
OBSTRUCTIVE SLEEP APNEA

The frequency of obstructive sleep apnea (OSA) in surgical populations has not been well studied, though is likely substantially higher than in the general population.¹ Studies have indicated that up to 70% of bariatric surgery patients have features of OSA, and many are not diagnosed before surgery.^{1,2} Perioperative anesthesia and analgesia are associated with hypoventilation and hypoxia;³ this effect can be more profound in combination with mechanical upper airway obstruction. A recent review included numerous case reports and observational studies, most of which support greater postoperative risk for OSA patients.⁴

Preoperative evaluation

- Assess for history of diagnosed or suspected OSA: daytime somnolence, non-restorative sleep, witnessed snoring or apneic episodes, awakening from sleep (restlessness, choking). Examine for collar/neck size, BMI, systemic hypertension
- Alert anesthesia and postoperative team to the presence of known or suspected OSA. Consider workup and treatment of previously undiagnosed OSA if symptoms are severe and surgery is purely elective
- Consider obtaining a preoperative room air ABG, if mild hypoxia or evidence for daytime hypercarbia (e.g. elevated serum bicarbonate)
- Ascertain CPAP or BIPAP settings, type of mask (nasal vs. full face), amount of bleed-in oxygen (if any)
- If patients have an ill-fitting mask, refer back to their sleep clinic for mask refitting
- Remind patients to bring their mask and machine (labeled with their name) to the hospital
- Assess for signs and symptoms of pulmonary hypertension (see **"Pulmonary Hypertension"**) and right heart failure; consider echocardiogram in selected cases

Postoperative management

- Extubate to CPAP when indicated
- Close respiratory monitoring, especially with sedating medications (e.g. opiates)
- CPAP when asleep (including naps and overnight)
- Consider ICU or continuous pulse oximetry monitoring on the floor, depending on extent of surgery and severity of OSA
- Semi-upright positioning
- If cannot tolerate CPAP or cannot use CPAP due to surgical site, initiate supplemental O₂ while sleeping (exercise caution in patients with concomitant COPD)
- Minimize opiate medications when possible (considering acetaminophen, NSAIDs to augment pain control in appropriate candidates)

Discussion

Though further prospective study is warranted, it is likely that OSA poses an increased risk of perioperative complications, especially respiratory failure and hypoxemia, as well as associated hypertension and arrhythmia. We recommend close attention to obstructive sleep apnea, recognizing that data is limited. The appropriate setting for adequate respiratory monitoring is institution and surgery dependent—for example, our gastric bypass surgeons routinely admit patients with OSA to the ICU postoperatively.

Precise indications for obtaining a preoperative echocardiogram to assess RV function and estimate pulmonary pressures remain unknown. Many patients with OSA have dyspnea on exertion due to obesity and deconditioning, and edema due to venous stasis, without having right heart failure; frequently neck veins are difficult to assess. Further, it is unknown to what degree screening for pulmonary hypertension by echocardiogram changes management or affects outcomes. It is generally thought that OSA itself may cause mild pulmonary hypertension, but if moderate or severe pulmonary hypertension is discovered, other causes should be evaluated.

References

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