

FROM THE FAMILY PRACTICE INQUIRIES NETWORK

Is surgery effective for reducing symptoms in adults with obstructive sleep apnea?

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■ EVIDENCE-BASED ANSWER

Current evidence is insufficient to recommend surgery for symptom relief for patients with obstructive sleep apnea. More convincing evidence exists supporting the use of Continuous Positive Airway Pressure (CPAP) or dental appliances for reducing symptoms of sleep apnea.

Grade of recommendation: C, based on case series and poor quality cohort and case-control studies

■ RECOMMENDATIONS FROM OTHERS

The Cochrane Database of Systematic Reviews reports, "In light of the current lack of good trial-based evidence, clinicians should consider restricting surgery for obstructive sleep apnoea to that carried out as part of clinical trials. Where practice is continued, patients should be informed of the experimental nature of the operations. Patients should be told that there is a lack of good trial-based evidence of the efficacy of surgery for obstructive sleep apnoea, a course of action that may restrict the use of these operations."¹

The American Sleep Disorders Association states, "The presence and severity of obstructive sleep apnea must be determined before initiating surgical therapy... because of the complexity of airway narrowing or collapse during sleep, any one surgical procedure may not eradicate a patient's sleep apnea. A stepwise approach to surgical management is acceptable if the patient is advised at the onset of treatment about the likelihood of the success of each procedure and that multiple operations may be necessary. After the surgical site has healed, a follow-up evaluation, including an objective measure of respiration and quality of sleep, must be performed to ensure that the abnormalities noted in the original study are corrected."²

■ SEARCH STRATEGY

The Cochrane Database of Systematic Reviews, the National Guideline Clearinghouse Database, the Turning Research Into Practice (TRIP) database, British National Health Service Health Technology Assessment Database (HTA), and DARE (Database of Abstracts and Reviews of Effectiveness) were searched, using the keywords "sleep" and "sleep apnea."

MEDLINE search strategy: {(Sleep Apnea, Obstructive/su [Surgery], OR sleep apnea syndromes/su) AND

(clinical trial.pt. OR exp treatment outcome/OR meta-analysis.pt)}

■ EVIDENCE SUMMARY

Obstructive sleep apnea is a common and potentially serious condition. Good evidence now exists supporting the efficacy of CPAP in improving patient-oriented outcomes (eg, daytime sleepiness) and disease-oriented outcomes (eg, nocturnal hypoxia).^{3,4,5} However, CPAP is not tolerated by 20% to 30% of patients, not universally effective, and ineffective if not used regularly.⁵ Surgery has held promise as a potentially curative therapy, a promise not yet demonstrated in well-designed randomized controlled trials.

The Cochrane Airways Group performed an extensive review of this topic in October 1999 and found that none of the 594 potentially relevant articles reviewed were methodologically adequate.¹ Our search found 2 randomized controlled trials: 1 apparently missed by the Cochrane review and 1 subsequent to it.

Lojander et al⁶ compared uvulopharyngopalatoplasty (UPPP) to conservative management (weight loss, smoking cessation, and alcohol avoidance advice) in 32 patients. Patients were excluded if they had asthma, obesity (body mass index >40), restless leg syndrome, hypothyroidism, chronic obstructive pulmonary disease, or intolerance of missed work because of somnolence. Remaining patients were selected as possible surgical candidates by a team of hospital-based experts then randomized to surgery or conservative therapy. At 1 year of follow-up, they found no change in nocturnal oxygen desaturation but some improvement in the mean score of a visual analog scale of daytime sleepiness and in the mean self-report of out-of-bed sleeping episodes. Unfortunately these subjective outcome measures have not been validated and are subject to bias. This, in addition to lack of intention-to-treat analysis, renders these results uninterpretable.

The other trial compared UPPP with dental appliances in late 1999 and found dental appliances superior to surgery for improving apnea scores.⁷

Current recommendations in favor of surgical therapy are based solely on case series, poorly designed trials, expert opinion or pathophysiologic reasoning.¹ Although such literature is voluminous, the most optimistic review estimates that less than 50% of patients with obstructive sleep apnea will benefit from surgery.⁸ The nonrandomized design of such trials may overestimate treatment effects by more than 40%.⁹

Given how little is known about its effectiveness, compounded by potential iatrogenesis, surgery should be considered the last resort for patients with obstructive sleep apnea. Doctors should discuss CPAP (the most effective therapy) and condition-specific dental appliances (the best tolerated therapy) with their patients until more is known about the efficacy of surgery. All patients should be counseled regarding healthy lifestyle modification.

CLINICAL COMMENTARY

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Sleep apnea is a difficult problem for the primary care physician. Uncertainty extends well beyond the efficacy of surgery. The literature associating sleep apnea and its proposed clinical consequences (such as pulmonary hypertension) is weak, and evidence that any current treatment alters long-term outcomes is even weaker. Clinicians can offer relief from daytime somnolence by recommending nightly CPAP, but they can promise little else. Our patients should understand the limits of our knowledge as we help them make lifestyle changes and choose appropriate therapy. Surgery remains an experimental approach for

markedly symptomatic patients who do not respond to noninvasive therapies.

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