

Introduction

Cervical dermatomal and myotomal syndromes have been well described for C2-8 nerve roots with exception of C4, which has received little attention. Asymptomatic radiographic C4 root foraminal stenosis is relatively common, so correctly identifying C4 radiculopathy is necessary for accurate diagnosis and surgical decision making. The authors describe our experience with diagnosis and treatment of C4 radiculopathy.

Methods

The senior author reviewed his personal operative registry of 651 surgically treated cervical radiculopathy patients, with 14 procedures (2%) involving exclusively the C4 root. C4 radicular involvement was suspected if patients endorsed unilateral or bilateral cervical pain involving the paraspinous muscles, trapezius muscle, and/or the posterior deltoid muscles without radiation distal to the shoulder. Imaging had to demonstrate compression of C4, and selective C4 root block had to provide greater than 50% relief during the anesthetic phase. If so, surgery was recommended. SF-36 and Oswestry Disability scores were obtained preoperatively and 3 months post operatively.

Results

Eleven (79%) of patients underwent posterior foraminotomy, and three (21%) underwent C3/4 anterior cervical discectomy and fusion. Preoperative Oswestry Disability scores were 18-26 (mean 21), and 3 month post-operative scores were 2-10 (mean 6). There were no complications.

Conclusions

Patients with unilateral or bilateral lateral neck pain with radiation to the paraspinous muscles, trapezius, interscapular region, the posterior shoulder, or the medial clavical, but not distally, with C4 foraminal stenosis on imaging may be suspected of C4 radiculopathy. When confirmed by properly performed diagnostic C4 root block, decompression of C4 can produce satisfactory results.

Learning Objectives

By the conclusion of the session, participants should be able to: 1) Describe the importance of precisely identifying C4 radiculopathy, 2) Discuss in small groups the nerve root distribution of symptoms and diagnostic tools used to support the diagnosis, 3) Identify effective treatments including posterior approach for C3/4 foraminotomy as well as C3/4 anterior cervical discectomy and fusion.

References

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