Results: An average of 4.7 X-rays were performed on each patient from the time of diagnosis to discharge from clinic. None of these fractures displaced on follow up X-rays.

Conclusion: Stable undisplaced ankle fractures treated conservatively with a below knee non-weight bearing cast do not displace. Hence these patients do not require to be followed up frequently with serial X-rays as they may be exposed to unnecessary harmful radiation and follow up appointments thereby saving time, money and resources.

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1B.58

Management of geriatric ankle and distal tibial fractures with percutaneous tibiotalocalcaneal nail

V. Upadhyay, S. Rajagopalan, D. Panchal, A. Sangar, M. Farrar, H.P. Taylor

Department of Trauma and Orthopaedics, Poole Hospital NHS Foundation Trust, United Kingdom

Introduction: The management of osteoporotic ankle fractures is difficult and controversial. A number of techniques have been described to overcome the problem of poor bone quality. We will discuss the indications for closed hindfoot nailing, present our results and describe the surgical technique.

Methods: Between January 2007 and June 2009, 23 elderly patients were referred to our Foot and Ankle Unit with osteoporotic ankle fractures. These were managed with closed hindfoot nailing and partial to full weight bearing mobilisation post-operatively as the fixation provided sufficient stability.

Results: There were 23 patients, of whom 22 were female. 11 patients have died within 1-year period of the study, 5 of whom died within 30 days of surgery. Average age was 89y (range 67–99 years). Average Olerud and Molander score at follow-up was 49.7 (range 25–70). One of the nails required removal due to loosening of nail without significant infection. All fractures united without further intervention. There were two superficial wound infections, two patients had pain at the nail insertion site and one patient suffered worsening of peripheral vascular disease requiring amputation.

Conclusions: We believe closed hindfoot nailing is a good option in this elderly, osteoporotic group with unstable fractures around the ankle. Whilst the patients often have numerous co-morbidities, this technique is relatively straight forward, has a low complication rate, and allows good fixation with early weight bearing mobilisation post operatively, as opposed to a period of non weight bearing (often resulting in no mobilisation in the elderly and consequent morbidity) required with standard ORIF with plate and screws.

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1B.59

Rupture of Achilles tendon: operative and non-operative management

R. Kearney, M.L. Costa, J. Achten, N. Parsons

University Hospitals Coventry and Warwickshire/University of Warwick, United Kingdom

Introduction: Rupture of the Achilles tendon is a disabling condition, affecting 18 per 100,000 people/year in the UK. Randomised controlled trials have shown that immediate weight-bearing mobilisation provides functional benefits without increasing complications. This pilot randomised controlled trial, compared operative with non-operative management of Achilles tendon ruptures using the same immediate weight-bearing rehabilitation for both groups.

Materials and methods: Twenty patients with an acute rupture of the Achilles tendon were randomised to 'operative' or 'non-operative' management. The same rehabilitation protocol was followed for both groups, full weight bearing within an orthotic using an orthotic for 8 weeks.

Patients were reviewed at 6 weeks and 3, 6 and 9 months. The primary outcome measure was the Disability Rating Index, a validated patient reported outcome measure. Secondary outcomes included EQ-5D, Achilles Total Rupture Score and complication rates.

Results: Thirteen men and seven women, aged 36–75 years consented to take part. Ten patients were randomised to each group; one patient crossed-over from operative to the non-operative management and one was lost to follow-up at 6 months. One re-rupture occurred in the non-operative group, and three superficial wound infections in the operative, which resolved with a short course of antibiotics.

Statistical analysis showed no significant difference between the two groups at any time point in relation to any of the patient reported outcome measures.

Discussion and conclusion: The aim of this pilot randomised controlled trial was to compare operative with non-operative management using an immediate weight-bearing rehabilitation protocol. This study showed no significant differences between the groups in relation to validated patient reported outcome measures. Furthermore, both groups had returned to their pre-injury scores at the 9-month time point.

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2B.1

Volar locking plates: how much rigidity is needed for adequate fracture fixation?

S. Baliga, A.J. Johnstone, S. McKenna

Aberdeen Royal Infirmary, Department of Trauma Orthopaedics, United Kingdom

Background: Angular stable volar locking plates have become increasingly popular for more comminuted fractures of the distal radius. Newer designs of plates have been thicker in profile and incorporate more options for distal fragment fixation. Although they have been shown to be successful at maintaining reduction to allow early mobilisation the main drawback is from screw cut-out. In our practice we have noticed that the newer style of plates that offer more rigid fixation has lead to more instances of screw cut-out. We aimed to quantify the minimum number of locking pegs and or screws need to maintain the operative reduction.

Method: We retrospectively looked at a series of 46 patients that had undergone volar plating. We assessed the fracture severity on pre-operative films (according to AO classification) and compared radiographic parameters (volar tilt VT, radial inclination RI and radial height RH) on post-operative films. We calculated the amount of reduction lost from initial post-operative X-rays to radiographs taken when union was confirmed. We compared this to the number of locking units used to fix the distal radius and also the configuration they were inserted, i.e. the number in the radial and middle columns.

Results: The mean loss of reduction in all plates was 0.9 mm of RH, 2.2° of RI and 2.8° of VT. There was no difference in mean 'reduction lost' between plates that had a total of 2 or 3 locking units (RH 1 mm and 1 mm, RI 2.0° and 2.7° and VT 2.9° and 3.2°, respectively).