Rates of Anterior Cervical Discectomy and Fusion following Initial Posterior Cervical Foraminotomy

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Background: In select patients, posterior cervical foraminotomy (PCF) and anterior cervical discectomy and fusion (ACDF) result in similar clinical outcomes when used to treat cervical radiculopathy. Nonetheless, ACDF is performed more frequently, in part because of surgeon perception that PCF requires operative revisions more frequently. The present study investigates the rate of ACDF re-operation at the index level following initial PCF.

Purpose: To determine the rate of anterior cervical discectomy and fusion following initial posterior cervical foraminotomy (PCF). To further describe any patient characteristics, pre-operative, or operative data that increases the rate of reoperation following PCF.

Study Design: Retrospective chart review.

Methods: Demographic, operative, and reoperation information was collected from the electronic medical records for all patients who underwent PCF at one institution between 2004 and 2011. All patients were subsequently contacted by telephone to identify postoperative complications and more conclusively determine whether any revision operation was performed at the index level.

Results: 178 patients who underwent a PCF were reviewed, with an average follow-up of 31.7 months. Nine (5%) patients underwent an ACDF revision operation at the index level. The reason for reoperation in these patients included cervical radiculopathy, foraminal stenosis, disc herniation, and cervical spondylosis. Patients who subsequently underwent ACDF at the index level were significantly younger (25 vs. 35 years; p=0.03), had lower BMI (25 vs. 29; p=0.01), more likely to take anxiolytic (56% vs. 22%; p=0.04) or antidepressant medication (67% vs. 27%; p=0.02), as compared to those that did not have a revision operation.

Conclusions: This is the first study to determine conversion to ACDF following PCF. The present study demonstrates that PCF is associated with a low reoperation rate, similar to the historical reoperation for ACDF. Accordingly, spine surgeons can operate via a PCF approach without a significant increased risk for ACDF revision surgery at the index level.