Endoscopic Microsurgical Treatment In Cervical Spinal Stenosis

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Citation

Abstract

Introduction: Cervical myelopathy and cervical radiculopathy caused by degenerative disease has been surgically treated either by a posterior approach or by an anterior approach with or without interbody fusion. The posterior approach, that is to say the laminectomy, was first described in 1950 by Spurling and Scoville to treat primarily laterally displaced disc herniation. It has been used less frequently since the development of the anterior approach to the cervical spine. Positioning the patient in the prone position, the complications associated with posterior approach include nerve root injury, particularly when more than one root is exposed; spinal cord injury secondary to cord retraction, particularly during transdural approach to the herniated disc; spinal instability, particularly when the facet joint is removed; posterior muscle trauma and injury. For the past 40 years, the anterior approach has become very popular. Three common techniques of fusion are described by Cloward, Bailey and Badgley, and Smith and Robinson. In Cloward's 1958 publication, he described his operative technique. With minimally invasive spinal surgery the trauma for the patient in the surgical area is minimised, and consequently iatrogenic effects may be avoided.

Materials And Methods: This study was carried out from January 1991 to October 2006. Three hundred and eleven patients with symptoms of cervical radiculopathy and/or myelopathy should have undergone to traditional surgery. They were, instead, treated by using the endoscopic microsurgical techniques. In 287 cases the surgical procedure was performed by an anterior approach, while in 24 cases by a posterior approach. In the first time we used endoscopic microsurgery with posterior approach for the far lateral osteophyte in the stenosis of the foramen. The operative techniques must be followed carefully, in general anaesthesia, step by step, and the operating surgeon must be properly trained in these endoscopic techniques.

Results: In our study there were neither incidents during surgery, nor major complications following these operations. We had in few cases transient hoarseness and dysphagia; in three cases transitory Horner's syndrome, in some cases temporary paresthesias or hyperesthesias in a specific dermatome of the upper extremity, in very few cases fleeting neck pain, occipital pain or shoulder pain. During this study period six patients experienced relapse; three of these were operated again by the same technique and three in other hospitals. After surgery the success rate, according to Odom criteria, was 93.0% (289 patients).

Conclusion: This study suggests that for cervical spinal stenosis, the endoscopic microsurgical technique is an extremely advantageous and safe method. The goal of this surgical technique was to achieve direct and effective anatomical decompression of the spinal cord and nerve roots, without post-operative immobilisation by the maintenance of the integral spinal stability. By using this endoscopic technique it is possible to maintain a normal mobility of the intervertebral space, avoiding the inevitable stresses applied to adjacent interspaces following fusion and the consequent secondary morbidity. We think that a continuous development and improvement of instruments, a longer follow-up periods and a greater number of patient treated, will further confirm this endoscopic microsurgical technique.

References
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