

Endoscopic Discectomy



DEFINING APPROPRIATE
COVERAGE POSITIONS

Introduction

North American Spine Society (NASS) coverage policy recommendations are intended to assist payers and members by proactively defining appropriate coverage positions. Historically, NASS has provided comment on payer coverage policy upon request. However, in considering coverage policies received by the organization, NASS believes proactively examining medical evidence and recommending credible and reasonable positions may be to the benefit of both payers and members in helping achieve consensus on coverage before it becomes a matter of controversy.

Methodology

The coverage policies put forth by NASS use an evidence-based approach to spinal care when possible. In the absence of strict evidence-based criteria, policies reflect the multidisciplinary and non-conflicted experience and expertise of the authors in order to reflect reasonable standard practice indications in the United States.

[NASS Coverage Policy Methodology](#)

Scope and Clinical Indications

This policy covers the diagnosis of lumbar disc herniation unresponsive to appropriate non-operative treatment. The indications are the same as those for other open or minimally invasive methods of lumbar microdiscectomy. In addition, the surgeon needs to be comfortable that the anatomy of the herniation is amenable to percutaneous visualization and removal. The procedure discussed in this policy is endoscopic visualization and removal of lumbar disc herniation via transforaminal or interlaminar approach. This is distinguished from an open or other forms of minimally invasive discectomy in that the operative field is not visualized with the naked eye but rather through an endoscope projected onto a monitor.

Coverage Recommendation(s)

Coverage recommendations should be the same as those for **lumbar discectomy**. More specifically within the Lumbar Discectomy Coverage Recommendations, endoscopic discectomy should be covered for the treatment of **lumbar disc herniations with radiculopathy (item X)**.

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Rationale

The rationale for surgical treatment of lumbar disc herniations with radiculopathy has been thoroughly described in many publications. The most recent prospective evaluation was done by Weinstein et al through the SPORT trial showing generally improved results at four years when compared to non-surgical treatment (Spine, 2008).

The current document reviews the peer-reviewed, published data regarding endoscopically-visualized discectomy for lumbar disc herniations. Currently, this procedure is included in the same code as discectomy performed via other methods (e.g. open, microscopically-assisted). The rationale for coverage, therefore, is to substantiate the recommendation that endoscopic discectomy, in experienced hands, is a reasonable alternative to other more conventional methods of discectomy.

The published history of endoscopic discectomy began in the 1980's. Multiple case series and retrospective series reporting results similar to open microdiscectomy have been published.

In 2010 Nellensteijn et al performed a systematic review of the procedure (Eur Spine J (2010) 19:181–204). They found one randomized controlled trial, seven non-randomized controlled trials and 31 observational studies. In the eight controlled trials they found equivalent results between endoscopic and open decompression regarding leg pain reduction, improvement, complications and reoperation rate. Their conclusion was that the current evidence on the effectiveness of transforaminal endoscopic surgery is poor and does not provide valid information to either support or refuse using this type of surgery in patients with symptomatic lumbar disc herniations.

This conclusion is a bit curious, however, considering the individual results of the randomized controlled trials in their review. One study by Reutten et al (Spine, 2008) was a prospective, randomized, controlled trial of 178 patients who either underwent an endoscopic or so-called microsurgical discectomy, the latter being the control procedure. They found the clinical results to be the same in both groups, with no difference in rates of recurrent disc herniations. The Nellensteijn et al review critiqued this study for inadequate randomization. There were five other prospective RCT's reviewed, only one of which they considered to have proper randomization (Hermatin et al, 1999). In this study of 60 patients, there were equivalent outcomes between endoscopic (arthroscopic) and open discectomy techniques. Some of the other studies that the Nellensteijn et group reviewed might not be pertinent to the current coverage policy, such as the study by Hoogland et al (2008) who compared results of endoscopic discectomy with or without chymopapain injection (thus not a comparison of open versus endoscopic discectomy).

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Similarly, the study by Lee et al (2006) evaluated the results of laser discectomy with chemonucleolysis compared to automated nucleotomy, which is not relevant to the current coverage recommendations.

There are other comparative studies that have been performed that have demonstrated equivalence between open and endoscopic discectomy. Garg et al (J Orthop Surg, 2011) performed a prospective RCT of 112 patients with lumbar disc herniations. Fifty-five underwent a microendoscopic discectomy while 57 underwent an open procedure. They found the clinical outcomes to be equivalent with similar complication rates in both groups at one year follow-up.

There have been reports of the potential complications unique to this procedure and the learning curve involved. One large series noted a 1% incidence of pseudocyst formation (Kang and Park, 2011). Of note, the authors felt this was more likely in the patients undergoing interlaminar endoscopic decompression compared to those who underwent transforaminal decompression. Wang et al (2011) noted a long learning curve to the procedure with 20 percent of their initial ten cases requiring conversion to an open procedure. This group highlighted the need to have experience in standard surgical technique prior to attempting endoscopic discectomy. This is prudent advice to a surgeon looking to adopt this as a new surgical technique, much as one would adopt other new spine surgical techniques.

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