



Posterior Cervical Foraminotomy for Cervical Radiculopathy: Symptomatic and Functional Outcomes in 1085 Cases with Long-term Follow-up

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Introduction

Posterior foraminotomy (FOR) has been shown to be an effective surgical treatment for cervical radiculopathy. The efficacy and safety of FOR has been demonstrated in several series with short-term follow-up. However, little is known of the relative effectiveness of FOR in the treatment of radiculopathy due to soft disc versus osteophytic disease. In the present study we review our experience with FOR for cervical radiculopathy in a large cohort of patients treated at one center with long-term follow-up.

Methods

We retrospectively examined the charts and magnetic resonance imaging reports of patients who underwent a total of 1085 FORs for cervical radiculopathy between 1990 and 2009. Patients were categorized into disease subtypes of soft disc and osteophytic disease based on operative findings. A large cohort of these patients also participated in a structured telephone interview designed to assess improvement in symptoms and function. A total 338 interviews were completed with a mean follow-up of 10 years.

Symptom	Cases
Arm pain	1029 (94.84%)
Neck pain	719 (66.27%)
Subjective weakness	580 (53.46%)
Exam weakness	467 (43.04%)
Numbness or paresthesias	682 (62.86%)

Presenting symptoms.

Results

Approximately 90 percent of interviewees reported improved pain, weakness, or function following FOR. Such symptomatic relief allowed 93 percent of patients to return to work. The overall complication rate of FOR was 3.3 percent and the rate of recurrent radiculopathy requiring surgery was 6.2 percent. Soft disc subtypes were associated with significantly improved pain, weakness and function when compared to osteophytic disease (p<0.05). The operative report of these pathologic subtypes was significantly associated with the preoperative MRI interpretation (p<0.0001).

Conclusions

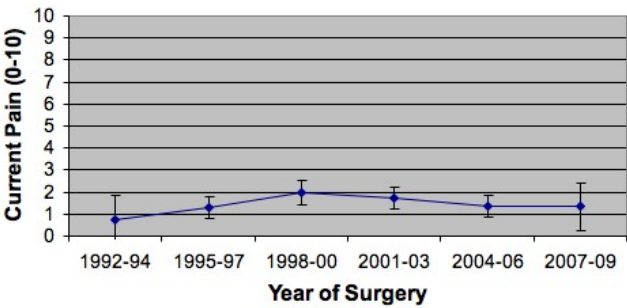
These results suggest that FOR is a highly effective surgical treatment for cervical radiculopathy with a low incidence of complications. Radiculopathy due to soft disc subtypes may be associated with a better prognosis compared to osteophytic disease. These common etiologies for radiculopathy may be differentiated on preoperative MRI scans, providing an opportunity for surgeons to predict outcome.

Complaint	Agree	Disagree
Pain	293 (90.4%)	31 (9.6%)
Weakness	209 (88.6%)	27 (11.4%)
Function	286 (89.4%)	34 (10.6%)

Patient rating of symptomatic and functional improvement at follow-up.

Surgical site infection	19 (1.75%)
Dural tear	7 (0.65%)
New focal sensory disturbance	6 (0.55%)
New focal weakness	3 (0.28%)
Scalp lac from Mayfield	1 (0.092%)
Overall complications	36 (3.3%)

Surgical complications.



Patient rating of original preoperative pain at the time of interview by year of surgery. There were no significant differences. Bars represent the 95% confidence interval.

References

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