What Is the Rate of Arthroplasty or Arthrodesis After Operative Treatment of Talus Fractures?

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Purpose: Talus fractures are rare injuries. To date, there is limited literature on outcomes after modern operative treatment of talus fractures. The purpose of this study was to report on the short-term, mid-term, and long-term rates of salvage treatment (conversion to arthroplasty or arthrodesis) after operative treatment of talus fractures.

Methods: This was a retrospective cohort study of all patients with a talus fracture treated surgically at a Level I trauma center between 2008 and 2018. Detailed demographic, injury, and radiographic data were collected as well as data on reoperations performed at our center. Attempts were made to contact all patients to ask if they underwent subsequent reoperation after they completed follow-up at our center.

Results: A total of 338 patients with surgically treated talus fractures were identified. Of these, 219 (65%) were men. The average age was 37 (standard deviation [SD] 10). 201 patients (59%) had an ipsilateral foot or ankle fracture. 104 (31%) were talar body fractures, 42 (12%) were lateral process fractures, 2 (1%) were posterior process fractures, and the remainder (56%) were talar neck fractures, of which 10 were Hawkins type I, 54 were type IIA, 70 were type IIB, 38 were type III, and 18 were type IV. The mean duration of follow-up was 5 years. 49% of patients had radiographic evidence of arthritis at most recent follow-up. Using Kaplan-Meier survival analysis, the rate of failure (conversion to arthroplasty or arthrodesis) was 1% (95% confidence interval [CI] 0-3%) at 1 year, 2% (95% CI 1-5%) at 2 years, 5% (95% CI 3-10%) at 5 years, 10% (95% CI 6-17%) at 10 years, and 15% (95% CI 8-25%) at 14 years. Higher Hawkins classification and presence of radiographic arthritis were associated with increased likelihood of conversion. Age at time of injury was not associated with subsequent conversion.

Conclusion: Rates of conversion to arthroplasty or arthrodesis remain lower than anticipated even at 14 years after operative treatment of talus fractures. Higher Hawkins classification is associated with increased risk of conversion.