International Journal of Medical and Health Research/ 54tr7
ISSN: 2454-9142
www.medicalsciencejournal.com
Volume 4; Issue 6; June 2018; Page No. 76-77

Ankle Dislocation without fracture in a young Athlete: A rare case and review of literature

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Abstract
We report a case report of a 24-year-old male who sustained an ankle dislocation injury without any associated fractures to the foot, ankle, or leg while playing basketball. After an extensive review of the literature, it was found that this type of injury without any associated fractures is an extremely rare occurrence. A case report and a review of the literature are presented in this paper.

Keywords: ankle, pure dislocation, reduction, tibiotalar joint

1. Introduction
Talotibial dislocation without an associated fracture to the foot, ankle, or leg is a rare injury. In an extensive review of the literature, a very few cases of this type of injury have been reported.

2. Patient and Observation
A 24-year-old athlete patient with no notable pathological history, admitted to the emergency room following a trauma to his right ankle during a basketball match causing intense pain with total functional impotence of the lower limb. Physical examination showed deformity of the ankle with intense pain on palpation and mobilization without neuro-vascular deficit or skin lesion (Figure 1). Standard radiographs confirmed the presence of postero-medial dislocation of the tibiotalar joint with no fracture (Figure 2). Emergency reduction of the ankle dislocation was performed at the operating room under general anesthesia. Post reduction radiographs showed a good joint congruence (Figure 3). Plastered immobilization was applied for 6 weeks followed by physiotherapy. Ankle examination was performed after the cast removal and did not find any tibiotalar joint laxity.At 6 months post injury the patient had returned to full activities which consisted of playing basketball at a competitive level. The patient is asymptomatic and without complaints.

3. Discussion
Pure tibiotalar dislocations are relatively rare. The first case documented by X-rays was reported by Péraire in 1913 [1]. Since then, several observations have been reported in isolated reports or within small series [2, 3].

In the literature, tibiotalar dislocations are classified according to the anterior, posterior, medial, lateral, and vertical direction of the displacement as well as the combined forms. All the authors underscored the importance of the traumatizing force causing the dislocation. Medial and posteromedial dislocations are the most frequently found variants [4, 5].

Many descriptions of the dislocation mechanism have been reported in the literature, the combination of plantar flexion and forced inversion of the foot caused by high energy trauma with axial load is the most common cause of this injury [6, 7]. Several risk factors have been implicated as predisposing to tibiotal dislocation without associated malleolar fracture, including ligamentous hyper laxity, hypoplasia of the medial malleolus, lack of talus cover, weakness of the peroneal muscles, and anterior history of repeated sprains ankle [8, 9].

Treatment of dislocation is reduction under anesthesia. It is relatively easy and should be done as quickly as possible. The associated lesions must be searched for and treated on a case-by-case basis. Immobilization is generally required for 6-8 weeks [10].

Functional results of talotibial dislocations are generally good with little loss of range of motion, sometimes persistent swelling, but complications have been described, such as chronic instability of the ankle [11] and tibiotalar osteoarthritis [12].

4. Figures

Fig 1: Clinical deformity of the right ankle.

Fig 2: Initial X-ray showing pure medial tibiotalar dislocation.

Fig 3: Post-reduction AP view of the ankle.

5. Conclusions

Pure talotibial dislocation is a very rare injury often caused by a violent energy trauma whose adequate emergency management is the only guarantee of a good result in the long term. Our observation illustrates the place of orthopedic treatment in the management of this serious injury.

6. Declaration of Interest

The authors declare that they have no conflicts of interest in relation to this article.

7. References

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