

## Patient-Centered Outcomes Following Total Ankle Arthroplasty vs Ankle Arthrodesis: A Comparative Cohort Study

Lauren M. Matheny, MPH, Daniel J. Liechti, MD, Nicholas S. Johnson, MD, Thomas O. Clanton, MD

**Category:** Ankle Arthritis

**Keywords:** ankle fusion, ankle arthrodesis, total ankle arthroplasty, total ankle replacement, ankle osteoarthritis, outcomes

**Introduction/Purpose:** Ankle arthritis is a debilitating disorder, which has been shown to significantly limit activities of daily living and lead to reduced quality of life. Total ankle arthroplasty (TAA) and ankle arthrodesis are common treatments for ankle arthritis; however, patient indications may differ based on individual patient needs. Few studies compare patient-centered outcomes following these two procedures, which may be useful in determining the appropriate procedure.

**Methods:** This study was approved by an IRB. All patients between January 2009 and November 2013 who underwent TAA with a third generation implant or ankle arthrodesis by a single surgeon for treatment of ankle arthritis were included. Patients completed a subjective questionnaire at minimum two years following index surgery. Outcomes measures included Foot and Ankle Disability Index (FADI), Foot and Ankle Ability Measure (FAAM), Lysholm score, WOMAC, SF-12 physical component summary (PCS) and mental component summary (MCS), Tegner activity scale and patient satisfaction with outcome. Detailed operative data and intraoperative findings were documented at time of surgery. All data were collected prospectively.

**Results:** There were 77 patients (46 males, 31 females) (mean age = 60.2 years (range 30.2-78.4), (mean BMI=27.7 (range 17.0-39.1)) included in this study. There was 85% follow-up at an average of 3.5 years (range 2.0-6.6). The arthrodesis cohort was significantly younger than the TAA cohort (54.1 vs. 62.7) ( $P=.002$ ). Five (7.8%) patients required revision surgery. There was no significant difference in failure rate between cohorts, with 3 patients in the TAA cohort and 2 patients in the arthrodesis cohort ( $P=.593$ ). There was no significant difference in any outcome measures including FADI and subscales, FAAM and subscales, Lysholm, WOMAC and subscales, SF-12 PCS and MCS or patient satisfaction with outcome, except Tegner (Table I).

**Conclusion:** Patients who underwent TAA or arthrodesis as treatment for end-stage ankle arthritis had low failure rates and similar postoperative function at final follow-up. Activity level was significantly lower in the TAA cohort; however, patients were highly satisfied with their outcome regardless of cohort. Since good outcomes may be achieved with both TAA and arthrodesis, operative procedure should be matched based on patient expectations of activity and function.

---

Foot & Ankle Orthopaedics, 1(1)  
DOI: 10.1177/ 2473011416S00244  
©The Author(s) 2016