Transforaminal Endoscopic Microdecompression for Herniated Lumbar Discs and Spinal Stenosis

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Citation


Abstract

Purpose: To demonstrate effective transforaminal endoscopic microdecompression for herniated lumbar discs and spinal stenosis, for very large protruded discs, recurrent discs with scar tissue and bony spurs or spondylitic bars compressing the lumbar nerve root. This is to be accomplished with endoscopic micro spinal instruments, laser application, and newly developed endoscopic decompression instruments (including tubular retractors, large cannulae, more aggressive trephines, curettes, rasps, and ronguers), in addition to laser thermodiskoplasty for disc shrinkage.

Materials and Methods: Since 1993, 3421 herniated lumbar discs in 2000 patients. Average age of 44.2 (24 to 92) with symptomatic lumbar single and multiple herniated intervertebral discs. Males: 1010 - Females: 990. Each failed at least 12 weeks of conservative care. Post operative follow up 6mos to 72mos (average 42mos). Progressive series of different diameters endoscopic assisted tubular retractors, with appropriate sized dilators and more aggressive saw-toothed trephines, and laser are utilized to perform transforaminal endoscopic microdecompression for herniated lumbar discs and spinal stenosis, in addition to the posteriorlateral foraminoscope and endoscopic assisted spinal operating systems. Some tubular retractors have extensions like a duckbill on one side that can be oriented toward the nerve root to retract and protect it. The microdecompressive endoscopic assisted discectomy (MEAD) system and/or SMART Endo-lumbar System are used for dorso-medial spinal decompression/laminotomy and laminoplasty. Laser application is included for laser thermodiskoplasty.

Results: There was no postoperative mortality, and had morbidity of less than 1%, in 2000 patients. For single level, 94% of patients had good or excellent results, 6% had some residual symptoms though improved overall, and 3% of patients did not improve significantly. A newly devised larger and more aggressive decompressive discectomy instrument set, safely and efficaciously allow wider and more complete removal of large or recurrent disc protrusions, scar tissue and bony spurs that cause nerve root compression, while protecting the adjacent nerve root. The MEAD system and or SMART Endo-lumbar System allows a minimal approach to laminotomy for spinal stenosis decompression and laminoplasty. Laser thermodiskoplasty reshapess and tightened disc tissue further for decompression.

Conclusion: Transforaminal endoscopic laser microdecompression can effectively decompress herniated lumbar discs and spinal stenosis, and perform foraminoplasty for lateral and central spinal stenosis. This minimally invasive endoscopic technique aided by new instruments and laser application, provides a safe and effective modality to achieve results in effective decompression of lumbar discs and spinal stenosis, preserves spinal motion and creates a channel for spinal arthroplasty.

References


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