



**Risk Factors for Wound Complications Following Anterior Cervical Discectomy and Fusion**  
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**Introduction**

Anterior cervical discectomy and fusion (ACDF) is a common surgical procedure with growing utilization and good long-term outcomes reported. Wound complications can be catastrophic and consistent risk factors have not been identified 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 NSQIP database. Patients > 18 years old undergoing ACDF between 2005 and 2012 were included. Patient baseline factors, perioperative data, preoperative labs, American Society of Anesthesiologists (ASA) scores and postoperative events were recorded. Patients were compared using multivariate logistic regression analysis with significance defined as p < 0.05. Odds ratio (OR) was calculated with a 95% confidence interval (CI).

**Results**

During the study period 3,845 patients met inclusion criteria. Rate of any wound complication was 0.78% (30/3,845) with superficial infection 0.52%, deep infection 0.20%, wound dehiscence 0.03% and organ space infection 0.03%. Higher rates of wound complications were associated only with ASA >= 3 (37% vs 56.7%, p=0.03) and operative time > 4 hours (6.5% vs 20%, p=0.003). Patients with wound complications had a higher rate of reoperation (1.7% vs 26.7%, p<0.0001), readmission (3.1% vs 20%, p=0.002) and total length of stay (LOS) > 5 days (5.6% vs 20%, p=0.0008). The only independent predictor of wound complications was operative time > 4 hours (OR 2.8, 0.9-6.8).

**Conclusions**

Higher rates of wound complications were associated with higher ASA class as well as longer operative time. As expected higher reoperation rates, readmissions and longer LOS were associated with patients developing wound complications. These factors should be considered during perioperative care in patients undergoing elective ACDF.

**Learning Objectives**

By the conclusion of this session, participants should be able to understand risk factors for wound complications in ACDF.

Multivariate Logistic Regression to Assess Independent Risk Factors for Wound Complications, N=3,845				
Risk Factors	Adjusted OR	95 CI		P Value
Operation Time > 4 Hrs	2.801	0.991	6.783	0.033