

Introduction

Lumbar spinal stenosis is a common disorder that can result in significant disability, debilitating back pain and bad quality of life. Minimally invasive laminectomy and in situ posterior fusion surgery as a modality to treat different causes of debilitating symptomatic back pain can lead to excellent clinical outcomes.

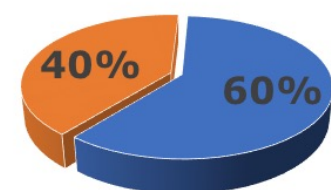
Methods

we reviewed 403 charts retrospectively with symptomatic lumbar stenosis operated using minimally invasive surgery. Data was collected on patient demographics, pre-operative imaging, complications, and reoperation rates. Outcome scale Oswestry Disability Index (ODI) and Visual Analogue Scale (VAS) were answered prospectively and over a 6-years follow-up period.

Results

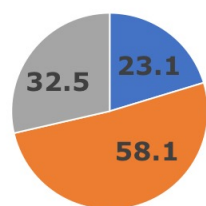
In 403 patients, 242 (60.8%) were females and 161 (39.2%) were males. The mean age was 63.9 ± 12.4 years and mean BMI was 29.8 ± 6.1 kg/m² and the average follow-up time was 2.3 ± 1.6 years. Minimally invasive laminectomy was most commonly performed at L3-L4 level in 23.1% and at L4-L5 level in 58.1% and at L5-S1 levels in 32.5%.

Sex Percentage



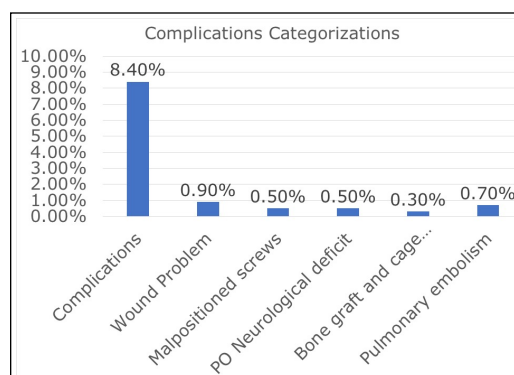
■ Female ■ Male

Minimally invasive laminectomy Levels %

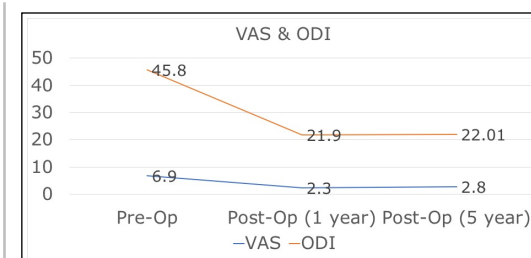


■ L3-4 ■ L4-5 ■ L5-S1

Complications occurred in 34 (8.4%) cases and included wound problem (n = 4, 0.9%), malpositioned screws (n=2, 0.5%), neurological post-operative deficit (n=2, 0.5%), bone graft and cage problem (n=1, 0.3%) and pulmonary embolism (n=3, 0.7%).



Additional transient complications included post-operative pain (n=12, 2.9%), post-operative weakness (n=1, 0.3%). Complications were evaluated by third party neurosurgeons. Mean OR time was 202.86 ± 26.6 minutes, mean EBL was 97.5 ± 51.8 ml, and mean LOS was 3.6 ± 3 days.



Mean VAS scores improved from 6.98 ± 2.2 pre-operative to 2.32 ± 1.9 , 2.86 ± 1.6 at 1 year and 5 years follow up consequently ($p > 0.001$). Mean ODI improved from 45.89 ± 16.3 pre-operative to 21.98 ± 17.7 , and 22.01 ± 17.6 at 1 and 5 years follow up consequently ($p > 0.001$). Fusion rate was $> 97\%$ measured at 3 months and one year follow-up.

Conclusions

MIL-ISF for lumbar stenosis is a safe and effective technique with excellent clinical outcomes and low complications rates.

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