Turbinate Resection

ACG: A-0183 (AC)
Link to Codes

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Ambulatory Care
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Clinical Indications

- Turbinate resection may be indicated when **ALL** of the following are present(1)(2)(3)(4)(5):
  - Marked turbinate mucosal hypertrophy
  - Inadequate response to appropriate intervention, including **1 or more** of the following(19)(20)(21):
    - Medical management (eg, intranasal steroids, intranasal antihistamines)(18)(22)(23)(24)
    - Mechanical treatments (eg, nasal cones/stents, nasal strips)(25)
  - Symptoms of nasal obstruction (eg, sinusitis, rhinitis, nasal polyps) affect quality of life.(26)(27)(28)(29)
  - Underlying medical condition (eg, assessment and treatment for allergies) evaluated and treated, as appropriate(21)(28)

Alternatives

- Alternatives include:
  - Medical treatment for allergies, nasal polyps, or infections(7)(19)(21):

- Allergy assessment and treatment
- Elimination of rebound congestion from overuse of nasal decongestant spray
- Intranasal corticosteroid(14)(30)
- Nasal lavage
- Trial of antibiotic therapy of 2 weeks or greater for rhinosinusitis

- Septoplasty. See Septoplasty AC for further information.

Evidence Summary

Background

Nasal turbinates are small shelf-like structures, composed of thin bone covered by mucous membranes, that protrude into the nasal airway and help to warm, humidify, and cleanse air as it is inhaled. Chronic enlargement of the turbinates can lead to nasal obstruction.(1)(6) **(EG 2)** Surgical resection of the turbinate may remove both bony and mucosal components using a variety of techniques.(4)(7)(8)(9) **(EG 2)**

Criteria

The evidence for the clinical indications found in this guideline includes 23 published peer reviewed articles, 2 specialty society or other evidence-based guidelines, and 3 book sections.

For turbinate mucosal hypertrophy, evidence demonstrates at least moderate certainty of at least moderate net benefit. **(RG A1)** A systematic review and meta-analysis of 18 studies (1411 patients) evaluating the long-term efficacy of turbinate resection for symptom relief of allergic rhinitis refractory to medical treatment found that, at 1 year post surgery, turbinate resection was associated with decreased nasal airflow resistance, increased total nasal volume, and improvement in patient-reported nasal obstruction, rhinorrhea, sneezing, and itching. The authors noted that the lack of control groups (ie, patients who did not undergo surgery) and heterogeneity of surgical techniques in the included studies limited the results.(11) **(EG 1)** A systematic review and meta-analysis of 26 studies (1523 patients) analyzing bilateral inferior turbinate reduction via either microdebrider-assisted or radiofrequency turbinoplasty found, at a median follow-up of 6 months, a significant improvement in visual analog scale-rated nasal obstruction and rhinomanometric measures such as nasal flow, nasal volume, and nasal resistance. The authors concluded that both techniques produced positive short-term improvements, although the study was limited by significant heterogeneity in the collection of rhinomanometry results, which may limit the clinical applicability of the findings.(12) **(EG 1)** A 6-year follow-up study of patients with symptomatic nasal obstruction and turbinate hypertrophy who were randomized to 1 of 6 treatments (turbinectomy, laser cautery, electrocautery, cryotherapy, or submucosal resection with or without lateral displacement) showed that only those groups treated with turbinectomy or submucosal resection with or without lateral displacement showed results of nasal patency, mucociliary clearance, and physiologic local secretory IgA production. The addition of turbinate lateral displacement further improved long-term results.(13) **(EG 1)** A specialty society guideline indicates that inferior turbinate resection may be useful for patients with allergic rhinitis and nasal airway obstruction due to enlarged inferior turbinates who have failed medical management.(2) **(EG 2)** For pediatric patients, a systematic review and meta-analysis of 5 studies (510 pediatric patients) evaluating the efficacy of inferior turbinate reduction surgery for chronic nasal obstruction due to inferior turbinate hypertrophy found, at 4-month to 1-year follow-up, that inferior turbinate reduction surgery was associated with improvement in nasal patency and low complication rates. However, the authors noted that difficulty in objective estimation of nasal patency in children and concomitant procedures performed at the time of turbinate reduction limited the study results; further studies to assess long-term nasal patency following turbinate reduction were recommended.(14) **(EG 1)** A case series of 43 children (mean age 11.2 years) with chronic nasal congestion refractory to medical treatment evaluated the efficacy of microdebrider submucous inferior turbinoplasty and outfracture of the inferior turbinate and found, at 1-month to 2-month follow-up, significant reductions in Sinus and Nasal Quality of Life Survey (SN-5) domain scores as well as absolute reduction in subjective symptoms of nasal congestion, intranasal steroid use, and rhinorrhea of 93%, 50%, and 42%, respectively. However, due to the relatively small number of patients and the lack of objective measures of nasal airway patency, further studies were recommended.(15) **(EG 2)** A review article addressing inferior turbinate hypertrophy in children recommends well-designed prospective studies to evaluate the most effective surgical approach in the pediatric population.(16) **(EG 2)** An expert consensus statement concluded that turbinate reduction surgery may be safe and effective for children with turbinate hypertrophy

and persistent obstructive sleep apnea after adenotonsillectomy, but the authors noted that the available evidence is limited to retrospective studies with limited long-term follow-up.(17) **(EG 2)** A consensus statement notes that mucosal sparing surgical treatment for pediatric turbinate hypertrophy should be considered only in patients who do not respond to medical therapy.(18) **(EG 2)**

Inconclusive or Non-Supportive Evidence

For obstructive sleep apnea, evidence is insufficient, conflicting, or poor and demonstrates an incomplete assessment of net benefit vs harm; additional research is recommended. **(RG B)** A literature review of nasal surgery for obstructive sleep apnea identified only 4 case studies and 1 randomized controlled trial and concluded that there is no evidence that nasal surgery will improve the apnea-hypopnea index or oxygen saturation.(10) **(EG 2)**

Rationale

Use of this MCG care guideline helps the clinician determine if a particular treatment, medication, or service might be appropriate for a specific patient, taking into account their unique health complexities.

Use of these evidence-based clinical criteria to support decision making benefits the patient by identifying patient-specific complex clinical factors and conditions, promoting personalized treatment. Utilizing evidence-based clinical criteria promotes patient safety by helping ensure that potential patient benefits outweigh the risks. In addition, the use of evidence-based guidelines can increase consistency in treatment thresholds, leading to less variation in care and promoting equitable treatment among patients.

Related CMS Coverage Guidance

This guideline supplements but does not replace, modify, or supersede existing Medicare regulations or applicable National Coverage Determinations (NCDs) or Local Coverage Determinations (LCDs).

Code of Federal Regulations (CFR): 42 CFR 419.22(31); 42 CFR 422.101(32)

Internet-Only Manual (IOM) Citations: CMS IOM Publication 100-02, Medicare Benefit Policy Manual, Chapter 14 - Medical Devices(33); CMS IOM Publication 100-02, Medicare Benefit Policy Manual, Chapter 15 - Covered Medical and Other Health Services(34); CMS IOM Publication 100-02, Medicare Benefit Policy Manual, Chapter 16 - General Exclusions from Coverage(35)

Medicare Coverage Determinations: Medicare Coverage Database(36)

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