



Influence of Gender on Outcomes after Lumbar Spinal Fusion

Parth Kothari BS; Jeremy Steinberger MD; Branko Skovrlj MD; Dante Leven DO; Nathan John Lee BS; Javier Z Guzman BS;

John I Shin BS; John M. Caridi MD; Samuel K Cho

Icahn School of Medicine at Mount Sinai



Introduction

Gender may have an effect on outcomes. Large scale studies examining the effect of gender on lumbar fusion outcomes have not been performed to date.

Methods

Adults (> 18 years) undergoing lumbar spinal fusion from 2005-2012 were identified using the Current Procedural Terminology (CPT) codes in the ACS NSQIP database. Patients were divided by gender. Baseline, operative, and outcomes data were compared in bivariate fashion. Univariate and multivariate analyses were performed to assess the impact of gender on 30-day postoperative complications and mortality.

Results

6,094 patients were identified, of which 55.1% were women. Male patients were younger (58.9 vs 60.6, $p<0.0001$), had lower rates of obesity (45.1% vs 48.7%, $p=0.005$), however males had increased likelihood to consume greater than two drinks per day in the two weeks prior to admission (5.52% vs 1.67%, $p<0.0001$) and higher cardiac comorbidities (59.74% to 57.1%, $p=0.036$), peripheral vascular disease (1.61% to 0.61%, $p=0.0001$). Intraoperatively, males had increased operative time more than four hours (36.6% vs 30.1%, $p<0.0001$) and higher rate of complications (1.02% vs 0.54%, $p=0.029$). In the postoperative period, females had higher rates of any complication (20.7% vs 16.7%, $p<0.0001$), higher rates of requiring blood transfusion (16.4% vs 13.1%, $p=0.005$), increased rates of urinary tract infection (2.86% vs 1.35%, $p<0.0001$), but lower rates of death (0.09% vs 0.37%, $p=0.02$). Length of stay, return to the operating room, unplanned reoperation, and unplanned readmissions were not statistically different between genders. On multivariate analysis, females had higher postoperative morbidity (Odds Ratio 1.329, $p<0.00$) but lower mortality (Odds Ratio 0.244, $p=0.043$). The increased rate of intraoperative complications in males was not statistically significant on multivariate analysis.

Conclusions

In evaluating gender differences on lumbar spinal fusion, thirty-day morbidity was higher in females but mortality was higher in males.

Learning Objectives

The objective of this study was to assess the effect of gender on 30-day outcomes after lumbar spinal fusion using a large national database.