

## ABSTRACT

- Title of Abstract:** Indications and Application of Advanced Endoscopic Minimally Invasive Spine Surgery Technique for Herniated Spinal Discs – 1000 case
- Purpose:** To demonstrate and to describe the authors experience with percutaneous microdecompressive endoscopic spinal discectomy with application of collagen and disc shrinkage effect of Holmium laser at lower non-ablative energy level (laser thermodiskoplasty), performed with ease, safety and efficacy for symptomatic non-extruded herniated nucleus pulposus at cervical, thoracic and lumbar spine.
- Materials and Methods:** Since 1995, 1000 cases, 1701 spinal discs, still symptomatic in spite of at least 12 weeks of conservative care, were treated with percutaneous microdecompressive endoscopic spinal discectomy and low-level non-ablative Holmium laser thermodiskoplasty, i.e., collagen tissue and disc shrinking/tightening Holmium laser. All cervical and lumbar herniated discs demonstrated unilateral radicular pain of a specific dermatome confirmed with EMG/NCV. MRI or CT scans demonstrated a contained soft intervertebral disc herniation in all cases. The levels of the discs included 899 lumbar discs, 699 cervical discs, and 103 thoracic discs.
- Results:** Postoperative follow-up demonstrates 93.5% (935 patients) did well (good to excellent). There were no intraoperative or postoperative complications. Nine patients demonstrated persistent mild residual pain and paresthesia. The average time to return to work was ten days for the non-workers' compensation patients. A computerized finite element model of the herniated disc, pre and post laser discectomy with collagen tissue tightening or shrinkage, i.e., laser thermodiskoplasty at the collar and the shoulder of the disc is presented. It demonstrates the results of a computerized model for laser induced collagen tissue and the disc shrinkage and contraction for the purpose of disc decompression in spinal discectomy.
- Conclusion:** The Holmium laser thermodiskoplasty technique with laser percutaneous microdecompressive endoscopic spinal discectomy appears to be easy, safe and efficacious. This less traumatic, easier outpatient treatment leads to excellent results, faster recovery, and significant economic savings.

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