

ROUNDUP³⁶⁰

Trauma

Fibula-pro-tibia plating – a technique for porotic bone

■ Sometimes osteoporosis makes it difficult to gain purchase of a screw into the diaphyseal bone of the tibia when internally fixing an ununited fracture. A group from **Assiut (Egypt)** has studied this issue and reported 30 patients treated over an eight-year period. With their technique, they inserted one or more screws through the tibial plate, across the tibiofibular space, and into the fibula. This is so-called fibula-pro-tibia plating. With a mean follow-up of 26 months, the group reported a mean healing time of 3.5 months with no negative effect on the movement of the ankle joint.¹ An effective variation for plating a diaphyseal tibial non-union, in 360's view.

Galeazzi fractures – a helpful review

■ Meanwhile, an interesting review article has appeared from **Toronto (Canada)** summarising the management of the common Galeazzi fracture. 360 feels this is particularly important because, as the article suggests, misdiagnosis or inadequate management can result in disabling complications such as instability of the distal radioulnar joint, malunion, chronic wrist pain and osteoarthritis. Non-surgical management with an anatomical reduction has been successful in children but tends to fail in adults. In this latter group open anatomical reduction and internal fixation is the preferred surgical option.²

Distal radial fractures in the over 65s – fix or manipulate?

■ For patients over the age of 65 years, 360 has noted that there is often a debate as to whether or not their fractures, wherever they occur, should be treated surgically or conservatively. Certainly for distal radial fractures there has been a recent trend towards internal fixation for the older age groups. Researchers from **Innsbruck (Austria)** have looked at this in a Level I study of 73 patients with displaced and unstable fractures of the distal radius. The patients were randomised to either open reduction and internal fixation or closed reduction and cast immobilisation. Pain, range of wrist movement, complications, dorsal radial tilt, radial inclination and ulnar variance were measured, as well as Patient-Rated Wrist Evaluation (PRWE) and Disabilities of the Arm, Shoulder and Hand (DASH) scores. Interestingly, there were no significant differences between the groups in terms of range of movement or pain during the entire follow-up period. Patients who were internally fixed had better wrist function in the early postoperative period but by six and 12 months the two groups were similar. Surprisingly, achieving an anatomical reduction did not convey any improvement in terms of range of movement or the ability to undertake activities of daily living. Unsurprisingly perhaps, there was a significantly higher chance of complications in the internally fixed

group.³ 360's view? We are less than one year old so conservative treatment applies to us. But when we reach 65 years of age? Perhaps stick us in plaster once again and see.

Transverse sacral fractures – hard to diagnose

■ Transverse fractures of the sacrum are sometimes very difficult to diagnose. This is an area looked at by a group from **Santiago (Chile)**. Although these fractures generally occur in association with severe trauma and neurological impairment or as insufficiency fractures after low-energy trauma, the researchers have identified a third group of patients without these features. The team looked at 42 patients presenting to their unit with an isolated transverse sacral fracture over a nine-year period and followed them up for a mean of 22 months. There were 34 (80%) who had sustained low-energy trauma but only two (4.8%) who presented with neurological impairment. The authors recommend sacrococcygeal CT scanning in case of doubt but also note that the fractures do well with conservative treatment. All their patients were free of pain six months after any accident and no patient required compensation for disability.⁴

Acute dislocation of the knee

■ An acute dislocation of the knee is a major injury by any standards, as highlighted by a group from **Bristol (UK)**. They report that the evaluation and management of this problem is still controversial but that

appropriate early management has a significant impact on long-term functional outcome. The group also noted how a dislocated knee joint is actually an underdiagnosed injury and that diagnosis relies on a high index of suspicion at presentation.⁵ 360's view is that although this is simply a review article that has looked at the recent literature in some detail, standing that alongside the group's own management, it pays to focus on this serious injury. Inadequate treatment, or even missing the diagnosis, can lead to disaster.

Posterior malleolar fractures – fix or manipulate?

■ The isolated posterior malleolar fracture of the ankle can sometimes be a challenge. Should it be manipulated or fixed? A team from **Nijmegen (The Netherlands)** has looked at this by assessing the 20-year outcome of 19 patients with this injury who had originally been treated with manipulation and cast immobilisation. The results were impressive, with 14 (74%) having excellent or good function, 16 (84%) showing satisfactory anatomical alignment and 18 (95%) showing little osteoarthritic change.⁶ Clearly, conservative treatment is the way forward for these fractures, concludes 360.

Immobilising the broken scaphoid

■ The management of the fractured scaphoid is a regular feature in the orthopaedic literature as it is such a common injury. Although

some form of immobilisation would be the first port of call for many after injury, the nature of that immobilisation varies widely. Researchers, this time from **Amsterdam (The Netherlands)**, have undertaken a meta-analysis to compare non-operative methods of scaphoid immobilisation and found a total of 523 patients from four trials. Two of the trials had compared below-elbow with above-elbow casting, one had compared including the thumb in a scaphoid cast *versus* excluding it, while the fourth had used a below-elbow cast with the wrist in either 20° of flexion or extension but with both types excluding the thumb. 360 was interested to find that the authors found no differences in union rate, pain, grip strength, time to union or osteonecrosis for any of the methods used. Keeping it simple clearly applies to the immediate treatment of the fractured scaphoid.⁷ Below-elbow and thumb free for 360, please.

The terrible triad

■ The so-called 'terrible triad' describes a combination of posterior dislocation of the elbow, a fractured coronoid process and a fracture of the radial head. The coronoid process itself plays a pivotal role as an anterior buttress of the elbow joint yet the best management for its fracture remains unknown. So writes a team from **Durham (USA)**. The researchers hypothesised that suture lasso-fixation of the fractured coronoid would lead to fewer complications than if screw or suture-anchor fixation was used. Although this was only a retrospective chart review from three tertiary care centres, 40 consecutive patients with terrible triad injuries were identified and followed up for a mean of two years. All had been treated by repair or replacement of the radial head, repair of the lateral collateral ligament of the elbow, and repair of the coronoid

fracture with either a lasso technique (28 patients) or open reduction and internal fixation with either screws or suture anchors (12 patients). In brief, suture lasso won, providing greater stability and fewer complications than screws or suture anchors.⁸ A shame this was not a Level I study, 360 feels, but a useful finding all the same.

Lower-limb amputation after trauma

■ Tragically, but perhaps unsurprisingly, the military have a long experience of lower-limb amputation after trauma. Consequently, a publication from **Birmingham (UK)** by the Royal Centre for Defence Medicine makes interesting reading. Shorter residual limbs are known to place greater physiological strain on patients than longer residual limbs, but should one opt for a through-knee rather than a below-knee amputation? The author undertook a large search of multiple databases as well as approaching more recent authors for any unpublished details. The result was an impressive total of 3105 patients, 1855 of whom had received a below-knee amputation, 104 a through-knee, 888 an above-knee, while 258 were bilateral amputees. The finding was clear – the more proximal the amputation the worse the outcome. Certainly, patients with a through-knee amputation had a better physical quality of life than those with an above-knee.⁹ It makes sense, 360 notes, to preserve length where one can and to opt for a through-knee rather than an above-knee amputation whenever possible. Did we know this all along? We might have done. However, it pays to reinforce this message.



Whiplash injury

■ Whiplash injury is frequently associated with road traffic accidents and is a major reason for compensation claims. A fascinating publication from **Hong Kong (China)** has looked at

this by trying to prospectively predict neck pain after motor vehicle collisions. The researchers identified 221 male and 85 female patients who had sustained acute fractures of the humerus, radius, ulna, pelvis, femur, patella, tibia, talus or calcaneum in a road traffic accident. No patient had sustained a cervical spine injury. Of the 306 patients, 232 (76%) completed a six-month questionnaire. Neck pain was measured by adapting the bodily pain questions from the SF-36 general health survey.¹⁰ The presence of neck pain at this point was significantly associated with three things – female gender, primary-level education only and, wait for it says 360, the use of a lawyer. Unsurprisingly perhaps, there is more to post-accident neck pain than meets the eye.

■ A complex pilon fracture of the ankle can be a surgical nightmare so a paper from **Shanghai (China)** is of interest. Surgeons used a two-stage technique for the fracture. Their protocol comprised an immediate internal fixation of the fibula using a plate and the application of an external fixator spanning the ankle joint. The patient is then discharged. Once the soft-tissue swelling has settled, normally ten to 14 days later, a minimally invasive plate osteosynthesis is performed. Artificial bone is injected into any defect rather than open surgery being performed. The team report on 29 patients and found there to be

no superficial or deep infections and a mean healing time of 6.7 months after the second-stage procedure. All the patients had normal function of their ankle joints.¹¹ Impressive work, 360 feels, particularly as infection seems to have been avoided.

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