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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 6*

Can we avoid fusion in Heberdon's nodes?

Knobbly fingers (Heberdon's nodes) are the sign of a lifetime of hard work and an unavoidable rite of passage into mature age. While most people find them pain-free, some people find that their fingers become too uncomfortable. Apart from reassurance and painkillers, and perhaps a steroid injection, the only other treatment for longstanding symptoms would be a fusion. Patients understandably often struggle between the trade-off between stiffness and absence of pain. It is encouraging to read this study from **Pittsburgh, Pennsylvania (USA)**, in which the authors take a different approach of simply debriding the osteophytes from the distal interphalangeal (DIP) joints.[1] The authors report a case series of 78 patients, all with symptomatic DIP joint osteoarthritis, who underwent a simple cheilectomy. The patients were reported to a minimum of two years follow-up. The operations were all similar and all patients underwent a simple open cheilectomy and were then immobilized for a month postoperatively. The authors report outcomes in terms of visual analogue scale (VAS) pain and motion scores to a median 36 months follow-up, and they report a significant improvement in mean VAS pain scores (improving from 8 to 1) with a surprising 20° improvement in range of motion in the DIP joint. The authors did not report any reoperations or complications in the follow-up period, and all in all this does look to be an attractive option.

Can we trust wrist arthroplasty yet?

Here at *360*, we are, as thoroughly responsible orthopaedic surgeons, a little cynical about new implants – and especially those with limited clinical data. Our world is replete with examples of apparently encouraging implants that end up being disappointing at best and thoroughly destructive at worst. The story of wrist arthroplasty so far is not one of resounding success or reliability. However, studies are just beginning to emerge to show that perhaps newer designs are becoming more predictable. Here we report on two. A group from **Oslo (Norway)** have reported the outcome of 56 wrist arthroplasties using the Motec system.[2] This total wrist arthroplasty involves a ball and socket with a long stem into the radius and a long stem into the third metacarpal. At a mean follow-up of eight years, eight of 56 patients required revision (four to arthrodesis and four revised to a further arthroplasty) and a further two had asymptomatic radiographic loosening. This gave a Kaplan–Meier ten-year survival rate of 86%. A total of 11 patients out of 17 could return to manual labour, and clinical results at final follow-up were impressive. The authors reported improved Quick Disabilities of the Arm, Shoulder and Hand (QuickDASH) and Visual Analogue Scale (VAS) pain scores. The mean range of motion improved from 97° to 126°. This improved range of motion was matched by improved grip strength, from 21 kg to 24 kg. Another group from **Providence, Rhode Island; Redwood City, California; and Durham, North Carolina (USA)** also report on contemporary results from a modern wrist arthroplasty.[3] Their paper reports the outcomes of 69 patients, all with a primary diagnosis of inflammatory arthritis and treated by fourth generation wrist arthroplasty for between five and 14 years. The Kaplan–Meier reported 14-year survival rate was an impressive 78%. In this case, as with most wrist arthroplasties, their patients did not report an improvement in their range of motion. However, pain improved from a preoperative score of 8.6 to a postoperative score of just 0.4. While two swallows do not make a summer, we can start to look towards wrist arthroplasty as a more reliable option. A lot of hard work has clearly gone in to developing better and more reliable arthroplasties, and the results are starting to look more favourable. The problem, of course, is that the wrist arthroplasty has to compete with the wrist arthrodesis, which is a surprisingly functional and robust operation. Nevertheless, despite these two reports of success, these implants should be still regarded as experimental and should be performed in specialized centres with very careful consent and follow-up.

Treating cubital tunnel syndrome: should we excise the epicondyle? X-ref

Cubital tunnel release is a widely undertaken operation for a problem that is common and sometimes difficult to treat. In the past, it was almost routine to transpose the ulnar nerve in the hope that doing so, in combination with decompression of the cubital tunnel roof, would result in a more successful outcome. However, transposition, at least in theory, renders the nerve relatively ischaemic and increases the potential for scar formation. With some clinical series demonstrating no clinical benefit, it has seemed that less is more. For that reason, there has been a trend to leave the nerve *in situ* unless it frankly subluxates forwards in most practice. If the nerve is subluxing, then there remains the oft-forgotten option of excising the medial epicondyle to prevent stretching of the subluxating nerve and to avoid the extra dissection for transposition. Given the plethora of literature on the topic, multiple potential operations and a somewhat divided community, we were delighted to see this systematic review from **Birmingham (UK)**.[4] This review team have systematically reviewed the literature, of which there is surprisingly little. Of the six studies comparing medial epicondylectomy to transposition,

three found epicondylectomy to be better than transposition, two had similar outcomes, and one found epicondylectomy to be similar to *in situ* decompression. The authors conclude that we do not yet quite know which is the better option. Here at *360*, our reading of this review and the associated literature is that for the time being, in the absence of better evidence, one should veer towards simple decompression when possible.

Should we worry when people crack their knuckles?

At best, knuckle-cracking is a rather irritating party trick; at worst, it may be harmful to the fingers. 'Knuckle-crackers' are often habitual and will crack their knuckles many times a day, often without being fully aware they are doing so. The clinical relevance of the problem is somewhat tricky to pin down, and there is no hard and fast evidence whether or not knuckle cracking can be expected to cause a problem. This small, case-matched study from **Sacramento, California and Charleston, South Carolina (USA)** aimed to find out whether it might do harm.[5] Researchers studied 400 metacarpal phalangeal joints (MPJs) in 40 patients: 30 people who habitually cracked their knuckles and 10 controls who did not. The study included blinded physical examination for swelling, grip strength, and composite range of motion. The examination was repeated before and after knuckle-cracking. Imaging in the form of ultrasound was also undertaken, with static and video images recorded before, during, and after a 'crack' MPJ distraction was performed by the subjects. There were no difference in the Quick Disabilities of the Arm, Shoulder and Hand (QuickDASH) score. However, the knuckle-crackers had a slight increase in range of motion just after knuckle-cracking. Ultrasound showed an echogenic focus just as the joint is distracted. So, as far as we can tell, knuckle-cracking does

no harm except to the ears of the beholder.

Can we avoid deletive surgery in a painful wrist?

There are few surgeons who would argue that there are any truly effective treatments for degenerative painful wrists. All surgical and nonsurgical options have their advantages and disadvantages and, whenever possible, most surgeons will avoid undertaking deletive or uncertain surgery if a simpler option exists. Posterior interosseous nerve neurectomy is an option that is often forgotten when considering options for painful wrists, and is often offered as an adjunct to other treatments. We are reminded by these researchers from **El-Paso, Texas (USA)** that posterior intraosseous neurectomy is a worthwhile option to consider in isolation.[6] The authors undertook a systematic review of the literature and, from the 427 articles found by the chosen search terms, were able to identify six relevant studies reporting outcomes of posterior interosseous nerve neurectomy as a primary treatment. The authors' review of these results established that, at a mean follow-up of 51 months, 89% of 136 reported cases were able to return to work. There was a moderate incidence of return of pain reported in the papers reviewed, with a recurrence rate of 26%. The overall complication rate, however, was less than 1%, and 88% of patients were satisfied. Compared with many of the other outcomes, we are reminded that the isolated posterior interosseous nerve neurectomy is a viable treatment option, and that, although recurrence rates are relatively high, it is an operation that has low complication and high satisfaction rates when used in isolation. Although this is a purely 'symptomatic' approach for those patients who are complaining of pain as their predominant symptom, a neurectomy does offer a potentially viable long-lasting option. We should be considering posterior interosseous nerve neurectomy in those patients who are suitable, and who have intractable and chronic wrist pain.

Should we splint after Dupuytren's surgery?

The sad state of evidence in health care is that the majority of interventions, treatments, rehabilitation strategies, and medications have very little in the way of objective evidence to support their use. Even when conclusive evidence does exist, it may sometimes not be followed. This would certainly appear to be true when one considers whether a splint should be used after surgery for Dupuytren's contracture. A recent paper published by hand surgeons in **Saudi Arabia, Canada, and The Netherlands** reviewed the literature.[7] Their search identified seven high-quality studies involving 659 patients reporting on the benefits (or otherwise) of night splintage for Dupuytren's disease after surgical release. The authors established that there was a relatively low risk of bias using the Cochrane and Ottawa assessment criteria. The bottom line from this review is that the authors found no reported differences in range of movement or patient-reported outcome measures in either group. So, from now on, we should implement this evidence and avoid a traditional yet apparently personnel-, time-, and money-consuming intervention, as there is no support in the literature for the use of static night orthoses in the management of patients post-Dupuytren's surgical release.

Does debridement of the TFCC really work?

One may be forgiven for having some scepticism as to the benefit of trimming away a triangular fibrocartilage complex (TFCC), bearing in mind that it is almost ubiquitous for people to have a central TFCC perforation as they age. However, since the advent of wrist arthroscopy, enthusiasts have been looking to establish indication for a variety of problems, and the triangular fibrocartilage has not escaped their notice. The more sceptical hand surgeons ask whether, given that many cases of ulnar corner pain settle down of their own accord, we should really be looking to intervene in these cases. The literature up to this point has hardly been supportive of TFCC debridement. For those surgeons among us who do feel that arthroscopic TFCC debridement may be useful, at least in selective cases, then there is some reassurance from a review team in **Ann Arbor, Michigan (USA)**. A total of 18 eligible studies were identified by the review team following an extensive search through the usual medical indices (PubMed, EMBASE and Medline). The initial search yielded a total of 1723 potentially relevant studies; the authors based their review on 18 studies that met their inclusion criteria. There was some evidence to support improved composite range of motion (wrist flexion) from six reports, giving a mean improvement from 120° to 146°. Similarly, there were improvements seen in grip strength of the contralateral hand from 65% to 91%, supported by ten reports. In terms of clinical outcome measures, there were seven studies reporting the Disabilities of the Arm, Shoulder and Hand (DASH) and Visual Analogue Scale (VAS) pain scores, and both scales supported improvement in outcomes following surgery. From an occupational perspective, 87% of patients returned to

their original work. So, on balance, the authors of this review are supportive of TFCC debridement, and there certainly is enough evidence on balance here to support ongoing use of TFCC debridement for ulnar-sided wrist pain in individuals found to have a tear. However, the naysayers among us would probably argue that this just represents the normal course of the disease, and that patients would be expected to get better in any case.

Does the ulnar styloid matter in a distal radius fracture? X-ref

■ The ulnar styloid was previously thought to be so important that one commonly used classification, the Frykman classification, even used the presence or otherwise of an ulnar styloid fracture as a key discriminator of treatments and outcomes. This view may induce the treating surgeon to attempt fixation of this often rather small piece of bone, which is not a technically easy venture. A team from **Yangzou (China)** performed a through systematic review and meta-analysis to find out whether there is genuine evidence about whether or not an ulnar styloid fracture makes a difference to outcomes. The authors identified ten studies that fulfilled their inclusion criteria and were suitable for meta-analysis. Between them, these studies report the outcomes of 1403 distal radius fractures. The review team have established that, in the indexed literature, there are no significant differences in wrist motion, grip strength, radial height, volar angle, ulnar variance, pain score, Patient-Rated Wrist Evaluation (PRWE) score, or 36-Item Short Form Health Survey (SF-36) score for distal radial fractures associated with an ulnar styloid fracture *versus* isolated distal radial fractures. Given the lack of differences in clinical outcomes, and when combined with the observation that in subgroup analysis of patients who went on to heal their ulna styloid fracture *versus* those who did not, there were no differences in outcome. This suggests that open reduction internal fixation (ORIF) of the ulna styloid to achieve union would be unlikely to improve outcomes. So, unless there is frank distal radial ulnar joint instability, which is rather rare, then our advice would be to leave the styloid alone.

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Shoulder & Elbow

X-ref ***For other Roundups in this issue that cross-reference with Shoulder & Elbow see: Wrist & Hand Roundup 3***

Elderly clavicle fracture fixation on the rise X-ref

■ Recent literature has highlighted a mismatch between the modest increase in the overall incidence of clavicle fractures and the marked rise in the rate of surgical management, probably driven by the mounting evidence that operative management reduces nonunion rate. Given that the evidence to support fixation of clavicle fractures is far from conclusive, and that evidence also suggests that fixation in patients at high risk of nonunion is likely to be the best strategy, the increasing rate in operative fixation raises an interesting question: which patients are we increasingly fixing? In this retrospective study from **Stanford, California (USA)**, the authors utilized data from large databases – collected as part of the billing process within the US – to define and compare the rates of surgery in patients older than 65 years of age with a midshaft clavicle fracture.[1] Between 2007 and 2012, there were a total of 32 929 patients recorded on the Medicare Standard Analytic File and Humana administrative claim datasets who sustained a clavicle shaft fracture. Within this population, there was an increasing rate of fixation in patients older than 65 years of age that presented with clavicle fractures; surgical fixation has nearly tripled in that time. On a sub-analysis by age and gender, there was also an increasing rate of both male and female elderly patients that were managed with surgery. This data demonstrates a clear increasing trend towards surgical fixation for elderly patients with a clavicle shaft fracture. Although there are well-known issues with using age as a cutoff for activity level and potentially the need for surgery, this study does highlight a notable increase in the use of surgery in managing these fractures, despite much of the level 1 evidence in this area being carried out in patients who are under 65 years of age. Furthermore, although these studies have determined that open reduction internal fixation (ORIF) is associated with an overall reduced rate of nonunion, the patient-reported benefit is debatable past three months. This increase in the rate of elderly patients undergoing surgical management of these injuries is somewhat surprising, given the lack of any clear evidence in the literature.

Humeral shaft fractures – which need fixing? X-ref

■ A recent prospective randomized trial reported superior outcomes and union rates following percutaneous plating to surgery, compared with nonoperative management, for isolated fractures of the humeral shaft. Considering this trial alongside recent clinical data that reported an 18.5% rate of postoperative iatrogenic radial nerve palsy following nonunion surgery, surely we should be fixing more of these fractures acutely to avoid late nonunion and the sequelae of nonunion surgery? There is plenty of evidence to support nonoperative management – although much of it is older – and there is certainly the possibility of spinning the data to support any particular point of view. Given the objective review of the evidence as it stands, it would seem to be