

The financial impact of diastasis screw fixation versus tight-rope fixation of injuries to the syndesmosis with fractures of the ankle

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In the UK, approximately 90,000 ankle fractures occur per year, accounting for the commonest fracture type in patients aged 20–65. These fractures may involve an injury to the tibiofibular syndesmosis which can lead to joint incongruency and an increased risk of developing secondary osteoarthritis. However, there is some debate as to the optimal method of repairing these injuries regarding the type of fixation device, its position, and if the device can remain in situ or requires removal prior to weight bearing.

The long-term complications associated with syndesmosis screw fixation include screw fracture and loosening, protruding screws heads, osteolysis, widening of the syndesmosis, inferior tibiofibular synostosis and patient anxiety to their presence. As a result, removal of the diastasis screw at 6 weeks is advocated by many surgeons. Tight rope suture fixation of syndesmosis injuries offers biomechanically equivalent results to screw fixation, and some evidence even suggests improvements in patient functional outcome. In addition, the use of tight rope sutures protects the patient from the risks associated with fixation device removal and may be more cost effective.

79 patients with ankle fractures who underwent open reduction and diastasis screw fixation of syndesmosis injuries between January 2007 and January 2009 were identified from the hospital Trisoft database system. The majority of the ankle fractures were classified as Weber C (72%) with the remainder of fractures classified as Weber B (28%). The mean time to diastasis screw removal was 53 days and 63 days for Weber B and C fractures respectively. 5 patients (6%) were discharged to other hospitals for follow up. Of the remaining patients, 6 patients (8%) did not have the diastasis screw removed for other medical reasons. The mean number of follow up clinic appointments was 3.7 following initial surgery, and 2.2 following diastasis screw removal.

We discuss the financial difference between diastasis screw and tight rope suture primary fixation of syndesmosis injuries in view of initial device costs, theatre time and follow up appointments.

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Fractures of the base of Vth metatarsal—should we treat them?

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Introduction: Closed fractures of the base of Vth Metatarsal are usually treated non-operatively. But there is an abundance of treatments ranging from plaster casting for 6–8 weeks at one extreme to no treatment at all at the other. The purpose of this study was to evaluate current treatments to see if it had any influence on the outcome, and if the outcome was similar in all the methods, to analyse their cost-effectiveness.

Materials and methods: A retrospective analysis of 100 patients' case notes, with isolated avulsion fractures of the base of 5th metatarsal between 1st January 2007 and 31st December 2007 was done.

Results: According to initial treatment patients fell into three groups:

(3) Fully weight bearing in walking boot $n = 24$.

Our results demonstrated that the patients in all three groups had union of their fractures and achieved a pain free foot. But, the patients in the tubigrip group required minimal follow up (maximum 1 follow up compared to an average three follow up appointments for cast and brace groups) and minimal plaster room support thereby turning out to be the best group economically as well. Therefore, a policy change was instituted at our hospital and all acute base of 5th metatarsal fractures are now treated with only tubigrip. This treatment method is currently being re-audited to close the loop and measure effectiveness.

Conclusions: Base of 5th metatarsal fractures can be simply treated in a tubigrip and allowed to weight bear as comfortable. They do not require any follow up and can result in significant cost savings for the NHS.

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Jones' fracture of the fifth metatarsal base or an avulsion fracture—do we really need to distinguish between them?

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Torg described three types of Jones' fractures and the emphasis for treatment has been either plaster cast and non weightbearing for at least 6 weeks for type 1 and 2 fractures and surgery for type 3 fractures. We conducted a study to determine whether treatment was actually required for type 1 fractures, whether patients needed to be weight bearing and if so for how long, time to fracture union and whether it is actually worthwhile distinguishing a Jones' fracture from a styloid avulsion fracture?

We had 43 patients. All of these fractures involved the meta-diaphyseal junction and were transverse in orientation involving the 4th–5th metatarsal articulation. 21 patients were treated with a below knee cast and kept non-weightbearing for at least 6 weeks. 22 patients had walking boot provided and allowed to weight bear as comfortable and progress to full weight bearing as soon as possible.

All fractures in the plaster cast group united by 8 weeks while one patient in the walking boot group went into delayed union and united at 16 weeks, but this was because he had a second episode of inversion injury to the foot while under treatment. All other patients in this group had achieved union by 7 weeks on average.

Thus, our results demonstrate that for type 1 Torg (acute) fractures, a plaster cast is not necessary, weight bearing can be allowed immediately rather than keep NWB for 6 weeks and this apparently seems to result in a slightly quicker union time (7 weeks vs. 8 weeks) and that actually we do not need to distinguish a Jones fracture from an avulsion fracture but we should rather determine the chronicity of the fracture at first presentation and if there is any suggestion that the fracture is Type 2/3 or stress fracture, surgical intervention should be given consideration.

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