



Is Obesity Correlated with Increased Complications Following Lumbar Surgery for Degenerative Conditions?

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Introduction

Studies have associated obesity and complications in spine surgery. To our knowledge no prospective studies have analyzed this correlation in patients undergoing elective lumbar surgery at a center treating a high percentage of obese patients. In this setting the impact of obesity on complications, operative time, and length of hospitalization remains uncertain. The purpose of this study was to investigate the correlation between obesity, complications, length of stay, and operative time in elective lumbar surgery.

Methods

Patients undergoing lumbar laminectomy or laminectomy with fusion for spinal stenosis, disc herniation, or spondylolisthesis were included. Follow up of at least 12 months was required. Patients were excluded in cases of trauma, tumor, infection, emergent surgery, deformity, and pseudarthrosis. Complications included wound infection, hematoma, urinary tract infection, deep venous thrombosis, pulmonary embolism, pneumonia, myocardial infarction, death, or new neurologic deficit. Patients were defined as “obese” for BMI = 35 based on the World Health Organization definition of class II obesity. Chi-square and student-t tests were used to analyze demographics, surgical characteristics, and complications.

Table 1: Demographic characteristics in obese versus non-obese (N = 602).

	BMI < 35	BMI ≥ 35	P-Value
Total	431	171	
Male	217 (50.3%)	71 (41.5%)	
Female	214 (49.7%)	100 (58.5%)	
Smoker	225 (52%)	107 (62.6%)	0.2
Preoperative narcotic use	229 (53%)	99 (58%)	0.27
ASA* Grade > 2	279 (65%)	144 (84%)	< 0.01
Diabetes	85 (20%)	68 (40%)	< 0.01
Diagnosis			
Disc herniation	77 (17.9%)	18 (10.5%)	0.13
Lumbar stenosis	246 (57.1%)	102 (60%)	0.13
Spondylolisthesis	168 (39.0%)	66 (38.5%)	0.13
Decompression only	113 (26%)	50 (29%)	0.34
Number of Levels	1.8 ± 0.8	1.9 ± 0.8	0.2
Fusion procedure	318 (74%)	121 (71%)	0.34

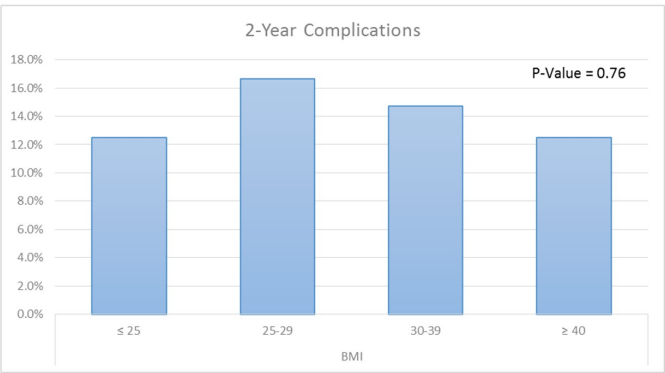
*American Society of Anesthesiologists; BMI = Body Mass Index

Table 2: Complications, readmission, length of stay, length of surgery

	BMI < 35	BMI ≥ 35	P-Value
Length of Surgery ¹	198 ± 81.5	214 ± 76	0.03
Length of Stay ²	3.7 5	4.2 7	0.45
90 Day Re-admission	28 6.5%	15 8.8%	0.38
90 Day Complications	67 15.5%	22 12.8%	0.44

¹ Measured in minutes

² Measured in days



Results

A total of 602 patients were included with 431 (71.5%) “non-obese,” and 171 (28.5%) “obese.” The 90-day complication rate was 14.8%, with surgical site infection and UTI seen most commonly. There was no significant difference in complications (15.5% in non-obese vs. 12.9% in obese, p = 0.46). Length of hospitalization was also not statistically different between the two groups (3.75 vs. 4.2 days, p = 0.448), while operative time was significantly shorter in the non-obese group (198 vs. 214 minutes, p = 0.026).

Conclusions

In this analysis of patients undergoing lumbar surgery at a high-volume center, BMI greater than 35 was not associated with increased 90-day complications or length of stay. These findings are in contrast to some previous literature, and may suggest that complications for obese patients can be mitigated.

Select References

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