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الجمعية السعودية لجراحة العظام
Saudi Orthopedic Association

Journal of Musculoskeletal Surgery and Research

Radiology Quiz

A painful deformed twisted ankle

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Received: 21 March 2022
Accepted: 11 April 2022
EPub Ahead of Print: 14 May 2022
Published: 21 May 2022

DOI
10.25259/JMSR_51_2022

Quick Response Code:

HISTORY

A 32-year-old man hurt his ankle following a fall in the gorge following a skid of his bike while crossing a jungle. There was pain, deformity, and swelling noted soon after the injury and he could not bear weight on his right leg. Following the first-aid, ankle radiographs were advised to reveal underlying musculoskeletal injuries.

- What are the radiographic findings?
- What is unusual in this injury?
- What is another eponymous injury similar to this case?

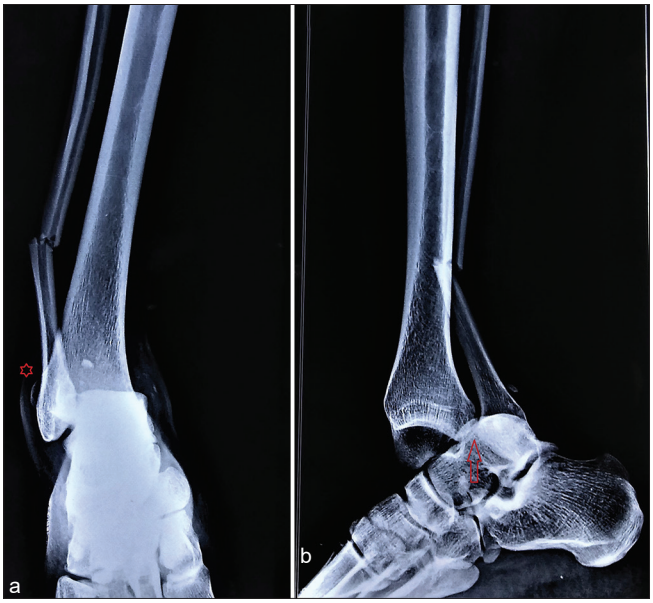

Figure 1: The radiograph showing the ankle fracture-dislocation with an associated fibula fracture. The distal part of the fibula fragment is not at its anatomical location (denoted by an asterisk) and seems behind the distal tibia in AP view (a). The lateral view depicts and confirms the complete incarceration of the distal fibula fragment (denoted by arrow) behind the tibia (b) thus making this a variant of Bosworth fracture-dislocation.

How to cite this article: Dharmshaktu GS, Dharmshaktu IS. A painful deformed twisted ankle. J Musculoskelet Surg Res 2022;6:189-90.

FINDINGS

There is a fracture-dislocation injury of the ankle joint with the tibia dislocated out of the joint anteriorly. There is a concomitant fracture of the distal third of the fibula and the distal part of the fractured fibula is stuck behind the distal tibia in the anteroposterior view [Figure 1a], as the characteristic normal fibula position in ankle images is disturbed. The distal fibula fragment is also placed entirely posterior to the tibia in the lateral view [Figure 1b]. A few bony specks seen posteriorly may represent avulsion fractures with ligamentous injuries in that region.

DIAGNOSIS

A variant of Bosworth fracture-dislocation. In this case, the distal part of the distal fibula fragment is stuck behind the distal tibia. In classical Bosworth fracture-dislocation, the proximal part of the fibula fragment is incarcerated behind the tibia. This makes it the variant of Bosworth fracture-dislocation.

PEARLS AND DISCUSSION

The Bosworth fracture-dislocation or Bosworth injury is an uncommon ankle injury characterized by ankle fracture-dislocation, mostly with an associated fibula fracture.[1] The proximal part of the fibula is trapped behind the posterolateral ridge of the distal lateral tibial tubercle in classical Bosworth fracture-dislocation.[2] The injury is also called fixed posterior retro-tibial luxation of the fibula. The name is dedicated to Bosworth, who first classified this injury in 1947. The name is dedicated to Bosworth, who first classified this injury in 1947, although Hugier described the mechanism of injury primarily in 1848.[3] The injury pattern results from severe external rotation injury to the ankle. The early diagnosis is important for the appropriate management and a good outcome for this injury. Surgical fixation of the fracture with ligamentous or syndesmotic repair may be required to stabilize the reduced ankle in the anatomical position. The trapped fibula also hinders the attempts of close reduction in most cases and necessitates open approaches. Dislocation of the intact fibula and fibular entrapment without dislocation is among other variants also described in the literature. A high index of suspicion and careful imaging assessment of imaging is critical not to miss these injuries and manage them appropriately.

AUTHORS' CONTRIBUTIONS

The ISD did the literature search and wrote the first draft, while GSD collected data and wrote the final draft. Both authors have critically reviewed and approved the final draft and are responsible for the manuscript's content and similarity index.

DECLARATION OF THE PATIENT CONSENT

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands that his name and initials will not be published, and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

FINANCIAL SUPPORT AND SPONSORSHIP

This study did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

CONFLICTS OF INTEREST

There are no conflicts of interest.

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