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Pure open tibio-talar dislocation: A case report

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Abstract

Pure tibiotalar dislocation is a very rare affection. The authors report the case of an open tibio-talar dislocation without fracture which was treated by immediate reduction. There was no tibiotalar diastasis after reduction. A conservative treatment was decided. The ankle was immobilized during six weeks without weight-bearing followed by physiotherapy. The recovery was good with full range of motion.

Keywords: Tibiotalar dislocation, ankle, non-operative

Introduction

Pure ankle dislocation is a rare affection, usually the consequence of a high-energy trauma ^[1]. The tibiotalar joint presents an intrinsic stability therefore they are often associated with malleolar fractures ^[2]. In this case report, we present a rare case of pure ankle dislocation treated conservatively and with good results.

Case presentation

A 26-year-old female patient injured her left ankle after falling from a horse. She was immediately rushed to the hospital. Clinical examination revealed ankle pain without any neurovascular deficit. There was a wound in front of the lateral malleolus. The patient had no particular medical history. Radiographs showed tibiotalar dislocation with a possible fracture of the tip of the lateral malleolus (Figure 1). A CT scan was then performed (Figure 2). It confirmed the pure antero-lateral tibiotalar dislocation.

Therefore, a closed reduction was performed under general anesthesia. The testing did not suspect any syndesmotic lesion. There was still no neurovascular deficit after reduction. A CT was realized and confirmed the reduction of the dislocation (Figure 3).

The ankle was then immobilized in a cast during six weeks. The patient began gradual weight bearing and physiotherapy.

Discussion

Pure ankle dislocations are rare. The incidence in the literature is estimated to be 0,5% of all the ankle dislocation ^[1, 2]. The incidence of pure ankle dislocation is estimated to be 0,065% of all the patients with ankle injuries ^[2]. They generally result from high-energy trauma. Most of the ankle dislocation are postero medial ^[3]. In this case, the talus made a dislocation with a 90 degrees rotation without anterior or posterior displacement. The mechanism of tibiotalar dislocation appears to be a rotation and a supination of the ankle. This mechanism is not described in the cadaveric studies of Fernandes *et al.* ^[4].

Edwards and DeLee classified ankle diastasis without fracture in four groups: type I injuries show a lateral distal subluxation without plastic deformation; type II consists of lateral distal fibular subluxation associated with a plastic deformation of the fibula; type III is uncommon and consists of a posterior rotary subluxation of the distal fibula; type IV is characterized by a superior dislocation of the talus, resulting in an important diastasis between the tibia and the fibula ^[5].

The most common complication of pure tibiotalar dislocation is stiffness in 18% of closed dislocation and 2% of open dislocations ^[2, 6]. Another frequent complication is post-traumatic osteoarthritis, that is reported in 10% of cases to 25% in open dislocation ^[6, 7]. It can be explained by the trauma and by the articular shape of the tibiotalar joint ^[3]. A small persistent lateralization of the talus decreases the weight-bearing area and contributes to arthritic degeneration ^[3, 8]. Functional results in long term are favorable ^[9].

The management of pure tibiotalar dislocation is controversial according to the type of injury ^[2].

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In a dislocation of the ankle, it's important to do a meticulous vascular and neurological examination. The overall incidence of vascular et neurological lesions is estimated at 10%. These lesions can modify the management of the dislocation [6]. The management of those injuries still sparks controversies. In closed injuries, a conservative treatment is recommended:

early reduction is performed followed by cast immobilization [6]. However, the treatment of open injuries is still uncertain. The necessity of ligament repair during debridement is discussed in the literature [6]. Studies show that there is no significant difference in outcomes between acute repair and conservative treatment [2].



Fig 1: X-rays showed tibio-talar dislocation without anterior or posterior displacement.

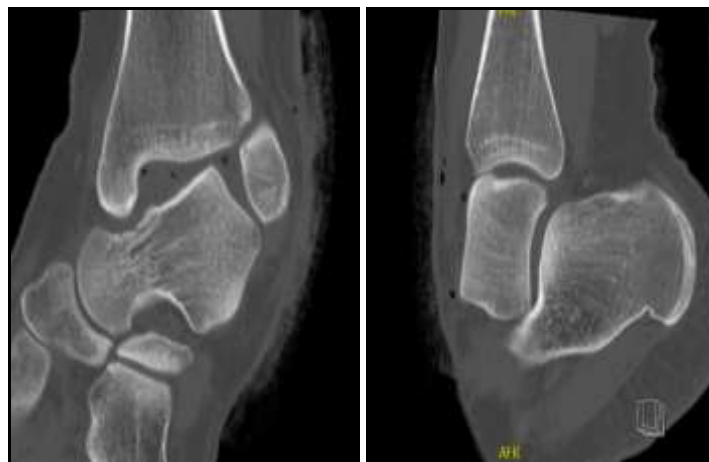


Fig 2: A CT scan was performed and confirmed the pure antero-lateral tibio-talar dislocation.



Fig 3: Closed reduction was performed, and a CT scan was realized and confirmed the reduction of the tibio-talar dislocation.

Conclusion

Pure ankle dislocation is a rare ankle injury. The literature consists of several case reports and a few case series. These types of injury result of high energy trauma. The treatment

is still controversial, but an immediate reduction followed by a cast immobilization and functional rehabilitation seems to give good outcomes.

Conflict of Interest

Not available

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Not available

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