Surgical Technique:
Transforaminal Endoscopic Lumbar Spine surgery
• Surgical approaches:
  - Left side of OR
  - Posterior paramedial
  - Posterior lateral

Demographics of Disks (3421)

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<th>Lumbar</th>
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Surgical Instruments and Equipment:
• Familiarity and experience in the use of various endoscopic surgical systems
  - To facilitate endoscopic spine surgery
  - To avoid potential complications

Surgical Procedure:
• Patient Positioning and Localization
  - Patient in prone position
  - Patient in lateral decubitus position
  - Localization – skin marking and placement of needle (portal)

OR Setup:
Endoscopic OR suite for MISS
MD’s
Staff
RN, Tech
EMG Monitoring
C-Arm Fluoroscopy
MRI Image - ... Endoscopy Monitor
EEG Monitoring
Left side of OR
Image view boxes
Teleconferencing - telesurgery

Posterior paramedial transforaminal approach
SMART Endoscopic lumbar spine surgery

Posterior lateral transforaminal lumbar Discectomy

Material and Methods: 3421 herniated lumbar discs in 2000 patients. Average age of 44.2 (24 to 92) with symptomatic lumbar single and multiple herniated intervertebral discs. Each failed at least 12 weeks of conservative care. Post operative follow up 6mos to 72mos (average 42mos). 2 types of endoscopic systems are used: 1)For posterior paramedial endoscopic assisted microdecompression of herniated lumbar discs and spinal stenosis, the SMART™ Endoscopic Lumbar Spine System, a progressive gradual serial of endoscopic assisted tubular retractors with appropriate sized dilators and more aggressive saw-toothed trephines, and laser are utilized for laser thermodiskoplasty (LTD) for reshaping and tightening disc tissue further. 2) For posterior/paramedial transforaminal approach, the foraminoscopes are utilized. Again laser application is also included for LTD.

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 endoscopic assisted tubular microdecompressive discectomy instrument set (SMART lumbar system), safely and efficaciously allows wider and more complete removal of large or recurrent disc protrusions, scar tissue, bony spurs, and spinal stenosis that cause nerve root compression, while protecting the adjacent nerve root.

Conclusion: Transformalinal 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 (LTD), provides a safe and effective modality to achieve results in effective decompression of lumbar discs and spinal stenosis, preserves spinal motion and provides a channel for spinal arthroplasty.

Learning Objective: The presentation provides the information for participants familiar with Transformalinal Endoscopic Microdecompression for Lumbar Disc and Stenosis and Their Avoidance: 1. Recognize the surgical indications. 2. The surgical technique. 3. Potential complications and avoidance

References: