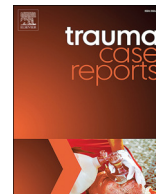




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Case Report

Bosworth fracture dislocation of the ankle: - Two case reports with perioperative illustration

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SUMMARY

The Bosworth fracture dislocation of the ankle is rare and present difficulties in treatment if not immediately recognized. Here we present two cases with pre- and postoperative x-rays and perioperative image of the dislocation. The fracture dislocations were further complicated by talocrural dislocations and were treated with open reduction and internal fixation.

Introduction

The Bosworth fracture is a rare fracture dislocation of the ankle caused by extreme external rotation of a supinated foot. The proximal part of the fibular oblique fracture becomes dislocated and trapped behind the posterolateral ridge of the lateral tibial tubercle. Here we present two cases admitted two weeks apart; a 27-year-old male and a 60-year-old male supported by x-rays and perioperative photographs.

Case 1

In 2016 during soccer the male patient was tackled from behind and landed on his supinated foot in plantar flexion. He was seen in the emergency room less than 30 min after the injury. Clinically his foot was pale and pulseless and posteriorly dislocated relative to the tibia. It was immediately reduced and the pulse in dorsal pedis artery (ADP) returned. Following the immediate reduction to a satisfactory clinical alignment a plaster cast and an ankle x-ray was planned. Prior to x-ray the patient felt that his foot was sliding in the cast. The x-ray showed posterior dislocation of the talus relative to the tibia and an oblique fracture of the fibula (Fig. 1A). There were no fractures in the proximal fibula. The foot had normal sensation and capillary response. In the emergency room the patient received a peripheral analgesia using popliteus blockade. The cast was removed after 20 min and the talocrural dislocation was reduced manually. The fibular alignment was, however, not restored (Fig. 1B). The patient was admitted to the orthopaedic department for open reduction and internal fixation of the fracture. Four hours after the trauma, the patient underwent surgery under general anesthesia.

A posterolateral approach to the ankle was used. The distal part of the fracture was fixed to the tibia with an intact anterior tibiofibular ligament. The proximal part of the fracture was entrapped behind the posterolateral edge of the distal tibia (Fig. 2). The proximal fibula was easily reduced applying an anterolateral pressure on the proximal fibula. The fibular fracture was then fixed using a semitubular buttress plate with distal fixation. The syndesmosis was stressed under fluoroscopic guidance and found unstable. Hence, it was reduced and secured using a syndesmotic screw (Fig. 1C). The neurovascular conditions were restored postoperatively.

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Fig. 1. Representative x-rays of Bosworth fracture dislocation in patient 1. Top is anterior-posterior view and bottom is lateral view. A) Posterior dislocation of the proximal fibular fragment and anterior dislocation of the tibia relative to the talus. B) Following closed reduction of with the proximal fibula still dislocated posteriorly. C) Postoperative result.

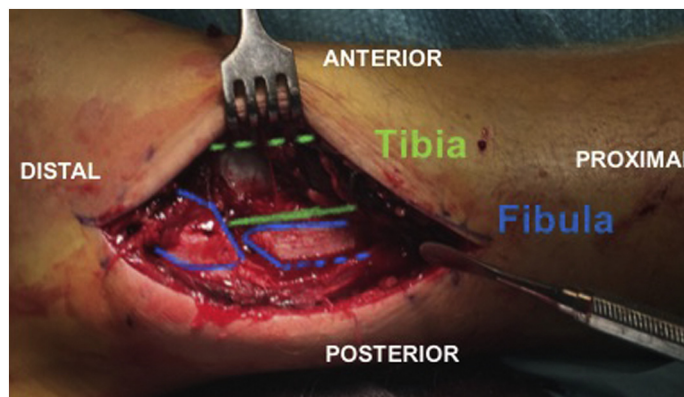


Fig. 2. Perioperative image of the surgical field prior to reduction of the proximal fibula in patient 1. The proximal part of the distal fibula segment is tilted posteriorly. Blue is fibula and green is tibia delineation. Dotted lines represent that the bony edge is not visualized. (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

The postoperative treatment consisted of immobilization in a walker with partial weight bearing for 6 weeks.

The outcome was good with radiological fracture healing within 6 weeks. He was referred to physiotherapy-guided rehabilitation and lost to follow-up.

Case 2

A 60-year old man slipped on a slippery step out of a shop and sustained a supination injury to his left ankle joint. In the emergency room it was noted that there was a posterior dislocation of the left foot relative to the tibia. The neurovascular status of the foot was intact. An unsuccessful attempt to reduce the ankle was made. A plaster cast was applied and the patient was referred to the radiology department for an x-ray examination. The x-rays showed that the proximal fibula was trapped behind the tibia and in addition there was fracture of the lateral and medial malleolus (Fig. 3A). In the lateral plane a posterior dislocation of the talus in the

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