

Timing of Hindfoot Arthrodesis and Early Reoperation Rates for Total Ankle Arthroplasty

Pradip Ramamurti MD, Joshua M. Schwartz MD, Wendy N. Novicoff PhD, Joseph S. Park MD,
Minton T. Cooper MD

ABSTRACT

Background: Prior literature has demonstrated that ipsilateral hindfoot arthrodesis may increase the risk for reoperation after total ankle arthroplasty (TAA) and that simultaneous hindfoot arthrodesis with TAA could result in short term clinical and radiologic improvements. The purpose of this study is to compare the reoperation rates after TAA with prior hindfoot arthrodesis versus simultaneous arthrodesis and TAA.

Methods: Patients who underwent primary TAA were identified in the PearlDiver database. Patients were sorted into two study cohorts: hindfoot arthrodesis prior to TAA and simultaneous arthrodesis and TAA. Propensity matched control cohorts were identified for each study group. Multivariate analysis was conducted to account for any confounding variables and covariates when identifying differences in complications between cohorts.

Results: 297 patients underwent TAA with prior hindfoot arthrodesis and 174 with hindfoot arthrodesis concurrently. The incidence of reoperation (13.8% vs. 5.2%, $P<0.001$) and infection (12.6% vs. 5.9%, $P=0.011$) for the simultaneous cohort was higher when compared to the control. In contrast, there was no statistically significant difference in reoperation (5.1% vs. 4.7%, $P=0.787$) or infection (4.4% vs. 4.8%, $P=0.734$) rates when comparing the prior arthrodesis cohort to the control. Those undergoing simultaneous procedures had increased incidences of reoperation, wound complications, infection and emergency department visits ($P<0.0167$) when compared to the prior arthrodesis cohort.

Conclusion: Patients undergoing simultaneous hindfoot arthrodesis and TAA were found to have higher rates of reoperation and infection when compared to the control. In contrast, there was no difference in these rates in patients undergoing TAA with prior hindfoot arthrodesis compared the control. However, patients undergoing simultaneous procedures had increased rates of reoperations, wound complications, infection, and emergency department visits compared to the prior arthrodesis cohort. Simultaneous arthrodesis and TAA may be associated with increased rates of complications when treating concomitant end-stage ankle and hindfoot arthritis.

Level of Evidence: III, retrospective comparative database study

Keywords: Hindfoot Arthritis, Total ankle arthroplasty, Subtalar Arthritis, Triple Arthrodesis, Ankle Arthritis