ROUNDUP360

Foot & Ankle

x-ref *For other roundups in this issue that cross-reference with Foot & Ankle see: Research roundup 1.*

Peroneal tendon tears associated with calcaneal fractures x-ref

The outcomes of calcaneal fractures are not always reliable and many patients suffer from ongoing symptoms regardless of the severity of the fracture or the type of management (operative or otherwise). These symptomatic patients are likely to be suffering from associated soft-tissue injuries. The importance of the heel pad and symptoms associated with its damage are well documented. Less well investigated is the association (or otherwise) of peroneal tendon tears and calcaneal fractures. Investigators in **Boston (USA)** set out to establish the incidence and symptomatology of peroneal tendon displacement associated with intra-articular calcaneal fractures. Secondarily, they hoped to establish any association with fracture classification, heel width and the 'miss' rate associated with this injury. The authors conducted a retrospective review of 421 calcaneal fractures presenting to three tertiary referral trauma centres. They undertook review of presenting CT scans and identified a 28% incidence of peroneal tendon displacement (n = 118/421). Displacement of the tendons was associated with joint depression type fractures, and the authors noted a very low rate of clinical diagnosis (10.2%) and treatment (10.8%).[1] Peroneal tendon symptoms are known to cause considerable discomfort and problems for patients. It seems likely that this, in part at least, contributes to the high rate of symptomatic patients following calcaneal fractures. Foot and ankle and trauma surgeons should consider the peroneals when treating patients with recalcitrant pain following a calcaneal fracture.

Syndesmosis procedure for first ray deformities

One of the primary drivers of hallux valgus in many patients is the primus varus deformity. There have been numerous reports of surgical procedures aimed at correction of the primus varus allowing the hallux valgus to then passively correct. These surgical options are most suitable for patients with high inter-metatarsal angles and low hallux valgus angles and obviously require a congruent and reducible joint if they are to be used in isolation. The syndesmosis procedure is a variant of this where a soft-tissue reefing is combined with a circlage wire around the metatarsal heads of the first and second rays. Surgeons in **Kowloon (Hong Kong)** report their experience of 27 patients (54 feet) assessed with clinical outcome scores (AOFAS score), radiological measurements and plantar pressure readings at around two years post-operatively. Matched pair comparisons were performed for contralateral feet and pre- and post-operative measures.[2] The clinical outcomes were excellent, with mean AOFAS scores rising significantly (from 62.8 to 94.4 points) and a significant reduction in the intermetatarsal angle (33.2 to 19.1°). Although it is difficult to know the clinical significance of force analysis data, the maximum force under the hallux was delayed during the gait cycle suggesting a re-functioning of the hallux. Treatment of underlying deformity and drivers for deformity is important in foot surgery. There are a number of procedures to address hallux primus varus. It is excellent to see some concrete clinical data to support their use.

Thromboprophylaxis not necessary in elective Ilizarov surgery x-ref

Thromboprophylaxis in the majority of orthopaedic and trauma surgery is a moot point. The range of national guidelines and the disparity of their treatment recommendations is astounding (based on national guidance, Americans will be fine with Aspirin prophylaxis but it apparently has no effect in England!) given these guidelines are often based on the same published trial data. This is extensive in arthroplasty, but there is very little data to recommend prophylaxis regimes or indeed whether it is required at all in many areas of musculoskeletal surgery. In England and Wales, the NICE guidelines recommend risk assessment in many areas of orthopaedic surgery where risk factors are unknown, including patients undergoing elective reconstructive surgery with an Ilizarov frame. Researchers in **Oxford (UK)** undertook a retrospective review of patients entered onto their prospective frame database. The surgeons were able to review the records of 457 reconstructive frames performed for elective deformity (425 in the lower limbs and 32 in the upper limbs). While all of the patients would have risk-scored 'high', having at least one risk factor for developing VTE (and 246 patients, 172 patients and 31 patients having two three and four risk factors, respectively) according to the UK national guidance, the authors surprisingly report only a single PE in their study, giving an incidence of 0.23%. Although this is a small series and the event rates are known to be low, the authors make a well argued point. Given the duration of treatment, the cost of adopting NICE guidance in this group of patients would be £89 493.40 even using the cheapest medication.[3] We would tend to agree with the authors here at *360*, that based on the data presented there is little evidence for thromboprophylaxis in this patient cohort.

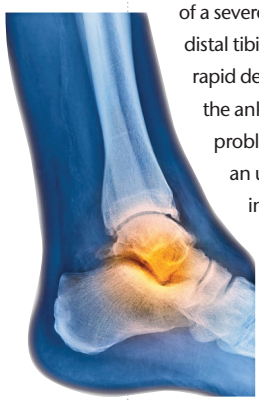
Ankle replacement gaining traction in academic centres

Osteoarthritis of the ankle has been treated by both fusion and replacement for many years. However, unlike other large joints, the uptake of ankle replacement has been slow, with the majority of patients still being treated in most centres with ankle fusion. In part, this is due to perceived limitations in outcomes and longevity of ankle arthroplasty combined with technical difficulties of the surgery. Researchers in **Philadelphia (USA)** sought to establish what the state of play is with regards to treatment of ankle arthropathy and how this has changed over time. As arthroplasty is becoming a more widely accepted

treatment and the indications refined, is it becoming more common place? The research team designed a national sample-based population study and identified patients through ICD-9-CM codes for ankle fusion and total ankle replacement. The inpatient sample identified 2666 replacements and 16,419 fusion operations within the sample which relates to an equivalent 13,145 and 80,426 arthroplasties and fusions, respectively, across the US. In terms of patterns of change over time, the study team identified a steady rise in ankle arthroplasties after 2006 which was particularly marked in larger academic centres. As time has gone on, the co-morbidity profiles of the two cohorts have started to even out, with a larger number of comorbid patients receiving ankle replacements than at the beginning of the study.[4] Ankle replacement has yet to gain traction in widespread use, not necessarily a bad thing given the relatively narrow recommended indications. It is refreshing to see population-wide studies following the introduction of new treatments and a relatively conservative adoption across the board which is to be commended.

Some evidence for PRP

Still looking for an indication, the proponents of PRP have littered the pages of this journal with potential indications, for the most part unsuccessfully. However, researchers in **Nantucket (USA)** may have found a useful application for the technology in the treatment of chronic plantar fasciitis. Often treated with either steroid injection or conservative treatment, plantar fasciitis can be a really difficult problem to treat. The research team designed a randomised controlled trial to test two interventions (corticosteroid injection and PRP injection) in patients with recalcitrant plantar fasciitis. The researchers recruited 40 patients, all of whom had failed four months of conservative treatment. Patients were randomised to a single ultrasound-guided injection of either PRP or cortisone. Outcomes were assessed using the American Orthopedic Foot and Ankle Society (AOFAS) hindfoot scoring at regular intervals up to a final follow-up of two years after treatment. The results were compelling, with a longer sustained improvement in the AOFAS scores with the PRP treatment. Although the cortisone group improved in the shorter term, patients relapsed over the two-year period of the study, leaving final scores of 92 in the PRP group and 56 in the cortisone group.[5] This is a relatively small study and will certainly need corroboration with other larger randomised controlled trials, especially as the results do not mirror those of the two other published studies where no advantage was found in the PRP group.



Fusion nailing and osteotomy an effective treatment for symptomatic tibial malunion

x-ref

Ankle arthrosis with concomitant tibial malunion is a surprisingly common condition. The natural history of a severe malalignment in the distal tibia is that of relatively rapid degenerative change in the ankle, leaving a difficult problem to treat. Fusion is an unsuccessful operation in the presence of tibial malunion, leaving a fixed symptomatic deformity. Despite this, described synchronous osteotomy and ankle replacement could be characterised at best as a little maverick. Reasoning that a synchronous osteotomy and hindfoot nail assisted fusion would potentially address the deformity and achieve fusion all in one operation, surgeons from **Philadelphia (USA)** set about filling this gap in the literature by describing their own retrospective series of 25 patients, all of whom had undergone a synchronous tibiotalocalcaneal nailing with re-alignment tibial osteotomy. They reported outcomes using clinical scores (VAS pain scores and AOFAS), complication rates and radiological outcomes. The clinical outcomes improved significantly between pre-operative and final follow-up for both the VAS (8.3 to 2.8) and AOFAS measures (43 to 76 points). In terms of satisfaction rates, 84% were extremely satisfied, 12% satisfied and 4% unsatisfied.[6] This paper has a good number of patients reporting what, while not a novel treatment technique, is certainly under reported. The advantages of a single stage single prosthesis operation without the protracted and often difficult treatment course associated with either multiple operations or a complex deformity correction and fusion with a frame are certainly very clear!

REFERENCES

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