

ROUNDUP³⁶⁰

Wrist & Hand

Xref For other Roundups in this issue that cross-reference with *Wrist & Hand* see: [Trauma Roundup 1](#).

Diagnosis of compressive neuropathy

■ Treating compressive neuropathy can be an infuriating experience. Patients with equivocal symptoms or those with an atypical presentation can often present a diagnostic conundrum. Although nerve conduction studies do often give an answer, they can sometimes be at odds with clinical findings and then the question of further investigation raises its head. Surgeons who face a diagnostic challenge in carpal tunnel syndrome, whether primary or in those who fail to respond to decompressive surgery, traditionally rely on neurophysiology. However, there is an increasing trend towards imaging the carpal tunnel with MRI or ultrasound to look for median nerve deformation. Surgeons in **Szczecin (Poland)** have been reaching for their ultrasound scanners when they are uncertain about diagnosis in suspected carpal tunnel syndrome. They undertook a prospective study of 113 patients who had both ultrasound and neurophysiological examination of the median nerve. A prospective study was carried out to investigate any correlation between electrophysiological and sonographic findings in patients with a clinical diagnosis of carpal tunnel syndrome. Their cohort included a full cross section of patients with a variety of symptom severities (48% mild, 38% moderate and 11% severe) and conduction

disturbances. The research team conducted sonographic measurements to establish the cross-sectional areas of the median nerve at the forearm and tunnel, height of the nerve at the tunnel inlet and throughout the tunnel. There were no relevant correlations between sonographic and electrophysiological parameters. We would tend to agree with the authors who don't recommend ultrasound in carpal tunnel diagnosis as a routine tool. It is important to remember, however, that ultrasound remains useful if a space occupying lesion or variant anatomy is questioned.¹ Hand in hand within the same issue of the *Journal of Hand Surgery* is a similar study aiming to establish if ultrasound is of any diagnostic value in cubital tunnel syndrome. Given the much wider variation in site of compression, one might expect this to be a more fruitful research exercise. The authors from **Ankara (Turkey)** examined ulnar nerve cross-sectional diameter.² They recruited to the study based on a healthy group of 38 elbows and the asymptomatic side of another 38 unilateral ulnar neuropathics. While less useful than the first paper, it highlights the difficulty in using standard reference values for ulnar nerve cross-sectional area in diagnosing ulnar neuropathy. It does appear that even the 'healthy' asymptomatic side in an affected individual may not be comparable with the background population.

Relevant reviews...

■ Although the benefit of review articles is sometimes up for debate,

with journals often preferring original research articles, there is no doubt that reviews can be effective for both continuing professional development and in bringing consensus to difficult topics or rare diagnoses. There are two such interesting reviews to which it is worth calling the readers' attention. Researchers in **Riyadh (Saudi Arabia)** have provided an excellent review of extremely rare flexor tendon injuries in the child. We would recommend a read for anyone who might be dealing with these rare injuries.³ Managing chronic regional pain syndrome is perhaps one of the most difficult topics in hand surgery. It is fitting that this would be the subject of a review article by surgeons in **Philadelphia (USA)** which deals with surgery on the hand after an episode of CRPS-type symptoms.⁴ There really is a paucity of evidence surrounding this topic and while many surgeons (including the hand surgical team here at 360 HQ) are undecided if certain anaesthetic interventions may make recurrent CRPS less likely, there is sadly no evidence to support this in the literature at present. As if to make matters worse, this review points to the appalling statistic that 19 peer-reviewed articles have been retracted from the literature as a result of an investigation into scientific misconduct, yet the myth persists that certain types of regional anaesthesia reduce the incidence of recurrent CRPS. This is a review that is well worth reading.

The biomechanics of dorsal PIP fracture dislocation Xref

■ Although a seemingly innocent fracture to many emergency department doctors and junior orthopaedic surgeons, any senior hand or trauma surgeon who has grappled with the acute presentation and late complications of unstable dorsal proximal interphalangeal joint (PIP) fracture dislocation knows how tricky they can be in practice.⁵ Investigators in **Baltimore (USA)** have undertaken a biomechanical cadaveric study in this difficult area. These investigators have established that, interestingly, in a 40° of flexion the majority of joints remain reduced. Furthermore, in those that do sublux, they can be treated in 40° of flexion which could be achieved with extension block splinting. This study also serves to remind us that many publications concerning dorsal fracture dislocations have a heterogenous group of articular surface defects, some of which may be relatively stable. This makes comparison between frame distraction and temporary k-wire transfixion techniques, for example, quite difficult.

The more strands the better

■ Given the large numbers of biomechanical papers on flexor tendon repair, one would presume that the vast majority of repairs fail early. This is of course not the clinical picture we see in practice, but the staple biomechanical study of flexor tendon repair continues to be a favourite of residents and surgeons alike after a publication.

Researchers in **St Louis (USA)** have taken a slightly different view on the age-old question. Allowing for the fact that there is only a certain volume of suture that can be placed in a zone II tendon, they ask the question: is a 3/0 4-strand, 4/0 4-strand or 4/0 8-strand repair better?⁶ They designed a cadaveric biomechanical study and tested 40 FDP tendons for initial maximum load to failure, taking the standard 2 mm gapping as failure. The results support current clinical practice, finding that the 8-strand repair using 4/0 suture was 43% stronger than a 4-strand repair using 3/0 suture. This is despite the 49% higher strength of the 3/0 suture; hence it does appear that with flexor tendon repairs it is the number of strands, not the total combined tensile strength that makes the biggest difference to load to failure.

State of mind the best predictor of outcome

■ In a very interesting randomised controlled trial (although just a small pilot), David Ring and colleagues from **Boston (USA)** tested the hypothesis that type of injection (corticosteroid vs placebo) would not be a predictor of arm-specific aspects within the DASH score at three months' follow-up in patients presenting with trapeziometacarpal (TMC) arthrosis or de Quervain's syndrome. The secondary outcome measure for this study was pain scores. Their RCT included 36 adult patients presenting with a diagnosis of TMC OA or de Quervain's syndrome. They were randomised to local injection with either dexamethasone or a placebo. Data including demographic details, psychological profiling, pain scores and DASH scores were collated for all patients.⁷ Interestingly, at the final follow-up the type of injection was



not a predictor of arm-specific disability or pain intensity. The best predictor for subsequent arm disability was catastrophic thinking, which was able to explain 18% to 33% of the variability in the results.

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