



## Risk Factors for Readmission Following Posterior Cervical Fusion

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### Introduction

Posterior cervical fusion (PCF) is a common surgical procedure with high fusion rates and good long-term outcomes reported. Hospital readmissions are associated with increased morbidity, and consistent risk factors have not been identified for patients following PCF using a large nationwide database. The American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP) provides a large multicenter database and allows for the analysis of potential risk factors.

### Methods

This was a retrospective analysis of prospectively collected data from the ACS NSQIP database. Patients > 18 years old undergoing elective PCF between 2011 and 2012 were included. Patient baseline factors, perioperative data, preoperative labs, American Society of Anesthesiologists (ASA) scores and postoperative events were recorded. Patients were either 1) readmitted, or 2) not readmitted and the two cohorts were compared using univariate and multivariate logistic regression analysis with significance defined as  $p < 0.05$ . Odds ratio (OR) was calculated with a 95% confidence interval.

### Results

Overall 286 cases were included with 14 (4.8%) total readmissions within 30 days following PCF. Patients with diabetes had significantly higher rates of hospital readmissions (15% vs 43%,  $p=0.0074$ ) and this was an independent predictor of readmission (OR 4.1, 1.4-12.4). Age, obesity, ASA class, alcohol use, prior functional status, preoperative labs, operative variables (multi-level fusion, operative time) and other medical comorbidities were not significant predictors of readmission ( $p>0.05$ ). As expected readmission was associated with increased reoperation rates (3.0% vs 21.4%,  $p=0.0005$ ).

### Learning Objectives

Our objective was to analyze risk factors for readmission following PCF and associated complications and reoperation rates within 30 days post-operatively.

### Conclusions

This study demonstrated that diabetes was an independent predictor of readmissions in patients undergoing PCF, though other medical comorbidities and operative factors were not risk factors. As expected, readmission was associated with higher rates of reoperations. These factors should be considered during perioperative care in patients undergoing elective PCF.