

## Assessing patient risks from sleep apnea

**A**n alarming 80% of patients with moderate to severe obstructive sleep apnea (OSA) are undiagnosed and untreated before surgery. OSA occurs when the soft tissue in the back of the throat narrows and repeatedly closes during sleep. The brain responds by waking the person up, and breathing resumes. Those with OSA can stop breathing hundreds of times each night, resulting in ineffective sleep. Without proper treatment, OSA can cause high blood pressure, cardiac disease, impotence, and other problems.

### What to ask patients

The American Society of Anesthesiologists (ASA) recommends asking preoperative patients:

- Have you been told you snore or stop breathing when you are asleep?
- Do you wake up often or constantly turn from side to side?
- Have you been told your legs or arms jerk when you sleep?
- Do you make abrupt snorting noises while you sleep?
- Do you feel tired during the day or fall asleep at work?

Patients who answer yes to any of the questions may have OSA.

### Perioperative care for OSA

ASA's recommendations for each phase of care:

**Preoperative.** Develop a protocol for patients suspected of having OSA so they can be evaluated long enough before the day of surgery to prepare a perioperative management plan. Determine whether an inpatient or outpatient setting is best for surgery. Discuss use of continuous positive airway pressure (CPAP), particularly if the patient has severe OSA.

**Intraoperative.** Keep in mind the potential for postoperative respiratory compromise when selecting intraoperative medications for OSA patients. Their propensity for airway collapse and sleep deprivation make them especially susceptible to the respiratory depressant and airway effects of sedatives, narcotics, and inhaled anesthetics.

**Postoperative.** Consider regional pain relief techniques to reduce or eliminate use of systemic narcotics.

**Discharge.** Set up specific criteria for outpatients with OSA to meet before discharge to an unmonitored setting, such as home.

### Studies compare screening methods

At the ASA 2006 annual meeting, Frances F. Chung, MD, professor of anesthesiology at the University of Toronto, Ontario, and a leading expert in ambulatory anesthesia, presented abstracts of 2 studies on identifying patients with OSA. She notes a concise, reliable screening tool is needed that can be used on the day of surgery.

One study assessed 3 preoperative tools for determining patient risk for OSA:

- The Berlin questionnaire developed in 1996
- The ASA checklist for OSA
- The Obstructive Sleep Apnea questionnaire created by Dr Chung and her col-

leagues.

The 3 tools were compared with data from polysomnography, the “gold standard” for diagnosing sleep apnea, which requires an overnight stay at a sleep clinic.

Though all 3 tools were useful, the Berlin questionnaire correctly identified more OSA patients.

In a second study comparing the Berlin questionnaire and Obstructive Sleep Apnea questionnaire against each other and with polysomnography, the Berlin questionnaire correctly identified more OSA patients.

### **Reducing adverse outcomes**

ASA’s guidelines for perioperative management of OSA patients say it is impossible to determine with 100% accuracy whether a patient will develop perioperative complications related to OSA. But anesthesia providers should implement guidelines to improve care in at-risk patients to reduce the likelihood of adverse outcomes. ❖

—Judith M. Mathias, RN, MA

### **References**

American Society of Anesthesiologists. Practice guidelines for perioperative management of patients with obstructive sleep apnea. *Anesthesiology*. 2006;104:1081-1093. [www.asahq.org](http://www.asahq.org).

Chung F, Yegneswaran B, Yuan H, et al. What is the best preop screening tool for surgical patients with obstructive sleep apnea? A991. ASA 2006 Annual Meeting. [www.asaabstracts.com](http://www.asaabstracts.com).

## **OSA screening tools**

### **Berlin questionnaire**

- Has your weight changed?
- Do you snore?
- How loud is your snoring?
- How frequent is your snoring?
- Does your snoring bother others?
- How often have you or someone else noticed your breathing pauses?
- Are you still tired after sleeping?
- Are you tired during your awake time?
- Have you fallen asleep while driving?
- Do you have high blood pressure?

—Netzer N C, et al. *Ann Intern Med*. 1999;131:485-491.

### **ASA checklist for OSA**

- BMI 35 kg/m<sup>2</sup>
- Neck circumference 17 in for men, 16 in for women
- Craniofacial abnormalities affecting airway
- Anatomical nasal airway obstruction
- Tonsils touching or nearly touching in throat midline
- Snoring loudly enough to be heard through closed door
- Snoring frequently
- Pausing in breathing during sleep
- Awakening with choking sensation
- Frequently waking up
- Frequently fatigued despite adequate sleep
- Easily falling asleep in nonstimulating environment.

—ASA. *Anesthesiology*. 2006;104:1081-1093.

**OSA questionnaire**

- Has anyone noticed that you stop breathing during sleep?
- Do you snore loudly? (Louder than talking or loud enough to be heard through closed door.)
- Do you feel tired during the day almost every day?
- Are you under 50 years of age with hypertension (defined as systolic >140 mmHg or diastolic >90 mmHg)?

—Yegneswaran B, Yuan H, Chung F, et al. Abstract A993. *American Society of Anesthesiologists 2006 Annual Meeting.*