1,706 Cases of Abdominal Wall Reconstruction: What Factors Influence the Occurrence of Major Surgical Complications?

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Abstract

**Background:** Abdominal wall reconstruction (AWR) poses a significant surgical challenge, often in the setting of multiple failed attempts at repair in high-risk patients. We aim to assess risk factors for major surgical morbidity following AWR using the American College of Surgeons- National Surgery Quality Improvement Program (ACS-NSQIP) patient database.

**Methods:** A review of the ACS-NSQIP database of outcomes from 2005-2010 was performed to identify patients undergoing AWR utilizing CPT codes for ventral hernia repair and component separation. Independent variables included patient demographics, medical comorbidities and operative considerations. Major surgical complication (deep wound infection, graft or prosthetic loss or unplanned return to the operating room within 30 days) was used as our dependent variable. Stepwise-multivariate logistic regression was performed to evaluate patient risk factors influencing the occurrence of major surgical complications.

**Results:** 1,706 patients with an average age of 55.9 +/- 12.8 years were identified with 30.1% undergoing concurrent intraabdominal procedures and 57.1% undergoing mesh repair. Notable medical comorbidities included obesity (63.4%), smoking (24.9%), hypertension (53.1%), diabetes (19.9%) and anemia (22.6%). Average operative time was 211.7 +/- 105.0 minutes. Regression analysis determined that prolonged operative time (OR= 2.7, p<0.001) and ASA>2 (OR= 1.8, p=0.009) were positively associated, while advanced age (OR= 0.5, p=0.005) was negatively associated with the occurrence of major surgical complications.

**Conclusions:** Longer operative times and overall patient health are important prognostic factors for individuals undergoing abdominal wall reconstruction. The increased physiologic stress of longer operative duration on patients who often have multiple comorbidities appears to play a significant role in predicting negative outcomes after abdominal wall reconstruction.