# ROUNDUP360

## Wrist & Hand

### Collagenase and Dupuytren's disease – a genuine alternative to surgery?

Collagenase injections are an ongoing contentious issue in Dupuytren's disease. While there is no doubt that injections of collagenase (Xiapex) are efficacious in the short term, there is some considerable doubt over the longer-term efficacy and the risk/benefit profile. Authors from **Southampton (UK)** set out to establish if collagenase is able to offer a viable non-operative solution for Dupuytren's disease. Reasoning that the efficacy of collagenase in the short term has been established in several studies, they designed an open label study (POINT X) to establish the longer-term health economic cost and durability of the treatment. Their pan-European study of 254 patients was designed to establish the return to function and patient-reported outcomes in a large series. Their study population for the most part had just one or two joints treated (79%), with only 9% of patients undergoing four or more injections. Perhaps most interestingly, an improvement in extension of approximately 30° was seen immediately, rising to 40° by day seven. Patient satisfaction rates were also found to be high, with over 85% of patients and physicians satisfied with the treatment outcomes at six months, and extension improvements were maintained over the six-month observation period of the study. Like many of these studies, however, there was only a poor correlation observed between improvement in range of motion and satisfaction. Perhaps most crucially, the serious adverse event rates were very low, with just 3% of patients experiencing adverse events. Further research from **Marquette (USA)** more carefully examined the safety of collagenase injections in Dupuytren's disease. There have been concerns that essentially blind injection of lytic enzymes into the hand may result in damage to other surrounding structures, allergic reaction or other adverse events. In their systematic analysis of 11 different studies, the authors were able to report on the safety of the collagenase injection in 1082 patients, in comparison with 48 studies of 7727 patients treated with open fasciectomy. Their study suggests that the incidence of complications does differ between the two methods. There were lower rates of nerve injury, CRPS and arterial injury in the collagenase group, but higher rates of tendon injury, skin complications and haematoma formation. There was also a range of new complications associated with injection, which are not reported with the open approach, all of which were transient and related to injection site problems (peripheral oedema, extremity pain, swelling, pruritus and tenderness). While the authors of this study conclude that 'these results may support clinical decision-making for treatment of Dupuytren's disease', they leave it mostly to the reader to come to their own conclusions about complication rates. It is always difficult to interpret comparative results for complications from mismatched non-comparative series.[1,2] Although these two papers are far from conclusive, they do give a good overview as to the current knowledge surrounding the use of collagenase injections. Factors other than those traditionally considered in Dupuytren's disease may encourage the use of the drug, including return to function, patient satisfaction and safety. The combination of an earlier sustained return to function, and an equivalent safety profile demonstrated in these two papers make an attractive combination for early disease when compared with traditional open release. Here at *360* we do wonder if some contemporary comparative studies between collagenase and percutaneous release may be indicated?

### iPad PROMise?

As healthcare resources continue to become more strained, healthcare funders are focusing more and more on PROMS data to support and guide their investments. Just a few years ago, outcome measures were mostly limited to the domain of health-related research. As PROMS are becoming ubiquitous, their assessment in paper form may become unnecessary. A research team in **Salt Lake City (USA)** set out to establish if the tablet is mightier than the pen in the field of PROMS collection. The team focused on the collation of the Disabilities of the Arm, Shoulder, and Hand (DASH) score and designed a simple prospective, randomised controlled trial to evaluate two methods of score administration, either paper- or tablet-based. While it is clearly impossible to assess the accuracy of data collation with a simple study design like this, the research team focused instead on the completeness of the data collection and what proportion of the data was analysable. The team were able to recruit 223 consecutive adult patients, all treated at a single tertiary referral centre. Overall, 120 patients undertook DASH scores using the tablet and 103 using pen and paper. As would perhaps be expected, over 40% of those patients completing the paper surveys had omitted at least one question and 14% of the DASH scores were not scorable, compared with 4% of the electronically-completed scores.[3] Using a tablet to accrue a DASH score (and presumably other PROMS) appears to be more reliable than paper. Although the research team found it may take a little longer to use a tablet, in addition to improved completeness of data collation, one may assume that the digital data accrued will be far easier to collate and analyse than a pile of paper forms.

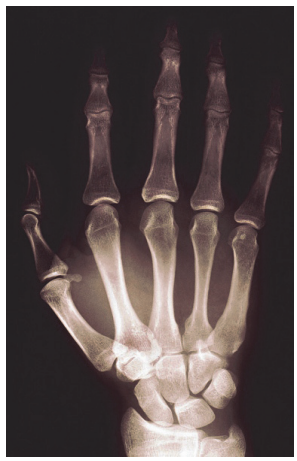
### Should we learn how to do endoscopic carpal tunnel release?

There is, quite appropriately, a trend throughout orthopaedics to perform surgery less invasively whenever possible in pursuit of less tissue damage, faster recovery and improved outcomes. However, many of these new techniques which have been tried have a number of disadvantages. Complications associated with the learning curve are common

for new techniques, and in many cases (such as minimally invasive hip and bunion surgery) the need for special (sometimes expensive) equipment coupled with higher complication rates has seen surgical innovation to the detriment of patient outcomes. When coupled with the risk of making routine operations more complex, this can result in less efficient use of healthcare resources and more complex operations which cannot be delegated to less experienced surgeons. This perhaps is the crux of the dilemma surrounding endoscopic carpal tunnel release. In a comprehensive review of the literature, Sayegh and Strauch from **New York (USA)**, using the widely accepted Cochrane approach to systematic reviews, included 21 randomised controlled trials, reporting the outcomes of 1859 hands measured using the Boston Carpal Tunnel Questionnaire (BCTQ). Their meta-analysis demonstrated similar rates of symptom relief and outcomes following open and endoscopic carpal tunnel release measured by the BCTQ, however, the endoscopic group had an earlier improvement in grip strength and around a 50% lower risk of scar tenderness. This may perhaps explain the eight-day median earlier return-to-work observed. This is offset against a higher rate of nerve injury (relative risk 2.8).[4] The authors conclude that while endoscopic carpal tunnel release allows a return to work eight days earlier with an earlier recovery of grip and less scar pain, this is at the expense of a greater risk of nerve injury. This represents a difficult balance of health economics for now, however, the higher risk of nerve injury, requirement for more senior surgeons and the increased operative time probably explains the low uptake of the technique.

## Two-week radiographs a relic of the past?

■ It is commonplace to obtain regular interval radiographs following injury or surgery. Although seemingly innocuous, there are risks of radiation exposure and the added health economic costs associated with these. A study team in **Florida (USA)** set out to establish if there really is a requirement for a radiograph at two-week follow-up. Do these really add anything to the initial intra-operative or post-operative films? The study team designed a retrospective study to assess the diagnostic value (in terms of altered treatment decisions) of these radiographs. They included 268 patients, all of whom



had undergone plate fixation of the distal radius. Two-week follow-up radiographs were compared with six-week films. Re-intervention based on the two-week radiograph occurred in just three patients due to radiological loss of fixation.[5] The authors suggest that given their further analysis of those patients who did not fail without any loss of position in any recognised radiographic parameters between the two-week follow-up radiograph and the six-week film, there may be no benefit in the two-week radiograph. It certainly seems sensible that perhaps those patients who do not have symptoms of pain or clinical concerns could be managed without repeated radiographs at every clinic visit.

## Bible? Aspirate or excise?

■ Wrist ganglions are a common, and sometimes surprisingly persistent, problem and it is useful to have up-to-date figures for recurrence rates after surgical intervention based on a literature meta-analysis. A study team from **Ontario (Canada)** undertook a comprehensive systematic review and meta-analysis including 35 previously published studies reporting the results of 2239 ganglions. The headline figures for mean recurrence rates from open, arthroscopic resection and aspiration were 21%, 6% and 59%; a striking difference in favour of the arthroscopic technique. However, the authors found that there were woefully insufficient randomised control trial data available for a meta-analysis of arthroscopic *versus* other treatment modalities, and the authors point out that best study[6] showed no difference in outcomes at one year between open and arthroscopic excision.[7] There was, as would be expected, reasonable quality evidence to support open surgical excision with a 76% reduction in recurrence in randomised studies, and 58% reduction in cohort studies when compared with aspiration alone. Given the low trial quality yet very low recurrence rates apparently associated with arthroscopic approaches, this is an area that perhaps requires revisiting with a contemporary, appropriately-powered randomised controlled trial.

## Patient expectations and trapeziometacarpal osteoarthritis

■ In an interesting expectations-based study, researchers in **Zurich (Switzerland)** set out to review patient outcomes and expectations following treatment for their base of thumb osteoarthritis. Although there is a wealth of trial data comparing surgical treatments, there is little in the literature concerning patient expectations. The study team designed and undertook a 163-patient outcome study evaluating patients with trapeziometacarpal osteoarthritis (TMC OA). Patients completed an expectation-based questionnaire concerning both general expectations and functional status before and after (three, six and 12 months) treatment. This cohort study included patients treated with both surgical trapeziectomy and steroid injection.[8] The expectations section of the questionnaire was perhaps the most interesting of the results presented, with patients having an overwhelming desire to improve pain (65% of patients), with improvement in hand function (17%), and achievement of ADLs (13%) playing a much smaller role in patients' decisions to seek treatment. Anticipation of success of treatment was better for surgically treated patients (93%) than those treated with steroid injection (59%). In terms of realising expectations, again the surgical group performed best, with 77% of 105 surgically treated patients rating their expectations as completely or mostly fulfilled after trapeziectomy (with ligament reconstruction/tendon interposition) and 24% of 58 patients after a steroid injection at one year. Although not the main point of this paper, these figures are of interest. With regression analysis looking at variables such as improvement of pain/function, fulfilment of expectations could not be predicted.

## Splintage in the treatment of sagittal band incompetence and extensor tendon subluxation

■ In an extremely interesting paper from the Journal of Hand Surgery (European Volume), researchers in **Ohio (USA)** undertook a retrospective review of their splint usage in sagittal band incompetence in extensor tendon subluxation. This retrospective review of a mixed cohort of patients looks at outcomes in terms of resolution of tendon subluxation. Their series included 92 patients all presenting with clinically confirmed extensor tendon subluxation. There was a mixture of aetiologies with 26% atraumatic injuries and the remainder recalling a specific traumatic event. The overall success rate with splints was 84% for resolution of subluxation. Not unreasonably, the authors undertook a number of subgroup analyses in this mixed cohort. Success rates were higher in the traumatic group and resolved in over 95% of patients presenting with

acute or subacute traumatic tendon subluxation or acute atraumatic tendon subluxation. It was less successful in the more chronic groups with success rates around 65% in subacute atraumatic or chronic acute tendon injuries.[9] It is refreshing to see such a thorough evaluation of a simple treatment for what can be a tricky condition. Surgery clearly should only be indicated for this condition following a trial of conservative treatment.

## REFERENCES


1. **Warwick D, Arner M, Pajardi G, et al; POINT X Investigators.** Collagenase clostridium histolyticum in patients with Dupuytren's contracture: results from POINT X, an open-label study of clinical and patient-reported outcomes. *J Hand Surg Eur Vol* 2015;40:124-132.
2. **Peimer CA, Wilbrand S, Gerber RA, Chapman D, Szczypa PP.** Safety and tolerability of collagenase Clostridium histolyticum and fasciectomy for Dupuytren's contracture. *J Hand Surg Eur Vol* 2015;40:141-149.
3. **Tyser AR, Beckmann J, Weng C, O'Farrell A, Hung M.** A randomized trial of the disabilities of the arm, shoulder, and hand administration: tablet computer versus paper and pencil. *J Hand Surg Am* 2015;40:554-559.
4. **Sayegh ET, Strauch RJ.** Open versus endoscopic carpal tunnel release: a meta-analysis of randomized controlled trials. *Clin Orthop Relat Res* 2015;473:1120-1132.
5. **Stone JD, Vaccaro LM, Brabender RC, Hess AV.** Utility and Cost Analysis of Radiographs Taken 2 Weeks Following Plate Fixation of Distal Radius Fractures. *J Hand Surg Am* 2015;(Epub ahead of print)PMID:25840478.
6. **Kang R, Stern PJ.** Fracture dislocations of the proximal interphalangeal joint. *J Hand Surg Am* 2002;2:p47–59.
7. **Head L, Gencarelli JR, Allen M, Boyd KU.** Wrist ganglion treatment: systematic review and meta-analysis. *J Hand Surg [Am]* 2015;40:546-553.e8.
8. **Frouzakis R, Herren DB, Marks M.** Evaluation of expectations and expectation fulfillment in patients treated for trapeziometacarpal osteoarthritis. *J Hand Surg Am* 2015;40:483-490.
9. **Peelman J, Markiewitz A, Kiefhaber T, Stern P.** Splintage in the treatment of sagittal band incompetence and extensor tendon subluxation. *J Hand Surg Eur Vol* 2015;40:287-290.