Kyphectomy - Single Service

Clinical Guidelines for Medical Necessity Review

Version: 3
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Important Notices

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Guideline Information:

Specialty Area: Diseases & Disorders of the Musculoskeletal System (M00-M99)
Guideline Name: Kyphectomy - Single Service

Literature review current through: 9/20/2024
Document last updated: 9/20/2024
Type: [**X**] Adult (18+ yo) | [**X**] Pediatric (0-17 yo)

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Medical Necessity Criteria

Service: Kyphectomy

General Guidelines

- **Units, Frequency, & Duration:** None.
- **Criteria for Subsequent Requests:** None.
- **Recommended Clinical Approach:** Kyphectomy is effective for the correction of kyphosis. The three types of kyphosis include postural, Scheuermann's, and congenital. Nearly 50% of patients have a complication, notably skin and wound breakdown. Patients with myelomeningocele have an increased risk of complications compared to patients with idiopathic scoliosis. Over 40% of patients experience failure of fusion; infection rates are also over 40%.[1]
- **Exclusions:** None.

Medical Necessity Criteria

Indications

➔ **Kyphectomy** is considered appropriate if **ANY** of the following is **TRUE**[1-8]:

- ◆ **Cervical spine deformity (including myelomeningocele, kyphosis, head-drop syndrome, post-laminectomy deformity)** when **ANY** of the following is **TRUE**:[2]
  - The patient has a clinically significant deformity that makes the patient unable to maintain a forward gaze; **OR**
  - The patient has **ANY** of the following substantial functional limitations:
    - Severe neck pain; **OR**
    - Difficulty ambulating; **OR**
    - Decreased ability to perform activities of daily living; **OR**
  - Progression of cervical deformity is documented; **OR**
- ◆ **Lumbar spine deformity (e.g., scoliosis restricted to the lumbar spine or a thoracolumbar deformity that ends in the lumbar spine)** when **ANY** of the following is **TRUE**:[3]
  - Failure of conservative management for greater than 3 months, including **ALL** of the following:
    - Oral steroids, anti-inflammatory medications, or analgesics; **AND**
    - Physical therapy; **AND**

        - **ANY** of the following:
            - Corticosteroid injection if medically appropriate; **OR**
            - Corticosteroid injection is contraindicated.
    - The patient has a substantial functional limitation (e.g., severe back pain, difficulty ambulating, decreased ability to perform activities of daily living); **OR**
    - **ANY** of the following is **TRUE**:
        - Progression of lumbar deformity is at least 10 degrees (as measured on consecutive radiographs over one year); **OR**
        - Fixed curve greater than 30 degrees in the coronal plane; **OR**
        - Lateral listhesis of at least 10%; **OR**
        - Proximal junctional kyphosis is defined as a segmental Cobb angle of at least 10 degrees or 10 degrees of progression from the immediate postoperative images; **OR**
        - Sagittal or coronal imbalance of at least 5 cm is present (as measured on long-plate, standing radiographs of the entire spine); **OR**
- **Scheuermann's kyphosis** when **ANY** of the following is **TRUE**:[4]
    - Thoracic kyphosis greater than 75 degrees causing unacceptable deformity[8]; **OR**
    - Thoracic kyphosis greater than 75 degrees associated with pain[8]; **OR**
    - Functionally progressive curve; **OR**
    - Neurologic deficit/spinal cord compression; **OR**
    - Symptomatic kyphotic deformity that is unresponsive to conservative, non-surgical treatment.

Non-Indications

- **Kyphectomy** is not considered appropriate if **ANY** of the following is **TRUE**:
    - Cervical radiculopathy from isolated foraminal stenosis treated with a partial medial facetectomy/foraminotomy.[2]

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
22818	Kyphectomy, circumferential exposure of spine and resection of vertebral segment(s) (including body and posterior elements); single or 2 segments
22819	Kyphectomy, circumferential exposure of spine and resection of vertebral segment(s) (including body and posterior elements); 3 or more segments
22899	Unlisted procedure, spine

Medical Evidence

Garg et al. (2011) performed a retrospective review of 23 pediatric patients with myelomeningocele who underwent kyphectomy and spinal fusion. The review assessed the efficacy of kyphectomy to repair an intact skin envelope to allow more comfort when sitting in a wheelchair. Complications of surgery for patients with myelomeningocele were analyzed, as well as if patients requiring an unplanned re-operation experienced additional complications compared to patients with a single procedure. Overall, 17 patients achieved seating balance and skin problems resolved; seven patients required re-operations and operations to treat late infection, pseudarthrosis, implant-related sacral pressure sore, and future extension of proximal fusion after growth.[5]

Samagh et al. (2011) performed a retrospective review of kyphectomy surgical outcomes in patients with myelomeningocele or lumbar kyphosis. These include surgical results, complications, and short-term and midterm outcomes. Preoperative, the mean extent of kyphosis among patients was 115.6 degrees (range, 77-176 degrees); correction was 13.0 degrees (range, 0-32 degrees) post-operatively, a reduction of 88.7%. Pre-operatively, patients could not lie supine; post-operatively, all patients could lie in this position.[6]

National and Professional Organizations

The **American Academy of Orthopaedic Surgeons (AAOS)** published a clinical practice guideline on the *Treatment of Symptomatic Osteoporotic Spinal Compression Fractures.* Recommendations are not provided for kyphectomy.[7]

The **North American Spine Society (NASS)** published two recommendations for *Cervical Fusion* and *Lumbar Fusion* which establish support for kyphectomy.[2-3]

References

1. Warner Jr. WC, Beaty JH. Chapter 34: Paralytic disorders. In: Azar FM, Canale ST, Beaty JH Campbell's Operative Orthopaedics. 14th ed. Elsevier; 2021:1432.
2. North American Spine Society (NASS). NASS coverage policy recommendations: Cervical fusion. Published May 2023. Accessed July 1, 2024. https://www.spine.org/.
3. North American Spine Society (NASS). NASS coverage policy recommendations: Lumbar fusion. Published June 2021. Accessed July 1, 2024. https://www.spine.org/.
4. Sebaaly A, Farjallah S, Kharrat K, et al. Scheuermann's kyphosis: Update on pathophysiology and surgical treatment. *EFORT Open Rev*. 2022 Dec 7;7(11):782-791. doi: 10.1530/EOR-22-0063. PMID: 36475554; PMCID: PMC9780615.
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6. Samagh SP, Cheng I, Elzik M, et al. Kyphectomy in the treatment of patients with myelomeningocele. *Spine J*. 2011 Mar;11(3):e5-11. doi: 10.1016/j.spinee.2011.01.020. PMID: 21377598.
7. Esses SI, McGuire R, Jenkins J, et al. The treatment of symptomatic osteoporotic spinal compression fractures. *J Am Acad Orthop Surg*. 2011 Mar;19(3):176-82. doi: 10.5435/00124635-201103000-00007. PMID: 21368099.
8. Mansfield JT, Bennett M. Scheuermann Disease. In: *StatPearls*. Treasure Island (FL): StatPearls Publishing; July 31, 2023.

Clinical Guideline Revision History/Information

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Version 2	12/1/2023	
Version 3	9/20/2024	Updated language regarding conservative treatment.