

Combined Talar Body and Medial Malleolous Fracture: A Case Report

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ABSTRACT

The combination of ipsilateral talar body and medial malleolus fracture is rare to occur. Such injuries are seen in multiply injured and polytraumatised patients. The high variability of talar fractures, their relatively low incidence together with the high percentage of concomitant injuries makes treatment of these injuries a challenge to the surgeon. Open reduction and adequate internal fixation followed by supervised aggressive physiotherapy gives good functional outcome as in this case.

KEY WORDS: Talar body fracture; Medial malleolus fracture

Introduction

Fractures of the talus account for the 0.3% of the total of fractures with an incidence of 3.2 per 100000 of population and are more common in males (82:18). Talar body fractures occur in only 7% to 38% of all talar fractures. [1] Sneppen et al. classified talar body fractures into five distinct groups: compression (talocrural joint), shearing (coronal or sagittal), posterior tubercle, lateral tubercle and crush fractures. [2] Sneppen et al. reported the early results for patients with fractures of the talar body, most of which had been treated non-operatively. High rates of malunion, osteonecrosis, and arthritis were noted. [2] There have been isolated reports of operative treatment. [3,4,5]

The clinical outcome after talar body fractures is determined by the severity of the injury and the quality of reduction and internal fixation.

The timing of definite internal fixation does not appear to affect the final result. The incidence of avascular necrosis is almost certainly dictated by the fracture pattern and its disruption of the intrinsic blood supply to the talus. The revascularization process can be achieved by stable surgical reduction and internal fixation. On the other hand anatomic reduction provides low rates of arthritis. [6,7] Preoperative planning of definite internal fixation requires CT scanning. To obtain a complete intraoperative overview allowing for anatomical reconstruction of the articular surfaces and the axial deviation bilateral approaches are usually necessary. Internal fixation is achieved with screws or mini-plates.

Materials and Methods

A male 34 years old patient of free history and

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Pre-Op Xray Post-Op Xray



3 Months Post-Op Xray



1 Year Post -Op Xray



2 Years Post-Op Xray

significantly increased body weight (140 kg) is brought to the E.R. due to a traffic accident. During the physical examination the patient complained of pain at his left ankle and right wrist while both sites appeared to be significantly swollen and bruised. Radiographic evaluation with plain x-rays set the diagnosis of perilunar dislocation of the right carpus and a combined shearing sagittal talar body and medial malleolous fracture of the left foot. Surgical treatment was decided in order to achieve anatomic reduction of the left ankle and the patient was operated the next day using open reduction and internal fixation of the talar body and medial malleolous.

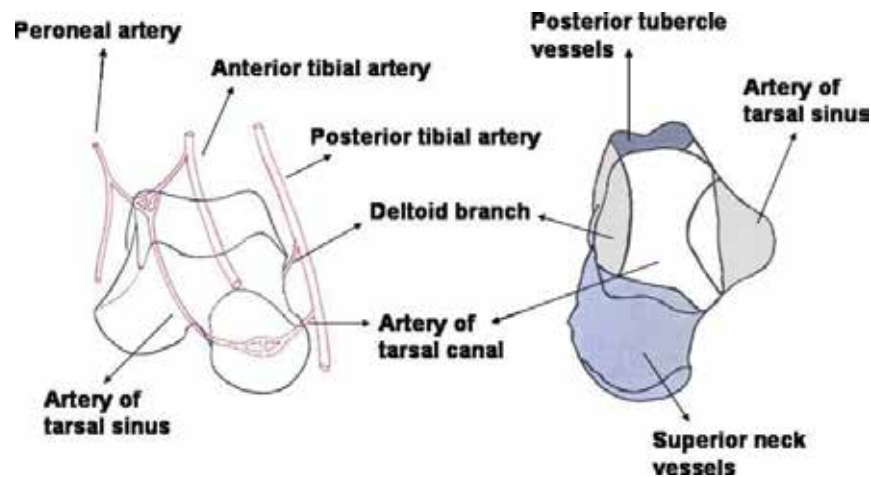
Results:

Physiotherapy was initiated three months post operation for a total duration of six months. Two

years after surgery the patient presents with moderate symptoms like swelling of the ankle after extended periods of standing, or walking. The clinical and radiological findings are indicative of the presence of post traumatic arthritis concerning both the ankle and subtalar joints, although no signs of avascular necrosis of the talus were found.

Discussion

Complexity in the blood supply to the talus itself makes it one of the bones in the body vulnerable to avascular necrosis. Arthritis in the ankle and subtalar joints can occur in the absence of avascular necrosis of the talus and joint incongruity. The reported incidence of avascular necrosis for severely comminuted talar body fracture is around 50%-75%. Vallier et al. reporting on radi-



ographic findings of 26 talar body fractures with a minimum follow-up of 1 year, noted a 38% incidence of AVN, 65% incidence of post-traumatic tibiotalar arthritis and 34% incidence of posttraumatic subtalar arthritis. [5] Lindvall et al., in 2004, reported on 26 isolated cases of talar neck and body fractures with a minimum follow-up of 48 months and found a 50% incidence of AVN and 100% incidence of post-traumatic arthritis. Timing of fixation did not seem to affect the outcome, union or prevalence of AVN in the later study. [8] The appearance of a radiolucent zone 4-8 weeks after the injury at the subcortical bone of the talar dome indicating bone remodelling “Hawkins’ sign” is highly predictive of a revitalisation of the talar body after a fracture. Talar body fractures are produced by an axial compression of the talus between the tibial plafond and calcaneus. In cases with a combined medial malleolar fracture,

an additional inversion torque seems to distribute this force to the medial structures, producing a vertical split of the talar body and the medial malleolar fracture. [9]

Conclusion

Fractures of the talar body are often severe injuries. Conservative treatment with closed reduction and casting leads to a very high rate of complications. Hence, open reduction and internal fixation in the appropriately selected patients can be performed safely with the prospect of reducing complications. An accurate reduction and stable fixation are also mandatory in order to provide the best biomechanical environment for revascularization of the lateral part of the talar body. [Ⓐ]

Conflict of interest:

The authors declared no conflicts of interest.

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ΠΕΡΙΛΗΨΗ

Η συνύπαρξη κατάγματος σώματος του αστραγάλου και του έσω σφυρού σύστοιχα δεν παρατηρείται συχνά. Τέτοιου τύπου κακώσεις απαντούν συχνότερα σε πολυτραυματίες. Η μεγάλη ποικιλία των τύπων κατάγματος του αστραγάλου, η σχετικά χαμηλή τους επίπτωση, μαζί με την υψηλή πιθανότητα συνύπαρξης συνοδών τραυματισμών, καθιστά τους παραπάνω τραυματισμούς πρόκληση για τους χειρουργούς. Η ανοικτή ανάταξη και εσωτερική οστεοσύνθεση σε συνδυασμό με επιθετική φυσιοθεραπευτική αγωγή μετεγχειρητικά οδηγεί σε καλά λειτουργικά αποτελέσματα, όπως στο παρακάτω περιστατικό.

ΛΕΞΕΙΣ ΚΛΕΙΔΙΑ: Κάταγμα, Σώμα του αστραγάλου, Έσω σφυρό, Εσωτερική οστεοσύνθεση