Does Revision Spine Surgery Mean More Opioids? Comparing Postoperative Opioid Use in Primary and Revision Lumbar Fusion

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INTRODUCTION:

To our knowledge, the incidence of persistent postoperative opioid use in the revision lumbar fusion population has not been determined. As revision spine surgeries have been shown to be associated with worse pain improvement following surgery, information regarding opioid consumption may be beneficial for clinicians to better counsel patients about postoperative pain management and ultimately improve postoperative care. This study compared opioid use for postoperative pain management in patients undergoing short segment primary and revision lumbar fusion. Additionally, patient demographic and preoperative factors were evaluated across revision lumbar fusion patients with and without persistent postoperative opioid use.

METHODS:

Patients who underwent primary or revision 1-2 level lumbar fusion from 2017-2021 were included in this study. The state PDMP was reviewed for all patients to quantify the number of opioid prescriptions filled, preoperative opioid use, postoperative opioid use, and use of benzodiazepines, muscle relaxants, or gabapentin in the perioperative period. A 1:1 propensity match was performed to match primary lumbar fusion patients with revision lumbar fusion patients. Patients were matched based on age and surgical approach (posterior or combined). Additionally, revision lumbar fusion patients were further sub-stratified into those with or without persistent postoperative opioid use to identify demographic differences between these patient cohorts.

RESULTS:

After a 1:1 propensity match was performed, the final cohort included 412 patients. The total MME consumed at all postoperative time points evaluated were similar between revision and primary fusion patients. Patients who underwent revision lumbar fusion and demonstrated persistent postoperative opioid use had higher use within one year (298 \pm 565 vs. 45.6 \pm 84.4; p<0.001) as well as within 30 days before surgery (34.8 \pm 66.9 vs. 4.97 \pm 17.5; p<0.001).

DISCUSSION AND CONCLUSION: Postoperative opioid prescription patterns in patients undergoing revision lumbar fusion were similar to primary lumbar fusion patients at all time points evaluated. Additionally, in the revision lumbar fusion cohort, persistent postoperative opioid users had a higher rate of preoperative opioid use, which supports the previous literature regarding primary lumbar fusion patients. Although revision lumbar fusion has been shown to lead to less pain improvement, our findings suggest these procedures may not lead to higher rates of persistent opioid use postoperatively.