



INTERNATIONAL JOURNAL OF RESEARCH SCIENCE & MANAGEMENT SUB-TALIENNE LUXATION IN EVERSION ASSOCIATED WITH A NON-MOVED M5 BASE FRACTURE IN A TRICYCLE TAXI DRIVER: ABOUT A CASE

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Abstract

The subtalar dislocation is an exceptional lesion in sports trauma. It affects the talocalcaneal and talonavicular joints, while the talocrural is intact. Lateral dislocation occurs as a result of high-energy trauma with frequent associated lesions. Its prognosis is therefore worse than medial dislocation. The authors report a case of pure lateral subtalar dislocation in a basketball player. The treatment was orthopedic with a good result.

Introduction

The subtalar dislocation is rare. Depending on the displacement of the forefoot and calcaneus. It is classified as medial, lateral, anterior or posterior. The medial version is the most common [1,2]. We report a case of lateral subtalar dislocation, which occurred in a scooter driver and we focus on its anatomopathological, clinical and therapeutic features.

Clinical case

Mr. ML.B., 27 years old with no history, helmeted scooter driver who collided head-on with another scooter and presented, pain and total functional impairment. The emergency room examination found one foot in abduction, pronation with sagging of the arch of the foot. The skin on the medial aspect was stretched by the head of the talus and presented a diffuse bruise without skin opening, pain with tumefaction opposite M5 (Fig. 1). The neurovascular examination was unremarkable.



Fig. 1: Clinical view of the foot

The standard X-ray showed a lateral subtalar dislocation plus a non-displaced fracture of the base of M5 right foot (Fig. 2).



Fig. 2: AP and lateral ankle and foot x-ray: Lateral subtalar dislocation plus M5 base fracture

The patient was transferred to the operating room where a second reduction under general anesthesia, involving adduction, traction and direct pressure on the head of the talus allowed reduction of the dislocation. The radiological control was satisfactory (Fig. 3). The ankle was immobilized in a resin cast boot for 6 weeks without support, followed by rehabilitation. After three years of follow-up, the result was satisfactory; the patient was able to recover normal walking in the 3rd month and resume his professional activity at the same level, in the 9th month no signs of instability were noted).

Discussion

The anatomical location of the talus between the skeleton of the leg and the foot exposes it to a significant traumatic risk. Devoid of any muscular and tendon insertion, the talus participates in the formation of three important joints: talocrural



Fig. 3: Post-reduction radiographs of the dislocation.

talocalcaneal and talonavicular whose stability is ensured by a complex ligament system. Subtalar dislocations are rare, accounting for 1 to 1.5% of all traumatic foot injuries [1,2]. Depending on the direction of movement of the



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forefoot, Broca [1,3] in 1852 and Malgaigne and Burger [1,4] in 1856, classified these dislocations as medial, lateral, posterior and anterior. The medial version is the most frequent with 80% of cases reported in the literature [1,2,5]. Lateral dislocation represents 17% of cases [1,2,5].

Lateral subtalar dislocation occurs as a result of high energy trauma [1,5], mainly in motorcycle accidents [2], as in our case. Sports accidents causing such injuries are very rare [1,5]; the most incriminated sport is basketball [6]. It results from the application of an eversion on a foot in plantar flexion; the talus pivots around the anterior process of the calcaneus; thus, the talar head moves medially and the rest of the foot laterally. Anatomically, this results in a rupture of the ligaments: deltoid, interosseous and dorsal talaronavicular [2], with possible incarceration of the posterior tibial tendon or the flexor digitorum longus, a source of irreducibility [2]. On examination, the foot is typically in abduction, pronation with flexed toes due to traction exerted by the flexor digitorum longus and flexor hallucis proper [1,2]. The head of the talus is prominent, palpable under the skin of the medial aspect of the foot with a significant risk of secondary skin necrosis [1,2]. Un œdème diffus peut rapidement masquer la déformation. Les lésions associées sont fréquentes à types of skin openings and vascular lesions. Monson and Ryan reported a case with posterior tibial artery involvement and nerve contusion [7]. Standard radiography confirms the diagnosis and looks for associated bone lesions, more common in lateral dislocation. Chondral lesions of the subtalar joint and fractures of the talus are the most common [2,5]. Conesa et al. [5] report a case with an associated malleolar fracture. Dislocations associated with metatarsal fractures have also been described [8]. In our patient, this is a pure lateral subtalar dislocation. Computed tomography is more efficient for the diagnosis of these lesions [9].

The treatment consists of an urgent reduction in order to limit the cutaneous and vasculonervous suffering. It is performed under general anesthesia on a knee flexed to 90° in order to relax the triceps sural [5]. The reduction maneuver combines plantar flexion, inversion and adduction of the foot, in parallel with the practitioner's hand exerting direct pressure on the head of the talus [2,5] to reduce the talonavicular joint. Irreducibility is more common in lateral dislocation due to incarceration of the posterior tibial tendon, the flexor digitorum longus or an osteocartilaginous fragment [2,5,11]. DeLee and Curtis [10], in their series of 17 subtalar dislocations, reported 4 cases of irreducibility, including 3 in a lateral version. They found incarceration of the posterior tibial tendon in two cases and a fracture of the talus head in one case as the etiology. The multiplication of reduction attempts should be prohibited because it causes iatrogenic cartilage damage [11]. Open reduction is required by the anterolateral approach according to Shelton and Pedowitz [2,9], allowing the incarceration to be lifted and the osteosynthesis of any associated fractures. This surgical reduction was deemed necessary in 32% of cases in some series [5,12]. The type and duration of immobilization are controversial [2: strict and prolonged immobilization is a source of residual pain and stiffness; brief immobilization may cause instability. While many authors in the literature have opted for a short immobilization of 3 to 4 weeks in a simple plaster splint followed by early physiotherapy, Jungbluth et al. [13] as well as Palma et al. [14] recently demonstrated that strict immobilization in a cast boot for 5-6 weeks provides a very good functional result. We adopted the same attitude in our patient. Stabilization with an external tibio-calcaneal fixator has been described [11].

Most authors report worse functional results in lateral subtalar dislocations compared to medial ones [2,5,11]. This is explained by the violence of the causative trauma and, therefore, the higher frequency of associated bone and soft tissue damage. Post-traumatic subtalar osteoarthritis, the source of pain and stiffness in the hindfoot, is the most common complication [11]. It is mainly favored by the presence of associated cartilaginous lesions [2,5,11]. Aseptic necrosis of the talus is a rare complication; it is seen especially during severe and open trauma [15]. Christensen et al. reported only two cases in their series of 30 patients [16]. Sporadic cases of subtalar instability have been reported [2], possibly secondary to insufficient immobilization time.

Conclusion

Lateral subtalar dislocation is a rare trauma lesion in sports. It is the consequence of a violent trauma explaining the frequency of associated injuries. Urgent reduction under anesthesia is the treatment of choice, but sometimes this is not possible due to the incarceration of endoscopic elements. The prognosis is poorer compared to medial dislocations, dominated by post-traumatic subtalar osteoarthritis.

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