A Comparative Outcome Evaluation of Lumbar Transforaminal Endoscopic Discectomy versus Micro-lumbar Discectomy for Lumbar Disc Herniation

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Purpose: The objective of this study was to compare the clinical outcome of patients with lumbar disc herniation treated by transforaminal endoscopic discectomy versus micro-lumbar discectomy.

Study design/setting: A prospective review of outcome data in patients with lumbar disc herniation treated by transforaminal endoscopic discectomy or micro-lumbar discectomy by 4 surgeons, all with foraminal endoscopic experience in an outpatient setting were analyzed by an independent reviewer.

Method: The clinical outcome of 137 consecutive patients who underwent “inside-out” transforaminal “selective endoscopic discectomy” (SED) and 50 consecutive patients who underwent micro-lumbar discectomy (MLD) were compared using Visual Analog Scale (VAS) and Oswestry Disability Index (ODI). A final clinical rating by modified MacNab criteria summarized the outcome. The procedure of decompression and discectomy chosen was a shared patient/surgeon decision. Data was collected and recorded at the initial office visit, preoperative and postoperative visits, as well as final follow up. All procedures were performed ln an ambulatory surgical center. All patients were discharged to home the same day. The average follow up time was, minimum 12, average 26 months.

Results: 50 Cases of MLD : L4-5=15, L5-S1=35. Average VAS=6.5, Average ODI 44%. Improvement was 3.8 and 30% respectively. Complications=1 seroma, 1 durotomy. Patients receiving MLD was due to surgeon advice and preference. Patient satisfaction was 92%. Patients in this spine practice, however, were mostly referred for and mostly sought and chose SED when given a choice by the surgeon. The SED group numbered 137, with 209 total levels. L1-2=1, L2-3=3 L3-4=31, L4-5=94, L5-S1=80. Average VAS was 6.6 and ODI was 46%. Improvement in the SED group was 4.1 and 32%. Endoscopic decompression included foraminoplasty for lateral stenosis. In the endoscopic group, 20 patients (14.7%) developed dysesthesia in the 2 week post-operative period. Dysesthesia resolved spontaneously in 10 mild cases within 2 months without treatment but 10 moderate to severe cases of dysesthesia took 6 months to significantly improve or resolve. In spite of the inclusion of more complex degenerative spine problems in patients who were also candidates for decompression and fusion. Improvement in VAS and ODI was comparable to MLD at 4.1 and 32% respectively. Patient satisfaction was high, since many avoided fusion and none were worse.

Conclusion: There may be a favorable patient/surgeon bias involved since many patients self selected and sought the endoscopic technique even when decompression and fusion was suggested and offered. In spite of dysesthesia not experienced by MLD patients, patient satisfaction remained high, because patients were advised that dysesthesia as an unavoidable consequence of the foraminal surgical approach during their pre-operative counseling. The more difficult extruded herniations where access was limited due to anatomic considerations such as extruded, sequestered herniations at L5-S1 made up the majority of the patients selecting the micro-lumbar discectomy. This study confirms the general consensus that MIS surgery provided comparable results with less surgical morbidity. The surgeon factor is one consideration that must be considered by each surgeon as the new paradigm of a share surgical decision becomes the desired concept, and surgeons sought after by patients opting for MIS techniques “force” surgeons into new endoscopic techniques in the current spinal care environment.