

Case Report

Combined Fracture of the Talus: Arthroscopic Treatment

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Abstract: The purpose of this article is to report the treatment and short-term results of a combined fracture of the talus treated arthroscopically. A 29-year-old man sustained an anterolateral osteochondral grade III fracture of the talus dome associated with a coronal fracture of the body of the talus. This injury was reduced and fixed arthroscopically using cannulated screws. The patient returned to his daily style of living after 3 months time. One year later, the patient remains asymptomatic. Radiography showed neither signs of osteonecrosis nor osteoarthritis of the talus at the 1-year follow-up. Therefore, arthroscopic surgery could be an alternative treatment for this kind of talus fracture. **Key Words:** Talus fractures—Osteochondral fracture—Arthroscopy.

Talus fractures are accepted to be rare and to have a high risk of complications.¹⁻⁴ Sneppen et al.⁵ classified the talus fractures into 5 grades, depending on the line of fracture and its location. Grade I includes osteochondral lesions of the talar dome, which were previously classified in 4 grades by Berndt and Harty.⁶ Classical treatment for talus fractures has been open reduction and internal fixation. At the present time, arthroscopic osteosynthesis for acute lesion of the talar dome is recommended.^{7,8} We present a case of a combined fracture of the body of the talus and the talar dome, and its simultaneous arthroscopically assisted osteosynthesis.

CASE REPORT

A 29-year-old man was involved in a traffic accident and sustained high-energy trauma to his left ankle. Physical examination showed pain and swelling

on the dorsal and medial aspect of the foot. There was no significant injury to the lateral ligaments of the joint. Radiologic studies included simple radiographs and computed tomography scanning. A complete coronal fracture line of the body of the talus, grade III according to Sneppen,⁵ was diagnosed (Fig 1). An osteochondral grade III fracture involving the anterolateral aspect of the talar dome was associated. Luxation of the talus was not associated.

An arthroscopic examination was carried out through 2 standard portals, anterolateral and anteromedial. Manual distraction was applied. Partial synovectomy, washing out, reduction of the fracture site, and osteosynthesis using 2 navicular cannulated screws placed in an anteroposterior direction through accessory portals, were performed under arthroscopic and fluoroscopic control (Fig 2). A 13 × 10 × 8 mm osteochondral fragment was reduced and synthesis was carried out using a third navicular screw placed in the craneocaudal direction through the anterolateral portal (Fig 3).

Postoperatively, a compressive bandage was applied for 2 weeks, after which active physiotherapy was initiated. A second-look arthroscopy was carried out 3 months postoperatively that showed complete consolidation of the osteochondral lesion of the dome. Therefore, the screw was removed and progressive weight bearing was allowed.

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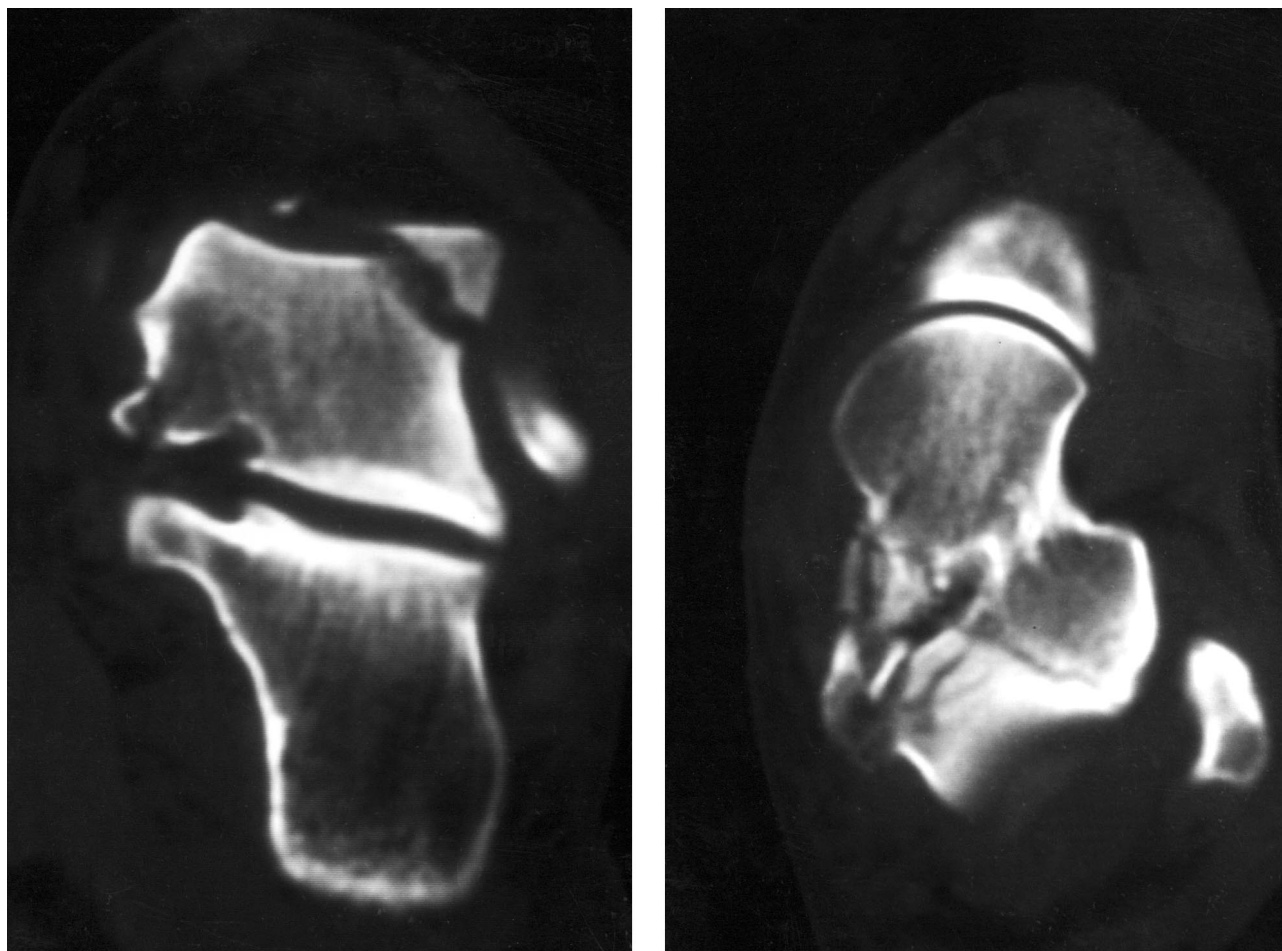


FIGURE 1. Computed tomography scans showing complete coronal fracture of the body and the associated osteochondral fracture.

The patient was clinically asymptomatic, with a complete range of motion of the ankle joint and living normally at the 12-month follow-up examination. Radiographic control showed complete consolidation of both fractures sites with no signs of necrosis (Fig 4).

DISCUSSION

This case presents an unusual talus fracture association—a coronal fracture of the body with an osteochondral fracture of the talar dome. Classical treatment of fractures of the body of the talus seeks anatomic reduction with minimal surgical exposure to avoid avascular necrosis.¹⁻⁴ To avoid vascular damage, a percutaneous approach under fluoroscopic control has been recently recommended.⁹ In this case, arthroscopic and fluoroscopic control allows a more accurate reduction of the fracture site.

Arthroscopic treatment of osteochondral fractures of the talus has been widely recommended in recent

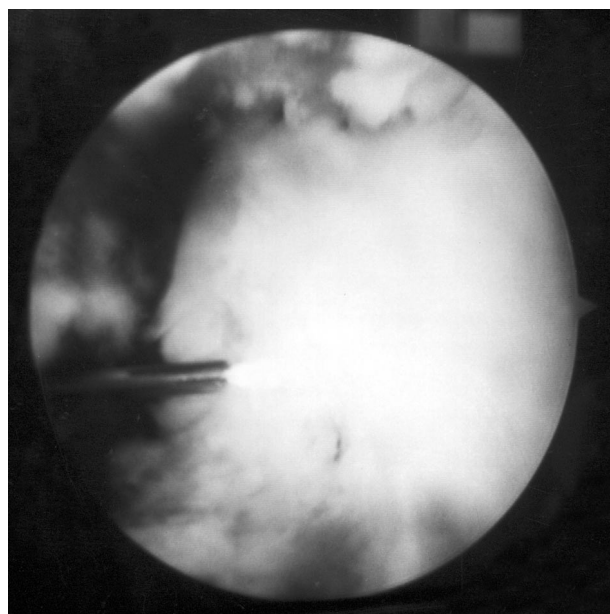


FIGURE 2. Arthroscopic synthesis using cannulated screws.

years.^{7,10-17} Classically, conservative treatment for grades I-II⁶ and removal of the fragment and local curettage for grades III-IV^{13,14} has been indicated. However, Kristensen et al.⁸ and Kelbérine et al.⁷ have recently introduced arthroscopic osteosynthesis as a treatment for osteochondral lesions of the anterior aspect of the talar dome, with satisfactory functional results.

Combined arthroscopic synthesis of both fractures, as far as we know not previously described, has allowed healing of the lesion with fast recovery of ankle function and minimal surgical injury. This treatment allowed the patient to start the rehabilitation program 15 days postoperatively, decreasing both muscle atrophy and joint stiffness. From our point of view, this treatment becomes another option for this kind of lesion. This case demonstrates that arthroscopic surgery is an alternative to open surgery as a treatment of talus fractures.



FIGURE 3. Radiographic control after anatomic reduction and internal fixation of both fractures.

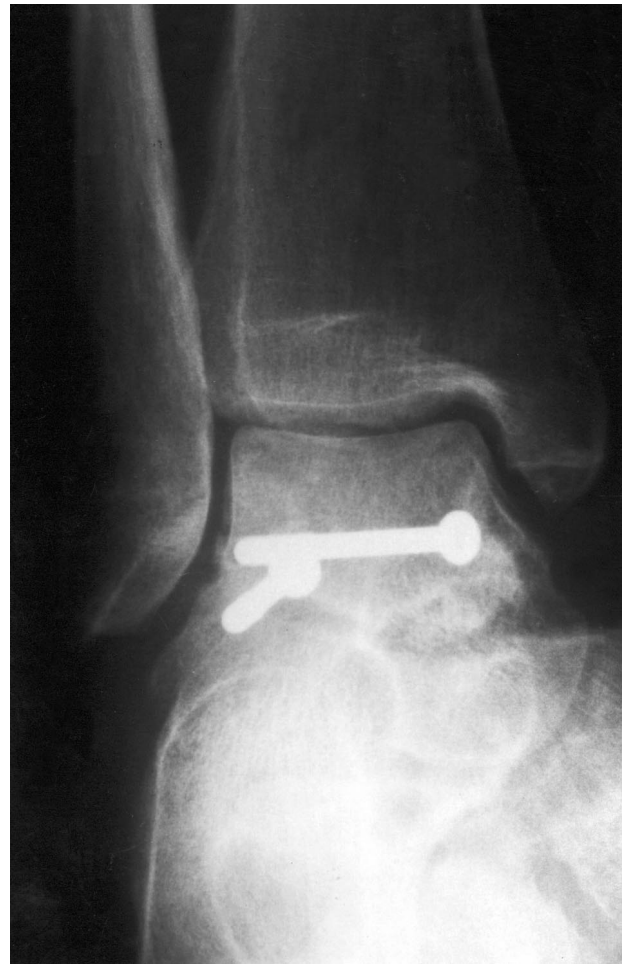


FIGURE 4. Radiographic control 12 months after surgery, showing complete consolidation of both fractures with no signs of necrosis.

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