

Treatment of Complex Hindfoot Trauma With Hindfoot Nail

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Purpose: Our objective was to assess outcomes associated with complex hindfoot trauma acutely treated with hindfoot nailing.

Methods: A case series at a Level I trauma center was performed to identify trauma patients with complex hindfoot fractures who underwent hindfoot nailing as definitive treatment after initial external fixation between 2012 and 2020. Indications included a combination of patient comorbidities, fracture severity, and soft-tissue injury. Exclusion criteria included follow-up less than 3 months. Postoperative radiographs were interpreted by a fellowship-trained foot and ankle surgeon. Primary outcome measures included unplanned reoperation/revision and deep infection. Deep infection was defined as any patient requiring surgical debridement after definitive fixation with positive cultures or the presence of positive cultures at the time of planned surgery. Fractures were classified using the AO/OTA classification and injury characteristics and postoperative complications were recorded via chart review.

Results: 26 of 29 of identified patients met inclusion criteria. The most common AO/OTA classification was 43C (62%). The average age was 55 years (range, 31-94) and the most common mechanism of injury was motor vehicle crash (38%). 13 fractures (50%) were open, with Gustilo Anderson grade IIIA fractures being the most common (38%). The overall deep infection rate was 15% with 50% of cases positive for a history of diabetes mellitus or smoking. Unplanned reoperations occurred in 7 cases (27%). Among these, a total of 4 (57%) occurred due to the development of deep infection, 2 (29%) were nonunions, and 1 (14%) was indicated for hardware failure. Below-the-knee amputation occurred in one patient with nonunion (4%), which was a grade IIIA open pilon fracture with significant bone loss. Union was achieved in the majority of patients (92%).

Conclusion: Treatment of complex hindfoot trauma with intramedullary nailing has a high union rate as a salvage procedure in a poor host. Surgeons should consider this treatment in patients who are not candidates for standard open reduction and internal fixation techniques.