

# Case report

## Avascular necrosis of the talus after a minimally displaced neck of talus fracture in a 6 year old child

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### 1. Case report:

A six year old boy was admitted after a heavy object fell onto his right foot. The radiograph showed a minimally displaced closed fracture of the neck of the talus (Fig. 1). The fracture extended into the talocalcaneal joint. There was an associated undisplaced distal tibial fracture (Fig. 2). A computed tomography scan confirmed the findings (Fig. 3). There were no other injuries. The foot was elevated initially and managed in a below knee cast. Six weeks after injury, radiographs showed increased density of the body of the talus and a healed undisplaced distal tibial fracture. The patient continued to have occasional discomfort and pain in the ankle joint. Two years after injury radiographic changes of avascular necrosis of the body of the talus were obvious. There was considerable irregularity with partial fragmentation of the dome of the talus particularly in the medial side (Fig. 4). At this stage an isotope bone scan showed increased activity at the dome of talus suggestive of attempts at remodelling and repair. A magnetic resonance imaging scan confirmed avascular necrosis of the body of the talus with considerable involvement of the dome of talus mainly involving the medial half of the articular surface (Fig. 5).



Fig. 1. Antero-posterior view of the right ankle showing a minimally displaced fracture of the neck of the talus.

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Fig. 2. Lateral view of the right ankle showing a hairline spiral fracture of the distal tibia.

This boy is able to lead an active life. He complains of ankle pain intermittently and is unable to take part in sports because of pain. He has developed a flexible valgus deformity of the hindfoot. To date no surgical intervention has been necessary.

## 2. Discussion

Thermann et al. [5] described a 13% incidence of foot fractures, 50% of which were involving metatarsals and phalanges. The incidence of talus fractures was found to be 0.008% of all childhood fractures [5]. These are treated non-operatively and do not usually cause problems in treatment. A long term follow-up study Inokuchi et al. [2] of eighty-six fractures of the talus revealed the poor outcome in talus fractures to be due to late stage osteoarthritis as a result of avascular necrosis and incongruity of the joint sur-

face. Avascular necrosis in a minimally displaced or undisplaced fracture has been reported in adults. Avascular necrosis of the body of the talus has been reported in children but only in association with fracture-dislocations of the talus [1,4]. Jensen et al. [3] reported an excellent long term prognosis of minimally displaced and undisplaced fractures of the talus in children.

A fracture of the neck of the talus is rare at the age of six. The case reported here is unique. To our knowledge there is no report of avascular necrosis occurring as a complication of an undisplaced or minimally displaced fracture of the neck of the talus in a child. Four years after injury this child already has pain on exercise. The long-term consequences of avascular necrosis in this case are yet to be realised. This case illustrates that a guarded prognosis should be given in talar neck fractures even when the fracture is undisplaced or minimally displaced and not associated with dislocation.

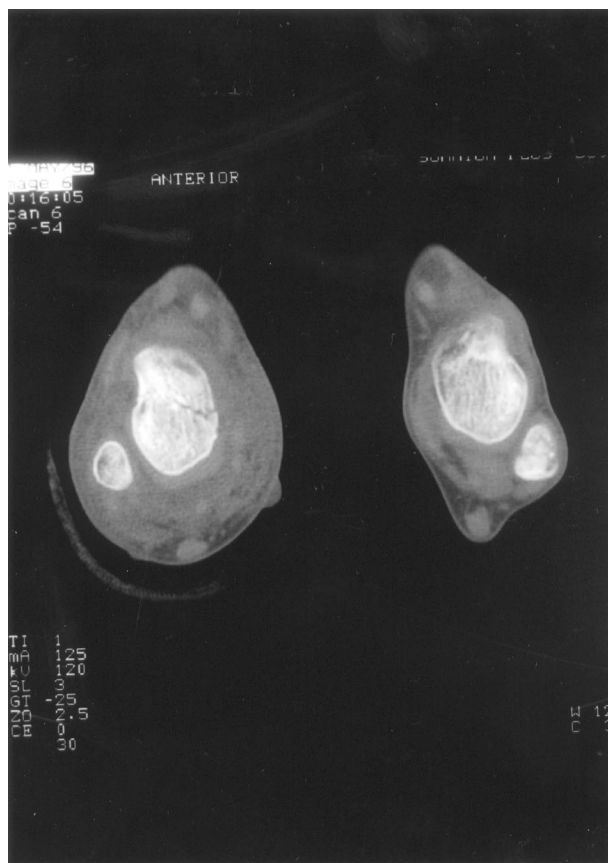


Fig. 3. Computerised Tomography illustrating a minimally displaced fracture of the neck of the talus.



Fig. 4. Antero-posterior view of the right ankle 4 years after injury showing loss of the medial dome of the talus as a result of avascular necrosis of the body.



Fig. 5. Magnetic Resonance Scan illustrating avascular necrosis of the medial dome of the talus.

## References

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