controversial. Currently, there is no conclusive evidence to suggest that IOM use improves safety and may represent an increased cost with low value.

METHODS: Posterior lumbar cases from February 2014 to November 2019 were utilized for this analysis. The primary variable was use of IOM (any combination of EMG, MMG, MEPs, SSEPs). The effect of other demographic, and comorbid conditions were also considered. Primary outcomes were: post-operative weakness, new post-operative radicular symptoms, return to OR, operative time, and length of stay (LOS). Logistic generalized estimation equations (GEE) were used for multivariate analysis to evaluate associations between IOM and these outcomes. The Surgery Invasive Index was used adjust for case complexity.

RESULTS: 36,733 cases were available for analysis, with 9,172 cases (25%) where IOM was used. On multivariate GEE, IOM was not significantly associated with either weakness, OR 0.96 (CI 0.83-1.11) p = 0.565, or new radicular symptoms, OR 1.05 (CI 0.94-1.17) p = 0.361 or return to OR, OR 0.89 (CI 0.77-1.03) p = 0.11. Diabetes (OR 1.22, CI 1.11-1.35, P < .05), CAD (OR 1.19, CI 1.05-1.35, P < .05), and ASA > 2 (OR 1.11, CI 1.01-1.22, P < .05) were associated with increased risk for weakness after surgery, while male gender (OR 0.89, CI 0.81-0.98, P < .05) and private insurance (OR 0.9, CI 0.81-0.99, P < .05) were associated with decreased risk. ASA > 2 (OR 1.11, CI 1.04-1.19, P < .05) and a history of previous spine surgery (OR 1.11, CI 1.03-1.20, P < .05) were associated with increased risk for new radicular symptoms after surgery. IOM did not have any significant effect on operative time, but was associated with increased LOS (OR 1.21, CI 1.14-1.28, P < .05).

CONCLUSION: Our study did not find any association between IOM use and the development of weakness and/or radicular symptoms after lumbar surgery. Given that only a minority of cases utilized IOM, one limitation is the lack of insight into why surgeons choose IOM versus not and how to account for this potential bias.

Emergency Department Visits Following Suboccipital Decompression for Adult Chiari Malformation Type I

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INTRODUCTION: The unnecessary overuse of ED services in the United States leads to an estimated wasteful spending of $38 billion yearly. The burden of these visits is multiplied in pandemics and times of crisis, such as the COVID-19 pandemic, where ED resources may already be overwhelmed. Post-operative Emergency Department (ED) visits following suboccipital decompression in CM-1 patients are not well described.

METHODS: A prospectively maintained database of CM-1 patients seen at our institution between January 1, 2006 and December 31, 2019 was used. Pre-operatively and post-operatively prior to hospital discharge, patients are counselled extensively on activity restrictions after surgery, incision care, expectations of severe headache and neck stiffness for the first few weeks after surgery, the variability in degree and timing of symptom improvement from patient to patient, and the proper intake of analgesics, as prescribed. ED visits occurring within 30 days after surgery were tracked for postoperative patients, while comparing clinical, imaging, and operative characteristics between patients with and without an ED visit. Clinical improvement at last follow-up was compared between both groups of patients in an univariable and multivariable analysis using the Chicago Chiari Outcome Scale (CCOS).

RESULTS: In 175 surgically treated patients, 44 (25%) visited an ED in the 1-month period after surgery. The most common reason for seeking care was isolated headache (41%). Concentration disturbance at presentation was the only factor significantly associated with a post-operative ED visit (P = .023). The occurrence of a post-operative ED visit was independently associated with a lower chance of clinical improvement at last follow-up (adjusted OR of CCOS≥13 = 0.35, P = .021; adjusted OR of CCOS≥14 = 0.38, P = .016).

CONCLUSION: Adult CM-1 patients undergoing surgery at a tertiary referral center have an elevated rate of post-operative ED visits, which are mostly due to pain-related complaints, despite preoperative and postoperative counselling. Such visits are hard to predict but are associated with worse long-term clinical outcome. Interventions that decrease the magnitude of post-operative ED service utilization are warranted.

Association of Body Mass Index on Surgical Outcomes and Cervical Alignment Following Posterior Fusion Surgery for Multilevel Cervical Spondylotic Myelopathy

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INTRODUCTION: With the increasing prevalence of obesity, there is a need to understand the impact of body mass index (BMI) on spine surgery outcomes.

METHODS: A retrospective chart review of 275 patients who underwent decompressive cervical laminectomy and bicortical lateral mass screw-rod arthrodesis for degeneration at an academic tertiary care hospital between 2012–2019 was performed. Patients were categorized into 3 groups based upon the BMI as (i) normal weight (<25.0kg/m², 28.4%), (ii) overweight (25.0-29.9kg/m², 42.5%), and (iii) obese (≥30.0kg/m², 29.1%). For each BMI cohort, univariable association with postoperative outcomes were first determined using logistic regression, and a predictive model was then constructed using all characteristics significant at the 0.10 alpha level. All associations were reported as odds ratio (OR) with 95% confidence interval (CI).

RESULTS: Patients with higher BMI were associated with an increased risk of postoperative distal junctional kyphosis (OR:2.12,95%CI:1.07-4.19;P = .03) and Nurick grade (≥1) (OR:1.61,95%CI:1.01-8.21;P = .05). Furthermore, adjusted multivariable regression analysis revealed that obese patients had a 2.32-folds higher likelihood of postoperative C2-C7 sagittal vertical Axis>40mm (OR:2.32,95%CI:1.01-5.44;P = .04) and 1.31-folds higher risk of T1 slope minus C2-C7 lordosis (T1S-CL) ≥25 (OR:1.31,95%CI:1.12-5.69;P = .05). However, patients under BMI<25.0 kg/m² had 63% less likelihood of postoperative T1S-CL≥25 (OR:0.37,95%CI:0.13-1.02;P = .05).

CONCLUSION: Our results corroborated that the patients with higher BMI are at an increased risk of neurological dysfunction,