

# Closed total talar dislocation—a case report

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## Abstract

Total dislocation of the talus with dislocation of the talonavicular, subtalar and ankle joint is an extremely rare injury. Coltart in 1952 included no fracture total talar dislocation in his classification system<sup>[1]</sup>. Leitner considered subtalar dislocation to be the preliminary stage to total talar dislocation<sup>[2]</sup>. He stated that severe supination or inversion forces lead to medial subtalar dislocation followed by lateral total dislocation. A literature review revealed previous reports of open total talar dislocations<sup>[3,6,7]</sup>. We report a successful case of a closed total talar dislocation, which required an open reduction.

## Keywords

Closed total talar dislocation; open reduction, successful outcome.

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## Case report

A 17-year-old man was presented to Accident & Emergency department complaining of pain below the right ankle and the medial aspect of the talonavicular joint of the right foot. An obvious deformity was noted. The injury was sustained when a heavy metal cage rolled down an incline onto his right foot. When examined he had a pronated and abducted foot, with very tense skin on the medial aspect of his ankle. He had a palpable dorsalis pedis but no palpable tibialis posterior pulsation. He had a sluggish capillary return with a refill time of 4 s. He had an intact sensation over his sole but had restricted movement of his toes, which appeared to be plantar flexed. Radiographs of the ankle from the frontal and lateral views (Fig. 1(a) and (b)) revealed medial rotation of the talus in the ankle mortise, with the head of the talus pointing medially and the rest of the foot displaced laterally. Following a failed closed manipulation under sedation in A & E, the patient was taken to theatre for an open reduction of the dislocation. Under a general anaesthetic and tourniquet control, the dislocation was initially approached through a lateral incision. Fragments of bone from the body of the talus lying in the ankle mortise were excised but it was impossible to free the talar head. Through a medial incision the head of the talus was approached. The head of the talus had buttonholed between the tendons of tibialis posterior and flexor digitorum longus. This was obstructing reduction of the tibiotalar, talonavicular, as well as the subtalar joint. The tibialis posterior tendon had to be divided after attempts to relocate the talus with the tendon intact failed. This allowed an easy relocation of the talus in the ankle, talonavicular and subtalar joint. The tibialis posterior tendon was then repaired with prolene stitches. The skin was loosely closed with interrupted prolene sutures. There was an improvement in the capillary return to the toes and the tibialis posterior pulsations could be easily felt following the open reduction. Radiographs of the ankle (Fig. 2) confirmed the reduction of the ankle and subtalar joint. The patient's wound was inspected after 48 h and there was no evidence of necrosis noted in the skin overlying the previously dislocated talar head. A below-knee cast was put on the patient with the ankle in slight inversion to splint the repaired tibialis posterior tendon. The patient was seen the following week in the follow-up clinic at which time the skin sutures were removed

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Fig. 1. Frontal and lateral views of total talar dislocation pre-operatively.

as the wound had healed by primary intention. A non-weight bearing short leg cast was applied for a period of 5 weeks and weight bearing was restricted for a further 3 weeks. Both foot and ankle regained full pain-free range of motion at 16 weeks. At 6 months there was no evidence of avascular necrosis of the talus on the radiographs.

## Discussion

Open reduction may be required after total talar dislocation, particularly with entrapment of the posterior tibial tendon or obstructing fracture fragments. Open reduction in our case was achieved by a combination of the surgical techniques described by Shelton and Pedowitz, and Delee<sup>[4,5]</sup>. Division of the tibialis posterior tendon to cause reduction of

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**Fig. 2.** Post-operative film which shows relocation of ankle, subtalar and talonavicular joint.

the talus, in our case, did not produce any complication in the post-operative period. A short period of immobilization can help protect the repair of the tibialis posterior tendon and can limit the loss of subtalar range of motion. Severity of injury accompanied with intra-articular fractures and open injury are factors influencing the prognosis. Avascular necrosis of the talus and infection are the most common complications that affect the outcome of these injuries<sup>[6]</sup>. If avascular necrosis develops it can be treated in most cases by weight bearing restrictions. Talectomy either alone or in association with a tibio calcaneal arthrodesis should be reserved for a later reconstructive procedure, particularly in the event of talus infection<sup>[7]</sup>.

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