

Similar Complication Rate following Ankle or Hindfoot Arthrodesis among Smokers and Nonsmokers

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INTRODUCTION: Joint arthrodesis is commonly performed in the field of foot and ankle surgery. This procedure can be more challenging in patients that smoke, as it can increase their risk of various complications. The purpose of this study is to determine which complications, if any, are associated with tobacco use in patients undergoing ankle or hindfoot arthrodesis in the first 30 days following surgery.

METHODS: Using the National Surgery Quality Improvement Program (NSQIP) database, we identified 1135 adult patients undergoing ankle (n=385), pantalar (n=43), triple (n=246), or subtalar (n=569) fusion between 2005 and 2020. Cases were identified using the following Current Procedural Terminology (CPT) codes for primary or concomitant arthrodeses: 27870, 28705, 28715, and 28725. Subjects were classified as nonsmokers (n=942) or smokers within one year prior to surgery (n=193). Demographics, medical comorbidities, and 30-day complication (e.g., wound breakdown, surgical site infection), readmission, and reoperation rates were compared between groups. The cohort was predominantly male (50.2%) and white (87.9%), with a mean age of 56.23 (range 18-89) years.

RESULTS: The groups had similar demographic and medical comorbidity characteristics, aside from age, which was significantly greater among the nonsmoking group (smoking=49.57 years, nonsmoking=57.59 years; $p<.001$). The cohort smoked, on average, 7.37 (range, 0-90) pack years. Pack years for the smoking and nonsmoking groups were 20.85 and 3.65, respectively ($p<.001$). 30-day complication (smoking=6.7%, nonsmoking=5.4%; $p=.549$), readmission (smoking=5.5%, nonsmoking=3.3%; $p=.173$), and reoperation (smoking=3.1%, nonsmoking=2.0%; $p=.346$) rates did not differ between groups.

DISCUSSION AND CONCLUSION: Our study found that patients who smoke within one year of surgery are not at increased risk of complication in the first 30 days following ankle or hindfoot fusion, as compared to nonsmokers. This finding is unexpected as smoking has often proven to adversely affect surgical outcomes. However, studies with follow-up beyond 30 days are needed to compare union rates and patient satisfaction between smokers and nonsmokers.