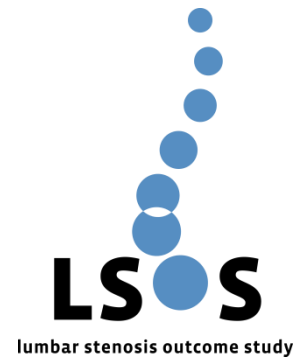


Abstract

The influence of single-level versus multi-level decompression on the outcome in multi-segmental lumbar spinal stenosis: A prospective multi-center cohort study



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Purpose

To assess whether patients with confirmed multi-segmental lumbar spinal stenosis (LSS) benefit more from a single- or a multi-level decompression. In multi-segmental lumbar spinal stenotic cases, the decision as to how many levels of stenosis need to be operated to achieve the best possible clinical outcome is still unknown and remains a controversy between spine surgeons.

Methods/Materials

Patients of the Swiss Lumbar Stenosis Outcome Study (LSOS) with confirmed multi-segmental LSS undergoing first-time decompression without fusion were enrolled in this study. The main outcomes of this study were Spinal Stenosis Measure (SSM) symptoms and function over time, measured at baseline, 6, 12, and 24 months follow-up. Further outcomes of interest were changes in SSM, Numeric Rating Scale (NRS), Feeling Thermometer (FT), the EQ-5D-EL, and the Roland and Morris Disability Questionnaire (RMDQ) from baseline to 6, 12, and 24 months.

Results

After 12 months, a total of 141 patients met the inclusion criteria; of these, 33 (23%) underwent a single-level and 108 (77%) a multi-level decompression. Multi-level decompression was associated with a significantly less favorable SSM symptoms and function score, respectively, as compared to single-level decompression. In all further outcomes of interest single-level as well as multi-level patients improved over time.

Conclusion

Our study showed that in multi-segmental stenotic cases a single-level decompression was associated with a significantly more favorable SSM symptoms and function score, respectively, as compared to multi-level decompression. This study provides evidence that in multi-segmental stenotic cases a single-level decompression might be sufficient to improve patient's symptoms and function.