

ulcers, amputations and osteomyelitis associated with diabetic foot disease is a huge source of comorbidity. Patients in **Pittsburgh, Pennsylvania (USA)**<sup>8</sup> were the focus of this study which rather bucks the trend of collective ignorance of what is a major orthopaedic pathology, and sets out to add some decent baseline data to the literature concerning the outcomes of diabetic foot disease. The authors report the outcomes of 229 patients, all of whom were hospitalised with diabetic foot disease. They report 155 patients with osteomyelitis and 74 patients with severe diabetic-associated foot infection as a comparison. Compared with the

soft-tissue infection group, those with osteomyelitis were 5.6 times more likely to suffer an amputation and over four times more likely to suffer a major amputation (16.7% of osteomyelitis and 5.3% of soft-tissue infections). On the other hand, there were no significant differences in hospital length of stay. This is a simple paper that quantifies the problem in a straightforward manner, but the problem is major. There are few other diagnoses (even grade III open tibial fractures) that have a 17% amputation rate associated with them. Although not terribly exciting or trendy, we have a sneaking suspicion that, with the ageing obese

population, we can expect to see many more diabetic foot complications in our hospitals and clinics.

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## Wrist & Hand

**X-ref** For other Roundups in this issue that cross-reference with *Wrist & Hand* see: *Children's orthopaedics Roundup 4*.

### Who is satisfied after fasciectomy?

■ As surgeons, we have a moral obligation to consider custodianship of scarce healthcare resources; treatment for cosmetic reasons alone may well not be justified. However, the flip side to that coin is that we also have to be aware that patient satisfaction is becoming recognised as an important outcome as more objective doctor-orientated measures such as range of movement. Dupuytren's contracture is one of those diseases in which decision making is increasingly difficult with patient expectations rather high and the evidence sometimes somewhat equivocal as to who will benefit, and who won't, from fasciectomy. A study team in **Rotterdam and Hilversum (The Netherlands)**<sup>1</sup> set out to establish what the predictors are of patient satisfaction following fasciectomy. They undertook an analysis of 194 patients, all of whom

completed the Michigan Hand Outcomes Questionnaire (MHQ), and collated a range of demographic and disease-specific factors. They performed a multivariate analysis, and the factors predictive of the satisfaction outcome question on the MHQ were the post-operative residual contracture, complications, a better pre-operative functional score and male gender. The bottom line appears to be that if you want your Dupuytren's patients to be satisfied then the key is contracture correction and absence of complications; appearance was the strongest predictor of patient satisfaction. Patients really do care about cosmesis and so should we if we want satisfied patients.

### Arthroscopic resection of occult dorsal wrist ganglia

■ We should always try to treat conditions in simpler and safer ways, with quicker post-operative recovery. Whilst larger ganglia are often asymptomatic, smaller "occult" ganglia can be very painful, especially when present on the dorsal aspect. The ganglia can be 'nipped' between the capitate and dorsal rim of the radius on hyperextension,

leading to symptoms. The difficulty with open surgery has always been the magnitude of the operation to solve a simple problem and the risk of recurrence. In a study of 30 patients from **Baden-Baden (Germany)**,<sup>2</sup> the author asks whether these smaller occult ganglia can be successfully treated using an arthroscopic approach. In their reported series of 40 wrists treated in 39 patients, all with occult ganglia confirmed on MRI scanning, and treated with an arthroscopic procedure. Ganglia were identifiable in 25 patients at surgery and were addressed arthroscopically. Given that all but one patient were satisfied with symptom relief by arthroscopic excision of a capsular window through a midcarpal and radiocarpal window, this paper is far from definitive but it does make the point that this treatment is an option. So this technique appears to be an appropriate option for those small ganglia which need treating, avoiding the detriment of an open approach.

### Needle or limited fasciectomy?

■ Continuing 360's theme of minimally invasive treatment, a study

from **Rotterdam (The Netherlands)**<sup>3</sup> set out to compare the effectiveness of needle aponeurotomy and limited fasciectomy. Until a large RCT reports a comparison between a variety of different treatments, either in a stepwise two-armed approach or with a more complex factorial design, we must base our treatment decisions and set patients' expectations on large comparison studies like this one. The authors report treatment of percutaneous needle aponeurotomy or limited fasciectomy in six hand units, all within The Netherlands. Outcomes were assessed in terms of active extension deficit, the Michigan Hand Outcomes Questionnaire and all importantly reported outcomes of complications at between six and 12 weeks post-operatively. Their matched comparison was of nearly 200 patients treated with either needle fasciectomy or surgery. The simple percutaneous technique produced an equivalent measured correction with a much lower reported mild complication rate (5% vs 24%). However, patients reported a much higher satisfaction rate and more rapid return to



function. In the spirit of proper informed consent, these advantages must be carefully explained to patients before promoting surgery. Although the caveat, as always, must be the very high recurrence rate seen with needle fasciotomy consistently shown in other papers and in the relatively short follow-up reported here.

#### Is wrist arthroscopy really safe?

■ Wrist arthroscopy is becoming a more and more widely performed technique, with growth in both numbers performed and what is considered an arthroscopically amenable lesion. Everything from arthroscopic-assisted distal radial fracture fixations to the triangular fibrocartilage complex (TFCC), arthritis and ganglia are now within the remit of the arthroscopic wrist surgeon. As the number of patients treated increases it becomes possible to quantify more precisely the risks associated with these procedures, requiring large numbers of patients to accurately assess risks and surgeons of sufficient standing to happily disclose their complications. A group in **Paris (France)**<sup>4</sup> undertook a cross-sectional survey-based analysis of members of the European Wrist Arthroscopy Society. The study was questionnaire-based and was designed to establish the rate of complications and the learning curve associated with wrist arthroscopy. The study reports the outcomes of 36 personal series comprising 10

107 wrist arthroscopies in which there was a complication rate of 6% (n = 605), with an overall serious complication rate of 5% with the most frequent complications including failure to complete the procedure (1.16%), nerve injury (1.17%), cartilage injury (0.5%) and CRPS (0.5%). When the study team undertook a more comprehensive analysis, they established that the rate of complications rose significantly in less experienced surgeons – less experienced both in terms of volume and years in practice. Surgery carries risks and we must inform patients of those risks. So, what are the risks of something “simple” like arthroscopy? A group of “experts” from the European Wrist Arthroscopy Society were surveyed and they disclosed a 5% risk of serious complications, such as nerve lesions, stiffness, and tendon lacerations. The reported complication rate was lower if the surgeon performed more than 25 arthroscopies per year and/or had more than five years’ experience. So a wrist arthroscopy, even amongst experts, has a material risk and less experienced surgeons would be wise to consent accordingly.

#### Pin site infection in Kirschner wires X-ref

■ Kirschner wires are simple and, for many wrist fractures, an effective treatment. Following the DRAFFT study showing that there is no difference in outcomes between volar plate and Kirschner wire fixation for closed reducible fractures, the use of Kirschner wires has skyrocketed in the UK. Given the obvious economic benefits, the evidence would suggest more and more Kirschner wires are being used in general orthopaedic practice. Here at 360 we firmly believe in disclosing the risk of complications so that proper informed consent can be discussed with the patients. Although the complications associated with plate fixation are relatively well studied, there are few large-scale studies available (other than the randomised controlled trials which are usually powered for functional outcomes rather than complications) to establish

what would constitute an expected complication rate. Of over 1200 Kirschner wire fixations undertaken in the hand or wrist, authors in **Austin, Texas (USA)**<sup>5</sup> report an overall infection rate of around 7%. The authors defined an infection in their study as any soft-tissue injury severe enough to require additional unplanned treatment (antibiotics, early pin removal or re-operation). The authors also helpfully identified that there were no causative factors apparent on multivariate analysis of either a modifiable or non-modifiable variety.

#### ESWT in trigger finger

■ New non-operative treatments need scrupulous assessment, and there are innumerable examples in the literature of attempts to find novel uses for existing interventions (think PRP, amongst others, which to a certain extent is a treatment looking for an indication). Whilst there is ample good evidence that trigger finger can be treated successfully with one or two steroid injections in the majority of patients, some patients are averse to injections, or have a contraindication to steroid injections. There is also a side-effect profile; although relatively safe, depigmentation and fat necrosis can occur. Extracorporeal shock wave therapy (ESWT) has been investigated previously for many other conditions in orthopaedics, urology and cardiology. In this novel randomised controlled trial, a group from **Kocaeli (Turkey)**<sup>6</sup> set out to evaluate the efficacy of ESWT when compared with what is now the standard of corticosteroid injections. The study team designed their randomised controlled trial to report cure rates, frequency of triggering and functional impact. They recruited 40 patients to have ESWT or a steroid injection, and followed them up for six months post intervention. The authors were unable to establish any differences in cure rates, pain, and functional status at follow-up. We do always, however, have some concerns about very small RCTs reporting ‘no difference’. This study

is likely to be underpowered and, as such, one may well not expect to see a significant difference between the two groups in any case.

#### Cost effectiveness of trigger finger treatment strategies

■ Staying with the trigger finger and non-operative themes in the previous couple of articles, these days cost effectiveness must always be considered. Non-operative treatment can fail and when it does, despite the cheaper cost, the cost of surgery will need to be added after all. This of course resets the economic balance, and is one of the reasons why longer-term health economic analysis must be considered. A group from **Boston, Massachusetts (USA)**<sup>7</sup> compared the approaches of steroid injection, immediate surgery in theatre, and immediate surgery in the clinic. The authors conducted a literature review to establish the success rates and the complications of the various treatments, and set out to establish what the cost implications may be of the various treatment strategies. The message is pretty clear – assuming a corticosteroid injection failure rate of at least 34%, the most cost-effective treatment is immediate surgical release in the clinic. For each patient, employment of this strategy appears to save around 35% of the total healthcare delivery cost.

#### Step-cut ulnar shortening osteotomy

■ There are many ways to skin the proverbial cat when it comes to the ulnar osteotomy, ranging from the cheap and cheerful transverse osteotomy to the much more expensive custom jig and plate options. The step-cut osteotomy offers a potential middle ground with some intrinsic stability, and avoids the need for a custom plate. Surgeons in **Pittsburgh, Pennsylvania (USA)**<sup>8</sup> have been using the ulnar step-cut osteotomy for a number of years and are the first group to report their long-term outcomes in a reasonable number of patients. Their series reports 164 patients, all

of whom underwent a step-cut ulnar shortening osteotomy. The authors report follow-up to a minimum of 24 months and were able to report an impressive 98.8% union rate with their strategy of a palmar plate and lag screw construct. Across the whole series, there were just two cases of nonunion and all of the patients were able to return to their pre-morbid conditions within four months. There was, however, an appreciable incidence of symptomatic metalwork,

with 12 patients complaining of plate-related symptoms and requiring their metalwork to be removed.

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## Shoulder & Elbow

**X-ref** For other Roundups in this issue that cross-reference with *Shoulder & Elbow* see: *Trauma Roundups 1 and 3; Children's Orthopaedics Roundup 3.*

### Revision for Propionibacterium

■ There is a renewed interest in subclinical infection across the whole of the arthroplasty world – with understanding of biofilms, improvements in diagnoses and the understanding that often apparently culture negative patients may have subclinical loosening leading to osteolysis has sparked renewed interest in indolent infections such as *Propionibacterium*. The usual suspect in revision shoulder surgery is *Propionibacterium*. Often implicated in subclinical infection associated with osteolysis, this low virulence organism is also only identified on delayed cultures. With the increasing recognition that *Propionibacterium* is often responsible for revision arthroplasty, the question then turns to how this indolent infection is best treated. Shoulder surgeons in **Seattle, Washington (USA)**<sup>1</sup> have set out to establish whether single-stage revision is successful in revision surgery. They report the clinical outcomes for single-stage revision arthroplasty in patients without obvious clinical infection at the time of surgery. The surgical team sent

multiple samples at the time of revision surgery for extended cultures and bacteriotyping. Patients with more than two cultures positive for *Propionibacterium* (n = 27/55) were compared with the remainder of the cohort. Clinical outcomes were assessed using the Simple Shoulder Test (SST) and there were no significant differences between the groups in terms of raw improvement or percentage improvements achievable, with both groups achieving around 7.5 points on average on the SST. Similarly, there were no differences in the numbers of post-operative complications, with three patients in each group requiring intervention for ongoing pain or stiffness. The authors conclude, and it certainly seems to us here at 360, that in this series the use of a single-stage revision approach is appropriate, with outcomes similar to a control group of aseptic revisions. Care should, however, be taken to ensure that appropriate antibiotic cover is used post operatively.

### Anterior instability: Bankart or Latarjet? X-ref

■ Recurrent anterior shoulder instability is a continual problem. There appears to be little consistent evidence to support conservative treatments in younger patients, and although some series have tentatively supported external rotation

slings or rehabilitation, these are often not successful in independent series. In many centres, to try and avoid the issues of recurrent instability, younger patients undergo routine MRI scanning and arthroscopic repair as necessary to preserve the stability of the joint just at presentation following their first dislocation. Nonetheless, there are still plenty of patients who present with ongoing recurrent anterior shoulder dislocations. The mainstay of treatment for these chronic unidirectional instability patients is repair. Whilst the general trend in the shoulder world is towards achieving more and more through arthroscopic means, there are still a number of surgeons who favour more interventional procedures such as the Latarjet stabilisation. Surgeons in **Zürich (Switzerland)**<sup>2</sup> have reported the outcomes of an impressive cohort of 360 patients treated with either arthroscopic Bankart repair or open Latarjet repair for recurrent anterior dislocation. The cohort is reported to a minimum follow-up of six years. The authors report the longer-term success of the two procedures in this comparative series both as re-operation for instability and as a range of outcome measures designed to assess higher level shoulder function (apprehension, the subjective shoulder value, sports participation, and

overall satisfaction). The series consisted of 93 open Latarjet procedures and 271 Bankart repairs, and clearly, in a series of this nature, there will be significant selection biases. Overall instability or apprehension was present in 11% of Latarjet procedures and 42% of Bankart procedures. A similar pattern was seen with the instability, with just 3% of Latarjet procedures reporting overt instability and 28% of the Bankart repairs at six years of follow-up. Reading these headline figures, we were hardly surprised here at 360 that the Kaplan-Meier analysis significantly favoured the Latarjet group. Perhaps the most interesting finding, however, was the timescale of the failures – this is a large series with significant follow-up and it makes interesting reading that a quarter of Bankart repair failures occur after 7.5 years. This paper is written from the perspective of equivalence of surgical technique and patient morbidity. The interesting presentation is the number of late Bankart repair failures, however, even allowing for this, the results in this Bankart repair series are very much on the high end of those reported in the literature, and, as such, the strong conclusions of this study should be taken with a significant pinch of salt. The procedures, of course, are not equivalent, with some morbidity