

The Effect of Preoperative Opioid use on Single Level Interbody Fusion for Degenerative Lumbar Spondylolisthesis

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Introduction

The use of prescription opioids may predispose patients to chronic opioid use. We hypothesized that the use of preoperative narcotics may lead to poorer patient outcomes in patients with degenerative lumbar spondylolisthesis undergoing single level interbody fusion.

Methods

A consecutive series of patients undergoing L4-5 transforaminal lumbar interbody fusion (TLIF) for degenerative lumbar spondylolisthesis were retrospectively analyzed. Patients were categorized according to the presence or absence of prescribed preoperative opioid use > 6 months using standard oral morphine dose-equivalents. Outcomes included the Oswestry Disability Index (ODI), Visual Analogue Scale (VAS) and Short Form 36 Physical and Mental Summary Scores (SF36-PCS, SF36-MCS). Between-group comparisons were performed using analysis of variance.

Results

63 patients (60% female) were identified with mean age of 56.4 ± 12.3 -years. 31 (48.9%) patients were prescribed preoperative opioids, with a mean oral morphine equivalent of 17.6 ± 15.3 mg/day. Mean hospital length of stay (LOS) was 2.7 ± 2.1 -days for the non-opioid group and 3.8 ± 2.8 -days for the opioid group. Mean preoperative ODI was 49.9 ± 14.3 for non-opioid versus 44.5 ± 13.1 for opioid.

Postoperatively, ODI was 25.9 ± 22.8 and 28.2 ± 18.9 for the two groups respectively. Mean preoperative VAS for the two groups was nearly identical (7.18 ± 1.8 , 7.19 ± 2.0), while mean postoperative VAS was 2.7 ± 2.1 and 3.8 ± 2.8 respectively. A trend was observed for the change in postoperative from preoperative ODI and VAS, with the non-opioid group showing a greater magnitude of improvement (-24.0 vs. -16.2 -points), (-4.45 vs. -3.38), respectively. The mean preoperative SF36-PCS (32.3 ± 8.3) preoperative SF36-MCS (40.7 ± 13.3), postoperative SF36-PCS (42.5 ± 10.6) and postoperative SF36-MCS (47.1 ± 11.8) did not differ by opioid use group.

Conclusions

In a preliminary cohort of consecutive patients undergoing single level interbody fusion for degenerative lumbar spondylolisthesis, trends exist between preoperative opioid use, HLOS, and postoperative improvement in ODI and VAS. The convergence of preoperative opioid usage and pain control warrants future prospective studies of larger sample sizes.

Learning Objectives

By the conclusion of this session, participants should be able to 1) describe the importance of early intervention when indicated for degenerative lumbar spondylolisthesis, 2) discuss the role of opioids preoperative and postoperatively, and 3) identify the long term effects of preoperative prolonged opioid use in patient undergoing single level interbody fusion for degenerative lumbar spondylolisthesis.

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