

X-ref For other Roundups in this issue that cross-reference with Foot & Ankle see: Trauma Roundup 6; Research Roundup 4.

Surgical time and outcome after Achilles tendon rupture **X-ref**

■ Optimizing outcomes after Achilles tendon rupture remains an area of significant clinical and scientific interest. Although the current consensus is that surgical options yield similar outcomes to non-surgical treatment of the Achilles tendon, both treatments have a poorer than baseline outcome. The interventions are chiefly chosen based on complication profiles (re-rupture being higher in the nonoperative group and other complications being higher in the operative group). This paper from **Stockholm (Sweden)** asks whether outcomes could be improved following operative treatment of Achilles tendon ruptures.¹ They specifically looked for the effect of delayed time to surgery on clinical outcomes in operatively treated Achilles tendons. Their series revolved around the clinical outcomes of a large cohort of 228 patients, all with an Achilles tendon rupture, who were treated operatively. The operative interventions were relatively standardized, with similar operative and anaesthetic techniques. The authors evaluated the effect of time to theatre on the Achilles Tendon Rupture Score (ATRS) outcomes at a year. The cohort were divided into three groups based on their time to surgery: less than 48 hours, between 48 and 72 hours, and greater than 72 hours. Patients with surgery greater than ten days after injury were excluded from the analysis. The main outcome from this study was the observation that time to surgery was associated with superior outcomes, with 71% of short time to surgery patients, 63% of intermediate time to surgery patients, and 44% of delayed surgery patients achieving a good outcome at a year, respectively, as judged by the ATRS score. A similar picture was seen in complications, with rates at 1.1% for immediate surgery, 11% for intermediate surgery, and 15% for delayed surgery. This study adds considerably to what is already known about Achilles tendon ruptures, and it is quite clear from what is the best current evidence on timing to surgery that both outcomes and complications are improved by getting on with the surgery right away. The default position will continue to be nonoperative management. However, for the majority of Achilles tendon ruptures, there is clear evidence presented here that if operative treatment is to be undertaken then it should be done as rapidly as possible.



Corticosteroid injection and plantar fasciitis **X-ref**

■ Plantar fasciitis is one of a small number of soft-tissue orthopaedic conditions (other examples would be trochanteric bursitis, tennis elbow, and adhesive capsulitis) that are generally difficult to treat, have relatively unsuccessful operative treatments, and cause localized excruciating pain that is unpleasant enough to result in regular attendance at the clinic. Plantar fasciitis itself is usually treated by physiotherapy or, on occasion, localized steroid injections or calcaneal spur excision. There remains some considerable uncertainty about the best way to treat plantar fasciitis, despite the estimated life-long incidence of 10%. We are delighted to see these authors from **Copenhagen (Denmark)** report on their randomized controlled trial (RCT) of 90 patients allocated to either stretching and strengthening, repeated corticosteroid injections, or both treatments.² The authors screened 123 patients at their two clinics, and patients were included if they had appropriate clinical symptoms of plantar fasciitis and ultrasound measured thickness above 4.0 mm. There were 25 patients who failed the ultrasound criteria and eight who declined participation. The remaining 90 patients were randomized to three months of strength training and stretching (n=30), corticosteroid injections at monthly intervals (n=31), or both treatments (n=29). Outcomes were assessed primarily using the visual analogue scale (VAS) for pain; the Foot Function Index (FFI) was also reported. There were improvements in all groups over time, as would be expected. However, the combination of steroid and training outperformed training alone by 40 points on the FFI scale, and outperformed steroid injections alone by 29 points. This difference was also reflected in the primary outcome measure, with combined treatment favoured over physiotherapy alone by 20 mm on the VAS score, and favoured

over steroids alone by 17 mm. It does appear from this admittedly small RCT that, as the evidence stands, a combination of injections and physiotherapy is really the way forward for treating plantar fasciitis.

Mental health and outcomes in foot surgery

■ The effects that patient comorbidities, particularly mental health and psychological welfare, have on outcome measures are complex and yet to be entirely unpicked. It is heartening, therefore, to see ongoing research into the area. This paper from **Singapore** evaluates preoperative mental health status as a predictor of outcome and postoperative function in a cohort of 67 patients who underwent scarf osteotomy for hallux valgus.³ The authors undertook a year of follow-up for this cohort of patients, and the 36-Item Short-Form Health Survey (SF-36) and the American Orthopaedic Foot & Ankle Society (AOFAS) scores were collated. Traditional radiological measurements were also collected, including hallux valgus angle (HVA) and intermetatarsal angle (IMA). Mental health and wellbeing was assessed using the SF-36 Mental Component Score. Over the period of the study, all eight components of the SF-36 improved postoperatively at a minimum of one year's follow-up. The preoperative mental component scores were not seen to correlate to change in AOFAS scores, although the preoperative mental health domain did relate to a poorer AOFAS score postoperatively. This relationship is, of course, associative rather than causative. It is important to appreciate that this observation may mean that a recalcitrant painful foot may affect your mental health – or, conversely, that those with mental health problems may perceive their painful foot to be worse despite an objectively similar outcome (as suggested by the authors' reported IMA and HVA).

Total ankle arthroplasty: what are the risks?

■ Total ankle arthroplasty is one of those rapidly evolving areas in orthopaedic surgery where, year on year, the indications, expectations, and outcomes shift slightly – usually one way then another! Over the past decade, however, there has been a big change in the expected outcomes and indications for total ankle arthroplasty. The authors of this study from **Wigan (UK)** report their own series of 278 consecutive ankle arthroplasties, with an emphasis on what information should be given surrounding

expected outcomes as part of the consent process.⁴ The authors supplement their own complication profile with a review of the literature. In this series, there were a number of complications reported that warranted discussion at the consent phase, with wound-healing problems in nine ankles (3.2%) and infection in 26 ankles (superficial 7.2% and deep in 2.2%). In terms of on-table complications, the malleoli fracture rate was nearly 11% (27 medial (9.7%) and four lateral (1.4%)). The longer-term outcomes looked a little rosier, however, with aseptic loosening and osteolysis seen in 16 ankles (5.8%). Clinically medial gutter pain and thromboembolism were postoperative problems in 31 ankles (11.1%) and two ankles (0.7%), respectively. These reported complication rates serve to remind us that total ankle arthroplasty is far from a benign operation. The authors argue that their results, while sombering, are comparable to the previously reported complications of total ankle arthroplasty in the literature. Clearly, the consent process should reflect the actuality of the complication profile.

Local antibiotic delivery in the diabetic foot

■ The management of the diabetic foot infection follows the principle of osteomyelitis surgery. Like all other bone infection surgery, a tissue diagnosis is followed by local debridement, soft-tissue management, and local and systemic antibiotics. However, although they are widely used, the evidence for local antibiotics is not entirely clear surrounding efficacy, method of delivery, or dosage. This systematic review from **Nottingham (UK)** highlights the current evidence surrounding this widely practised approach.⁵ Overall, the quality of evidence was poor, and in many areas was sparse or non-existent. The authors were only able to find a single trial reporting the outcomes of a gentamicin-impregnated collagen sponge. This suggested an

improved rate of healing (8% vs 25%, not statistically significant) but no differences in length of stay or rate of subsequent amputation. In their systematic review, the authors identified 485 patients who were treated using local antibiotic delivery devices. The rates of wound healing, reoperation, and mortality were comparable to those that have been previously reported for the routine management of these infections. There is currently a lack of good-quality evidence to support the use of local antibiotic delivery devices in diabetic forefoot infections. While clearly still a matter for the treating surgeon, it will become increasingly difficult to continue to justify the ongoing use of such devices without the development of an evidence base. Given that diabetic forefoot infections are a relatively common presentation, it is surprising that the evidence base is at best tenuous for what is considered by many to be a key component in their treatment.

Treatment of chronic plantar heel pain

■ Chronic heel pain is a recalcitrant foot and ankle diagnosis, for which the mainstay of treatment is physiotherapy-led stretching, usually in the form of eccentric loading and strengthening. Like many enthesopathies, the causes of insertional Achilles tendonitis are unclear. This paper from **Grålum (Norway)** evaluates the role for gastrocnemius recession and stretching *versus* stretching alone in chronic plantar heel pain.⁶ This is a small randomized trial that, although reported as a standalone trial, in reality represents a large pilot study. The authors identified 40 patients with plantar heel pain that had been present for longer than a year, and randomized them to either a home stretching programme or to surgery consisting of a proximal medial gastrocnemius recession in addition to stretching exercises. Outcomes were assessed at a year using the American Orthopaedic Foot & Ankle Society (AOFAS) hindfoot score at 12

months. Secondary outcomes were assessed using the 36-Item Short-Form Health Survey (SF-36) and visual analogue scale (VAS) for pain, alongside some objective pedobarometric readings. In terms of the primary outcome for this study, the authors reported a significant increase in the AOFAS score from 59.5 to 88.0 in the operative group, and from 52.5 to 65.5 in the nonoperative group. In terms of secondary outcomes, there were significant differences in the AOFAS, VAS for pain, and SF-36 scores favouring the operative group. While this study is small and likely underpowered, it does raise the question: should these patients with intractable heel pain be offered surgical release? A larger trial with more robust methodology is clearly needed here. However, the authors have done enough to highlight the potential benefit and to inform a suitably powered study.

REFERENCES

1. Svedman S, Juthberg R, Edman G, Akermann PW. Reduced time to surgery improves patient-reported outcome after Achilles tendon rupture. *Am J Sports Med* 2018;46:2929-2934.
2. Johannsen FE, Herzog RB, Malmgaard-Clausen NM, et al. Corticosteroid injection is the best treatment in plantar fasciitis if combined with controlled training. *Knee Surg Sports Traumatol Arthrosc* 2018. (Epub ahead of print) PMID: 30443664.
3. Lai SWH, Tang CQY, Graetz AEK, Thevendran G. Preoperative mental health score and postoperative outcome after hallux valgus surgery. *Foot Ankle Int* 2018;39:1403-1409.
4. Clough TM, Alvi F, Majeed H. Total ankle arthroplasty: what are the risks? *Bone Joint J* 2018;100-B:1352-1358.
5. Marson BA, Deshmukh SR, Grindlay DJC, Ollivere BJ, Scammell BE. A systematic review of local antibiotic devices used to improve wound healing following the surgical management of foot infections in diabetics. *Bone Joint J* 2018;100-B:1409-1415.
6. Molund M, Husebye EE, Hellesnes J, Nilsen F, Hvaal K. Proximal medial gastrocnemius recession and stretching versus stretching as treatment of chronic plantar heel pain. *Foot Ankle Int* 2018;39:1423-1431.