

Minimally Invasive Percutaneous HydroDiscectomy: Preliminary Report on 30 Consecutive Cases

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OBJECTIVES

A variety of non-surgical percutaneous approaches to symptomatic contained disc prolapses and herniations have been developed in which a discography approach is used. Hydrosurgical methods for soft tissue cutting, aspiration and removal without external suction have been developed.

METHODS

Discectomy was performed using SpineJet™ Hydrosurgery System (Hydrecision, Inc.; Billerica, MA). Data from 30 consecutive hydrosurgical discectomy cases was reviewed. All patients demonstrated disc prolapse or herniation on radiographs. Previous failed interventional or limited surgical treatment was not a basis for exclusion, but was considered on a case-by-case basis. Pain was assessed on a visual analog scale (VAS). Pain medication use (opioids and NSAIDs) and functional status were also evaluated. Patients were routinely followed at 2 weeks, 6 weeks, 3 months, 6 months, and 12 months after their procedure.

RESULTS

At least 50% relief in pain was noted in 50% of patients in this preliminary analysis. Mean pain scores improved from 7.4 preoperatively to 2.5 at latest follow-up (Figure 1; $p < 0.000001$). Initial relief of pain postoperatively was maintained through 12 months. Pain reduction was found in 87% of patients (Figure 2). Pain medication use was significantly reduced at latest follow-up compared to preoperative values (Figure 3). Functional status improvement was seen in all 6 patients who presented with complete disability.

HydroDiscectomy was performed in single- and multi-level procedures. There were no complications relating to the procedure.

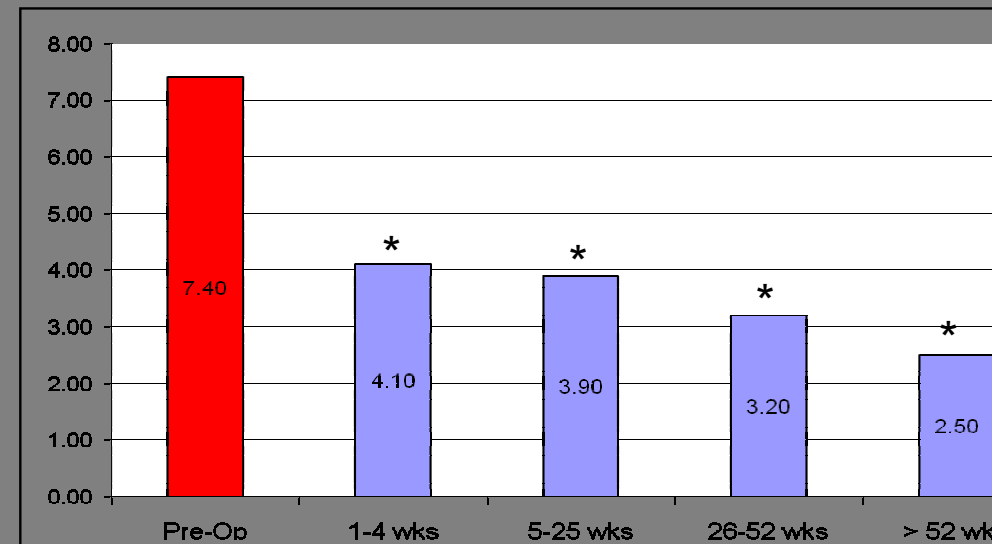


Figure 1: Pain scores over time.

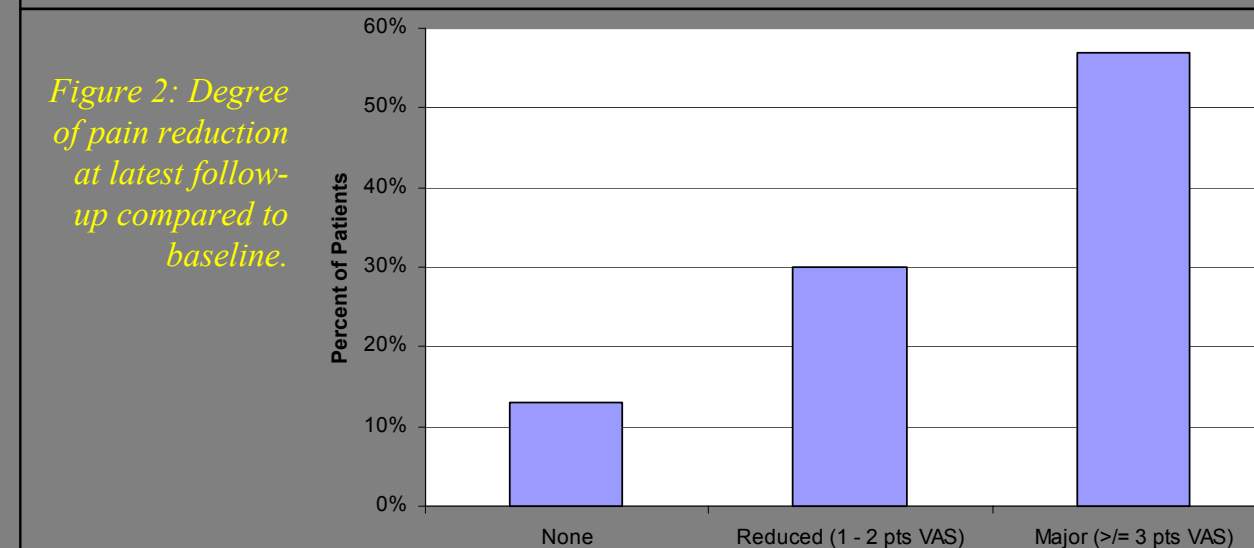


Figure 2: Degree of pain reduction at latest follow-up compared to baseline.

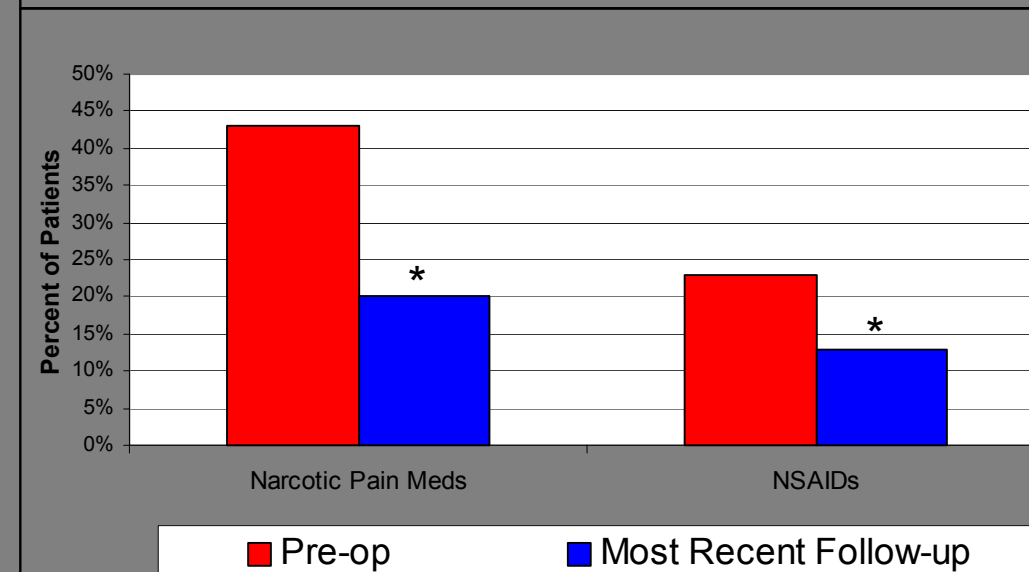
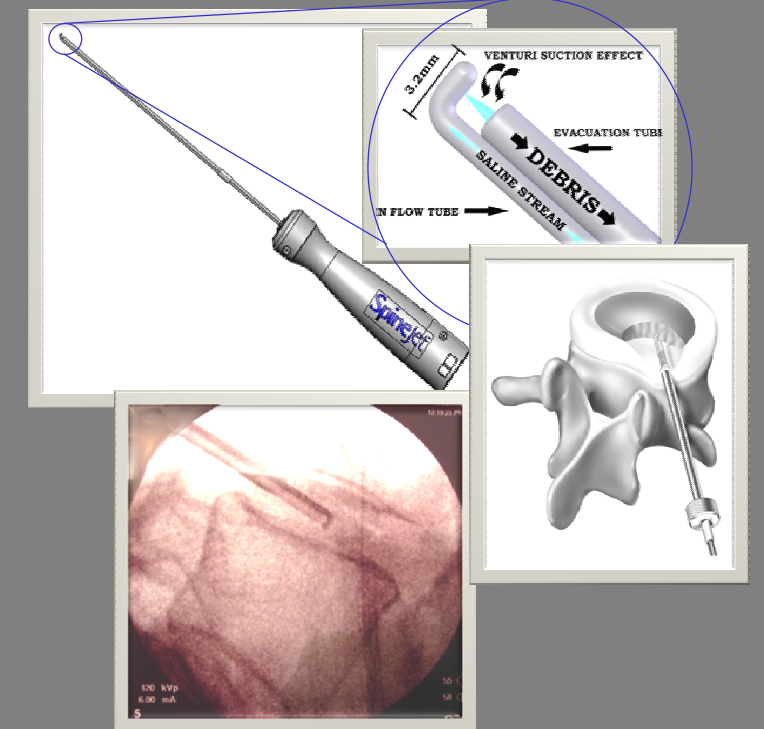
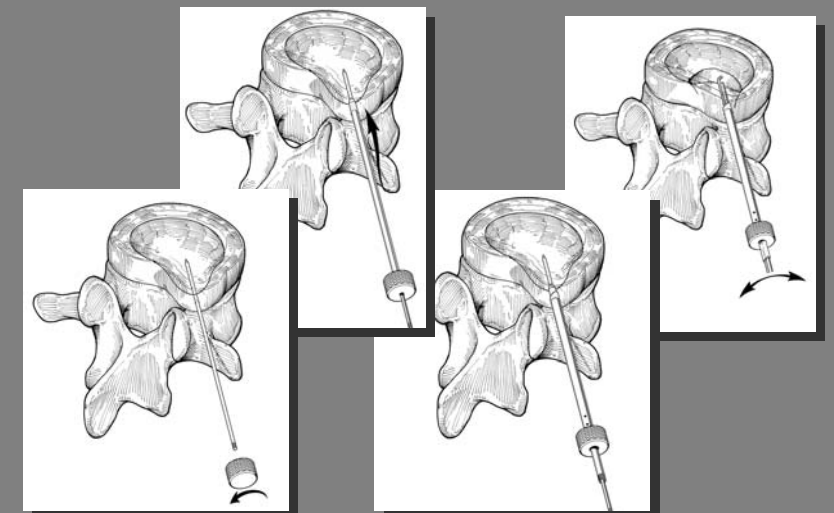


Figure 3: Proportion of Patients Using Pain Medications



SpineJet™ Hydrosurgery System



CONCLUSIONS

HydroDiscectomy offers a means of decompressing the lumbar disc in a percutaneous, minimally invasive manner. The present series demonstrates promising early clinical results. Further research is warranted.