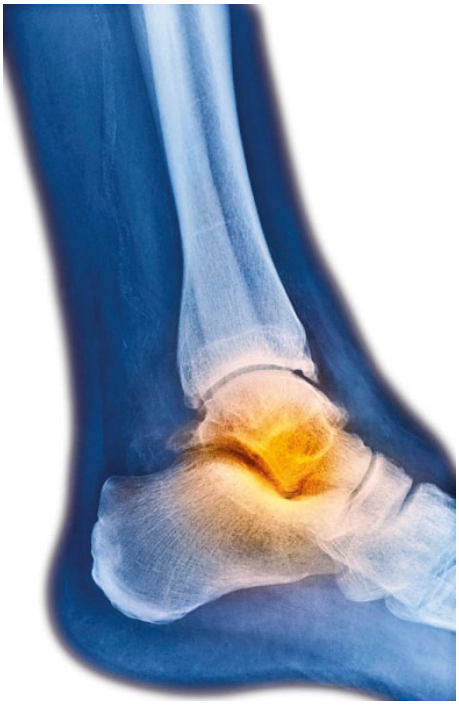
between waiting times in foot and ankle surgery and postoperative health gain.



Syndesmosis under the spotlight

■ This study from **Vail, Colorado (USA)** was designed to evaluate the most responsive measurements on CT to evaluate the syndesmosis.[5] The authors utilized 12 cadaveric lower-leg specimen pairs, which were each imaged using CT. The legs were then used to produce four specific malreduction models, and the initial 35 measurements were then repeated to compare the reliability and accuracy of existing described CT methods for measuring the distal tibiofibular syndesmosis. The malreductions evaluated were translations of 2 mm in each of the lateral and posterior directions. In addition, a 7° external rotation was produced, and then all three deformities were combined, which probably simulates best the malreduction usually seen. Using this method, the authors established that the most accurate of the 35 methods for evaluating clear space was the Leporjärvi clear space for lateral translation, the Nault anterior tibiofibular distance for posterior translation, and the Nault talar dome angle for external rotation of the fibula. While this is certainly an interesting paper that adds considerable weight to the use of CT scanning to detect deformity in the syndesmosis – either as the result of an injury or in assessing reduction following injury – there are a number of caveats to the paper as it stands. The study is cadaveric, which has the advantages that injuries can be simulated. However, the nature of the generated deformities adds some specific limitations to the study, insofar as these are neither injuries nor simulated injuries. In fact, they are simulated deformities, so it is not clear how the various methods would perform with an actual injury or post-reduction film.

Subtalar arthrodesis: comparison of bone graft types

■ Subtalar distraction arthrodesis is a well-recognized operation that is performed for a variety of reasons. However, one of the most common indications is for a malunited calcaneal fracture in combination with subtalar arthritis. A distraction arthrodesis requires the use of allograft or autograft, which can be locally based or from a donor site. There are potential complications to navigate if a donor site is used; however, the graft may be of better quality and, if structural grafting is required, this is often the preferred option. These authors from **Mansoura (Egypt)** have reported their prospective outcomes of 28 patients presenting with calcaneal malunion who were treated with subtalar distraction arthrodesis using local calcaneal bone graft.[6] These patients were compared with a control group of ten patients who had iliac crest bone graft. The authors hypothesized that the local graft would be as effective in terms of clinical outcomes and fusion rate. Patients appear well matched, with a mean age of around 40 years in both groups. The authors reported that the American Orthopaedic Foot & Ankle Society hindfoot score improved in both the study and the control groups. In terms of successful fusion, all patients in the study achieved fusion, other than a single patient in the local bone graft group, and this was at a mean time of 13 weeks in both groups. In both groups, the radiological outcomes were satisfactory and there did not appear to be any differences in terms of success of correction. Overall, the authors of this study report that other than donor site complications (reported in 40% of the iliac crest group), there were no overall differences in between the two groups.

REFERENCES

1. **Kurokawa H, Taniguchi A, Morita S, Takakura Y, Tanaka Y.** Total ankle arthroplasty incorporating a total talar prosthesis: a comparative study against the standard total ankle arthroplasty. *Bone Joint J* 2019;101-B:443-446.
2. **Sanders FRK, Backes M, Dingemans SA, et al.** Functional outcome of implant removal following fracture fixation below the level of the knee: a prospective cohort study. *Bone Joint J* 2019;101-B:447-453.
3. **Patel S, Malhotra K, Cullen NP, et al.** Defining reference values for the normal tibiofibular syndesmosis in adults using weight-bearing CT. *Bone Joint J* 2019;101-B:348-352.
4. **Sutherland JM, Wing K, Younger A, et al.** Relationship of duration of wait for surgery and postoperative patient-reported outcomes for hallux valgus surgery. *Foot Ankle Int* 2019;40:259-267.
5. **Schon JM, Brady AW, Krob JJ, et al.** Defining the three most responsive and specific CT measurements of ankle syndesmotic malreduction. *Knee Surg Sports Traumatol Arthrosc* 2019. (Epub ahead of print) PMID: 31020353.
6. **El-Hawary A, Kandil YR, Ahmed M, Elgeidi A, El-Mowafi H.** Distraction subtalar arthrodesis for calcaneal malunion: comparison of local versus iliac bone graft *Bone Joint J* 2019;101-B:596-602.

Wrist & Hand

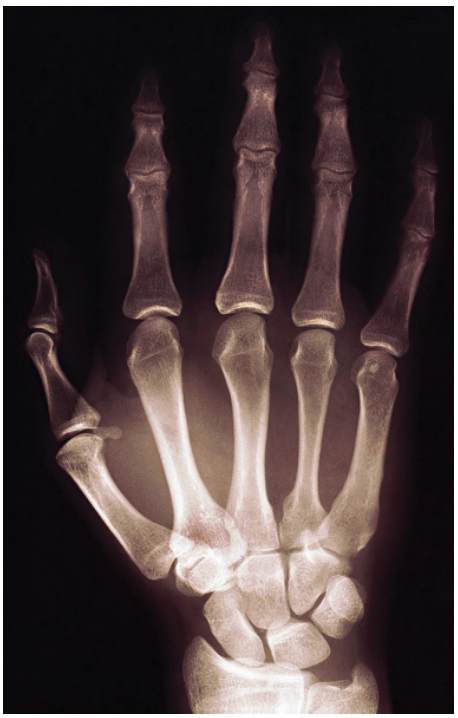
Outcome of surgical repair of adult digital nerve injury: a systematic review X-ref

■ A lot of resources are invested in addressing digital nerve repair in the hand, and this review from **Oxford (UK)** sought to determine whether this is justified in terms of clinical benefit and outcomes.[1] As perhaps would be expected from the champions of evidence-based medicine, this was a well-conducted review that searched a number of databases, including in-process and in-progress studies across all languages. From an initial pool of 4036 articles, 3045 were excluded as they were nonclinical, animal studies, or performed exclusively in children. A further 852 articles were excluded as they were selective concerning the location of digital nerve injury, 66 of which only included details on digital replantation and not isolated nerve injury. Finally, 45 articles were excluded as they were expert opinion pieces only. Two articles were added following

a bibliographic review. This gave 30 articles from between 1928 and 2015 reviewing results in over 1600 digital nerve repairs. For a study period covering 90 years, there was understandable variation in surgical technique, surgical timing, and specific outcomes assessed. The timing of intervention varied from 0 to 30 months postinjury, with some studies using 'finest silk' suture (6-0 or 7-0), and more recent articles describing the use of nylon between 8-0 and 10-0 gauge, often with magnification. Static 2-point discrimination (s2PD), moving 2-point discrimination (m2PD), Medical Research Council sensory grading, temperature discrimination, sweating, and nerve conduction studies were all described as outcome measures. s2PD was the most commonly used measure in 26 of the articles. Given the historical nature of the review, patient-reported outcome measures (PROMs) were infrequently reported. Interestingly, the review found that predictive factors briefly thought to influence the results of nerve repair, such as smoking status, presence of concomitant digital artery injury, time interval between injury and repair, mechanism, and level of the original injury, as well as the severity of injury to the nerve, inconsistently had an effect on the results. However, it was apparent that increasing age of patient and the seniority of the operating surgeon appeared to have an effect. Return of normal sensibility was not common, and protective sensation was regained by six months in almost all unrepaired nerves. Adverse events were variably reported, but the incidence of neuroma formation, where studied, was approximately 5% whether the nerve was repaired or not. Cold intolerance was reported in five studies with an incidence between 2% and 53% but, given the common nature of cold intolerance following hand injury in general, it seems likely that this is generally under-reported. So should we be repairing nerves or leaving them alone? Unfortunately, we do not yet have that answer. While opinion may be strong and often heated, it is clear there is currently a lack of strong evidence in favour of repair, despite nearly a century of reported research.

The dorsal plate revisited X-ref

Fractures of the distal radius commonly feature in 360, mainly because of the uncertainty that continues to surround optimal management despite the relative frequency of these injuries. While much of the research interest focuses upon those injuries that could possibly be treated less invasively, there are certainly injuries where using less invasive options or plaster may be difficult. Severely comminuted articular fractures with multiple small fragments are a significant surgical challenge, even in nonosteoporotic bone. External fixation remains the go-to fixation technique for many, utilizing ligamentotaxis to maintain length and alignment. The complication rate from this technique is not insignificant, but a dorsal distraction plate, variably described as spanning or bridging, is also a potentially useful solution. This technique may permit adequate control of the fracture without the need for a cumbersome external device applied to the forearm. The use of the dorsal plate is gaining popularity, although it is not clear if this is simply based around expert opinion. Authors from **Toronto (Canada)** sought to review the evidence for this surgical technique.[2] The authors were able to find and review 16 articles and, following screening, reported the results from eight papers. Not unusually, only two of these articles were prospective cohort studies, with the other six being retrospective reviews or case series analyses. The mean age of the 180 included patients was 57 years and the mean follow-up time was 19 months postinjury. The described indication for dorsal distraction plating was most commonly comminuted intra-articular, AO type C injuries, which accounted for 83% of the patients with a documented classification. Interestingly, however, 11% of the injuries were type A3 fractures. The weighted mean range of movement achieved was 47.6° of flexion, 50.5° of extension, 76.0° of supination, and 74.2° of pronation. Grip strength, which was measured in three articles as a percentage of the normal contralateral side, was a mean of 79.1%. Radiological outcomes were generally favourable and were measured in six studies. The weighted mean volar tilt was 3.6°, the radial height was 10.5 mm, the radial inclination was 19.4 mm, and the ulnar variance was 0.5 mm. Complications were only formally documented by two of the included papers, but the documented rates were approximately 12% overall and the major complication rate was 7%, including malunion, nonunion, deep infection, and extensor tendon rupture. Interestingly, the time to removal of the dorsal distraction plate was not discussed in any of the papers, and the need for this is clearly a downside of the procedure. This technique is clearly a useful adjunct in the distal radius armamentarium, but we would not necessarily advocate its use for anything but the most severe of fractures. Overall, the data presented here show that the technique results in a reasonable range of movement and grip strength in what we assume would be otherwise extremely difficult-to-treat injuries. The evidence is, however, generally low-quality. Until randomized trials are performed, the use of dorsal distraction plating over other methods will be a matter for individual judgement and the debate will no doubt continue.



Scaphoid fracture geometrics: an assessment of location and orientation

Scaphoid fractures can be hard to treat, and an understanding of the anatomy of the injury and the fracture axis is useful to guide management. Authors from **Coventry** and **Leicester (UK)** have sought to improve our understanding by defining scaphoid fracture patterns by assessing fracture geometry on plain radiographs with the help of a high-resolution CT based scaphoid model.[3] CT scans were used to manufacture a 3D representation of the scaphoid bone that was scalable and had the ability to be rotated in 3D. The model was then applied to radiographs of confirmed scaphoid fractures and rotated until it aligned with the radiograph. This allowed the fracture to be plotted on the model and then manipulated in 3D. The study used a series of 423 scaphoid fractures, of which 44 were excluded as the fracture plane was difficult to identify, did not cross the scaphoid axis (i.e. tubercle fractures), or was the initial presentation of a nonunion. This left 342 male patients and 37 female patients with confirmed scaphoid fracture that could be analyzed by the model. The mean location of all fractures was at the exact midpoint of the scaphoid axis, and this was also the most common location of fracture, with 34% of fractures identified in the central 10% of the scaphoid. Commonly, the fracture plane was between 70° and 90° to the axis in 40%, and more extreme angles

were typically found with fractures at either pole of the scaphoid. Men were more likely to suffer proximal fractures compared with women. Interestingly, the more proximal fractures appeared to have a higher rate of union, although when the most proximal and distal injuries were excluded, there was no difference in union rate for the various waist fractures. As with many basic science papers, this work raises ideas that we can apply to our clinical practice rather than outright answers. Perhaps most importantly, this study demonstrated that, while many fracture planes are close to perpendicular to the scaphoid axis, many planes are at a significant obliquity. Thus, in an acute displaced fracture, screw positioning along the scaphoid axis may cause inadvertent shear at the fracture site and displacement. In addition, fractures with increased obliquity tend to occur in the more proximal and distal aspects of the scaphoid. While nonunion has always thought to be have been more prevalent in proximal injuries, perhaps the obliquity, and by inference the instability, of the fracture is of significance. This raises the possibility of selective fixation for those injuries thought to be unstable.

Carpal tunnel decompression in primary care: what is the infection risk and is it effective?

In the current healthcare environment, cost saving is a significant driver in almost every aspect of health and social care provision. However, this should only be a driver for change where safety and clinical effectiveness can be maintained. One practice that is becoming increasingly popular is performing carpal tunnel decompression outside of the normal theatre environment, with the logic that a smaller operation can be undertaken with less than the usual precautions or skill. Authors from **Kettering (UK)** have, therefore, explored the effectiveness and the infection risk when this practice is adopted.[4] A single surgeon series of 460 consecutive carpal tunnel releases over five years were performed in a community primary care setting (a treatment room with no mechanical ventilation). The patients were seen in a one-stop fashion, but all had already received prereferral electrodiagnostic studies. Surgery was completed under local anaesthesia, using a tourniquet and with no prophylactic antibiotics. The hand was prepared and isolated with field sterility and the surgeon was masked and wore sterile gloves. Instruments were single use, and nonabsorbable monofilament sutures were removed by the general practitioner two weeks postoperatively. All patients were asked to complete the Boston Carpal Tunnel Questionnaire preoperatively and six months postoperatively. Postoperative infection was the primary outcome and was identified as any potential infective episode documented on a national clinical information system able to track patient episodes and treatment. There were 17 bilateral synchronous carpal tunnel releases performed. Three patients (0.65%) had superficial infections identified that required treatment with antibiotics. No deep infections requiring an additional surgical procedure were reported. In all, 318 patients (69%) completed preoperative and six-month postoperative questionnaires. The mean symptom severity score significantly improved from 3.11 preoperatively to 1.66 postoperatively, with the functional severity score also significantly improving from 2.79 to 1.63 over the same period. Age over 60 years was a risk factor for a weaker improvement in overall score. The authors also discuss some of the limitations of the study, which include the observation that when patients attended an alternative hospital with infection and were prescribed antibiotics, this would potentially be missed by the system, leading to under-reporting. However, we suspect most patients would return to their general practitioner. The authors have, therefore, demonstrated that carpal tunnel release can be performed to good clinical effect and with a low infection rate in a nontheatre clinical setting without mechanical ventilation or surgical scrub. This is obviously a valuable and important message whether this procedure is performed in hospital or community buildings. Overall, although this is a simple study with no comparator group, it seems to suggest that community-based carpal tunnel release can be effective and safe, when undertaken by an appropriately trained surgeon in a treatment room setting.

Distal radius fractures and intraoperative CT? X-ref

CT guidance to improve surgical accuracy is a technique being developed in a significant number of areas within orthopaedics but has not yet gained huge traction in trauma surgery. This paper from **Osaka (Japan)** evaluates its use in the treatment of patients needing surgery for complex articular distal radius fractures with volar locking plates.[5] The authors report a small but interesting comparative series of 12 patients undergoing CT guided surgery compared with 16 patients undergoing surgery using traditional fluoroscopy in a different hospital. The CT guidance required some preparatory surgery: a guidance device was fixed to the radius with wires, the bone surfaces were marked using a tracking pointer, and the fracture was stabilized with a volar locking plate. On-table CT was performed to verify implant and fracture position. Postoperative CTs and radiographs were reviewed in a nonblinded manner for articular gap, step, and screw position, as well as distal radial metrics of palmar tilt, length, and inclination. Clinical metrics including grip strength, range of movement, the Mayo wrist score, and the Disabilities of Arm, Shoulder and Hand (DASH) questionnaire were recorded. The groups were of similar age, sex, and preoperative radiological factors, being of AO type C3.1. In the non-navigated group, 6/136 screws (4.4%) penetrated the joint, compared with zero of 106 in the navigated group. Similarly, 11/136 (8.0%) penetrated the dorsal cortex in the non-navigated group compared with 2/106 in the navigated group. Intra-articular fracture gap was significantly greater in the non-navigated group compared with the navigated group at 1.6 mm and 0.5 mm, respectively, but there were no differences in any of the other radiological parameters. Perhaps most importantly, there were no demonstrable differences in any of the clinical outcomes assessed. The problems of overlong or intra-articular screws are well known, and any technique that minimizes these complications should be considered. It is unclear whether the 3D navigation or the intraoperative CT facilitated better screw placement. It is not stated how the dorsal cortex and articular surface were assessed using fluoroscopy, and whether additional views, such as an inclined posteroanterior and skyline view, were routinely performed. The authors also raise the issues surrounding intraoperative CT scanning, as navigated patients had an average of 2.6 scans performed during surgery, which is likely to be a significantly higher dose of ionizing radiation that fluoroscopy. The additional time taken to obtain these scans and to place the navigation device is not discussed but is likely to be of significance, as the surgical team had to leave the theatre while the scan was performed. Finally, given the small sample size, it is difficult to assess the true importance of the differences identified. Like many previous examples of navigation, it would seem that, while the process can produce better radiographs, the additional clinical benefit remains unproven.

Ibuprofen and aspirin *versus* codeine and acetaminophen for soft-tissue hand procedures

The use of opiate-based analgesia is currently a source of much discussion. Due to opiate dependency becoming an established concern worldwide, there is a drive to reduce overall opiate usage. This randomized double-blinded controlled trial from **Hershey, Pennsylvania (USA)** sought to determine whether there were any differences in patients undergoing day-case elective hand surgery between either acetaminophen 325 mg

(paracetamol) and 5 mg hydrocodone, or 500 mg paracetamol and 400 mg ibuprofen.[6] Patients undergoing surgery for carpal tunnel syndrome, trigger finger, de Quervain's disease, and ganglion excision were randomized and received two blinded bottles containing capsules. In the opiate group, the first bottle contained the combined paracetamol/hydrocodone preparation and the second contained a placebo. In the nonopiate group, one bottle contained paracetamol and the other contained ibuprofen. Patients were given identical instructions to take one pill from each bottle every four hours for one week or until pain-free, pain scores were recorded on a visual analogue scale (VAS) four-hourly prior to taking any medication, and diaries and unused medication were returned at the first postoperative visit at two weeks. The study was powered to detect a difference in pain VAS of 10 mm. Patients with chronic opioid use, chronic pain, fibromyalgia, recent upper gastrointestinal bleed, coagulopathy, renal impairment, or liver disease were excluded. Of 315 screened patients, 72 met the inclusion criteria. Interestingly, while one patient declined participation for fear of inadequate analgesia in the nonopiate group, 17 patients declined involvement when they discovered they could avoid opiates all together. Thus, 72 patients were recruited into the study, with 12 subsequently withdrawn due to lack of compliance with pain diaries, surgery cancellation, or change of mind concerning participation. There were 32 carpal tunnel releases, 16 trigger digit releases, eight ganglion cyst excisions, and four de Quervain's releases. All procedures were performed under local anaesthesia, except two that were performed under general anaesthesia. There were no differences in the reported pain scores or need for rescue analgesia between the two groups when considering all procedures. Although subgroup analysis of the carpal tunnel procedures alone was probably underpowered, it was undertaken and showed no differences. From a side effects and medication toleration perspective, instances were more common in the opiate group. The sample sizes could have been larger and this would make the findings of the study more reliable, particularly given the heterogenous type of procedures and anaesthetic techniques used. However, a straightforward take-home message is that day-surgery minor soft-tissue hand procedures are unlikely to require opiate analgesia.

Steroid injection and percutaneous trigger finger release: a randomized controlled trial

Trigger finger release is a commonly performed procedure and there is the belief in some circles that following the surgical release with an injection can be effective in combatting postoperative adverse symptoms, such as swelling, stiffness, and pain. While a simple and relatively straightforward question, there is little data to inform us one way or the other. Here at *360*, we applaud this group from **Seoul (South Korea)** who sought to answer this particular question with a prospective, single-centre randomized controlled trial.[7] The trial consisted of parallel groups of either percutaneous A1 pulley release alone, or the same procedure with an added corticosteroid injection. A pilot study had been previously performed in 2012 to ascertain the likely effect size of the injection and guide the power calculation. In all, the authors screened 163 patients over an 18-month period and those with conditions such as rheumatoid arthritis, type I diabetes, infection, and multiple previous steroid injections were excluded. The study team went on to report on the 112 patients who underwent randomization and were followed up with scoring at three weeks and three months postoperatively. Their operative technique was standardized in both groups and was performed by an experienced single surgeon. The procedure was percutaneous, and the subsequent steroid injection was also standardized and consisted of 20 mg of triamcinolone injected through the operative site onto the volar aspect of the flexor tendon. The outcomes were measured with a visual analogue scale pain score, a modified patient global impression of improvement, and a modified Quinnell grade (a clinical score of severity of trigger finger). In order to examine if the effect of the steroid was greater where the preoperative pain or contracture was worse, these groups were also subject to secondary subgroup analysis. The results demonstrated that at three weeks, subjective improvement in symptoms in the group with simultaneous steroid injection was significantly better. Interestingly, the pain score in patients without a steroid injection was significantly better at three months. No significant differences were identified in the modified Quinnell grade reported between the groups. The authors conclude that the steroid injection decreases pain and improves subjective outcomes in the early postoperative period, but we are unable to see that the data presented firmly supports that conclusion. The outcomes, as reported in this trial, are that the subjective impression of improvement was significantly better at three weeks and the pain scores were not different. Of greater concern would be the better pain scores at three months in patients who did not receive a steroid injection, as this would be the time that patients are returning to activity and employment. Therefore, our own conclusion would be that steroid injections are not indicated.

Can patients forecast their postoperative disability and pain?

As surgeons, we are all familiar with the concept of predicting our winners in terms of which patients will do well after surgery. We all appreciate that there are a vast multitude of factors involved, some that are measurable and some that are not. Taken as a whole, experienced clinicians almost universally feel that they are good at judging the factors that feed into the overall patient outcome. However, this is a somewhat unscientific process in which there is clearly a range of abilities. This interesting article from **Redwood City, California (USA)** focuses on the psychological mindset of the patient and whether the patient's own forecasting of disability and pain that they expect to experience after surgery correlates with actual outcomes.[8] The study was prospective and 118 patients undergoing all types of upper limb surgery under the care of one surgeon were enrolled in the study over a 15-month period. Patients were sent questionnaires asking them to forecast their upper limb disability in terms of their Disabilities of Arm, Shoulder and Hand (DASH) score and their pain in terms of their visual analogue scale (VAS) score for two weeks after the procedure. The questionnaire also queried a number of psychological variables including the general self-efficacy scale, the pain catastrophizing scale, and the patient health questionnaire depression scale, as well as demographic and socioeconomic variables. Overall, 32 patients did not complete their postoperative questionnaires and so were excluded. At two weeks postoperatively, the actual DASH and VAS scores were completed and the results were analyzed. Overall, the patient forecasted postoperative disability was moderately correlated with realized postoperative disability, but the forecasted pain was only weakly correlated with postoperative scores. Approximately half of patients were able to predict their scores within the range of the minimally clinically important difference. Preoperative symptoms of depression correlated with increased realized postoperative pain and disability and catastrophic thinking correlated with increased realized postoperative pain. Interestingly, depressed patients had poorer pain scores postoperatively than they predicted. Overall, patients undergoing hand surgery can moderately effectively forecast their postoperative disability. As surgeons, we may be able to focus on patients who are likely to experience greater disability compared

with the average, and potentially amend mindset, resilience, and expectations. We commend the authors of this paper, as this is certainly an important but understudied area of our field.

REFERENCES

1. Dunlop RLE, Wormald JCR, Jain A. Outcome of surgical repair of adult digital nerve injury: a systematic review. *BMJ Open* 2019;9:e025443.

2. Perlus R, Doyon J, Henry P. The use of dorsal distraction plating for severely comminuted distal radius fractures: A review and comparison to volar plate fixation. *Injury* 2019. (Epub ahead of print) PMID: 31040029.

3. Garala K, Dias J. Scaphoid fracture geometrics: an assessment of location and orientation. *J Plast Surg Hand Surg* 2019;53:180-187.

4. Palial V, Kheiran A, Siddiqui S. Carpal tunnel decompression in primary care: what is the infection risk and is it effective? *Ann R Coll Surg Engl* 2019;101:353-356.

5. Kaneshiro Y, Hidaka N, Yano K, et al. Intraoperative computed tomography with an integrated navigation system versus freehand technique under fluoroscopy in the treatment of intra-articular distal radius fractures. *J Plast Surg Hand Surg* 2019;28:1-5.

6. Weinheimer K, Michelotti B, Silver J, Taylor K, Payatakes A. A prospective, randomized, double-blinded controlled trial comparing ibuprofen and acetaminophen versus hydrocodone and acetaminophen for soft tissue hand procedures. *J Hand Surg Am* 2019;44:387-393.

7. Jegal M, Woo SJ, Il Lee H, Shim JW, Park MJ. Effects of simultaneous steroid injection after percutaneous trigger finger release: a randomized controlled trial. *J Hand Surg Eur Vol* 2019;4:372-378.

8. Alokozai A, Eppler S, Lu L, et al. Can patients forecast their postoperative disability and pain? *Clin Orthop Relat Res* 2019;477:635-643.

Shoulder & Elbow

X-ref ***For other Roundups in this issue that cross-reference with Shoulder & Elbow see: Sports Roundups 1 & 4; Children's orthopaedics Roundups 5 & 7; Research Roundups 3 & 5.***

Chronic opioid use following shoulder arthroscopy: who is at risk?

The opioid epidemic is prominent in the media and has been the subject of several studies in the orthopaedic literature. While the epidemic within North America is well documented, there are also data to suggest a rising prescription of strong opioids in Europe. The potentially unnecessary prescription of opioids within orthopaedic surgery has been reported, with a recent randomized trial concluding that paracetamol was not inferior when compared with paracetamol combined with tramadol for patients undergoing surgery for a limb fracture. This has been coupled with the significant publicity surrounding some of the newer 'less dependent' opioids, such as oxycontin and oxycodone, suggesting that they have been mismarketed and may be as addictive as traditional opioids. In this retrospective case-control 'big data' study from **Detroit, Michigan (USA)**, the authors utilized insurance claims information from the Truven Health MarketScan Research Databases.[1] The authors identified all opioid-naïve patients who underwent shoulder arthroscopy in a five-year period and then used this as their study baseline population. The study was designed to establish the new onset incidence of opioid dependence in this previously naïve cohort following relatively minor surgery. The primary outcome measure for this study was new prolonged opioid use, which the authors defined as continued opioid use 91 to 180 days following the index surgery. From the total cohort of 104154 patients, the authors found that 8.3% (n=8686) had prolonged opioid use, as per their definition of greater than three months use. The highest rates of prolonged use were seen following limited debridement surgery (9.0%), rotator cuff repair (8.5%), anterior labral repair (8.5%), and an extensive debridement procedure (8.2%). On multivariate logistic regression analysis, female sex, pre-existing pain disorders, a high total opioid use in the perioperative period of ⩾743 oral morphine equivalents, patients with a background of a mood or anxiety disorder or self-harm, alcohol dependence, and an opioid prescription in the 30 days preceding the surgery were all associated with prolonged opioid use. These authors went on to conclude that the high-risk groups they have identified should be closely monitored in the post-operative period. Despite the limitations of this study, it is another useful addition to the literature highlighting the issues associated with opioid use following orthopaedic surgery. It is clear that more research is required on how to best manage those patients at risk of developing opioid dependence.

Steroid injections prior to arthroscopic rotator cuff repair: what is the risk of infection?

There have been numerous papers recently looking at the risks associated with preoperative injections in patients undergoing arthroscopic rotator cuff repair. One study has recently found that patients who underwent an injection within six months prior to surgery had a higher risk of revision cuff repair within the first three years following the index procedure. This is a difficult topic, with surgeons worrying that steroid may increase infection rates, but with patients needing symptomatic treatments and many not requiring surgery if the injection is successful. Until now, there has not been a definitive answer from a large dataset, which is a significant omission in the literature given the relatively low point prevalence of infection. In this multicentre study from across the **United States**, the authors utilize 'big data' to determine if patients who undergo a steroid injection in the year prior to arthroscopic rotator cuff repair are at increased risk of postoperative infection.[2] The study identified 12060 patients who had undergone an injection and compared them with a control group of 48763 patients without a prior injection, all of whom underwent an arthroscopic cuff repair during the period of the study. The primary outcome measure was a documented surgical site infection within six months post-surgery. On primary univariate analysis, there was no difference in surgical site infection rates between the two groups (0.7% *vs* 0.8%; p = 0.2). However, when stratified by month, patients who received an injection in the month prior to surgery did have a significantly higher infection rate (1.3% *vs* 0.8%; p = 0.04). Multivariate logistic regression analysis revealed that male sex, obesity, diabetes, smoking, and a steroid injection in the month prior to surgery were independent factors associated with an increased rate of surgical site infection. The authors conclude that despite an increased risk of infection associated with a corticosteroid injection in the month prior to surgery, there is no increased risk if the injection is performed before this. There are limitations to this study, including: the unknown quality of the database used, in particular the fidelity of the event rates; the lack of other baseline data that could be important in determining the risk of infection, such as surgical details and technique; the potential for late infections; and the higher number of older patients included. However, this study, along with other recent research, does