

Higher In-Hospital Complications in Ankle Fusion Than Ankle Arthroplasty: A Matched Cohort Study

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Introduction/Purpose: Ankle fusion and total ankle arthroplasty (TAA) are common surgical procedures used to treat ankle morbidity. Little is known about the comparative rates of in-hospital complications between patients treated with ankle fusion and TAA.

Methods: Data from the 2002-2013 Nationwide Inpatient Sample releases were analyzed. 4,451 TAA patients and 16,277 ankle fusion patients were identified using International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) 81.11 and 81.56 procedure codes, respectively. ICD-9-CM diagnosis codes were utilized to classify major or minor in-hospital complications. Fusion and TAA patients were exact matched on age, gender, race, hospital type, geographical region, comorbidities, and diabetes status. Minor and major in-hospital complications, including mortality were compared using chi-square and multivariate logistic regression.

Results: Exact matches were identified for 4,174 (93.8%) TAA patients, with a mean age of 62.2 years. The major in-hospital complication rate for ankle fusion patients was 14.7% (615 of 4,174) versus 6.4% (269 of 4,174) for TAA patients ($p < .01$). The minor complication rate for ankle fusion was 3.9% (169 of 4,174) compared to 4.6% (167 of 4,174) for TAA ($p = 0.91$). Fewer than 10 patients in either group died ($p = 0.59$). After adjusting for case-mix, ankle fusion patients were 2.46 times more likely to experience major complications (OR: 2.46, 95% CI 2.11-2.88) than TAA patients.

Conclusion: Compared to a matched cohort of ankle fusion patients, TAA patients are less likely to experience major in-hospital complications. These findings suggest that TAA may be a safer surgery than ankle fusion.

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