

Fusion versus Non-Fusion Minimally Invasive Spine Surgery in Patients Over 65 Years of Age: Functional Outcomes

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Introduction

- **Standard treatment for degenerative spinal stenosis refractory to conservative therapy involves spinal decompression with or without instrumentation.**
- **Currently, there is a dearth of studies assessing postoperative patient-reported outcomes for minimally invasive (MIS) spinal fusion and non-fusion for spinal stenosis in the elderly.**
- **We compare postoperative outcomes of fusion and non-fusion MIS approaches in patients ≥ 65 years old to aid surgical decision-making.**

Methods

- **We retrospectively reviewed medical records of all patients 65 years of age and above who underwent MIS surgery between 2013-2016.**
- **Patients were divided into two groups: MIS spine decompressive laminectomy vs. MIS decompression with fusion.**
- **Demographics, operative data, and functional data were analyzed.**

Results

- **We assessed 171 patients of which 96 patients underwent MIS decompressive laminectomy and 75 underwent MIS decompression with fusion.**
- **A higher percentage of males underwent non-fusion laminectomy than MIS fusion (52.1% versus 33.3%) (p=0.0216).**
- **Non-fusion patients recorded shorter hospital stays (1.6 days vs. 3.8 days) and less estimated blood loss compared to MIS fusion patients (p < 0.0001 for both).**

Results

- **There was no significant difference between groups regarding BMI ($p=0.6078$).**
- **There were significant improvements in both VAS and ODI scores within both groups. However, ODI scores were 19.7% higher in the MIS fusion group when compared with MIS laminectomy.**
- **Furthermore, males had a 24% higher ODI score compared to females for MIS laminectomy vs MIS fusion.**

Discussion

- **Due to the higher prevalence of degenerative spine disease in the aging population, all forms of treatment must be properly evaluated.**
- **Our study suggests that operative management of surgical lower back pain with spinal stenosis in the elderly is both efficacious and safe using the MIS spinal surgery technique and should be considered a viable form of management in select patients.**

Summary Points

- **Few studies assess patient-reported outcomes for spinal MIS fusion and non-fusion in the elderly (≥ 65).**
- **Of a total 171 patients, 96 underwent MIS decompressive laminectomy and 75 underwent MIS decompression with fusion.**
- **Non-fusion patients recorded shorter hospital stay and a lower EBL ($p < 0.0001$). Improvements were seen in both VAS and ODI scores within both groups.**
- **MIS for lower back pain with spinal stenosis in the elderly should be considered a viable form of management in select patients.**