Acta Scientific Orthopaedics (ISSN: 2581-8635)

Volume 7 Issue 6 June 2024

Research Article

Talar Fractures: Results and Outcomes

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Received: March 15, 2024

Published: May 08, 2024

Abstract

Background: Talar fractures occur infrequently and have been associated with high complication rates. The purpose of our present study were to evaluate the rates of early and late complications after operative treatment of talar fractures, to ascertain the effect of surgical delay on the development of osteonecrosis, and to determine the functional outcomes after operative treatment of such fractures.

Methods: We retrospectively reviewed the records of 78 with 60 males and 18 female patients with talar fractures who were managed at Tejasvini Hospital and SSIOT from 2004 to 2010. Amon g these patients 5(3.9%) had fracture of the body of talus, 55(42.9%) had fracture neck of the talus, 6 (4.68%) had fracture of the head of the talus, and 12 had dislocations in 12 (9.36%) of the 78 patients. All fractures have been treated with open reduction and internal fixation. 78 fractures were evaluated during this period after surgery. Complications with radiographic evidence of osteonecrosis and posttraumatic arthritis was evaluated. The results were evaluated using Hawkin's Criteria.

Results: Radiographic evidence of osteonecrosis was seen in 20 (25.64%), with joint stiffness in 53 (67.94%), peritalar arthritis in 32(41.02%), malunion in 17(21.79%), and infection in 8 (10.25%) of the 78 patients studied.

The mean time to fixation was 3.6 days for patients who had development of osteonecrosis, compared with 6 days for the patients who did not have development of osteonecrosis. With the numbers available, no correlation could be identified between surgical delay and the development of osteonecrosis. Osteonecrosis was associated with communition of the talar neck fractures and open fractures. 32 Patients had development of posttraumatic arthritis, which was more common after communited fractures and open fractures. Patients with communited fractures also had worse functional outcome scores.

Keywords: Hawkin's Criteria; CT Scan

Introduction

Talar fractures occur infrequently. Such fractures are a result of high energy trauma and are characterised by displacement, communition, and sot tissue injury which has an impact on the treatment and outcome. Urgent reduction of these fractures have been advocated to protect any remaining blood supply to the talar body and to promote revascularisation [1,2].

The blood supply to the talus has been well characterised [1,2] primarily localised to the talar neck and medial part of the talar body. These fractures often disrupt the congruity of the peritalar joints [3,4]. Restoration and preservation of the anatomic alignment may limit the development of posttraumatic arthritis. Which have a devastating impact on the overall outcome. The purpose of our present study is to evaluate the complications of the talar fractures and to the present the outcome after surgical intervention.

Materials and Methods

We retrospectively reviewed the records of 78 with 60 males and 18 female patients with talar fractures who were managed at Tejasvini Hospital and SSIOT from 2004 to 2010. Among these patients 5(3.9%) had fracture of the body of talus, 55(42.9%) had fracture neck of the talus, 6 (4.68%) had fracture of the head of the talus, and 12 had dislocations in 12 (9.36%) of the 78 patients. All fractures have been treated with open reduction and internal fixation. 78 fractures were evaluated during this period after surgery.

Complications with radiographic evidence of osteonecrosis and posttraumatic arthritis was evaluated. The results were evaluated using Hawkin's Criteria.

These fractures were treated with open reduction and internal fixation with cannulated cancellous screw fixation. Using anteromedial or anterolateral approach with 10 patients requiring medial malleolar osteotomy for better visualisation dn reduction. Postoperatively manged with casting for 6 weeks and mobilised according to the fracture healing as indicated by the radiographic evidence.

C T Scan was used in cases of communized fractures of talus but not regularly. Osteonecrosis was defined as on plain radiograph as any area of increased density of the talar dome relative to the adjacent structures. And posttraumatic arthritis was defined as any loss of joint space., formation of osteophytes or development of subchondral cysts or sclerosis.

Results and Discussion

Radiographic evidence of osteonecrosis was seen in 20 (25.64%), with joint stiffness in 53 (67.94%), peritalar arthritis in 32(41.02%), malunion in 17(21.79%), and infection in 8 (10.25%) of the 78 patients studied [5].

The mean time to fixation was 3.6 days for patients who had development of osteonecrosis, compared with 6 days for the patients who did not have development of osteonecrosis. With the numbers available, no correlation could be identified between surgical delay and the development of osteonecrosis. Osteonecrosis was associated with communition of the talar neck fractures and open fractures. 32 Patients had development of posttraumatic arthritis, which was more common after communited fractures and open fractures. Patients with communited fractures also had worse functional outcome scores.

In conclusion, it has been suggested that early operative intervention protects the already tenous blood supply to the talus. Although the numbers in the series are small, no correlation was found between the timing of fixation and the development of osteonecrosis. With this study we recommend urgent treatment and reduction of dislocations and proceeding with definitive fixation when there is minimal soft tissue swelling to promote fracture healing and early mobilisation status to the patient.

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