



Minimally Invasive (MIS) lumbar laminectomy is a more cost effective treatment for degenerative spinal stenosis compared to Open laminectomy- Ochsner Experience

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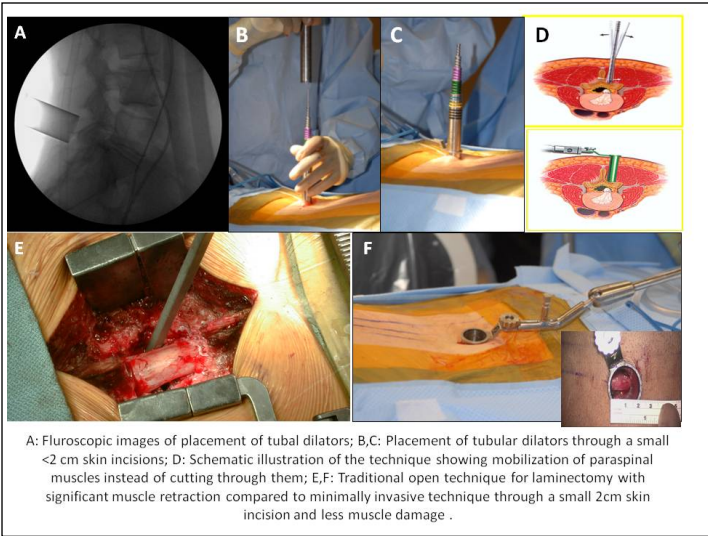


Introduction

Lumbar spinal stenosis is a common cause of leg pain and difficulty walking, especially in older patients. Open laminectomy and bilateral laminotomy are the standard procedures for decompression of LSS and are very effective, although further degeneration of the spine can occur and may necessitate additional spinal surgery. Limited long-term follow-up publications exist which report on cost-effectiveness and clinical outcomes of MIS laminectomy compared to conventional open laminectomies.

Methods

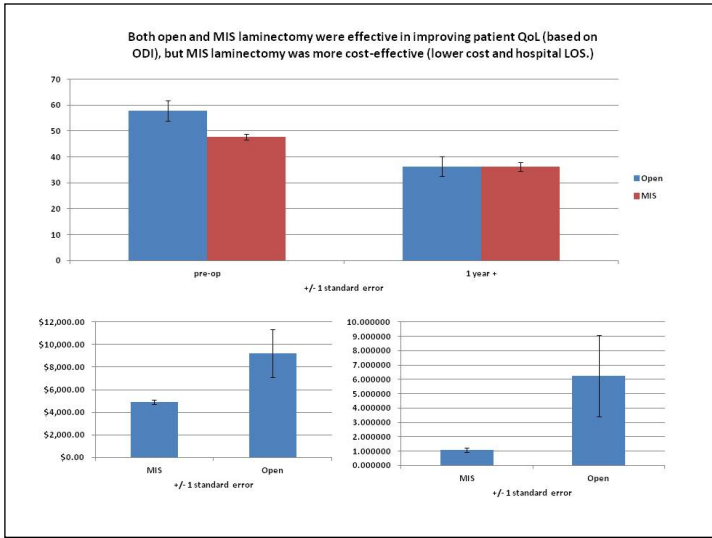
We reviewed our clinical database and patient medical records for sex, age at surgery, pre-op BMI, EBL, hospital LOS, duration of surgery, post-operative complications, and patient reported Oswestry Disability Index (ODI) and Visual Analog Scales (VAS). These outcomes are reported at pre-op, 6 weeks, 6 months, and 1 year+ post-operative terms. Paired t-test and two-sample t-test with equal variances were performed to determine means, standard errors, and p-values for statistical significance.



Results

There were 116 patients in the MIS group and 13 patients in the open group. There were no significant differences in age between the 2 groups. Outcomes in the MIS group were significantly more favorable in EBL (58 v 171), direct cost (\$4,903 v \$9,210), and hospital LOS (1 day v. 6 days), (p values 0.0000). Compared to their preoperative scores, there was significant and sustained improvement in the ODI and VAS scores at each follow-up point for MIS patients. The outcomes in the open group were significantly improved at all follow-up points except 6 months for ODI and VAS.

Patient Demographics	Open	MIS
Total Cases	13	116
Sex:		
Male	6	58
Female	7	58
Average Age	71.76923	68.9569
Pre-Op BMI	31.00909	31.00642
Avg LOS (Days)	6.230769	1.086207
Avg Duration of Surgery (Mins)	127.8462	116.3934
Average EBL (CCs)	171.5385	58.06034
Spinal Levels:		
T1-L1	2	0
L1-L2	0	3
L2-L3	6	15
L3-L4	6	41
L4-L5	4	70
L5-S1	0	14



Conclusions

We present a series of over 100 patients that have been treated with MIS laminectomy with excellent functional outcomes at reduced direct cost to the hospital. These findings not only prove that MIS laminectomy is clinically effective but also cost effective. Other studies have found open laminectomy to be less cost effective compared to other treatment modalities (1)

Learning Objectives

By the conclusion of this session, participants should be able to: 1) Describe the importance of MIS laminectomy in the treatment of lumbar spinal stenosis; 2). Discuss, in small groups cost effectiveness of MIS laminectomy compared to open laminectomy 3. Identify an effective treatment for a patient experiencing lumbar spinal pain.

References

Udeh BL1, Costandi S, Dalton JE, Ghosh R, Yousef H, Mekhail N (2014). The 2-Year Cost-Effectiveness of 3 options to Treat Lumbar Spinal Stenosis Patients. Pain Pract. doi: 10.1111/papr.12160. [Epub ahead of print]