

Case Report

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Complete Traumatic Talus Dislocation: A Rare Case Report

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ABSTRACT

A complete traumatic talus dislocation is an exceedingly rare injury pattern. A case of reimplantation of an open traumatic complete intact talus dislocation and distal fibula fracture following a motor vehicle accident is reported. A review of the literature and emergency medicine management recommendations follows.

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Intro/Case Report

A 28 year-old, otherwise healthy male, high on methamphetamines, was brought in to the emergency department by ambulance after being hit on his moped by a vehicle traveling at a high rate of speed. The patient was thrown a minimum of 30 feet and was in severe distress complaining of right ankle pain on arrival. Paramedics performed an emergent anatomical field reduction and air splinting of the ankle secondary to vascular compromise. The patient had an approximate 12 cm horizontal linear laceration on the lateral ankle at the level of the malleolus and the distal foot had rotated 180 degrees counter clockwise. Pre-hospital fire squads discovered two bones, connected by ligamentous tissue, another 30 ft beyond the patient and transported these amputated fragments to the emergency department.

Upon arrival in the ED, pain control, fluid resuscitation, antiemetics, antibiotic therapy, tetanus prophylaxis and emergent procedural sedation for fracture reduction, long leg splinting, and wound irrigation, debridement and skin closure was performed. Post-splinting, palpable dorsalis pedis and posterior tibial pulses (1+) were noted and capillary refill of the distal digits was assessed at approximately two to four seconds. Emergent scout imaging of the dislocated bones and ankle are seen in cross table lateral views and AP (Images 1A & 1B). Fracture fragments were wrapped in moist sterile saline 4x4s, placed in plastic and packed on ice. Pan-CT imaging revealed small bilateral frontal traumatic subarachnoid and intraparenchymal hemorrhages and was otherwise negative for acute traumatic injuries. The patient was then taken emergently for reimplantation of his open traumatic complete talar and distal fibular dislocation under regional anesthesia. Intra-operative reimplantation with internal stabilization and external fixation device is seen in fluoroscopy lateral & AP views of the ankle Figure 1 (images 1C & 1D).



Images A & B: Scout lateral & AP radiographs of the ankle following emergent field reduction and ED splinting of RLE secondary to vascular compromise. Of note image B illustrates open traumatic dislocation views of an intact talus and a distal fibula fracture fragment (white arrows pointing to amputated bones and their anatomical origins). Images C & D: Intra-operative fluoroscopy imaging of reimplantation of talus and distal fibula, lateral and mortise views, showing good anatomical alignment following external fixation and k-wire stabilization (black arrows pointing to re-implanted bones).

Conclusion

Complete traumatic talus dislocations, of the open and closed variants, are exceedingly rare and most commonly occur in falls from a height or motor vehicle collisions with impact to a plantar-flexed, inverted foot [1]. Although a rare injury pattern, emergent reimplantation of traumatic open complete talus dislocations have been successfully performed. Emergent reimplantation is the recommended treatment over talar prosthesis with total ankle arthroplasty despite high vascular and infectious risks. Subsequent osteonecrosis secondary to compromised vascular supply following reimplantation appears inevitable. Bone grafting is of some assistance but post-traumatic arthritis, limited range of motion and joint fusion are common [1]. Of greater concern is the high risk of osteomyelitis which has been avoided with good joint washout, emergent antibiotic therapy and prompt re-implantation [2]. Pre-hospital medical teams should always collect and bring amputated extremities with them to the emergency department for possible salvage. Traditional teaching has been to wrap amputated parts in moist sterile saline gauze, place into a plastic bag, and transport to the emergency department on ice. Emergency management of open fractures recommends prompt administration of a 1st generation cephalosporin and an aminoglycoside with wound irrigation, debridement, and closure [3]. If the talus is not recovered, significantly contaminated, or comminuted, a primary talectomy with either tibiocalcaneal pseudoarthrosis or

talar prosthesis with total ankle arthroplasty can be performed [4-6]. Given the rarity of this injury pattern, there is limited evidence suggesting relative or absolute contraindications to reimplantation.

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