



## RESEARCH ARTICLE

### SUBTALAR DISLOCATION IN A WORKER: A CASE REPORT AND LITERATURE REVIEW

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#### ABSTRACT

Subtalar dislocation is a rare but serious traumatic injury, frequently complicated by talar necrosis and a consequent poor prognosis. We report a case of an anteromedial talo-naviculo-calcaneal dislocation. Closed reduction was performed in the emergency department under sedation using external maneuvers. Treatment consisted of six weeks of immobilization followed by a structured rehabilitation program. Post-reduction imaging revealed no associated fractures. At the 18-month follow-up, the patient had a stable and pain-free ankle, with no radiological evidence of osteonecrosis.

## INTRODUCTION

Subtalar dislocation is a rare injury, accounting for less than 1% of all ankle traumas according to some authors (1,2). It usually results from high-energy-trauma, and can in some cases be open, requiring open reduction followed by internal fixation. It is often associated with fractures, making management more complex. We report the case of a worker, victim of a total closed anteromedial dislocation of the talus on the right, treated orthopedically with satisfactory functional results.

#### OBSERVATION

A 38-year-old man, a construction worker with no significant medical history, presented with a blunt trauma to the right ankle with a twisting mechanism, which occurred following a fall from a scaffolding of approximately 4 meters high. He landed on his right foot, resulting in immediate a severe pain and visible deformity.

The patient presented to the emergency department a few hours after injury. Clinical examination revealed significant edema and obvious deformation of the right ankle, which was extremely tender to palpation, without any skin breach. The heel was displaced medially relative to the leg and the forefoot was inverted. Neurovascular examination was normal (Figure 1). Standard radiographs confirmed talo-scapho-calcaneal dislocation in its anteromedial variety without associated fracture (Figure 2). Closed-reduction was performed urgently under sedation using external maneuvers similar to a boot-removal technique. Post-reduction stability test was satisfactory, and the ankle was immobilized using a plaster boot. Post-reduction radiographs and computed tomography confirmed the integrity of the

articular contours and the absence of other associated anomalies (Figure 3). Physical therapy was initiated immediately after six-weeks the immobilization period.

## RESULTS

At 18-months follow-up, no complications such as residual instability, chronic pain or joint damage were observed. (Figure 4) Radiologically, no ligamentous ossification or changes or joint space were noted. The patient resumed his professional activity and gradually returned to sport three months after the trauma.

## DISCUSSION

Subtalar dislocation is a rare entity, often secondary to high-energy trauma. It is characterized by a loss of contact between the talus and the tibio-fibular mortise, without associated fracture (3,4). In this context, several predisposing factors have been mentioned, including the length of the internal and external malleoli, as well as ligamentous laxity. Furthermore, it is important to note that the medial subtype is the most common (5,6,7). Malgaigne et al. described sub-variants based on the position of the calcaneus relative to the talus (8). Clinically, the obvious deformation helps guide the diagnosis, characterized by the protuberance of the talus laterally and the calcaneus internally and posteriorly. In terms of additional examinations, standard radiography is essential to confirm



Figure 1. Clinical deformity of the right ankle



Figure 2. AP, lateral and oblique X-ray views showing anteromedial dislocation



Figure 3. AP and lateral post-reduction X-rays

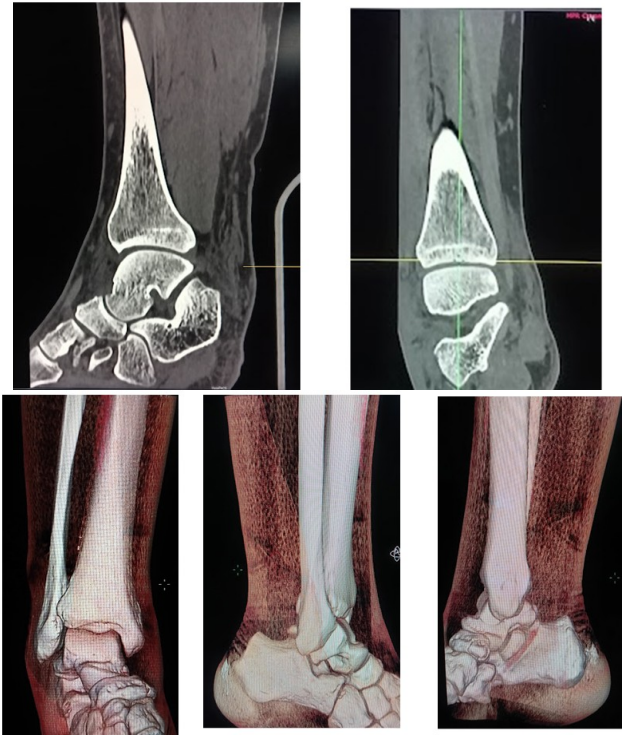


Figure 4. Post reduction CT scan of the ankle

the diagnosis. More precisely, it consists of performing an anteroposterior or dorso-plantar and lateral view. In addition, the contribution of the CT scan is crucial to carry out a more extensive lesion assessment. Indeed, it allows in particular to highlight cartilaginous damage as well as possible joint incarceration (9,10,11,12). Moreover, some authors have reported unstable dislocations, either closed or open, requiring surgical fixation with pins, plates or screws (13,14,15). Long-term hindfoot instability following subtalar dislocation can necessitate subtalar arthrodesis as a salvage procedure (16,17,18). In addition, cartilage involvement is common (19), which may hamper the functional prognosis by increasing the risk of osteoarthritis and then osteonecrosis (2, 7, 20, 21). However, no complications were observed in our case, confirming the importance of early and adequate management.

## CONCLUSION

Subtalar dislocation is a rare but serious injury of the hindfoot, where early and coordinated management is paramount for recovery. Diagnosis relies on obvious clinical signs, confirmed by radiographs and a mandatory post-reduction CT scan to detect occult fractures and assess joint congruence. While long-term outcomes can be uncertain due to the frequent associated chondral injury, prompt anatomical reduction is a critical modifiable factor that greatly reduces the risk of secondary complications like post-traumatic arthritis or osteonecrosis. Surgery is reserved for complex cases, such as irreducibility associated fractures, or persistent instability, to restore joint stability. In our case, the favorable evolution underscores the efficacy of a clear timely protocol that combines urgent reduction, comprehensive imaging, adequate immobilization, and guided rehabilitation to optimize functional recovery.

### ETHICS APPROVAL AND CONSENT TO PARTICIPATE:

Consent was given by the patient for the writing of this article.

**CONFLICTS OF INTEREST:** There are no conflicting relationships or activities.

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