

Risk Factors for 30-Day Postoperative Complications in Traumatic Compartment Syndrome Patients

INTRODUCTION: No study has investigated the specific risk factors and rates for complications following decompression fasciotomy in traumatic compartment syndrome patients.

METHODS: The National Surgical Quality Improvement Program was queried to identify all patients who underwent surgery for traumatic compartment syndrome from 2008 to 2016. The identified pool of patients was further refined by selecting for those who had orthopaedic fasciotomies. Binary logistic regression analysis was used to identify risk factors for adverse events including postoperative complications and readmissions.

RESULTS: 379 patients were included (mean age 44.8, male 74.1%, white 68.3%) There were 109 patients who had post-decompression fasciotomy complications, 36 and 19 of whom required reoperations and were readmitted, respectively. Within 30-days postoperatively, the most common complications were weaning failure (33 patients, 30.3%) and bleeding requiring transfusions (31 patients, 47.7%). Binary logistic regression analysis revealed diabetes (OR=3.5 95% confidence interval [CI] [1.9-6.5], $p < 0.001$), active smoking (OR=2.2 95% CI [1.4-3.4], $p = 0.001$), hypertension (OR=1.6 95% CI [1.0-2.5], $p = 0.032$), dialysis (OR=4.7 95% CI [1.4-15.7], $p = 0.011$), and renal failure (OR=22.0 95% CI [5.0-96.1], $p < 0.001$) to be significant predictors of postoperative complications.

DISCUSSION: Diabetes, active smoking, hypertension, dialysis, and renal failure emerged as risk factors for postoperative complications. These findings may highlight the need to adjust postoperative management plans accordingly for patients at higher risk for complications.