

ROUNDUP³⁶⁰

Wrist & Hand

For other Roundups in this issue that cross-reference with Wrist & Hand see: Trauma Roundups 2 and 4; Oncology Roundup 8; and Research Roundups 5 and 6.

Ultrasound for carpal tunnel diagnosis

■ Electrodiagnostic testing (EMG) is the gold standard for all compressive neuropathies, and a wide range of other neurological conditions. Although EMG is highly sensitive and specific for these diagnoses, it does, however, give patients discomfort. Carpal tunnel syndrome is a common compressive neuropathy that in many cases can be diagnosed clinically with no need for any form of investigation. However, if there is any diagnostic doubt then it is commonplace to request EMGs to confirm the diagnosis. This is, however, like using a sledgehammer to crack a walnut. Researchers in **Wexford (USA)**, reasoning that a less invasive diagnostic test might be ideal, set out to establish the diagnostic potential of ultrasound of the carpal tunnel to diagnose compressive neuropathy.¹ Although previously described, the sensitivity and specificity when compared with EMG studies has yet to be established. The diagnostic accuracy was evaluated using 85 patients, all with symptoms consistent with carpal tunnel syndrome. The investigators used a Carpal Tunnel Syndrome 6 (CTS-6) diagnostic threshold of ≥ 12 as positive for carpal tunnel syndrome. The study team defined a positive finding on ultrasound as a cross-sectional area of ≥ 10 mm²

or a motor latency of ≥ 4.2 ms and/or distal sensory latency of ≥ 3.2 ms. Using the CTS-6 as the diagnostic standard, the study team calculated the sensitivity and specificity of both tests. While both were around 90% sensitive, USS was more specific than EMG (89% vs 80%), giving a higher positive predictive value of ultrasound (94% vs 89%). While ultrasound will clearly not replace electrodiagnostic testing when there is diagnostic uncertainty (remember, there were no negative controls with different conditions in this study so the false positive rate is difficult to estimate), it clearly adds a simple and effective tool to the diagnostic armamentarium.

Where are we at with management of undisplaced scaphoid fractures?

■ Undisplaced scaphoid fractures are commonplace, however, there is still some debate surrounding their treatment. Proponents of non-operative treatment arguing that patients have little chance of AVN and that functional recovery is good are countered by proponents of operative treatment citing arguments about earlier return to work and fewer long-term complications. There are a myriad of studies on the topic, and making sense of all the information out there can be challenging. A review from **Stoke (UK)** set out to make sense of the evidence.² The review team undertook an extensive review of treatment options for undisplaced scaphoid fractures, and their search strategy yielded

60 articles potentially suitable for inclusion in their review. Of these, 21 were available for inclusion in the study (comprising five RCTs, three meta-analyses and six retrospective studies). While these studies provide a reasonable account of excellent outcomes from both treatment methods, the authors comment that cast treatment is associated with short-term limitation in function including increased immobilisation time, stiff wrist, compromised grip strength and increased time for return to work. The operative group was associated with a faster union time and consequent reduced return to work times (five vs seven weeks). Although there is no large direct comparative study including appropriate health economic analysis, the available data suggest that there is a similar complication rate associated with each treatment option, but that return to work time is two weeks quicker with the operative group. The question now, of course, is whether the additional risks of surgery, along with the extra cost, are worth the two-weeks' quicker recovery time?

ARPE for thumb metacarpals?

■ The ARPE implant (Biomet, UK) is a modular carpometacarpal joint (CMCJ) replacement designed with a modular system with hydroxyapatite-coated press-fit prosthesis and a modular head/neck junction to allow for optimum surgical fit and anatomic reconstruction. Each component is available in a range of sizes, and the ARPE is designed to

overcome some of the limitations of previous generations of total CMCJ replacements. There are very few long-term follow-ups of such prostheses and we were delighted to read the ten year long-term results of the ARPE implant in the treatment of trapeziometacarpal osteoarthritis from **Valladolid (Spain)**.³ The series is one of the largest in print and includes 69 joint replacements followed up to ten years of survival. The 'headline' ten-year survival estimate of 93.9% (95% CI 82.3 to 97.9) is better than many other published series. Although the radiographic outcomes were not quite so impressive with just over 80% satisfactory (the chief radiographic anomaly being subsidence of the cup in 15.8%), this is the first CMCJ arthroplasty that we are aware of that would pass the 'NICE' test of over 90% survival at ten years that has been applied to hip replacements in the past. It seems that thumb arthroplasty is moving on even if we aren't yet sure it is the correct thing to do. Slightly amusingly, later in the same journal, researchers from **Singen (Germany)**⁴ make the observation that trapeziectomy (albeit with the 'ligament reconstruction and tendon interposition' bit) appears to work better than an STT implant without the need to treat the scaphotrapezoid joint. Their study involved just 15 consecutive patients who were treated with trapeziectomy and ligament reconstruction. The authors make the point that their outcomes with a median pain intensity of 0/10, grip strength of 24 kg,

DASH score of 16 and Mayo Wrist Score of 84 outperform those of the CMCJ arthroplasties, so why would one wish to replace the joint? The wheel keeps turning round in the ‘implant versus no implant’ debate for basal thumb osteoarthritis.

Extravasation injuries in the hand and wrist

x-ref Trauma

■ Extravasation injuries can be tricky to treat, particularly with high pressure injection. Management strategies include a range of chemotherapeutic antidotes as well as a range of other options such as surgical washout or debridement and liposuction. The decision making process, however, can be tricky and a review team in **Oxford (UK)** have set out a very clear and concise review.⁵ They outline all of the key management principles for dealing with extravasation injuries. The authors note that in these difficult management decisions the key parameters in correct decision making include the agent itself (including volume, toxicity and time since injury), as well as visible necrosis, patient-related factors and the availability of local factors and expertise.

Research and practice in hand surgery

■ Far, far away, tucked into the back of the Journal of Hand Surgery is an article by Curtin and Chung from **Palo Alto (USA)** exploring the effects of research and changes in practice of hand surgery.⁶ It resonates with a ‘A prejudiced view’ by FP Monsell⁷ who expresses a ‘forthright, personal and somewhat prejudiced appeal to retain the legitimacy of clinical decision making in conditions that are rare, contain multiple variables, have a solution that generally works

or has an unpredictable course’. Kevin Chung is a prolific author of hand surgical articles and this review quickly summarises how we got to be where we are in hand outcomes research in a less emotive, more objective article. Two points jump out. First, if you have a bent finger (Dupuytren’s disease) and it can be made straighter then you are highly satisfied. If you have a chance of dying to make your finger straighter, then within this context



you might live with it. ‘Current economic research methodology does not capture this subtle difference’. The second point, however, rallies to the defence of outcomes research in that ‘we need to be good stewards of our field and provide the best quality and cost-effective care’ and simple trapeziectomy for basal thumb arthritis is used to highlight that ‘the 17 year time lag from publication to implementation is unacceptable’. Why is the simple trapeziectomy not the standard of care when proven to have fewer complications, take less time and have equal outcome to other techniques? Our ‘specialist societies should issue practice guidelines’. In other words, call the hand police!

There is a tricky and difficult line to be trodden here – clearly, scientifically debunked or out-of-date procedures should not be offered to patients as ‘appropriate’; neither should treatments be offered where it is clear an alternative treatment would be superior. As things stand, however, specialist societies do not fulfill that role – they are not there to be the guardians of access to health care and the onus is still on the individual clinician to make the correct treatment choices for their patients.

Physio ineffective in hand osteoarthritis

■ Conservative management for degenerative joint conditions is surprisingly tricky. While building muscle bulk and maintaining joint stability in the major weight bearing joints can add significantly to the quality of life for patients with large joint osteoarthritis, there is less widespread acceptance of the role of physiotherapy in small joint osteoarthritis in the hand. Researchers in **Oslo (Norway)** set out to add some level 1 data to the debate with their randomised control trial.⁸ The study team recruited 130 patients who were randomised to either a 12-week exercise programme or usual care with primary outcomes assessed with a self-reported hand functional score (Functional Index for Hand Osteoarthritis) which were assessed at three months following enrolment into the study. There was a minor loss to follow-up and the authors were able to report the results of around 120 patients at six months of follow-up. Essentially the two groups reported in this study are equivalent, with no significant differences in any of the reported outcomes including pain, stiffness,

disease activity, hand dexterity or grip strength. This study highlights for us, here at 360, what little we know about some interventions. Although widely used throughout the world, this study shows no benefit from hand rehabilitation in osteoarthritis. This does seem a likely accurate finding and we will be interested to see how this is received in the wider medical community, given the comments we reported in the previous article.

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