Comorbid opioid use disorder (OUD) likely increases post-operative complications and non-routine discharge. However, comparison of outcome by spinal level from a national database has not been described and may better identify patients with OUD most at risk following spinal decompression, fusion or revision.

Methods

The Healthcare Cost and Utilization Project National Inpatient Sample (HCUP-NIS) was queried for adults in 2008-2014 undergoing spinal fusion (ICD-9 81.00-81.08), decompression (ICD-9 03.09) or revision (ICD-9 81.30-81.39). Comorbid vertebral fracture, cancer and drug dependence other than opioids were excluded. Patients were divided into OUD (ICD-9 304.0x) and non-OUD cohorts. OUD patients were further stratified into cervical and lumbar level cohorts for outcome comparison via Chi-square analysis.

Results

A total of 276,495 lumbar cases and 193,401 cervical cases were identified. Comorbid OUD was more common in lumbar operations compared to cervical (n = 1206 [0.436%] vs 551 [0.285%], respectively; p<0.001). There was no difference in frequency of spinal fusion (p=0.193), decompression (p=0.783) or revision (p=0.283) procedures between spinal levels. Elective admissions were less frequent for lumbar cases (89.64% vs 76.95%; p<0.001). Total complication rate (38.31% vs 23.96%; p<0.001), acute post-hemorrhagic anemia (17.99% vs 5.26%; p<0.001) and blood transfusion (13.02% vs 5.08%; p<0.001) were significantly more common for lumbar procedures. Routine discharges were more common in cervical cases (65.34% vs 55.97%; p<0.001).

Conclusions

OUD is more prevalent in patients receiving lumbar spinal procedures, which were also associated with proportionally increased complication rates, fewer elective procedures, and fewer routine discharges compared to cervical spine procedures. Compared to cervical procedures, lumbar fusion, decompression and revision may be associated with comparatively increased post-operative risk in patients with opioid use disorder. Causation cannot be inferred from the National Inpatient Sample; thus, retrospective and prospective study to identify potential etiologies of this phenomenon is warranted.