Outcomes of Revision Ankle Arthroplasty using a Fixed-bearing, Stemmed Intramedullary Prosthesis
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Introduction/Purpose: As in all total joint arthroplasty, longevity is finite, and the need for predictable revision surgery is mandatory. Literature is sparse describing revision total ankle arthroplasty (TAA) feasibility and outcomes. Revision total ankle arthroplasty involving implant exchange remains in its infancy, making critical assessment of outcomes necessary to guide future treatment options. The purpose of this study was to analyze the clinical outcomes of revision TAA using a minimum 2-year follow-up to evaluate for early failure and outcomes.

Methods: Retrospective chart review identified 18 patients that underwent revision of their TAA to a third generation FDA approved fixed-bearing, intramedullary stemmed implant with a minimum 2 year follow up. Once identified, all patients were contacted for an in-office outcomes questionnaire, examination, and radiographic follow up. Outcomes included the Foot & Ankle Disability Index (FADI) Score, Foot Function Index (FFI), Visual Analog Scale (VAS) used for pain, and ankle range of motion.

Results: The mean age of patients at the time of revision was 59.6±9.7 years and the mean follow up was 4.2±2.1 years. The mean FADI score was 69.9±17.9, the mean FFI was 49.1±15.2, and the mean VAS score was 33.3±25.8. Mean ankle dorsiflexion was 19.6±7.8 degrees and mean ankle plantar flexion was 18.6±7.5 degrees. Postoperative complications included one infection requiring irrigation and debridement with hardware removal for a medial ankle soft tissue abscess, and one medial malleolus fracture that underwent open reduction and internal fixation. Three revision prostheses failed during the follow-up period, requiring additional surgery. Reasons for failure included talar subsidence in 2 patients secondary to osteolysis and/or avascular changes to the talus, and medial/lateral gutter impingement due to an oversized talar component in 1 patient.

Conclusion: Revision of ankle arthroplasty requires significant planning in extraction of the failed prosthesis, implantation of the revision prosthesis, and alignment of the foot. Major complications are potentially avoidable through careful bone assessment prior to revision surgery, and results are acceptable in this early follow-up study using a fixed-bearing intramedullary stemmed implant system.

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