

Swelling Results in Poor Outcome After Ankle Arthritis Surgery

Alastair S. Younger, MD, FRCSC, Timothy R. Daniels, MD, FRCSC, Kevin Wing, BSc, MD, FRCSC, Murray J. Penner, MD, FRCSC, Mark A. Glazebrook, MD, MSc, PhD, FRCS(C), Andrea Veljkovic, MD FRCSC, Hubert Wong, Peter Dryden, MD, MSc, BSc, FRCS(C)

Category: Ankle Arthritis

Keywords: ankle arthritis swelling outcome ankle fusion ankle replacement nonunion

Introduction/Purpose: Patients often comment on swelling after foot and ankle surgery. However the relationship between swelling and outcome has not been defined. Pinsker and Daniels demonstrated that swelling was an important aspect of outcome. The purpose of this paper was to determine the relationship between swelling score and outcome after ankle fusion and replacement. A secondary purpose was to determine how this relationship changed in time, how swelling score changed before and after surgery, and determine differences in swelling score between total ankle replacement (TAR), open ankle arthrodesis (OAA) and arthroscopic ankle arthrodesis (AAA).

Methods: The MODEMS outcomes package from AAOS was used, with the validated ankle osteoarthritis score (AOS) score being used to assess outcomes in the pain and disability domains. The swelling score was indexed from 1 to 5, 1 being no swelling and five being severe swelling. Outcomes were recorded pre-operatively and annually up to 2010. Statistical analysis was performed using 95% confidence intervals and correlations being determined using Pearson's correlation and r^2 values.

Results: The swelling score was correlated with AOS score preoperatively. Postoperatively patients with a swelling score of 1 had an average AOS score of 15.1 (CI 13.3 to 16.9), a swelling score of 2 had an AOS score of 23 (CI 21.7 to 24.9), 3 an AOS of 31 (CI 29.6 to 33.1), 4 an AOS of 33.6 (CI 34.9 to 38.8), and 5 an AOS of 39 (CI 35.3 to 43.0).

There was therefore a difference in outcome score for all groups of swelling score (i.e. 1 scored better than 2, 2 better than 3, 3 better than 4 and 4 better than 5).

Swelling scores were the same for TAR, OAA and AAA preoperatively. Postoperatively swelling scores were lower for AAA (2.1, CI 1.9 to 2.2) compared to TAA (2.5, CI 2.4 to 2.6) and OAA (2.5, CI 2.4 to 2.6).

Conclusion: Swelling has a relationship with outcome. Swelling after surgery may result in poorer outcomes. Strategies to reduce swelling such as patient education about elevation, surgical technique and the use of compression stockings may improve outcomes. Arthroscopic surgery may have better outcomes because of the reduction in postoperative swelling.

Foot & Ankle Orthopaedics, 1(1)
DOI: 10.1177/2473011416500285
©The Author(s) 2016