Evaluation of Endoscopic Laminoforaminoplasty for Treatment of Painful Foraminal and Centeral Cervical Stenosis

T. Mork¹, S. Haufe¹
¹Microspine, DeFuniak Springs, FL, United States

Method: 107 consecutive patients with foraminal or centeral stenosis were evaluated with preoperative MRI, history and physical, and Visual Analog Scale (VAS). Surgery was performed in the prone position under conscious sedation (opiate and benzodiazepine mixture). Surgery was performed using a fluroscopically guided pin tapped into the lamina for proper placement. The operating tube was 14mm in diameter. The soft tissue debridement was performed with Holmium laser and electrocautery. A 6mm round burr was used to remove a portion of the lamina from the midline to the lateral recess. All surgery was performed as an outpatient and given perioperative antibiotics. Only patients with at least 24 months of follow up were included in the study. Outcome was measured in change of VAS scores. A 75-100% reduction of pain was considered excelent, and a reduction of 50-75% was considered good.

Summary of finding: A total 107 patients were enrolled with 20 lost to follow up leaving 87 patients (48 male, 39 female). Mean age was 55 (range 38-85). Mean follow up was 30 months (range 24-46). Based on the VAS scores 56 of 87 patients (64%) had 75-100% reduction of pain, 11 patients (13%) had 50-74% reduction of pain, 4 (5%) had 25-49% reduction and 6% (7%) had 1-24% reduction, 8 (9%) had no change of scores, and 2 (2%) had worsening of symptoms by 25-49%. Thus 67/87 (77%) showed to good to excellent results (i.e. at least 50% improvement of pain). Overall mean pre and post operative VAS scores were 7.1 and 2 respectively, which is statistically significant at a 99% confidence interval.

Complications occurred in 2 patients. Both patients had intraoperative dural leaks treated with free graft, laser welding, and Duragen brand mesh. There were not cases of infection or neurological injury.

Statement of conclusions: The findings of good to excellent results in 77% of patients with a low rate of complications are supportive of a role for endoscopic surgery emphasizing decompression in the management of painful cervical spinal stenosis. A recent systematic review highlighted the lack of a clear consensus concerning the best surgical technique, as anterior discectomy, anterior corpectomy, laminoplasty, and laminotomy were reported to mutually equivalent in terms of outcome (Mummaneni, 2009). In conclusion, symptomatic improvement is comparable to that seen with open surgery with signifigantly less blood loss, shorter recovery time, less soft destruction with preservation of muscular and ligamentous attachements, no adjacent disc disease and performed with low risk of neurologic injury or infection. In addition, this can performed as an outpatient.