Cohere Medical Policy - Vertebral Corpectomy

Clinical Guidelines for Medical Necessity Review

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Important Notices

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Guideline Information:

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

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

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Service: Vertebral Corpectomy

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 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] Vertebral 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.

Medical Necessity Criteria

Indications

- ➔ A **full/partial vertebral corpectomy** is considered appropriate when **ANY** of the following is **TRUE:**
  - ◆ The procedure is a **full/partial cervical corpectomy,** and **ALL** of the following are **TRUE**[5]:
    - **ANY** of the following radiographic findings on advanced imaging (magnetic resonance imaging [MRI] or computed tomography [CT] myelogram) are **TRUE**:
      - ○ Ossified posterior longitudinal ligament causing cord compression; **OR**
      - ○ Unstable cervical burst fracture; **OR**
      - ○ Cervical vertebral osteomyelitis when **ANY** of the following is **TRUE**:
        - ◆ No response to nonoperative management (intravenous and oral antimicrobial therapy; **OR**
        - ◆ The infection is causing symptomatic cord compression); **OR**

    - Ventral epidural abscess causing cord compression with myelopathy; **OR**
    - Cervical vertebral body tumor; **OR**
    - Correction of cervical kyphosis; **OR**
    - Revision of failed cervical disc arthroplasty (such as disc replacement); **OR**
    - Cervical vertebral body fracture related to previous surgery; **AND**
- **ANY** of the following is **TRUE**:
    - The patient has cervical myelopathy due to cord compression from disc, osteophyte, thickened or ossified posterior longitudinal ligament (PLL) behind the vertebral body, and **ANY** of the following is **TRUE**[3,6]:
        - **ANY** of the following 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**
        - **ANY** of the following physical examination findings:
            - Lhermitte's sign; **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 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 due to cord or nerve root compression from disc, osteophyte, thickened or ossified PLL behind the vertebral body, and **ALL** of the following are **TRUE:**
        - **ANY** of the following 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; **AND**
        - **ANY** of the following 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 for greater than 6 weeks, including **ALL** of the following[8]:
                - Oral steroids, anti-inflammatory medications, or analgesics; **AND**
                - Physical therapy or physician-directed home exercise program; **AND**
                - Facet injections/medial branch blocks (MBBB); **AND**
                - Epidural steroid injections (ESI); **OR**
                - **ANY** of the following:

        - ◆ Corticosteroid injection if medically appropriate; **OR**
        - ◆ Corticosteroid injection is contraindicated; **AND**
    - The patient has severe pain or disability that affects their quality of life and limits their daily life (such as working or 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) is **TRUE**:
    - Trauma (vertebral body fractures) in the thoracic region; **OR**
    - Tumor present in the thoracic region; **OR**
    - Thoracic vertebral osteomyelitis when **ANY** of the following is **TRUE**:
        - No response to nonoperative management (intravenous and oral antimicrobial therapy; **OR**
        - The infection is causing symptomatic cord compression); **OR**
- ◆ The procedure is a **full/partial lumbar corpectomy,** and **ANY** of the following, seen on advanced imaging (MRI or CT myelogram), is **TRUE**:
    - The patient has an unstable lumbar burst fracture; **OR**
    - Lumbar vertebral osteomyelitis when **ANY** of the following is **TRUE**:
        - No response to nonoperative management (intravenous and oral antimicrobial therapy; **OR**
        - The infection is causing symptomatic cord compression); **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

- ➔ A **full/partial vertebral corpectomy** is not considered appropriate if **ANY** of the following is **TRUE**:
  - ◆ There are no absolute non-indications for a vertebral corpectomy.

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
22100	Partial excision of posterior vertebral component (e.g., spinous process, lamina or facet) for intrinsic bony lesion, single vertebral segment; cervical
22101	Partial excision of posterior vertebral component (e.g., spinous process, lamina or facet) for intrinsic bony lesion, single vertebral segment; thoracic
22102	Partial excision of posterior vertebral component (e.g., spinous process, lamina or facet) for intrinsic bony lesion, single vertebral segment; lumbar
22103	Partial excision of posterior vertebral component (e.g., 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) (e.g., 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) (e.g., 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) (e.g., 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

In a 2022 systematic review, Piche et al. discuss the evolution of lumbar corpectomy, including the transition away from open procedures t to less invasive mini-open procedures, often avoiding complications such as vascular injury, bowel and urogenital injury, nerve injury, etc. They briefly summarize indications for lumbar corpectomy, including trauma, spinal deformity, tumor, and lumbar infection. The authors of the report state that their preference is the transpsoas method in order to improve visualization during the corpectomy procedure.[9]

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 (e.g., discectomy, corpectomy, laminoplasty) is recommended, alongside conservative management, to prevent progressive neurologic compromise.[3] The authors note that symptomatic myelopathy, in combination with cord compression that is confirmed on imaging, and for which no comorbid pathology is the contributory cause of symptoms, is indicated for surgical management.

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 do require posterior fixation.[10]

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]

The North American Spine Society (NASS) published the following coverage recommendations:

- *Cervical Fusion* (2023): Anterior cervical corpectomy is recommended in cervical myelopathy; however, they state that instability may result from the procedure when used to treat spinal infection. Surgical

strategies exist to preserve the soft tissues and ligamentous structures without compromising decompression.[8]
- *Lumbar Fusion* (2021): Discusses predominantly lumbar fusion, mentioning if the possibility of postoperative spinal instability when surgery is used to treat spinal infection.[11]

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.[7]
- McDonald et al. (2018) recommended radiography, MRI, or CT for initial imaging in new or increasing nontraumatic neck pain, as well as in cervical radiculopathy. In patients with a history of cervical spine surgery, radiography, and non-contrast CT are primary recommendations, with a disagreement on the appropriateness of MRI (contrast and non-contrast). CT myelography is rated as May Be Appropriate.[12]
- The *Low Back Pain Appropriateness Criteria* (Hutchins et al., 2021) recommended non-contrast MRI as Usually Appropriate and radiography and CT as May Be Appropriate in low back pain with and without radiculopathy. This applied to surgical candidates with persistence or progression of symptoms, having failed six weeks of medical management. MRI, CT, and CT myelography were recommended for suspected cauda equina syndrome. In osteoporosis or chronic steroid use, radiography, non-contrast MRI, or CT was recommended as Usually Appropriate.[13]

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Clinical Guideline Revision History/Information

Original Date: September 29, 2023		
Review History		
Version 2	11/17/2023	
Version 3	9/20/2024	Updated language regarding conservative treatment.
Version 4	1/2/2025	• Annual review. • Standardized infection language throughout indications. • Removed non-indications that are not absolute non-indications. • Reviewed boolean logic. • Literature review - Medical Evidence section updated (including references).