



Medial Peritalar Dislocation without a Fracture: A Rare Case

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Introduction

Peritalar dislocations are rare forms of orthopedic dislocations. They can be seen in high-energy injuries such as falling from a height, sports injuries, or motorcycle accidents. Inversion or eversion motions may cause dislocation, damaging talonavicular and talocalcaneal ligaments. The head of the talus in medial subtalar dislocation is in the lateral position and the entire part is in the medial position. Medial dislocations are known as “acquired clubfoot” and lateral dislocations are called “acquired flatfoot” [1-3]. In this case report, we present a patient with anteromedial subtalar dislocation without any accompanying fracture, which occurred after a jump and fall into place during a volleyball game.

Case Presentation

A 38-year-old male was taken to the emergency room with a foot deformity which occurred after spraining his ankle following a jump and fall into place during a volleyball game.

The head of talus was palpable on the lateral side and the foot was in clubfoot position (Figure 1). Arteria tibialis posterior and arteria dorsalis pedis were not palpable due to the severe soft tissue tenderness and swelling. There were no lacerations or cuts on the skin. Even though the dislocation of the head of the talus was seen in radiography (Figure 2), we planned a 3-dimensional tomography to evaluate the subtalar joint and tarsal bones. Three-dimensional Computerized Tomography (3-D CT) showed that the head of the talus was dislocated to the superior and lateral with respect to the navicular joint. The calcaneocuboid joint was normal and the forefoot was in the medial position and on supination with calcaneus. Subtalar joint had a rotatory subluxation with a constrained supination. The patient did not have a fracture (Figure 3).

We performed a closed reduction under sedo-anesthesia. The head of the talus was pushed mildly and traction and lateral rotation were applied on the distal part of the foot. The sound indicating that the talus had returned to its normal position was heard clearly. We chose to apply a short leg cast. Presence of osseous pathology, osteochondral lesions, and ligamentous injuries were checked with Magnetic Resonance Imaging (MRI) and no pathology was detected. A diffuse soft tissue edema on the medial side of the ankle was detected on the MRI. (Figure 4) We continued cast mobilization for 4 weeks. After the cast was removed, we started range of motion exercises. At the end of the 6th postoperative month, full range of motion on the joints was obtained. One year and 2-year after the injury, the foot was completely stable and functional without any pain while walking. The American Orthopaedic Foot and Ankle Society (AOFAS) score of the patient was 96 and 98 at the 1-year and 2-years follow-ups, respectively.

Discussion

Subtalar or peritalar dislocation is a simultaneous dislocation of the talonavicular and talocalcaneal joints with an intact tibiotalar joint. It is a very rare condition without a fracture at the talus. Among all foot dislocations, its prevalence is 1% to 2% [1]. They occur commonly after high-energy injuries such as falling from a height, motorcycle accidents, and sport injuries especially while jumping. It is known as “basketball foot” in the medical American literature as it is seen very often during basketball games as player jump. Classification is made by evaluating the position of the foot in respect to the talus. The most common type is the medial type and is followed by lateral, anterior and posterior dislocations, respectively [3]. Mechanisms of medial and lateral peritalar dislocations are different. Plantar flexion and a trauma to the foot in inversion result in medial

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Received Date: 24 Jul 2018

Accepted Date: 14 Aug 2018

Published Date: 16 Aug 2018

Citation:

Yener Erken H, Takka S, Akmaz I. Medial Peritalar Dislocation without a Fracture: A Rare Case. Clin Surg. 2018; 3: 2078.

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Figure 1: The clinical view of the foot after dislocation.



Figure 2: Plain AP X-ray of the medial subtalar dislocation.

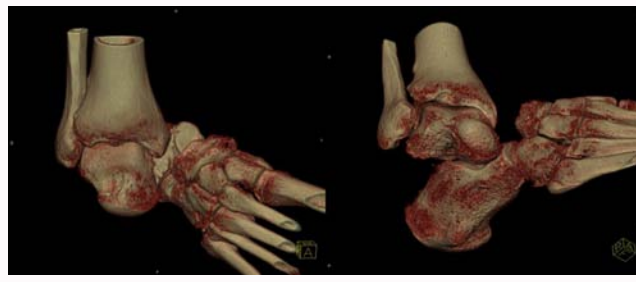


Figure 3: 3-D CT shows the anterolateral positioning of the talar head and preserved integrity of the calcaneocuboid joint.

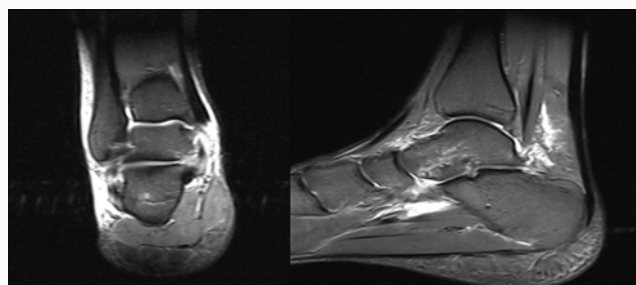


Figure 4: Lack of both osseous pathology and osteochondral lesions on the MRI.

dislocations, whereas plantar flexion and a trauma to the foot in eversion result in lateral dislocations. Fractures at tarsal bones (20% to 60%), and less frequently, fractures at the base of the 5th metatarsal bone and both malleoli are generally seen in peritalar dislocations. Small avulsion fractures cannot be detected easily. Thus, it is suggested to evaluate these cases using a 3-D CT scan [4]. In our case, we did not detect any accompanying fractures in addition to the peritalar dislocation in the 3-D CT scan. Soft tissue complications, avascular necrosis, neurovascular injuries are seen commonly in peritalar dislocations. Therefore, immediate repositioning under general anesthesia is crucial [5]. Results are satisfactory when performing a closed reduction under general anesthesia. It was reported that 10% of medial dislocations require a surgical reduction [6]. Following a closed reduction, vascular and neurovascular complications may occur. Jungbluth et al. [4] suggested the use of a doppler ultrasound when distal pulses are not palpable following a closed reduction procedure because of the risk of a vascular injury.

The most common late complications of peritalar dislocation are arthrosis and chronic pain [7]. DeLee et al. [5] reported in their case-series (n=17) that post traumatic arthrosis is more common in cases with osteochondral fractures. Jungbluth et al. [4] did not detect any cases with limitations in Range of Motion (ROM) of the ankle in their study of 97 cases with isolated subtalar dislocation without fractures. Similar to the latter study, our case had an isolated dislocation and had a stable foot without pain and with full ROM in the 2-year follow-up.

The duration of cast immobilization after closed reduction is controversial. DeLee et al. [5] concluded that three weeks of immobilization is enough to protect subtalar joint motion. Zimmer, on the other hand, detected instability in younger patients when cast immobilization was shorter than 6 weeks [8]. Perrugia et al. [9] reported long-term beneficial effects of a 4 week cast immobilization. Garofalo et al. [10] did not detect any long-term differences between

4 and 6-week cast immobilization in their case series of 18 patients. We used cast immobilization for 4 weeks and the outcome in our patient was satisfactory at the 2 years' follow-up. In conclusion, isolated medial peritalar dislocation after a minor injury is a very rare condition and reduction should be performed as soon as possible after the injury. There is a risk of both early and late complications. To prevent such complications, we suggest the use of 3-D CT and MRI to detect accompanying pathologies of surrounding tissues and bones. Result of an early closed reduction and cast immobilization for 4 weeks was satisfactory in our case.

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