens. Meanwhile, the metal screw provided very rigid fixation.¹⁰ What is the relevance of this work, thinks 360? We agree with the authors that proper directioning of the suture button can provide adequate stabilisation of the ankle and might benefit athletes with injuries to the tibiofibular syndesmosis.

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