



Clinical outcome and complications associated with minimally invasive lumbar spinal decompression: an analysis of 250 cases

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Introduction

Lumbar stenosis is one of the most common diseases of the spine. Traditionally, lumbar stenosis is decompressed with conventional open laminectomies. However, this requires a wide exposure with removal of the spinous process and lamina, resulting in disruption of the posterior tension band and paraspinal muscle injury. While this approach provides excellent improvement in symptoms, it may be associated with iatrogenic muscle injury, postoperative instability, and prolonged recovery. The application of tubular retractors is an acceptable alternative to open lumbar decompression. Recent studies have shown improved perioperative outcomes, including decreased blood loss and shorter hospital stay (1-3). We present our experience with this technique with a focus on clinical outcome and complications.

Methods

Clinical records gathered from 2003 to 2013 were retrospectively reviewed identifying 250 patients who underwent single or multi-level lumbar decompression using tubular retractors. Patient demographics, clinical outcome using the McNab criteria, and all complications encountered were analyzed.

Results

250 patients (138 males and 112 females; mean age 66.5) underwent minimally invasive lumbar spinal decompression over a 10-year period. 206 single-level, 42 two-level, and 2 three-level procedures were performed. The estimated blood loss was 47 mL. Outpatient procedures were performed in 180 cases (72%). The overall complication rate was 4.8%. 8 of 250 cases (3.2%) resulted in a durotomy that was managed conservatively. There were 4 cases (1.6%) of postoperative epidural hematoma requiring surgical evacuation. There was no evidence of spinal instability in any patient, and no patient required a follow-up open laminectomy. There were no conversions to an open procedure or cases of infection. According to the McNab criteria, 94% had an excellent (85%) or good outcome (9%).

Conclusions

Minimally invasive lumbar decompression via tubular retractors is a safe and effective approach that results in excellent clinical outcome and a low incidence of complications. There are potential advantages in terms of postoperative pain and recovery.

Learning Objectives

By the conclusion of this session, participants should be able to: 1) Describe the epidemiology and pathophysiology of lumbar spinal stenosis, 2) Discuss, in small groups, the clinical and functional outcome and types of complications associated with the minimally invasive approach for lumbar decompression, and 3) Identify an effective treatment plan for preventing complications while performing this technique.

References

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