

Surgical Consultation in Adult OSA: AASM Clinical Practice Guideline

Stanley Thomas, D.O.

Creighton University

Learning Objectives

Based on updated AASM guidelines:

- Understand appropriateness of surgical referral for treatment of OSA
- Understand role of bariatric surgery in treatment of OSA
- Understand role of sleep surgery to decrease PAP (positive airway pressure) pressures
- Understand management of OSA with major upper airway anatomical abnormality

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SPECIAL ARTICLES

Referral of adults with obstructive sleep apnea for surgical consultation: an American Academy of Sleep Medicine clinical practice guideline

David Kent, MD¹; Jeffrey Stanley, MD²; R. Nisha Aurora, MD, MHS³; Corinna Levine, MD, MPH⁴; Daniel J. Gottlieb, MD, MPH⁵; Matthew D. Spann, MD¹; Carlos A. Torre, MD⁴; Katherine Green, MD, MS⁶; Christopher G. Harrod, MS⁷

¹Vanderbilt University Medical Center, Nashville, Tennessee; ²University of Michigan, Ann Arbor, Michigan; ³Rutgers Robert Wood Johnson Medical School, New Brunswick, New Jersey; ⁴University of Miami, Miller School of Medicine, Miami, Florida; ⁵VA Boston Healthcare System, Brigham and Women's Hospital, Boston, Massachusetts; ⁶University of Colorado, Aurora, Colorado; ⁷American Academy of Sleep Medicine, Darien, Illinois

Guidelines for surgical consultation

- Clinical practice recommendations for referring adults with OSA for surgical consultation based on task force comprised of experts in sleep medicine, otolaryngology, and bariatric surgery
- Task force commissioned by AASM
- AASM Board of Directors approved the final recommendation

Guidelines for surgical consultation

- 4 recommendations given with either STRONG or CONDITIONAL qualifier
- STRONG – one that clinicians should follow under most circumstances
- CONDITIONAL – requires the clinician use clinical knowledge and experience, and strongly consider the patient values and preferences to determine the best course of action.

Background

- PAP therapy is the most efficacious treatment for OSA, however, in those that don't tolerate it, it does not sufficient and largely ineffective
- In select patient populations, surgery maybe more effective treatment option.
- Guidelines aim to provide recommendations for providers to refer for upper airway surgery or bariatric surgery evaluation with OSA
- DOES NOT make recommendations for individual surgical procedures

Poll Question

- What population are these recommendations this for?
 - A) Patients with OSA with normal anatomy seeking surgery as first option
 - B) Patient who have failed PAP therapy, seeking alternative options
 - C) Those with severe OSA, that are tolerating PAP therapy

What population are these recommendations this for?

- 1) Patients who are intolerant or unaccepting of PAP therapy
- 2) Patients who have persistent inadequate PAP adherence due to pressure-related side effects
- 3) Patients with obvious upper airway anatomic abnormalities potentially amenable to surgery as initial OSA treatment

Assumptions

- Surgical referral is part of comprehensive discussion of alternative treatment options including oral mandibular advancement device, positional therapy, lifestyle changes, etc.
- Surgical provider provides comprehensive anatomical assessment, along with risk and benefits of specific surgical procedures, that are not known to average sleep medicine provider.
- Surgical procedures include, but not limited to: pharyngeal soft tissue modifications, skeletal modification and upper airway stimulation

Methods

- Task Force performed a systematic review of scientific literature, using PICO questions
 - PICO (Patient, Intervention Comparison, Outcomes)
- Meta-analysis were performed on outcomes of interest
- Practice recommendations were developed according to the GRADE process
 - Grading of Recommendations, Assessment, Development and Evaluation

Recommendation #1

Surgical treatment of patients who are intolerant or unaccepting of PAP

Recommendation 1: We recommend that clinicians discuss referral to a sleep surgeon with adults with OSA and BMI < 40 kg/m² who are intolerant or unaccepting of PAP as part of a patient-oriented discussion of alternative treatment options (STRONG).

Poll Question

- The recommendation was based on a meta-analysis which showed which of the following:
 - A) Improvement in AHI/RDI
 - B) Improvement in QOL
 - C) Improvement in Daytime sleepiness
 - D) Improvement in BP
 - E) All of the above

Recommendation #1

Surgical treatment of patients who are intolerant or unaccepting of PAP

Recommendation 1: We recommend that clinicians discuss referral to a sleep surgeon with adults with OSA and BMI < 40 kg/m² who are intolerant or unaccepting of PAP as part of a patient-oriented discussion of alternative treatment options (STRONG).

- The recommendation to discuss referral is not required to result in referral and does not preclude patient consideration of other viable alternative treatment options.
- Balance of risk versus benefit of upper airway surgery depending on individual OSA severity, symptoms, medical co-morbidities and surgical therapy
- Task force made the STRONG recommendation based on LARGE body of low quality evidence from 4 randomized controlled trials (RCTS) and 239 observational studies
- Studies showed clinically meaningful and beneficial differences in nearly all critical outcomes for those undergoing upper airway surgery
- **Meta analysis demonstrated a clinically significant reduction in excessive sleepiness, snoring, BP, AHI/RDI and QOL**
- No clinically significant risk of dysphagia
- **Task force judged that potential benefits of discussion regarding referral to sleep surgeon for treatment of OSA in those with PAP intolerance/unacceptance outweigh harms of untreated OSA**

Recommendation #2

Surgical treatment of patients with obesity with bariatric surgery

Recommendation 2: We recommend that clinicians discuss referral to a bariatric surgeon with adults with OSA and obesity (class II/III, BMI ≥ 35) who are intolerant or unaccepting of PAP as part of a patient-oriented discussion of alternative treatment options (STRONG).

Poll Question

- The recommendation was based on a meta-analysis which showed which of the following:
 - A) Improvement in AHI/RDI
 - B) Improvement in optimum PAP level
 - C) Improvement in excessive sleepiness
 - D) Improvement in BP
 - E) All of the above

Recommendation #2

Surgical treatment of patients with obesity with bariatric surgery

Recommendation 2: We recommend that clinicians discuss referral to a bariatric surgeon with adults with OSA and obesity (class II/III, BMI ≥ 35) who are intolerant or unaccepting of PAP as part of a patient-oriented discussion of alternative treatment options (STRONG).

- The recommendation to discuss referral is not required to result in referral and does not preclude patient consideration of other viable alternative treatment options.
- Balance of risk versus benefit of bariatric surgery depending on individual OSA severity, symptoms, medical co-morbidities and surgical therapy
- Task force made the STRONG recommendation for bariatric surgery referral based on moderate quality evidence from 2 RCTs and 28 observational studies
- Studies showed clinically meaningful and beneficial differences in critical outcomes for those undergoing bariatric surgery
- **Meta analysis demonstrated a clinically significant reduction in AHI/RDI, BP, ODI, excessive sleepiness, BMI, snoring, optimum PAP level, and increase in minimum oxygen saturation during sleep**
- Potential harms: iron malabsorption, gastric ulcer, vitamin deficiency, bowel obstruction/leak, GERD, gastric band slippage
- **Task force judged that potential benefits of discussion regarding referral to bariatric surgeon for treatment of OSA in those with PAP intolerance/unacceptance outweigh harms of untreated OSA**

Recommendation #3

Surgical treatment of patients to facilitate PAP use

Recommendation 3: We suggest that clinicians discuss referral to a sleep surgeon with adults with OSA, BMI <40 kg/m², and persistent inadequate PAP adherence due to pressure-related side effects as part of a patient-oriented discussion of adjunctive or alternative treatment options (CONDITIONAL).

Poll Question

- The recommendation was based on a meta-analysis which showed :
 - A) Improvement in AHI/RDI
 - B) Improvement in PAP adherence
 - C) Improvement in reduction in optimum PAP level
 - D) Improvement in QOL
 - E) All of the above

Recommendation #3

Surgical treatment of patients to facilitate PAP use

Recommendation 3: We suggest that clinicians discuss referral to a sleep surgeon with adults with OSA, BMI $< 40 \text{ kg/m}^2$, and persistent inadequate PAP adherence due to pressure-related side effects as part of a patient-oriented discussion of adjunctive or alternative treatment options (CONDITIONAL).

- Task force made the CONDITIONAL recommendation based on very low quality evidence 7 observation studies
- Studies showed clinically meaningful and beneficial differences in critical outcomes for those undergoing surgery for PAP related side effects
- Task force investigated surgery as adjunctive procedure to facilitate the use of PAP by improving 1 or more of the following critical outcomes: optimal PAP level, excessive sleepiness, sleep quality, PAP adherence, snoring and sleep related QOL
- **Meta analysis demonstrated a clinically significant reduction in optimal PAP level and PAP adherence**
- Surgery carries inherent risk, metanalysis did unable to report on perioperative death or permanent dysphagia
- **Task force judged that potential benefits of discussion regarding referral to sleep surgeon for adjunctive procedure to facilitate PAP use may, in some patient, outweigh harms of inadequately treated OSA**
- Ideally for those that are partially PAP adherent opposed to those that are completely untreated.

Recommendation #4

Surgical treatment as *initial* therapy in patients with a major upper airway anatomical abnormality

Recommendation 4: We suggest that clinicians recommend PAP as initial therapy for adults with OSA and a major upper airway anatomic abnormality prior to consideration of referral for upper airway surgery (CONDITIONAL).

Poll Question

- The recommendation was based on a meta-analysis which showed :
 - A) Improvement in AHI/RDI
 - B) Improvement in ODI
 - C) Improvement in excessive sleepiness
 - D) Improvement in snoring
 - E) All of the above
 - F) None of the above

Recommendation #2

Surgical treatment as *initial* therapy in patients with a major upper airway anatomical abnormality

Recommendation 4: We suggest that clinicians recommend PAP as initial therapy for adults with OSA and a major upper airway anatomic abnormality prior to consideration of referral for upper airway surgery (CONDITIONAL).

- Task force included tonsillar hypertrophy and maxillomandibular abnormalities as n upper airway abnormalities.
- While data shows clinically significant benefit for surgical intervention in these patient populations, PAP therapy should be initial treatment
- Task force made the CONDITIONAL recommendation based on low quality evidence from 2 randomized controlled trials (RCTS) and 15 observational studies
- **Meta analysis demonstrated a clinically significant reduction in RDI/AHI, excessive sleepiness, snoring, ORDI and improvement in lowest oxygen saturation during sleep**
- No clinically significant risk of permanent dysphagia
- Benefits limited to patients with major anatomical obstruction considered appropriate for surgery by treatment surgeon
- **Task force judged that even low surgical risk is above minimal initial PAP risk, the balance of benefits to harms favors PAP thdrapy as initial treatment over discussion of referral for surgical evaluation.**
 - **Dependent on anatomical abnormality**

Summary

- Recommendations are for those that are PAP intolerant or unaccepting

Surgical treatment of patients who are intolerant or unaccepting of PAP

Recommendation 1: We recommend that clinicians discuss referral to a sleep surgeon with adults with OSA and BMI < 40 kg/m² who are intolerant or unaccepting of PAP as part of a patient-oriented discussion of alternative treatment options (STRONG).

Surgical treatment of patients with obesity with bariatric surgery

Recommendation 2: We recommend that clinicians discuss referral to a bariatric surgeon with adults with OSA and obesity (class II/III, BMI ≥ 35) who are intolerant or unaccepting of PAP as part of a patient-oriented discussion of alternative treatment options (STRONG).

Surgical treatment of patients to facilitate PAP use

Recommendation 3: We suggest that clinicians discuss referral to a sleep surgeon with adults with OSA, BMI < 40 kg/m², and persistent inadequate PAP adherence due to pressure-related side effects as part of a patient-oriented discussion of adjunctive or alternative treatment options (CONDITIONAL).

Surgical treatment as *initial* therapy in patients with a major upper airway anatomical abnormality

Recommendation 4: We suggest that clinicians recommend PAP as initial therapy for adults with OSA and a major upper airway anatomic abnormality prior to consideration of referral for upper airway surgery (CONDITIONAL).

Questions?