Arthroscopic Microdiscectomy for Lumbar Disc Herniation

Policy Number: 2014M0033A  Effective Date: December 1, 2014

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INSTRUCTIONS:

“Medical Policy assists in administering UCare benefits when making coverage determinations for members under our health benefit plans. When deciding coverage, all reviewers must first identify enrollee eligibility, federal and state legislation or regulatory guidance regarding benefit mandates, and the member specific Evidence of Coverage (EOC) document must be referenced prior to using the medical policies. In the event of a conflict, the enrollee’s specific benefit document and federal and state legislation and regulatory guidance supersede this Medical Policy. In the absence of benefit mandates or regulatory guidance that govern the service, procedure or treatment, or when the member’s EOC document is silent or not specific, medical policies help to clarify which healthcare services may or may not be covered. This Medical Policy is provided for informational purposes and does not constitute medical advice. In addition to medical policies, UCare also uses tools developed by third parties, such as the InterQual Guidelines®, to assist us in administering health benefits. The InterQual Guidelines are intended to be used in connection with the independent professional medical judgment of a qualified health care provider and do not constitute the practice of medicine or medical advice. Other Policies and Coverage Determination Guidelines may also apply. UCare reserves the right, in its sole discretion, to modify its Policies and Guidelines as necessary and to provide benefits otherwise excluded by medical policies when necessitated by operational considerations.”

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**POLICY DESCRIPTION:**

This policy addresses arthroscopic microdiscectomy (AMD), a percutaneous and endoscopic surgical intervention designed to relieve pain and disability caused by an herniated disk. The aim of surgery is to prevent permanent injury to the spinal nerve by removing the herniated material directly or by removing disc material from the center of the disc, thus allowing the herniation to subside.

AMD is performed by neurosurgeons or orthopedic surgeons, in an operating room. An anesthetist provides monitoring and conscious sedation, to allow communication between the surgeon and patient during the procedure. The operation can be performed on an outpatient basis.

**COVERAGE RATIONALE / CLINICAL CONSIDERATIONS:**

Arthroscopic Microdiscectomy (AMD) is considered **EXPERIMENTAL AND/OR INVESTIGATIONAL** and **NOT MEDICALLY NECESSARY** for all indications.

The evidence in the published medical literature on arthroscopic microdiscectomy is inadequate to permit scientific conclusions. Evidence from large comparative studies with long-term follow-up, using a well-defined AMD procedure, is needed to determine its clinical role among other minimally invasive techniques for lumbar disc herniation.

**Clinical Considerations:**

The operation can be performed on an outpatient basis and patients are encouraged to ambulate immediately and to avoid long periods of sitting, bending, or climbing for about a week.

**Complications:** AMD has the potential for complications that may arise with any spinal surgery, including dural tears, nerve root damage, bowel and/or bladder incontinence, bleeding, and infection. Reported overall complication rates for AMD range from 1% to 3.5%, including dural tear, wound infection, causalgic-type pain, psoas muscle hematoma, and thrombophlebitis.

**Contraindications:** AMD may be contraindicated in patients with spinal stenosis, mechanical instability, or cauda equina syndrome. Relative contraindications include prior disc surgery, obesity, anatomical characteristics limiting accessibility (e.g., elevated iliac crest), large central herniations, stenosis of the spinal canal, migrated sequestered herniations, drug dependency, and psychological disorders.

**BACKGROUND:**

Disc herniation is a condition affecting the spinal column in which one or more of the cushioning discs between the vertebrae are damaged and the inner gel-like substance (nucleus pulposus) bulges or protrudes through the tougher outer layer of the disk (annulus). Most herniations occur in the lower back, where this bulge or protrusion exerts pressure on the nerves that exit the spinal cord. This causes sciatica (a pain and weakness in the leg, also referred to as radicular pain or lumbar radiculopathy) and lower back pain. Disc herniation can be caused by injury or degenerative disc disease (DDD). DDD is a common condition that refers to gradual wear and tear leading to deterioration and weakening of the intervertebral disc as a person ages. At least 30% of patients aged 30 to 50 years have DDD, and in patients > 60 years,
some degree of DDD is considered normal.

While the majority of disc herniations (90%) resolve with conservative therapy, some may require surgery. Conservative measures include a short period of rest followed by physical therapy and slow and controlled exercise, with anti-inflammatory, muscle relaxant, and analgesic medications as required. Taking short walks and avoiding sitting for long periods can also help keep symptoms from returning. Cold compresses or ice may be helpful; gentle heat may be applied after spasms cease. With failure of nonsurgical treatments, epidural cortisone-like injections may lessen nerve irritation and allow for more effective physical therapy.

If conservative therapy fails, or if recovery is unacceptably slow, surgery is indicated to relieve pain and disability. The aim of surgery is to prevent permanent injury to the spinal nerve by removing the herniated material directly or by removing disc material from the center of the disc, thus allowing the herniation to subside. This procedure is referred to as a discectomy, and a considerable number of open and minimally invasive procedures have been investigated. Open discectomy is the treatment of choice for severe pain or weakness and complicated herniations. Minimally invasive surgical techniques have been developed to reduce postoperative recovery time, scarring, and instability. These procedures differ from each other in terms of access of the herniated disc, visualization of the operative site, and the method by which pressure on the nerve roots is alleviated.

Arthroscopic microdiscectomy (AMD) is a term coined by the originator of this surgical procedure, which has evolved into a number of similar procedures sometimes referred to as percutaneous (through the skin) or posterolateral (in back and away from the midline) lumbar endoscopic discectomy. AMD describes an endoscopically guided posterolateral approach bolstered by illumination and magnification that removes nuclear material and herniated material through cannulas placed within the disc. The technique has evolved over time, with a number of investigators describing similar or modified approaches under a number of different terms (percutaneous or posterolateral endoscopic discectomy; selective endoscopic discectomy). The disc is accessed through one or two 1-cm (centimeter) incisions or ports, either uniportal or biportal. The uniportal approach is most commonly used, with the biportal approach being reserved for large central herniations or fragments of nuclear material that have completely detached from the disc within the spinal canal (sequestered herniations). The technology does not involve muscle dissection or bone removal.

For the AMD, the patient receives a single dose of antibiotic prophylaxis, and is placed in a lateral decubitus position, so that the symptomatic side is facing upwards. Under fluoroscopic control, the level, entrance point, and angle of the injured disc(s) are confirmed. Using a local anesthetic, a spinal needle is inserted through the skin at a point 8 to 12 cm lateral from the midline under C-arm fluoroscopic guidance. The needle is advanced to the posterolateral surface of the annulus adjacent to the spinal canal through a triangular working zone. The triangular working zone is bordered superiorly by the exiting nerve root, inferiorly by the proximal plate of the lower vertebrae, posteriorly by the vertebral articular processes, and medially by the traversing nerve root and dura of the spinal cord. Cannulas large enough to accommodate the endoscope and surgical instruments are inserted. Disc material is excised manually using forceps, or utilizing automated shavers and suction punch forceps, to relieve the pressure on the nerve. Herniations within the opening of the foramen and outside this structure can be targeted directly. Medial herniations that intrude on the center of the spinal canal can be accessed from within the disc. In cases where visualization permits, the cannula can also be directed toward the spinal canal to retrieve fragments that have dislodged. Coagulation of small blood vessels in the annulus surface may be accomplished using lasers.
or radiofrequency ablation.

AMD is performed by neurosurgeons or orthopedic surgeons, in an operating room. An anesthetist provides monitoring and conscious sedation with e.g., midazolam, to allow communication between the surgeon and patient to detect inadvertent placement of instruments near neural tissue. The procedure has a relatively steep learning curve, requiring specific instruction and training. The operation can be performed on an outpatient basis and patients are encouraged to ambulate immediately and to avoid long periods of sitting, bending, or climbing for about a week. Exercises such as aquatherapy and swimming are encouraged after 2 weeks, followed by more vigorous exercise including isokinetic exercises. AMD does not limit or hinder the subsequent use of microsurgical procedures to remove discs.

Clinical Alternatives: Clinical alternatives to AMD include open discectomy; open microdiscectomy; microendoscopic discectomy; and percutaneous nonendoscopic technologies such as coblation nucleoplasty, thermal disc decompression, intradiscal electrothermal therapy, automated percutaneous lumbar discectomy, laser disc decompression, and chemonucleolysis.

REGULATORY STATUS:

1. **U.S. FOOD AND DRUG ADMINISTRATION (FDA):**
   AMD is a procedure and, therefore, is not subject to regulation by the FDA. However, the devices used to perform this procedure are regulated by the FDA premarket approval process. Arthroscopes are captured in the FDA 510(k) database.

2. **CENTERS FOR MEDICARE AND MEDICAID SERVICES (CMS):**
   No CMS National Coverage Determination (NCD) was found for AMD for lumbar disc herniation.
   National Coverage Determination (NCD) for Percutaneous image-guided LUMBAR DECOMPRESSION for LUMBAR spinal stenosis (150.13). Implementation date: 10/6/2014.
   Percutaneous image-guided LUMBAR DECOMPRESSION (PILD) for LUMBAR spinal stenosis is a posterior decompression of the lumbar spine performed under indirect image guidance without any direct visualization of the surgical area. This is a procedure proposed as a treatment for symptomatic LSS unresponsive to conservative therapy. This procedure is generally described as a non-invasive procedure using specially designed instruments to percutaneously remove a portion of the lamina and debulk the ligamentum flavum. The procedure is performed under x-ray guidance (e.g., fluoroscopic, CT) with the assistance of contrast media to identify and monitor the compressed area via epiduragram.
   Effective for services performed on or after January 09, 2014, the Centers for Medicare & Medicaid Services (CMS) has determined that PILD will be covered by Medicare when provided in a clinical study under section 1862(a)(1)(E) through Coverage with Evidence Development (CED) for beneficiaries with LSS who are enrolled in an approved clinical study that meets CMS criteria.
   Endoscopically assisted laminotomy/laminectomy, which requires open and direct visualization, as well as other open lumbar decompression procedures for LSS are not within the scope of this NCD.

3. **MINNESOTA DEPARTMENT OF HUMAN SERVICES (DHS):**
   Minnesota DHS does not have a policy statement regarding AMD for lumbar disc herniation in its
Clinical & Quality Management

MEDICAL POLICY

CLINICAL EVIDENCE:

EXTERNAL SOURCES/ GROUPS POLICY:

National Institute for Health and Clinical Excellence (NICE): The National Institute for Health and Clinical Excellence (NICE) published guidance in 2005 on automated percutaneous mechanical lumbar discectomy, indicating that there is limited evidence of efficacy based on uncontrolled case series of heterogeneous groups of patients and evidence from small RCTs showing conflicting results. In view of the uncertainties about the efficacy of the procedure, it should not be used without special arrangements for consent and for audit or research (NICE, 2005). This guideline did not mention AMD or PED.

American Society of Interventional Pain Physicians (ASIPP): In a 2009 update of guidelines for management of chronic spinal pain, a task force of the American Society of Interventional Pain Physicians (ASIPP) published a 1C recommendation for automated percutaneous lumbar discectomy, defined as a strong recommendation based on low-quality to very low-quality evidence from observational and case series studies. The 1C definition further states that this recommendation “may change when higher quality evidence becomes available.” Questions remain about the appropriate patient selection criteria (particularly related to the size and migration of the disc herniation) for this procedure (Manchikanti et al., 2009). This guideline did not mention AMD or PED.

Work Loss Data Institute (WLDI): In a set of guidelines on acute and chronic low back pain, the WLDI mentions percutaneous discectomy, but does not recommend this procedure for treatment of this type of pain (WLDI, 2011).

SUMMARY:

The best available evidence was provided by two randomized controlled trials, one prospective case series, and two retrospective case series. The evidence was insufficient to demonstrate equivalent or superior efficacy of AMD or percutaneous endoscopic discectomy compared with standard open microdiscectomy. A review of the data suggests that the procedure broadly has comparable results with open microdiscectomy, and it has some advantages in terms of a shorter hospitalization and reduced postoperative disability. Reported success rates for AMD were similar or slightly higher than those reported after standard microdiscectomy. Reported procedure success rates ranged from 70% to 97% in the randomized controlled studies and case series.

The overall quality of the evidence was very low. The studies were relatively old, had short follow-up times, and were subject to potential bias due to poor study design and nonstandardized assessment of outcomes. In addition, bias in favor of the treatment on the part of some investigators cannot be excluded and may have influenced interpretation of the results. An assessment of the efficacy of AMD was further complicated by the continuous further development of technologies, which led to a diversity of procedures in use, prohibiting generalization of study results. Given the inadequate quality of the comparative data and lack of data on long-term outcomes, it is not possible to draw definitive conclusions. Evidence from large comparative studies with long-term follow-up, using a well-defined AMD procedure, is needed to determine its clinical role among other minimally invasive techniques for lumbar disc herniation. However, the paucity of recent literature evaluating the procedure suggest that AMD as described in the early 1990s
has likely been replaced by newer procedures using more up-to-date technologies.

### APPLICABLE CODES:

The Current Procedural Terminology (CPT®) codes and HCPCS codes listed in this policy are for reference purposes only. Listing of a service or device code in this policy does not imply that the service described by this code is a covered or non-covered health service. The inclusion of a code does not imply any right to reimbursement or guarantee claims payment. Other medical policies and coverage determination guidelines may apply.

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<tr>
<td>S2348</td>
<td>Decompression procedure, percutaneous, of nucleus pulposus of intervertebral disc, using radiofrequency energy, single or multiple levels, lumbar [DISC nucleoplasty]</td>
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<tr>
<td>80.59</td>
<td>Other destruction of intervertebral disc [when specified as percutaneous lumbar disc decompression, laser discectomy, coblation nucleoplasty]</td>
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<td>OR53ZZ-OR5B4ZZ</td>
<td>Destruction of vertebral disc, percutaneous or percutaneous endoscopic approach [cervical, cervicothoracic, thoracic or thoracolumbar; includes codes OR53ZZ, OR5B4ZZ]</td>
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<td>ORB3ZZ-ORBB4ZZ</td>
<td>Excision of vertebral disc, percutaneous or percutaneous endoscopic approach [cervical, cervicothoracic, thoracic or thoracolumbar; includes codes ORB3ZZ, ORB4ZZ]</td>
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<tr>
<td>ORN3ZZ-ORN4ZZ</td>
<td>Release vertebral disc, percutaneous or percutaneous endoscopic approach [cervical, cervicothoracic, thoracic or thoracolumbar; includes codes ORN3ZZ, ORN4ZZ]</td>
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<tr>
<td>OS52ZZ-OS54ZZ</td>
<td>Destruction of vertebral disc, percutaneous or percutaneous endoscopic approach [lumbar or lumbosacral; includes codes OS52ZZ, OS54ZZ]</td>
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<td>OSB2ZZ-OSB4ZZ</td>
<td>Excision of vertebral disc, percutaneous or percutaneous endoscopic approach [lumbar or lumbosacral; includes codes OSB2ZZ, OSB4ZZ]</td>
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<tr>
<td>OSN2ZZ-OSN4ZZ</td>
<td>Release vertebral disc, percutaneous or percutaneous endoscopic approach [lumbar or lumbosacral; includes codes OSN2ZZ, OSN4ZZ]</td>
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<td>62287</td>
<td>Decompression procedure, percutaneous, of nucleus pulposus of intervertebral disc, any method utilizing needle based technique to remove disc material under fluoroscopic imaging or other form of indirect visualization, with the use of an endoscope, with discography and/or epidural injection(s) at the treated level(s), when performed, single or multiple levels, lumbar</td>
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<td>63030</td>
<td>Laminotomy (hemilaminectomy), with decompression of nerve root(s), including partial facetectomy, foraminotomy and/or excision of herniated intervertebral disc; one interspace, lumbar (including open or endoscopically-assisted approach)</td>
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<td>63035</td>
<td>Laminotomy (hemilaminectomy), with decompression of nerve root(s), including partial facetectomy, foraminotomy and/or excision of herniated intervertebral disc; each additional interspace, cervical or lumbar (List separately in addition to code for primary procedure)</td>
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| 63056      | Transpedicular approach with decompression of spinal cord, equina and/or nerve root(s) (eg, herniated intervertebral disc), single segment; lumbar (including transfacet, or lateral
extraforaminal approach) (e.g., far lateral herniated intervertebral disc)

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<td>63057</td>
<td>Transpedicular approach with decompression of spinal cord, equina and/or nerve root(s) (eg, herniated intervertebral disc), single segment; each additional segment, thoracic or lumbar (List separately in addition to code for primary procedure)</td>
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<td>0274T</td>
<td>Percutaneous laminotomy/laminectomy (intralaminar approach) for decompression of neural elements, (with or without ligamentous resection, discectomy, facetectomy and/or foraminotomy) any method under indirect image guidance (eg, fluoroscopic, CT), with or without the use of an endoscope, single or multiple levels, unilateral or bilateral; cervical or thoracic</td>
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<td>0275T</td>
<td>Percutaneous laminotomy/laminectomy (intralaminar approach) for decompression of neural elements, (with or without ligamentous resection, discectomy, facetectomy and/or foraminotomy) any method under indirect image guidance (eg, fluoroscopic, CT), with or without the use of an endoscope, single or multiple levels, unilateral or bilateral; lumbar</td>
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<tr>
<td>64999</td>
<td>Unlisted procedure, nervous system [when specified as percutaneous decompression or laser procedures of cervical or thoracic spine]</td>
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REFERENCES:

   Available at: http://www.spineuniverse.com/conditions/degenerative-disc/degenerative-disc-disease-low-back-
15. Lühmann D, Burkhardt-Hammer T, Borowski C, Raspe H. Minimally invasive surgical procedures for the treatment
   of lumbar disc herniation. GMS Health Technol Assess. 2005;1:Doc07. Available at: 
17. Mayer HM, Brock M. Percutaneous endoscopic discectomy: surgical technique and preliminary results compared
18. Morita A, Shin M, Sekhar LN, Kirino T. Endoscopic microneurosurgery: usefulness and cost-effectiveness in the
   October 3, 2014.
20. Tsou PM, Alan Yeung C, Yeung AT. Posterolateral transforaminal selective endoscopic discectomy and thermal
   annuloplasty for chronic lumbar discogenic pain: a minimal access visualized intradiscal surgical procedure. Spine
   Available at: http://www.spine-health.com/conditions/degenerative-disc-disease/lumbar-degenerative-disc-
   [website]. Available at: http://www.spine-health.com/topics/surg/overview/lumbar/lumb03.html. Accessed
   October 3, 2014.
   Institute; 2011. Summary on National Guideline Clearinghouse [website]. Updated March 14, 2011. Available at: 
24. Yeung AT, Tsou PM. Posterolateral endoscopic excision for lumbar disc herniation: Surgical technique, outcome,

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