Predictors of Postoperative Risk in Lumbar Spine Surgery

Hesham Mostafa Zakaria MD; Kevin Reinard MD; Feras Mossa-Basha; Brent Griffith MD; Victor Chang MD

Introduction

Identifying patient factors which are associated with postoperative complications is an important aspect of surgical risk stratification. With the increased scrutiny over cost of care, it is important to identify what pre-morbid conditions can put a patient at increased risk for complications. We attempt to identify patient characteristics associated postoperative morbidity and mortality in lumbar spinal surgery patients.

Methods

The perioperative course of 395 patients (192 male and 203 female) who underwent lumbar surgery at our institution from 2013 to 2014 was retrospectively reviewed. Pre-operative risk factors such as age, diabetes, smoking, CAD, and BMI were noted. Primary outcome measures included any 90 day post-op mortality and morbidity including: unplanned return to OR, 30 day and 90 day hospital re-admission, surgical site infection, wound dehiscence, new neurological deficit, DVT, PE, MI, UTI, urinary retention, hospital acquired pneumonia, stroke, and prolonged ICU stay. Statistical analysis was done to assess what pre-existing conditions were associate for a higher risk of complication.

Results

The overall rate of complication was 30% for any complication. Urinary retention was the most common complication (12%, N = 46) followed by SSI (9%, N = 36), and readmission within 90 days (9%, N = 36). Patients with complications were on average 3 years older (65.6 vs 62.3, p=0.015) and less likely to be smoking (19% vs 30%, p=0.026). BMI was associated with postoperative complications in female patients (p = 0.021), but not in males. Diabetes and CAD were not associated with increased complications. There was no observed difference in complications with revision surgery.

Conclusions

Age and smoking history affect postoperative complication risk after lumbar spine surgery. BMI affects the postoperative complication risk of lumbar spine surgery in female patients. Further research is required to delineate these factors more thoroughly, as well as identify more factors.

Learning Objectives

By the conclusion of this session, participants should be able to understand preoperative risk factors which predict postoperative morbidity.