Posterior cervical foraminotomy

Seventeen patients underwent single-level posterior cervical foraminotomy for radicular symptoms were studied between June 2011 and May 2016. Clinical outcome was studied by visual analog scale (VAS) score, neck disability index (NDI), and Odom's criteria. Adjacent segment degeneration was evaluated on lateral cervical radiograph at every follow-up by calculating the focal and global angulation of the cervical spine and disc height at the operated level and adjacent segments. Dynamic lateral cervical spine radiograph was done to evaluate segmental instability.

After a mean follow-up duration of 30.64 months, 13 patients had excellent, three patients had good, and one patient had fair outcome as per Odom's criteria. The mean VAS score for radicular pain, neck pain, and NDI was significantly reduced postoperatively ($P < 0.001$). The mean focal angulation, mean global angulation, the disc height at operated and adjacent level were not changed significantly ($P > 0.05$). There was no instability noted postoperatively on lateral dynamic cervical spine radiographs. There was no complication in our study.

Posterior cervical foraminotomy is an effective surgical method for treatment of patients with single-level cervical radiculopathy and helps to achieve good clinical and radiological outcome, prevents postoperative adjacent segment degeneration and instability with minimal complications [1].

2016

One hundred eighty-one patients were included, with a median follow-up of 58 months (mean 43 months, range 12-96 months). The overall reoperation rate was 7.2% (13 patients); 11 patients (6%) for recurrent root symptoms due to recurrent disc herniation (six patients, 3.3%) and re-stenosis (five patients, 2.8%), one patient (0.55%) for wound infection and one patient (0.55%) for postoperative haematoma. Among the eleven patients who underwent re-operation for recurrent root symptoms there was one patient who additionally had persistent cerebrospinal fluid leak and superficial posterior wound infection. There was no significant difference between lateral soft disc herniation and spondylosis in term of re-operation rate. At discharge, excellent or good outcome was achieved in 89% of patients; the long-term success rate was 97.2% using Odom's criteria.

Microsurgical PCF is an effective technique for treating lateral spinal root compression. Proper patient selection is obligatory to achieve the best results [2].

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338 patients who underwent Posterior Cervical Foraminotomy (PCF) between 1990 and 2009 participated in a telephone interview designed to measure symptomatic and functional improvements following surgery. They also administered the EQ-5D, and analyzed this data for associations between patient and treatment characteristics, improvements in symptoms and function, and HRQOL as measured by the EQ-5D.

Mean follow-up was 10.0 years. The average EQ-5D at follow-up was 0.81±0.18, and improvements in pain, weakness and function as well as ability to return to work correlated with improved EQ-5D score ($p<0.0001$). There was no correlation between length of follow-up and EQ-5D score ($p=0.980$). Additionally, there was no difference between mean EQ-5D score for soft disc versus osteophyte pathology (0.84 versus 0.81, $p=0.21$).

These data provide evidence that PCF for cervical radiculopathy is associated with improved HRQOL at long-term follow-up. The lack of correlation between length of follow-up and HRQOL suggests that PCF is a durable treatment option. Moreover, PCF is associated with improved HRQOL whether radiculopathy is due to soft disc or osteophyte pathology [3].

2015

From January 2006 to December 2008, 12 consecutive patients with unilateral cervical radiculopathy from either cervical foraminal stenosis or cervical disc herniation, which was confirmed with imaging studies, underwent posterior foraminotomy and discectomy with the use of a microscope and CO2 laser. For annulotomy and discectomy, Jeon et al. used about 300 joules of CO2 laser energy. Magnetic resonance imaging (MRI) was used to evaluate the extent of disc removal or foraminal decompression. Clinical outcome was evaluated by using visual analogue scale scores for radicular pain and Odom's criteria. For evaluation of spinal stability, cervical flexion and extension radiographs were obtained. Single-level foraminotomy was performed in 10 patients and two-level foraminotomies were performed in 2 patients. Preoperative radicular symptoms were improved immediately after surgery in all patients. No surgery-related complications developed in our cases. Postoperative MRI demonstrated effective decompression of ventral lesions and widened foraminal spaces in all cases. There was no development of cervical instability during the follow-up period. Posterior foraminotomy and discectomy using a microscope and CO2 laser is an effective surgical tool for unilateral cervical radiculopathy caused by lateral or foraminal disc herniations or spondylotic stenosis. Long-term follow-up with radiographs showed no significant kyphotic changes or spinal instability [4].

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