



Subtalar Dislocation: About a Case Report

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Case Report

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Abstract

External subtalar dislocation is a rare and severe orthopedic injury, accounting for only 1% of all dislocations and 17% of subtalar dislocations. It results from forced eversion trauma and requires early diagnosis and management to prevent complications. We report a rare case of left external subtalar dislocation successfully managed in our department.

Keywords: Subtalar Dislocation; Closed Reduction; Road Traffic Accident; Orthopedic Surgery

Introduction

Pure external subtalar dislocation is defined as a total and permanent loss of contact between the talus and the navicular and between the talus and the calcaneus which moves externally.

It is a rare and serious entity, representing only 1% of all dislocations observed in trauma [1]. The external variant is exceptional, representing 17% of these dislocations.

Subtalar dislocation is most often secondary to a high-energy mechanism [2], such as road accidents or a fall, but can also occur following a sports accident [3].

In Niger, rare clinical cases or articles have been made on this subject. It is with this in mind that we report the case of a purely traumatic left external subtalar dislocation occurring

in a 63-year-old patient following a road traffic accident treated in our department at the Niamey National Hospital.

Case Presentation

This was a 63-year-old patient from Tahoua (Niger), retired, who was allegedly the victim of a road traffic accident following a skid of their public transport vehicle with an imprecise mechanism causing him pain in his left foot and absolute functional impotence of the left pelvic limb.

Upon Admission: Patient was conscious with good hemodynamic and ventilatory status.

Examination of the Locomotor System of the Left Pelvic Limb Found: Left foot deformity: His heel was displaced laterally relative to his leg with his foot in eversion and plantar flexion (Figure 1);





Figure 1 : Preoperative photograph of the patient showing the deformity of the left foot (Red arrow).

The head of the talus was visible and palpable on the dorsomedial aspect of his ankle (Figure 1) ;
 The skin was stretched at the level of the talar protrusion without visible wound (Figure 1) ;
 The peripheral pedal and posterior tibial pulses were clearly felt;
 Sensitivity and motor function of the foot were preserved;
 Active or passive mobilization of the foot was impossible;

The radiological assessment showed a pure left external talocalcaneal and talo-navicular dislocation without associated fracture (Figure 2). The orthopedic reduction was

performed urgently under general anesthesia by the boot puller maneuver followed by left calcaneal-talotibial pinning. Additional contention by plaster boot was performed and maintained for six weeks (Figure 3). The radiological control showed good joint congruity after reduction (Figure 4). The patient was hospitalized for observation with the limb elevated for postural drainage for four days. Rehabilitation was undertaken six weeks after the reduction. During follow-up consultations, the patient's progress was favorable with improved joint mobility and an absence of pain. A return to sports activities was authorized from the third month post-trauma with a follow-up of seven months.



Figure 2 : Standard radiographs of the left ankle, front (A) and side (B), showing the external subtalar dislocation (red arrows).



Figure 3 : Postoperative photograph of the left foot showing the cruro-pedal cast in place after reduction and pinning.



Figure 4 : Standard postoperative radiographs of the left ankle, front (A) and side (B) after reduction and pinning.

Discussion

Subtalar dislocation, simultaneous dislocation of the talocalcaneal and talo-scaphoid joints, represents approximately 1% of dislocations. The literature is full of numerous clinical cases but lacks recent studies on its management and its long-term evolution in Niger. Allieu [4], in 1967, introduced the term talar-scaphocalcaneal dislocation, specifying that this dislocation can be internal, external, posterior or anterior.

According to the literature data, this dislocation is mainly due to three types of trauma: road traffic accident, fall from a high place, sports accident. Candau [5], as well as Patel, et al. [6], emphasize that a trauma of high intensity is necessary to induce a subtalar dislocation, which is confirmed in our study where the patient suffered a dislocation following a road accident involving a skid of his vehicle. Thus, the external variant occurs during an eversion position. It leads to the following chronological events: rupture of the anterior portion of the deltoid ligament at its distal insertion, then rupture of the astragalocalcaneal interosseous ligament and finally rupture of the dorsal taloscaphoid ligament [7].

After clinical examination, a standard X-ray of the ankle from the front and side is necessary to confirm the diagnosis as well as the associated lesions. It is also recommended to perform a CT scan [7,8] after treatment to objectify osteocartilaginous lesions and joint damage at the talocalcaneal level. Magnetic Resonance Imaging is useful in the diagnosis of avascular necrosis [9].

The treatment consists of an emergency reduction under general anesthesia. This is done by the boot-puller maneuver described by the classic authors Boehler L [10]. Patient in the supine position, Knee flexed at 90° to release the triceps, One hand placed on the antero-superior region of the tibiotarsal ensures the support of the lower limb, the other hand grasps and pulls the foot forward in plantar flexion as if to pull off a boot. Malgaigne JF [11] recommends exerting an impulse on the head of the talus to guide it towards the articular sphere. 15 to 20% of lateral dislocations cannot be reduced by talonavicular or tendon interposition (tibialis posterior, long flexor of the hallux) [12]. Stabilization by pins, associated with a 6-week plaster cast (this was the case for our patient), carried out by some authors, is suspected of stiffening but is a guarantee against instability [13]. Other authors only carry out a 6-week plaster cast to maintain the reduction.

The outcome of these LSTs is Punctuated by four Major Complications: Stiffness is the most frequent complication, osteoarthritis, avascular necrosis of the talus and instability of the subtalar joint [14-16].

Conclusion

Pure external taloscaphocalcaneal dislocation is a rare condition most often secondary to high-energy trauma. Emergency management is required after a clinical assessment in order to perform emergency reduction by external maneuvers. In the majority of cases, a closed reduction is sufficient, but if the dislocation is irreducible, open, or unstable, surgical treatment should be considered.

Conflict of Interest: The authors have reported no conflict of interest.

Data Availability: All data are included in the article content.

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