Spinal reoperation

- Laminectomy with fusion for cervical spondylotic myelopathy is associated with higher early morbidity and risk of perioperative complications compared with laminectomy alone: a retrospective study in the United States
- Clinical outcomes of posterior cervical fusion in the setting of increasing age and medical complexity: an American national database analysis from 2012 to 2022
- A Second Look at the Use of VersaWrap Nerve Protector in Spine Surgery: A Case Report
- Pelvic Incidence-Dependent Clustering of Sagittal Spinal Alignment in Asymptomatic Middle-Aged and Elderly Adults: A Machine Learning Approach
- Similar reoperation rates in upper versus lower thoracic to pelvis instrumentation: an analysis of 7,300 patients utilizing a national administrative database
- Uniportal Endoscopic Microdiscectomy Is an Effective Treatment Option for Far-Lateral Lumbar Disk Herniations
- Surgical treatment to resect giant intraspinal epidural cavernous hemangioma of Cobb syndrome: illustrative case
- Rod options to outcomes: comparing sagittal correction in pediatric posterior spinal fusion by rod size and material

Beyond initial lesions, any form of spinal (re)operation can cause direct potential aggression to the nervous system by contact with neural tissue or by imprinting a morphological change on the neural tissue. The potential consequences of nerve root injury affect both peripheral and axial dermatomal distribution. The hypothesis of a possible neuropathic aspect associated with the back pain component of failed back surgery syndrome (FBSS) therefore appears to be reasonable. Its pathophysiology remains unclear due to the permanent interplay between nociceptive and neuropathic pain components, resulting in the coexistence of physiological and pathological pain at the same anatomical site.

Smoking was the strongest predictor of reoperation in patients who had undergone single-level laminectomy, multilevel laminectomy, or reoperation for progression of spinal degeneration. These findings suggest that tobacco smokings have worse outcomes of lumbar decompression than nonsmokers [1)].

Lumbar disc herniation (LDH) is a common spinal problem with reoperation rates of 6-24%. Although different surgical techniques are used for treatment, there is still debate regarding whether fusion techniques can reduce the reoperation rate in LDH patients.

This retrospective study used a 5-year nationwide database to analyze reoperation rates in Taiwan. Patient age groups (≥20 and <90) treated by index surgery and reoperation for LDH were identified. Four surgical procedures were included in the analysis: discectomy (DC), anterior lumbar fusion with DC (FA+DC); posterior lumbar fusion (FP); and posterior lumbar fusion with DC (FP+DC).

There were 1743 index surgeries between 2008 and 2012, with 184 (10.56%) reoperations. Index surgery DC had the highest reoperation rate (n = 121, 20%). The reoperation risk was significantly lower for patients undergoing fusion procedures [FA+DC vs. DC (HR: 0.24, 95% CI: 0.12-0.47, p<0.01), FP vs. DC (HR: 0.17, 95% CI: 0.09-0.33, p<0.01), FP+DC vs. DC (HR: 0.31, 95% CI: 0.22-0.44, p<0.01)]. Fusion procedures had significantly higher treatment costs compared to DC (FA+DC vs. FP vs. FP+DC vs. DC: 5,851,74 ± 4,808.94 vs. 5,116.88 ± 3,428.97 vs. 4,782.16 ± 2,902.19 vs. 3,846.79

± 3,584.45 US dollars/patient, respectively, p<0.0001).

Among surgical procedures for LDH, fusion techniques are related to lower reoperation rates compared to discectomy, but at the expense of higher medical costs [2].

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1)
Bydon M, Macki M, De la Garza-Ramos R, Sciubba DM, Wolinsky JP, Gokaslan ZL, Witham TF, Bydon A. Smoking as an independent predictor of reoperation after lumbar laminectomy: a study of 500 cases. J Neurosurg Spine. 2015 Mar;22(3):288-93. doi: 10.3171/2014.10.SPINE14186. Epub 2015 Jan 2. PubMed PMID: 25555058.
2)
Cheng CY, Cheng YC, Wang TC, Yang WH. Fusion techniques are related to a lower risk of reoperation in lumbar disc herniation: a 5-year observation study of a nationwide cohort in Taiwan. World Neurosurg. 2018 Jun 23. pii: S1878-8750(18)31325-1. doi: 10.1016/j.wneu.2018.06.109. [Epub ahead of print] PubMed PMID: 29945009.