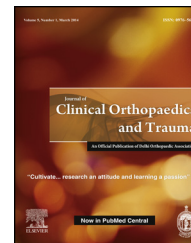


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Case Report

Nonoperative treatment of closed total talus dislocation without fracture: A case report and literature review



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ABSTRACT

Complete dislocation of the talus not accompanied by a fracture is a very rare injury. Most cases reported are open talus dislocations; closed dislocations are rarely seen. The functional prognosis is poor due to osteonecrosis of the talus which develops in the majority of cases.

We present a case of lateral dislocation of the left talus in a 29-year-old road accident victim, but no fracture could be detected in the talus and any of malleolus. Reduction of dislocation had been performed in emergency by external manipulation. At 1-year follow-up, the right ankle was pain free and stable. Motion was satisfactory: 15° dorsal flexion, 30° plantar flexion; the talus didn't show subluxation and avascular necrosis could not be detected.

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1. Introduction

A closed total dislocation of the talus from all its surrounding joints (talonavicular, tibiotalar, subtalar) not accompanied by a fracture (talus, navicular, calcaneus, malleoli) is an extremely rare injury caused by a high-energy trauma. Its exact incidence is unknown.¹ Closed total talus dislocations are rare.

The few case reports found in the literature and the non-existent guidelines add to the confusion regarding the

optional method of treatment. There are two major series of nine cases each by Detenbeck et al² and Coltart³ of total talar dislocation, with the majority being open type.

In this case report, we present a patient who sustained a high-energy trauma with a closed total dislocation of talus, without malleolar or talus fracture, treated conservatively with satisfactory functional results.

A literature review is attempted, to retrieve evidence on whether a closed or open approach should be chosen in order to minimize complications and augment possibilities for a favorable outcome.

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2. Case report

A 29-year-old woman sustained a twisting injury to his left foot while falling from the motorbike. This injury results in pain and total loss of mobility of his left ankle.

On arrival at the hospital, physical examination revealed a medially shifted hindfoot and a supinated forefoot. The overlying skin was tense, but intact (Fig. 1). There was no sensory or motor loss, but initial vascular assessment was difficult because pulses could not be felt and the capillary refill was borderline. There were no other injuries. X-rays (Fig. 2) revealed a lateral dislocation of the talus with no fracture. Manipulation of the ankle was performed under general anesthesia with image guidance. The technique used was similar to that used by Mitchell.⁴ One assistant supported the leg with the knee flexed at a right angle. Traction was given by grasping the heel and forefoot. Direct pressure with both thumbs was then exerted over the prominent lateral protuberance to rotate the talus 90° in the antero-posterior plane. The aim was to reduce the tibiotalar joint first. The talus was easily reduced in the tibiotalar joint with simultaneous spontaneous reduction of the subtalar and talonavicular joint and restoration of normal contour of the foot, repositioning of talar bone was obtained. The reduction appeared stable with manual manipulation and was confirmed radiologically in the operating room (Fig. 3). The time since injury at the time of closed reduction is 5 h. After reduction, pulses could be palpated clearly.

Computer tomography (CT) was obtained to rule out the presence of occult fractures, fracture fragments in the subtalar joint, and to confirm joint reduction. The tibiotalar, subtalar, and talonavicular joints remained concentrically reduced as demonstrated by CT scan (Figs. 4 and 5).

The reduction was maintained in a posterior splint for 1 week to monitor skin lesions, after an acrylic foot-thigh brace was put in place under neutral position of the foot, with the



Fig. 1 – Lateral dislocation of talus, skin tensed, foot in equinus and supination.



Fig. 2 – Antero-posterior and lateral radiograph of total lateral talar dislocation.

knee flexed at 30° with strict non-weight-bearing for 5 weeks. She initially had edema and mild pain that subsided by elevating the extremity; Radiographs were taken at weekly intervals for the first 3 weeks to rule out subluxation. An air cast boot was given at 6 weeks to allow partial weight-bearing and supervised physiotherapy. The patient was allowed to fully weight-bear without the air cast boot at 3 months post-injury. At the 1-year follow-up, motion was satisfactory: 15° dorsal flexion, 30° plantar flexion. There were no signs of avascular necrosis of the talus on conventional radiography (Fig. 6). The ankle was painless with a good mobility.

3. Discussion

The talus is predisposed to dislocation because it lacks muscular attachment and 60% of its surface is covered with cartilage. A closed total dislocation of the talus is defined as a dislocation of the talus from all surrounding articulations:



Fig. 3 – AP and lateral view after closed reduction.

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