

## **ABSTRACT: Arthroscopic Electro-Thermal Surgery for Discogenic Low Back Pain: A preliminary Report**

**Introduction:** Discogenic low back pain remains a difficult lumbar syndrome to treat. Recently developed electro-thermal technology permits precise tissue temperature control, steerability, and controlled lesion production in collagenous tissue. This novel treatment permits targeted shrinkage of annular and nuclear disc collagen (collagen shrinkage has been reported in the literature) and may preserve disc function without tissue necrosis or the need for fusion. It may also be useful in the ablation of pain sensing nociceptors.

**Materials and Methods:** The use of a radiofrequency probe (ORATEC EndoTAC Probe) deployed through an endoscope was evaluated in 50 patients consecutively treated in the course of practice. The patient's back pain was diagramed and reported on a visual analog scale. All had at least 6 months of unremitting back/leg pain, failed to respond to non-operative care, had MRI study, and had discographic disc lesions correlating to clinical symptoms. Diagnoses included non-focal herniations with annular tears. Temperature controlled electro-thermal therapy was added to standard AMD procedures for disc decompression as well as generally assisting with hemostasis and tissue shrinkage for improved visibility. Results: All cases demonstrated dramatic visual nuclear shrinkage at time of surgery. (Video to be shown at time of presentation) Follow up ranged from 4 - 14 months. 49/50 reported reduction of their pre op back pain. 49/50 expressed satisfaction with the procedure. In The first 30 patients 8 reported post operative dysesthesia or quadriceps weakness. Six (20%) were transient and resolved on one to three months. Two (7%) continue to have moderate symptoms after four and six months. Improvements in technique and probe design decreased the complication rate to 0% in the last 20 patients.

**Conclusions:** Arthroscopic electro-thermal surgery is feasible for treating the lumbar disc. It offers the advantages of tissue temperature control, lesion size, and steerability over laser. Preliminary data suggests that this therapy can be effective for targeted intradiscal treatment. A prospective clinical study has been initiated to validate these anecdotal findings.