

Outcomes of Tibiototalcaneal Hindfoot Fusion Nails in the Setting of Acute Lower Extremity Trauma

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Purpose: This study was undertaken to evaluate unexpected return to the operating room within 2 years of surgery.

Methods: This Level-IV retrospective case series was conducted at a Level-I academic trauma center. 54 patients with significant comorbidities with acute lower extremity trauma were treated with a tibiototalcaneal hindfoot fusion nail. Injuries included 28 (52%) tibial pilon fractures, 9 (17%) bimalleolar ankle fractures, 9 (17%) trimalleolar ankle fractures, 7 (13%) tibial shaft fractures, and 4 (7%) talus fractures; 27 (49%) were open injuries. The average age was 63 years, 32 patients (59%) had diabetes, 46 (85%) cardiovascular disease, 16 (30%) psychiatric disorder, 7 (13%) chronic kidney disease, and 8 (15%) peripheral neuropathy. Average body mass index (BMI) was 32. Patients were followed over a 2-year period, with an average follow-up of 12.5 months.

Results: Of 54 patients included in this study, 22 had an unexpected return to the operating room including 19 for hardware removal, 13 for irrigation and debridement and/or placement of an antibiotic delivery device, 4 for amputation, and 4 for revision fusion. Comorbidities most prevalent in patients requiring reoperation were cardiovascular disease (n = 19, 86%), diabetes mellitus (n = 15, 68%), and psychiatric disorders (n = 10, 45%). Chronic kidney disease (n = 3, 14%) and peripheral neuropathy (n = 5, 23%) were found less commonly in those requiring reoperation.

Conclusion: There was a high rate of return to the operating room for patients in this series, but a relatively low rate of amputation. Since patients were indicated for this course of treatment on the basis of comorbidities felt to put them at high risk for loss of limb with traditional treatment, acute hindfoot fusion nailing may represent a viable option in a select group of high-risk patients and injuries.