Cohere Medicare Advantage Policy - Vertebral Corpectomy

Clinical Guidelines for Medical Necessity Review

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Important Notices

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Other Notices:

Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System
Guideline Name: Cohere Medicare Advantage Policy - Vertebral Corpectomy

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Type: [**X**] Adult (18+ yo) | [_] Pediatric (0-17yo)

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Medical Necessity Criteria

Service: Vertebral Corpectomy

Benefit Category

Not applicable.

Recommended Clinical Approach

Corpectomy involves surgical removal of the central portion of a vertebral body and replacement with graft material.[1] Single or multi-level disc disease may be treated via an anterior approach (with fusion) as well as improvement of symptoms related to short-segment ossification of the posterior longitudinal ligament.[2-3] Other approaches (posterior, lateral, oblique) may be chosen based on the location of compression or if a contraindication to the anterior approach exists.[4] Corpectomy may be used to treat degenerative disease, infection, tumor, or fracture. Partial vertebral excision/partial corpectomy may be used based on the patient's anatomical presentation and degree of spinal compression.

Evaluation of Clinical Benefits and Potential Harms

Cohere Health uses the criteria below to ensure consistency in reviewing the conditions to be met for coverage of vertebral corpectomy. This process helps to prevent both incorrect denials and inappropriate approvals of medically necessary services. Specifically, limiting incorrect approvals reduces the risks associated with unnecessary procedures, such as complications from surgery, adverse reactions, and infection.

The potential clinical harms of using these criteria may include:

- Inadequate management of spinal conditions due to inappropriate denials. If there is associated myelopathy or cauda equina syndrome and surgery is denied or delayed this could result in permanent neurologic deficits. Therefore the criteria reflect this and do not require conservative treatment for these conditions. In addition, if surgery is denied or delayed for degenerative conditions this could progress resulting in chronic pain and possible opioid dependence which can worsen patient outcomes.

- Risks with inappropriate surgical procedures include infection, bleeding requiring a transfusion, injury to neurovascular structures, anesthetic risk and need for repeat or additional procedures due to implant failure, pseudoarthrosis and ongoing pain. Sowa et al report that the most common complications from a corpectomy include migration of the implant into the adjacent vertebral endplate, fracture above the fixation and a dura mater injury.[14] Sarkar et al reported on complications from corpectomy for degenerative conditions after reviewing 468 surgical procedures.[16] They report the major complications for a cervical corpectomy are dural tears 4.3%, surgical site infection 3.4%, C5 radiculopathy 1.3%, dysphagia 0.8%, recurrent laryngeal nerve injury 0.4%, and one postoperative death.
- Increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.

The clinical benefits of using these criteria include:

- Improved patient outcomes by ensuring timely and appropriate access to vertebral corpectomy procedures. Audat et al, in a retrospective study, reported that surgical treatment is recommended for cervical myelopathy which includes a corpectomy.[4] Tatter et al. reviewed 119 patients and determined that anterior cervical corpectomy and fusion are safe and effective procedures with low revision and complication rates.[5] In a 2022 systematic review, Piche et al. report that open procedures can avoid complications such as vascular injury, bowel and urogenital injury, nerve injury, etc.[13] According to Sowa et al, corpectomy is the treatment of choice for unstable spine fractures.[14] Tabaraee et al determined that minimally invasive thoracolumbar corpectomies are a safe and viable procedure with lower blood loss, shorter hospitalization time and shorter procedure time.[15]
- Reduction in complications and adverse effects from unnecessary procedures. Sarkar et al reported on complications from corpectomy for degenerative conditions after reviewing 468 surgical procedures.[16] They report the major complications for a cervical corpectomy are dural tears 4.3%, surgical site infection 3.4%, C5 radiculopathy 1.3%, dysphagia 0.8%, recurrent laryngeal nerve injury 0.4%, and one postoperative death.
- Enhanced overall patient satisfaction and healthcare experience.

This policy includes provisions for expedited reviews and flexibility in urgent cases to mitigate risks of delayed access. Evidence-based criteria are employed to prevent inappropriate denials, ensuring that patients receive medically necessary care. The criteria aim to balance the need for effective treatment with the minimization of potential harms, providing numerous clinical benefits in helping avoid unnecessary complications from inappropriate care.

In addition, the use of these criteria is likely to decrease inappropriate denials by creating a consistent set of review criteria, thereby supporting optimal patient outcomes and efficient healthcare utilization.

Medical Necessity Criteria

Indications

- ➔ **Full/partial vertebral corpectomy** is considered appropriate when **ANY** of the following is **TRUE**:
  - ◆ The procedure is necessary as part of treatment for cervical spine injury or trauma as indicated by **ALL** of the following[5]:
    - Symptomatic acute cervical myelopathy or radiculopathy; **AND**
    - Neuroimaging (e.g., MRI) findings correlate to symptoms[6]; **OR**
  - ◆ The procedure is a **full/partial cervical corpectomy** and **ALL** of the following are **TRUE**[7]:
    - **ANY** of the following radiographic findings on advanced imaging (MRI or CT myelogram) is **TRUE**[6]:
      - Existence of ossified posterior longitudinal ligament; **OR**
      - The patient has an unstable cervical burst fracture; **OR**
      - Cervical vertebral osteomyelitis that has not responded to nonoperative management (intravenous and oral antimicrobial therapy); **OR**
      - Cervical vertebral body tumor; **OR**
      - Correction of cervical kyphosis; **OR**
      - Failure of previous cervical surgery such as disc replacement; **OR**
      - Cervical vertebral fracture related to previous surgery; **AND**
    - **ANY** of the following is **TRUE**:

- The patient has **cervical myelopathy** and **ANY** of the following is **TRUE**[3,8]:
  - **ANY** of the following **cervical myelopathy** symptoms:
    - Gait disturbance or abnormality; **OR**
    - Lower or upper extremity weakness; **OR**
    - Paresthesias or numbness in the upper extremities; **OR**
    - Loss of dexterity/coordination; **OR**
    - Bowel or bladder dysfunction; **OR**
  - MRI or other neuroimaging reveals spinal cord compression related to cervical spondylosis that correlates with clinical presentation; **OR**
  - **ANY** of the following **cervical myelopathy** physical examination findings:
    - Lhermitte's sign: an electric shock-like sensation down the spine or into the upper extremities with forward flexion of the cervical spine; **OR**
    - Hoffman's sign; **OR**
    - **ANY** of the following upper lower motor neuron (ULMN) findings in the upper extremities:
      - Weakness; **OR**
      - Atrophy; **OR**
  - **ANY** of the following upper lower motor neuron (ULMN) findings in the lower extremities:
    - Hypertonicity; **OR**
    - Hyperreflexia; **OR**
    - Positive Babinski (extension of toes with distal to proximal plantar stimulation of foot); **OR**
    - Multiple beats or sustained clonus; **OR**
    - Decreased sensation, proprioception, or vibratory sense; **OR**
    - Loss of sphincter tone; **OR**
- The patient has **cervical radiculopathy** and **ALL** of the following are **TRUE:**
  - **ANY** of the following **cervical radiculopathy** symptoms:
    - Neck pain; **OR**
    - Arm pain; **OR**

- Scapular pain; **OR**
- Periscapular pain; **OR**
- Anterior chest pain; **OR**
- Weakness, numbness, or paresthesia in the upper extremity; **OR**
- Headache; **OR**

◆ **ANY** of the following **cervical radiculopathy** positive specialty tests:
- Spurling's test or maneuver or compression test (reproduction of symptoms with neck extension, lateral flexion, and downward compression or loading); **OR**
- Shoulder abduction test (symptoms relieved with shoulder abduction); **AND**

◆ **ANY** of the following is **TRUE**:
- Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 6 weeks. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement[9]; **OR**
- The patient's severe pain or disability is affecting their quality of life and limiting their daily life (including working and ability to provide self-care); **OR**

◆ The procedure is a **full/partial thoracic corpectomy** and **ANY** of the following radiographic findings on advanced imaging (MRI or CT myelogram) **TRUE**:
- Trauma (vertebral fractures) in the thoracic region; **OR**
- Tumors present in the thoracic region; **OR**

◆ The procedure is a **full/partial lumbar corpectomy** and **ALL** of the following are **TRUE**:
- **ANY** of the following seen on advanced imaging (MRI or CT myelogram)[10]:
  - The patient has an unstable lumbar burst fracture; **OR**
  - Lumbar vertebral osteomyelitis that has not responded to nonoperative management (intravenous and oral antimicrobial therapy); **OR**
  - Lumbar vertebral body tumor; **OR**
  - Lumbar kyphosis; **OR**

- Failure of previous lumbar surgery such as disc replacement; **OR**
- Lumbar vertebral fracture related to previous surgery.

Non-Indications

➔ **Full/partial vertebral corpectomy** is not considered appropriate if **ANY** of the following is **TRUE**:

- The procedure is for a cervical vertebral corpectomy, and the patient has had previous radiation treatment to the anterior neck; **OR**
- The procedure is for a cervical vertebral corpectomy, and the patient has had previous multiple anterior neck surgeries.

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
22100	Partial excision of posterior vertebral component (eg, spinous process, lamina or facet) for intrinsic bony lesion, single vertebral segment; cervical
22101	Partial excision of posterior vertebral component (eg, spinous process, lamina or facet) for intrinsic bony lesion, single vertebral segment; thoracic
22102	Partial excision of posterior vertebral component (eg, spinous process, lamina or facet) for intrinsic bony lesion, single vertebral segment; lumbar
22103	Partial excision of posterior vertebral component (eg, spinous process, lamina or facet) for intrinsic bony lesion, single vertebral segment; each additional segment (List separately in addition to code for primary procedure)
22110	Partial excision of vertebral body, for intrinsic bony lesion, without decompression of spinal cord or nerve root(s), single vertebral segment; cervical
22112	Partial excision of vertebral body, for intrinsic bony lesion, without decompression of spinal cord or

	nerve root(s), single vertebral segment; thoracic
22114	Partial excision of vertebral body, for intrinsic bony lesion, without decompression of spinal cord or nerve root(s), single vertebral segment; lumbar
22116	Partial excision of vertebral body, for intrinsic bony lesion, without decompression of spinal cord or nerve root(s), single vertebral segment; each additional vertebral segment (List separately in addition to code for primary procedure)
22899	Unlisted procedure, spine
63081	Vertebral corpectomy (vertebral body resection), partial or complete, anterior approach with decompression of spinal cord and/or nerve root(s); cervical, single segment
63082	Vertebral corpectomy (vertebral body resection), partial or complete, anterior approach with decompression of spinal cord and/or nerve root(s); cervical, each additional segment (List separately in addition to code for primary procedure)
63085	Vertebral corpectomy (vertebral body resection), partial or complete, transthoracic approach with decompression of spinal cord and/or nerve root(s); thoracic, single segment
63086	Vertebral corpectomy (vertebral body resection), partial or complete, transthoracic approach with decompression of spinal cord and/or nerve root(s); thoracic, each additional segment (List separately in addition to code for primary procedure)
63087	Vertebral corpectomy (vertebral body resection), partial or complete, combined thoracolumbar approach with decompression of spinal cord, cauda equina or nerve root(s), lower thoracic or lumbar; single segment
63088	Vertebral corpectomy (vertebral body resection), partial or complete, combined thoracolumbar approach with decompression of spinal cord, cauda equina or nerve root(s), lower thoracic or lumbar;

	each additional segment (List separately in addition to code for primary procedure)
63090	Vertebral corpectomy (vertebral body resection), partial or complete, transperitoneal or retroperitoneal approach with decompression of spinal cord, cauda equina or nerve root(s), lower thoracic, lumbar, or sacral; single segment
63091	Vertebral corpectomy (vertebral body resection), partial or complete, transperitoneal or retroperitoneal approach with decompression of spinal cord, cauda equina or nerve root(s), lower thoracic, lumbar, or sacral; each additional segment (List separately in addition to code for primary procedure)
63101	Vertebral corpectomy (vertebral body resection), partial or complete, lateral extracavitary approach with decompression of spinal cord and/or nerve root(s) (eg, for tumor or retropulsed bone fragments); thoracic, single segment
63102	Vertebral corpectomy (vertebral body resection), partial or complete, lateral extracavitary approach with decompression of spinal cord and/or nerve root(s) (eg, for tumor or retropulsed bone fragments); lumbar, single segment
63103	Vertebral corpectomy (vertebral body resection), partial or complete, lateral extracavitary approach with decompression of spinal cord and/or nerve root(s) (eg, for tumor or retropulsed bone fragments); thoracic or lumbar, each additional segment (List separately in addition to code for primary procedure)
63300	Vertebral corpectomy (vertebral body resection), partial or complete, for excision of intraspinal lesion, single segment; extradural, cervical
63301	Vertebral corpectomy (vertebral body resection), partial or complete, for excision of intraspinal lesion, single segment; extradural, thoracic by transthoracic approach

63302	Vertebral corpectomy (vertebral body resection), partial or complete, for excision of intraspinal lesion, single segment; extradural, thoracic by thoracolumbar approach
63303	Vertebral corpectomy (vertebral body resection), partial or complete, for excision of intraspinal lesion, single segment; extradural, lumbar or sacral by transperitoneal or retroperitoneal approach
63304	Vertebral corpectomy (vertebral body resection), partial or complete, for excision of intraspinal lesion, single segment; intradural, cervical
63305	Vertebral corpectomy (vertebral body resection), partial or complete, for excision of intraspinal lesion, single segment; intradural, thoracic by transthoracic approach
63306	Vertebral corpectomy (vertebral body resection), partial or complete, for excision of intraspinal lesion, single segment; intradural, thoracic by thoracolumbar approach
63307	Vertebral corpectomy (vertebral body resection), partial or complete, for excision of intraspinal lesion, single segment; intradural, lumbar or sacral by transperitoneal or retroperitoneal approach
63308	Vertebral corpectomy (vertebral body resection), partial or complete, for excision of intraspinal lesion, single segment; each additional segment (List separately in addition to codes for single segment)

Medical Evidence

The North American Spine Society (NASS) has recently published the following Coverage Recommendations:

- *Cervical Fusion* (Kreiner et al., 2023): Anterior cervical corpectomy is recommended in cervical myelopathy; however, they state that instability frequently results from the procedure.[11]
- *Lumbar Fusion* (Kreiner et al., 2021): Discusses predominantly lumbar fusion, with mentions of lumbar corpectomy in addition to discectomy as a cause of postoperative spinal instability.[12]

The American College of Radiology (ACR) Expert Panel on Neurological Imaging has published several guidelines related to myelopathic evaluation:

- Agarwal et al. (2021) updated the previous *Myelopathy Appropriate Use Criteria* with MRI recommended as initial imaging for acute onset myelopathy as well as chronic or progressive myelopathy due to its superior resolution of soft tissue and ability to evaluate surrounding structures. CT is designated as May Be Appropriate in the ratings, with CT myelography of possible use prior to surgical intervention.[9]
- Hutchins et al. (2021) published *Low Back Pain ACR Appropriateness Criteria* which recommends non-contrast MRI as Usually Appropriate, and radiography and CT as May Be Appropriate in low back pain with and without radiculopathy. This applies to surgical candidates with persistence or progression of symptoms having failed six weeks of medical management. MRI, CT, and CT myelography are recommended for suspected cauda equina syndrome. In osteoporosis or chronic steroid use, radiography, non-contrast MRI or CT is recommended as Usually Appropriate.[10]

In a systematic review by Lannon et al. (2021), degenerative cervical myelopathy (DCM) is described as a leading cause of spinal cord injury and spinal stenosis with increasing incidence. Early surgical referral is recommended along with conservative management to prevent progressive neurologic compromise.[3]

In a retrospective study, Audat et al. (2018) concluded that surgical treatment is the ideal choice for cervical spondylotic myelopathy, and whether to use an

anterior or posterior approach is controversial. The studies reviewed revealed little difference in outcomes between approach types.[4]

Tatter et al. (2021) concluded in a case series of 119 patients that anterior cervical corpectomy and fusion are safe and effective with low revision and complication rates for degenerative and traumatic spinal disorders. Single-level surgery does not require posterior fixation; however, multi-level procedures require posterior fixation.[5]

In a 2022 systematic review, Piche et al. discuss large-scale open procedures in the past in contrast to current less invasive mini-open procedures, often avoiding complications such as vascular injury, bowel and urogenital injury, nerve injury, etc. The authors of the report state that their preference is the transpsoas method in order to improve visualization during the corpectomy procedure.[13]

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Clinical Guideline Revision History/Information

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