



Talus fracture associated with a fracture dislocation of the distal tibia in an immature skeleton

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A 12-year-old boy with a severe injury of his right ankle was treated in the accident unit. The local condition was an extensive open wound with parts of the fractured bones prominent. Radiographs showed a severely displaced fracture of the body of the talus associated with a Salter-Harris IV injury of the distal tibia and subluxation of the ankle. After proper debridement the fractured bones were reduced and fixed.

Eleven years later both fractures are completely healed without any sign of avascular necrosis, the patient has full painless ankle movement and he can perform his demanding occupation without any problem.

INTRODUCTION

Severe isolated injuries involving the ankle joint in the immature skeleton are frequently reported (4, 6, 7, 9). Fractures of the neck of the talus in children are not rare either (1, 3, 5, 8, 10). However traumatic injuries affecting both the ankle joint and the talus have not been previously reported in children.

The case reported is a rare combination of a fracture separation of the distal tibial epiphysis and a fracture of the body of the talus with subluxation (fig 1).

CASE REPORT

A 12-year-old boy was admitted in our department after a road traffic accident. He had sustained an isolated open fracture dislocation of his right ankle, after he was hit by an automobile at a speed of 25 Km/hr. He sustained no other injuries.



Fig. 1. — Fracture-separation (Salter-Harris IV) of the distal tibial epiphysis associated with vertical fracture of the body of the talus and avulsion fracture of the distal fibular epiphysis, in the frontal and lateral view. There is subluxation of the ankle joint.

His limb injury was an open (Gustilo IIB) fracture of the distal tibial epiphysis (Salter-Harris IV) and dislocation of his right ankle. The ankle was reduced in the emergency room. Surgical exploration

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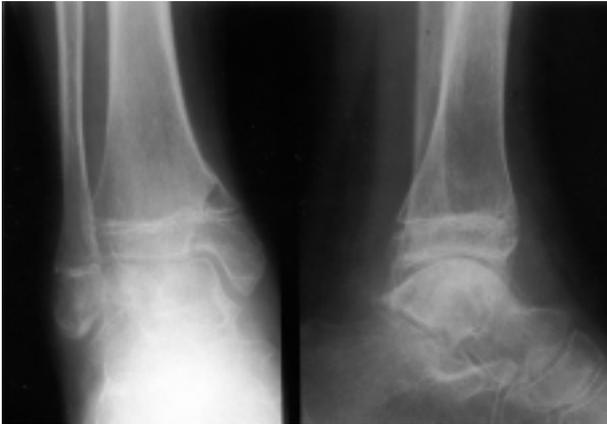


Fig. 2. — Healing of the fractures four months postinjury. Signs of limited avascular necrosis of the talus and the medial part of the distal tibial epiphysis, on anteroposterior and lateral view.

and debridement followed in the operating room under general anaesthesia. The distal tibia was fixed with Kirschner wires and the talus was reduced and fixed with a 3.2 mm malleolar screw. The skin was only partially closed with interrupted sutures and the joint was immobilised with an above knee back-slab. Antibiotics coverage was administered from induction and up to 76 hours after wound closure. A second surgical look and secondary wound closure were done 48 hours after the initial surgery. The wound healed without any complications. Partial weight bearing was allowed six weeks post injury. The fixation hardware was removed three months post injury.

Radiograph four months after injury showed satisfactory healing of the fractures with limited avascular necrosis of the trochlea (fig 2).

With a follow-up of 11 years, the morphology and the mobility of the ankle joint were very satisfactory. Radiographs were taken at follow-up and showed anatomic reconstitution of the ankle joint. The talus healed without any evidence of residual avascular necrosis but a notch on the weight bearing area of the trochlea remained at the level of the proximal part of the original fracture (fig 3). No evidence of arthritis was present. The patient was asymptomatic. He had full range of movement of his ankle joint compared with the other side; the ankle was stable and assumed without difficulty the high demanding job of an international lorry driver.

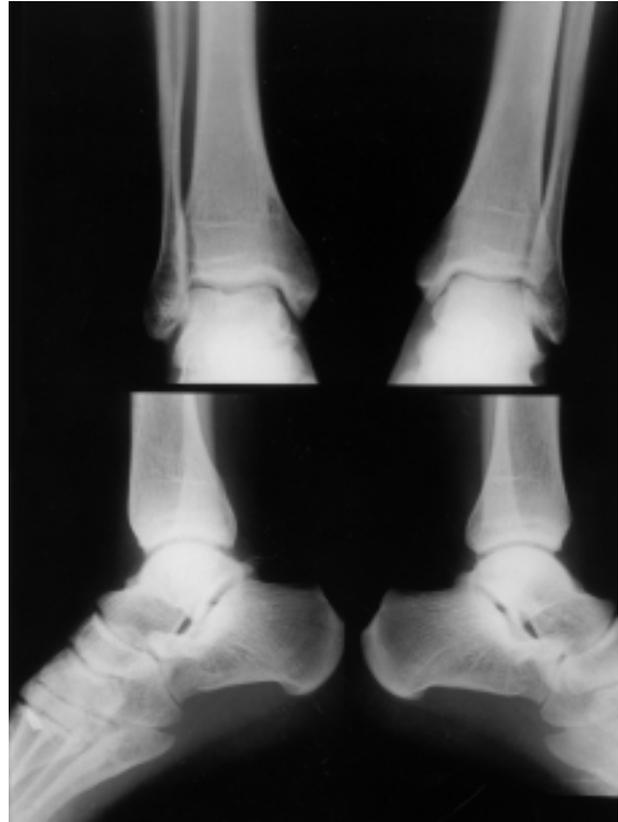


Fig. 3. — Radiography 11 years after the accident shows complete healing of the ankle fractures and full restoration of the avascular fragments. A notch is present on the top of the articular surface of the trochlea in the right talus.

DISCUSSION

There is a wide variety of fractures of the distal part of the tibia and fibula, which explains the number of classifications that have been proposed. Fractures of the body of the talus in the immature skeleton are rarely encountered. Even less common at this age is the presentation of a talus fracture that is associated with an ankle fracture and dislocation.

Following intra-articular injuries of the ankle joint, good anatomical reduction and osteosynthesis when appropriate are mandatory even in an immature skeleton, in order to achieve a good result. Preservation of the blood supply is essential. Removal of the metal work is recommended when there is evidence of healing.

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