

Isolated fracture-dislocation of the second cuneiform bone

Case report

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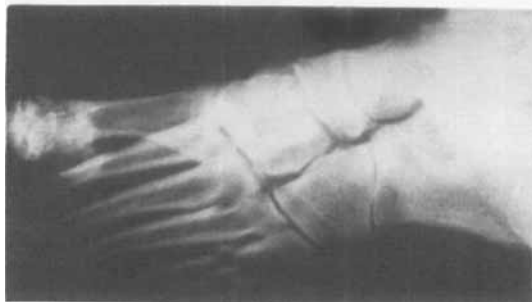
Case report

A 61-year-old man had been involved in a head-on car collision. In an attempt to avoid the collision, he had violently jammed his right foot under the brake pedal. On admission, he had a great deal of pain, edema, and deformity of the dorsal aspect of the midfoot. Radiographs revealed a dorsal, isolated fracture-dislocation of the second cuneiform bone (Figure 1). Under local anesthesia, the dislocation was reduced with an audible snap, but the reduction was unstable. A poste-

rior splint was then applied to the right leg, and was allowed to remain until the edema, 1 week later, had subsided. Two days later, then under general anesthesia and fluoroscopic control, a new closed reduction was performed, and two crossed Kirschner wires were used to maintain it. Lastly, a short leg cast was applied. The cast and the wires were removed after 5 weeks; and 4 months after the injury, there was complete recovery.



Figure 1. Dorsal fracture-dislocation of the second cuneiform bone.



Discussion

This case is remarkable for two reasons: it is an isolated fracture-dislocation of the second cuneiform bone and there was no fracture of the second metatarsal base. The mechanisms in tarsometatarsal injuries, as well as the features of the midfoot, have been well described by Wiley (1971). The plantar aspect of the second tarsometatarsal joint has strong ligamentous support, whereas the dorsal aspect is poorly supported. The second metatarsal base represents the cornerstone of the so-called Lisfranc system, being dovetailed in the mortice formed by all three cuneiform bones. The prerequisite for this injury is dorsiflexion of the ankle and plantar flexion of the forefoot (Wiley 1971). Also

the naviculo-cuneiform, intercuneiform, and metatarsal-cuneiform ligaments must rupture. For radiographic diagnosis, oblique projections are useful. In this type of injury, temporary fixation with Kirschner wires is probably always necessary (Arntz et al. 1988).

References

- Arntz C T, Veith R G, Hansen S T Jr. Fractures and fracture dislocations of the tarsometatarsal joint (see comments). *J Bone Joint Surg (Am)* 1988; 70 (2): 173-81.
- Wiley J J. The mechanism of tarso-metatarsal joint injuries. *J Bone Joint Surg (Br)* 1971; 53 (3): 474-82.