Impact of pre-operative pain scores on post-operative outcomes in patients undergoing lumbar microdiscectomy

Sohrab Virk MD, MBA, Avani Vaishnav MBBS, Jung Mok BS, Steven McAnany MD, Sravisht Iyer MD, Todd J Albert MD, Catherine Himo Gang MPH, Sheeraz Qureshi MD, MBA

Hospital For Special Surgery
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Introduction

• Pre-operative pain assessment is often used to gauge symptoms for patients with lumbar disc herniation, but the impact of high pre-operative pain scores on the clinical course and outcomes after lumbar microdiscectomy is not clear.

• The study aims to determine how pre-op extreme pain scores impact post-surgical outcomes after lumbar microdiscectomy.
Methods

- **Study Design/Setting:** Retrospective review of patients undergoing lumbar microdiscectomy.

- **Patient Sample:** 138 adult patients with lumbar disc herniation/radiculopathy

- **Outcome Measures:** Short-form 12 mental and physical health scores, PROMIS, Oswestry Disability Index and Visual analog scale back/leg scores.

- We defined patients with high pain as having pre-operative VAS leg/back scores of 9 or above. These “high-pain” (hp) patients were divided into cohorts with VAS leg scores >9 (VL-hp) and VAS back scores >9 (VB-hp).

- Health related quality of life (HRQOL) scores were collected on patients in the pre- and post-op period up to 1 year from surgery. These scores included ODI, SF-12 MHS and PHS and PROMIS scores.

- We collected data on narcotic consumption before and after surgery and length of stay. We performed a student’s T-test to analyze if there was a difference in outcomes, opioid use and length of stay between “high-pain” patients and those with lower pain scores.
Results

• 138 patients were included. 28 patients in the VB-hp cohort (14 female, 48.0±17.6 years old) and 37 patients in the VL-hp cohort (22 female, 49.4 ±18.2 years old).

• The pre-operative SF-12 MHS (48.2 vs. 37.6, p <0.001), SF-12 PHS (32.3 vs 26.5, p = 0.001), ODI (37.6 vs 57.7, p <0.001) and PROMIS (36.2 vs 29.1, p <0.001) scores were worse for the VL-hp cohort versus non-VL-hp. The pre-op SF-12 MHS (47.3 vs. 37.7, p = 0.001), SF-12 PHS (31.6 vs 27.5, p = 0.04), ODI (38.8 vs 61.5, p < 0.001) and PROMIS (35.7 vs 28.6, p <0.001) scores were worse for the VB-hp cohort versus non-VB-hp. Post-op, the VL-hp cohort had worse HRQOL scores at the 2-week time point for SF-12 PHS (p = 0.03).

• At all other time points post-op there was no statistically significant difference between HRQOLs between the VL-hp cohort vs non-VL-hp cohort. For the VB-hp there were worse scores for SF-12 PHS (0.03) and ODI (p = 0.02) at 2 weeks, the SF-12 MHS (p = 0.03), ODI (p = 0.007), PROMIS (0.02) scores at 6 weeks and the PROMIS (p = 0.03) and ODI scores (p = 0.006) at 12 weeks.

• At all other time points, VB-hp patients had equivalent outcome scores to the non-VB-hp cohort. VB-hp had higher pre-operative opioid consumption (p < 0.001), but there was no difference in inpatient opioid consumption (p = 0.33). VL-hp patients did not have a difference in pre-operative opioid consumption (p = 0.11) or in-patient opioid consumption (p = 0.92) as compared to non-VL-hp patients. Patients in the VL-hp had a longer length of stay as compared to non-VL-hp patients (0.64±0.06 vs 1.3±0.21 days, p = 0.003).

• There was no difference in length of stay between VB-hp versus non-VB-hp patients (p = 0.76).
Conclusion

• These results show that patients with higher pain scores preoperatively have worse immediate outcomes after tubular lumbar microdiscectomy surgery compared to patients with lower scores.

• This effect disappears after 2 weeks for patients with extreme leg pain, and 12 weeks for patients with extreme low back pain.
Thank you