



Impact of Affective Disorders on Recovery of Baseline Function in Patients Undergoing Spinal Surgery: A Single Institution Study of 275 Patients

Gautam Nayar, Aladine A. Elsamadicy, Rasheedat Zakare-Fagbamila, Julia Farquhar, Oren N. Gottfried

BACKGROUND: Decompressive spinal surgery patients have high expectations of recovering functionally, both at work and with leisurely activities. Affective disorders, such as depression or anxiety, are increasingly prevalent in this population and are associated with poorer baseline quality-of-life measures and worse postoperative outcomes. The study examined the results of affective disorders on self-reported recovery of baseline function (RBF) following decompressive spinal surgery.

METHODS: Medical records of 275 patients undergoing elective decompressive spinal surgery at a major academic institution were reviewed. There were 101 (36.7%) patients (with diagnosed anxiety or depression) in the affective disorder cohort (ADC) and 174 (63.6%) patients in the control cohort. The main outcome measure was self-reported RBF 3 months after surgery. Multivariate regression analysis was also used to determine whether affective disorders were a risk factor for poor RBF.

RESULTS: Baseline demographics, comorbidities, and perioperative variables between the two cohorts were similar, except for a higher proportion of females, more smokers, and longer length of stay in the ADC. On patient-reported outcome measures, the ADC had significantly decreased baseline scores and decreased improvement in scores over time. On univariate analysis, the ADC had significantly lower rates of RBF at 3 months after surgery. On regression analysis, affective disorders were an independent risk factors for poor RBF.

CONCLUSIONS: This study suggests that affective disorders are an independent risk factor for decreased recovery of baseline functionality after decompressive spinal surgery. Preoperatively identifying these patients could improve management of postoperative expectations and thereby improve surgical outcome.

INTRODUCTION

Spinal surgery patients often overestimate the benefits of operative intervention.¹ Furthermore, increased preoperative expectations have had a negative influence on postoperative satisfaction, outcome scores, and pain relief.²⁻⁴ One of the most common expectations of patients undergoing decompressive spinal surgery is improvement of functional abilities, both at work and with leisurely activities.^{3,5,6} Therefore, it is important to identify factors that influence patient perceptions of functional recovery following decompressive surgery.

Affective disorders, such as anxiety and depression, are becoming increasingly prevalent in the spinal surgery population.⁷⁻⁹ Preoperatively, patients with affective disorders face greater challenges with managing their health, productivity, employment, and finances.¹⁰⁻¹⁵ Furthermore, an affective disorder diagnosis is correlated with increased risk of unplanned hospital readmission because of postoperative complications.^{16,17} On patient-reported outcome measures (PROMs), which are validated tools for assessing a patient's opinion of their postoperative course, those with affective disorders have worsened disability,

Key words

- Affective disorders
- Anxiety
- Decompressive spinal surgery
- Depression
- Postoperative recovery
- Recovery of baseline function

Abbreviations and Acronyms

- ADC:** Affective disorders cohort
- ASA:** American Society of Anesthesiologists
- BMI:** Body mass index
- EQ-5D:** EuroQol 5-dimensions questionnaire
- EQ-VAS:** EuroQol visual analog scale
- ODI:** Oswestry Disability Index

PROM: Patient-reported outcome measure

RBF: Return to baseline function

VAS-BP: Back pain visual analog scale

VAS-LP: Leg pain visual analog scale

Department of Neurological Surgery, Duke University Medical Center, Durham, NC

To whom correspondence should be addressed: Oren N. Gottfried, M.D.
[E-mail: oren.gottfried@duke.edu]

Citation: *World Neurosurg.* (2017) 100:69-73.
<http://dx.doi.org/10.1016/j.wneu.2016.12.098>

Journal homepage: www.WORLDNEUROSURGERY.org

Available online: www.sciencedirect.com

1878-8750/\$ - see front matter © 2017 Elsevier Inc. All rights reserved.

pain relief, and satisfaction.^{10,18-21} Although such difficulties in postoperative course and baseline functional ability are well described, there is little data on the effects of affective disorders on recovery of baseline functionality after surgery.

The aim of this study was to identify the impact of affective disorders on self-reported assessment of recovery of baseline function (RBF) following decompressive spinal surgery.

METHODS

This is a retrospective study of a prospective database. Institutional review board approval was obtained before initiation of the study. Medical records were reviewed for 275 patients undergoing elective decompressive lumbar surgery at Duke University Medical Center.

Inclusion criteria included patients who (1) received elective decompressive spinal surgery, (2) were between 18 and 70 years of age, and (3) completed PROMs at 3 months and 1 year postoperatively. Patients with documentation of anxiety or depression diagnosed by a board-certified psychiatrist ($n = 101$) were placed in the affective disorder cohort (ADC).

Demographic variables collected included sex, age, race, body mass index (BMI), and social factors such as level of education and employment. Baseline medical comorbidities collected include smoking, chronic pain (longer than 12 weeks before date of surgery), long-term opioid use (longer than 2 weeks before date of surgery), and American Society of Anesthesiologists (ASA) physical status grade (as assessed by a board-certified anesthesiologist). Intraoperative variables assessed were length of surgery, surgical approach, and number of spinal levels. Postoperative variables included discharge disposition, length of stay, readmission rates, and complication rates.

The primary outcome measure was patient-reported outcome metrics collected both before surgery and postoperatively at 3 months and 1 year. These PROMs are standardized, validated, and widely used in the spinal surgery literature. Back pain and leg pain were assessed with the Visual Analog Scale for Pain (VAS-BP for back pain, VAS-LP for leg pain).²² Overall self-rated health was assessed using the EuroQol Five Dimensions (EQ-5D) descriptive system and the EuroQol Visual Analog Scale (EQ-VAS).²³ Disability from low back pain was evaluated with the Oswestry Disability Index (ODI).²⁴

Patient satisfaction with surgery (defined as “satisfied with surgical result” or “not satisfied but would have surgery again” vs. “not satisfied with surgical result” or “would not have surgery again”) was collected at 3 months and 1 year after surgery. For return to baseline function, patient data were collected 3 months postoperatively regarding employment status, self-reported productivity level at work (“as productive as before surgery” vs. “not as productive as before surgery”), and activity level outside of work (“as active as before surgery” vs. “not as active as before surgery”). Successful RBF was defined as regaining activity and (if previously employed) productivity levels.

Parametric variables were aggregated as mean and standard deviations and analyzed with Student *t* test. Nonparametric variables were aggregated as median and interquartile range and analyzed with Mann-Whitney *U* test. Independent variables were then run in multivariate analysis for recovery of baseline function. Significance was set to $P < 0.05$ for all analyses. All statistical

Table 1. Baseline Patient Demographics and Comorbidities

Variable	Affective Disorder (n = 101)	No Affective Disorder (n = 174)	P Value
Body mass index (kg/m ²)	31.73 ± 6.97	30.47 ± 6.61	0.14
Age (years)	52.4 ± 10.83	54.9 ± 12.61	0.08
Male sex	38.6%	61.5%	<0.01*
White ethnicity	79.2%	80.5%	0.88
Completed college degree or higher	53.5%	63.8%	0.10
Smoker	31.0%	12.9%	<0.01*
Chronic pain	81.0%	78.7%	0.76
Chronic narcotic use	10.9%	10.3%	1.00
Median ASA grade (interquartile range)	3 (2–3)	2 (2–3)	0.08

*Statistical significance at $P < 0.05$.

analysis was done with JMP version 13 (SAS Institute Inc., Cary, North Carolina).

RESULTS

Baseline demographics were similar between cohorts (Table 1), with no significant differences in mean ± SD age (ADC 52.4 ± 10.83 years vs. control cohort 54.9 ± 12.61 years; $P = 0.08$) and BMI (ADC 31.73 ± 6.97 kg/m² vs. control cohort 30.47 ± 6.61 kg/m²; $P = 0.14$). The ADC had significantly fewer males (38.6% vs. 61.5%; $P < 0.01$) and significantly more smokers (31.0% vs. 12.9%; $P < 0.01$). There were no significant differences in comorbidities, such as chronic pain, chronic narcotic use, or ASA grade as evaluated by anesthesiology preoperatively.

For perioperative variables (Table 2), no significant differences were noted for median (interquartile range) spinal levels operated (ADC, 2 (2–3) vs. control cohort, 2 (2–3); $P = 0.74$), mean ± SD length of surgery (ADC, 114.83 ± 52.12 minutes vs. control cohort, 116.04 ± 64.9 minutes; $P = 0.87$), or the use of a posterior approach (ADC, 99% vs. control cohort, 100%, $P = 0.37$). Postoperatively, the ADC had significantly longer mean ± SD length of stay (ADC, 1.81 ± 1.21 vs. control cohort, 1.37 ± 0.99; $P < 0.01$), but had similar outcomes for discharge, readmissions, and complications.

For PROMs, the ADC had significantly worse scores, with higher VAS-BP, VAS-LP, and ODI and lower EQ-5 VAS and EQ-5D at all time points (Table 3). The ADC also had decreased improvement from baseline at 3 months and 1 year in VAS-BP, VAS-LP, ODI, and EQ-5D, but not EQ-VAS (Table 4).

Patient satisfaction with surgical outcome showed no difference between cohorts at 3 months (80.0% vs. 86.0%; $P = 0.23$) and 1 year (40.6% vs. 49.4%; $P = 0.17$) after surgery, but a significantly decreased RBF (52.1% vs. 67.1%; $P = 0.02$) at 3 months postoperatively (Table 5).

On multivariate analysis (Table 6), negative predictors of RBF at 3 months after surgery included mental health history and

Download English Version:

<https://daneshyari.com/en/article/5634490>

Download Persian Version:

<https://daneshyari.com/article/5634490>

[Daneshyari.com](https://daneshyari.com)