

# Medial Subtalar Dislocation: A Case Report

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## Abstract

Subtalar dislocations are uncommon high energy injuries accounting for less than 1% of all dislocations. The vast majority, around 85%, are medial dislocations whereas the lateral type occurs much less frequently. We report the case of a 27 year old man who sustained an isolated medial subtalar dislocation following a low impact injury while playing football and discuss its management.

## CASE REPORT

A 27 year old man, otherwise fit and well, attended the Accident and Emergency Department after twisting his left ankle while playing football. He described hearing a

“cracking” noise. He did not report any direct trauma to his foot. He was subsequently unable to weight bear. Physical examination revealed that the foot was inverted and plantarflexed with significant tenderness and swelling. The skin was intact and there was no neurovascular deficit. Radiographic images of his foot revealed a prominent talar head dorsolaterally with simultaneous disruption of the talonavicular and talocalcaneal joints (Fig. 1). There were no associated talar fractures. A diagnosis of medial subtalar dislocation was made.

## Figure 1

Figure 1: Radiographs showing dislocation at the talonavicular and talocalcaneal joints.



**Figure 2**



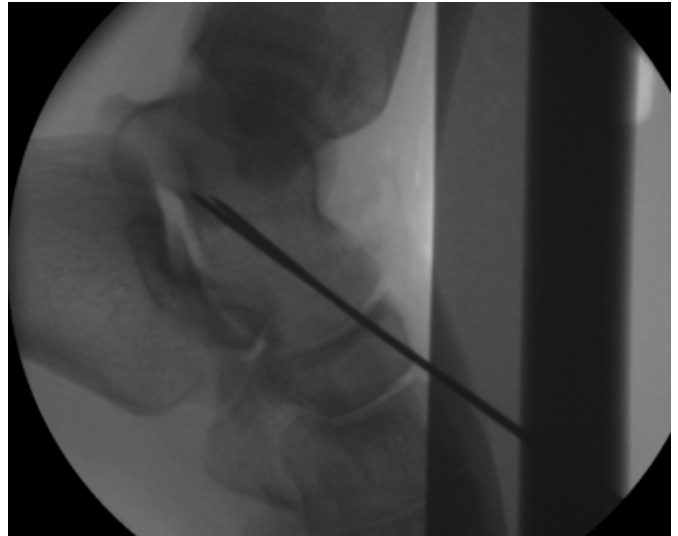
Attempts at closed reduction under conscious sedation in Accident and Emergency and even under general anaesthetic failed hence open reduction was performed. This was done via a dorsolateral approach. Reduction occurred spontaneously after incision of the talonavicular joint capsule. Two parallel K-wires were inserted to stabilise the talonavicular joint (Fig. 2).

**Figure 3**

Figure 2: Intraoperative images showing stabilisation of the talonavicular joint using K-wires.



**Figure 4**



The patient was immobilised with below knee cast and was instructed to non-weight bear with crutches for 6 weeks. Post-operative plans are to remove the K-wires in six weeks post insertion, start physiotherapy and follow-up with X-rays mainly looking for signs of avascular necrosis.

### DIAGNOSIS

Medial subtalar dislocation without any associated fracture.

### DISCUSSION

A subtalar dislocation involves a normal tibiotalar joint and disruption of the talocalcaneal and talonavicular joints. Subtalar dislocations are rare accounting for approximately 1% of all dislocations.<sup>1</sup> 85% are medial dislocations with the other 15 % accounting for lateral and the very rare anterior and posterior dislocations.

Medial subtalar dislocations occur following inversion injuries and result in medial displacement of the foot and the calcaneus. The head of the talus can be seen dorsolaterally and the navicular lies medial and sometimes dorsal to the talar head and neck. This type of injury is frequently called “basketball foot”. In lateral subtalar dislocations the calcaneus is displaced lateral to the talus and the talar head can be seen medially while the navicular lies lateral to the talar neck. The lateral type usually follows an eversion type of injury. Inversion or eversion injuries are capable of producing subtalar dislocations because the force can not disrupt the strong calcaneonavicular ligament but is dissipated through the weaker talonavicular and talocalcaneal ligaments, causing disruption of the respective joints.

Subtalar dislocations are commonly accompanied by fractures of the malleoli, the talar bone or the fifth metatarsal. Lateral or open dislocations are more likely to be associated with tarsal fractures.<sup>2</sup> In our case report, a rare isolated medial subtalar dislocation, without any associated fractures was diagnosed and treated.

Subtalar dislocations can be treated conservatively with closed reduction and follow up computerised tomography scan in order to assess the reduction and rule out any osteochondral lesions. However, in 10% -20% of cases closed reduction is unsuccessful and open reduction is indicated. The main obstacles preventing closed reduction are soft tissue interposition such as the tibialis posterior tendon and bony fragments.<sup>3</sup> In our patient's case, we believe the talonavicular joint capsule became interposed and prevented reduction. Reduction should be carried out immediately in order to avoid the early complications of skin necrosis, deep infection and neurovascular compromise. Late complications include avascular necrosis of the talar bones, post traumatic arthritis and osteoporosis due to long term

immobility.<sup>4</sup> Complications are more likely to follow lateral or open dislocations. Hence close follow-up is essential.

### **TEACHING POINT**

Subtalar dislocations are rare injuries. They should be reduced as soon as possible to avoid soft tissue and circulatory complications. If closed reduction is unsuccessful, open reduction and stabilisation is indicated. K-wires form one method of achieving this.

### **References**

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