

ORIGINAL ARTICLE

Don't Ignore My Snore: Reducing Perioperative Complications of Obstructive Sleep Apnea

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Purpose: Obstructive sleep apnea (OSA), a condition associated with decreased muscle tone in the airway, has been linked to postoperative complications. The purpose of the initiative was to develop and implement a guideline for patients identified as high-risk for OSA to reduce complications related to OSA.

Design: A multidisciplinary team developed the guideline utilizing the Iowa Model of Evidence-Based Practice to Promote Quality Care.

Methods: PubMed literature search from 2006-2013 and critique of over 40 articles were completed. A nursing care plan was created from the guideline to facilitate communication of care for this population.

Findings: Postoperative cardiopulmonary complications related to OSA decreased from 27% to 14.6% after guideline implementation.

Conclusions: Guideline and nursing care plan specific to OSA in the perioperative setting improved patient outcomes.

Keywords: obstructive sleep apnea, perioperative complications, OSA guideline, OSA nursing care plan.

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OBSTRUCTIVE SLEEP APNEA (OSA) is a serious and commonly under-recognized and underdiagnosed medical condition. OSA is associated with reduced muscle tone in the airway leading to frequent airway obstruction occurring during sleep.¹ In a recent OSA prevalence study, it was estimated that 13% of men and 6% of women among adults aged 30 to 70 years have a positive

indication for OSA.² Unfortunately, 80% of men and 95% of women living with OSA are unaware that they even have it.³ Between 9% and 24% of all surgical patients are at high risk for OSA.⁴ Numerous studies have linked OSA to adverse postoperative outcomes. One study, in particular, concluded that the presence of OSA was associated with a higher incidence of hypoxemia, intensive care unit transfers, and prolonged stays in the hospital.⁵

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Conflict of interest: None to report.

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The importance of screening for OSA risk as part of the preoperative evaluation has been emphasized consistently in the literature.⁶⁻⁸ A tertiary medical center in Honolulu, Hawaii used the STOP-Bang screening tool that has been shown to be user-friendly, reliable, valid, and highly sensitive.^{6,9,10} The tool identifies eight risk factors for OSA (Figure 1), namely snoring loudly, daytime tiredness, observed holding breath when sleeping, hypertension, body mass index greater than 35 kg/m², age older than 50 years, neck circumference greater than 40 cm (16 in), and

Snoring	<input type="radio"/> 0=No <input type="radio"/> 1=Yes
	1=Yes taken today
	Do you snore loudly (louder than talking or loud enough to be heard through closed doors)?
Tired	<input type="radio"/> 0=No <input type="radio"/> 1=Yes
	0=No taken today
	Do you often feel tired, fatigued, or sleepy during daytime?
Observed	<input type="radio"/> 0=No <input type="radio"/> 1=Yes
	1=Yes taken today
	Has anyone observed you stop breathing during your sleep?
Blood Pressure	<input type="radio"/> 0=No <input type="radio"/> 1=Yes
	1=Yes taken today
	Do you have or are you being treated for high blood pressure?
BMI	<input type="radio"/> 0=No <input type="radio"/> 1=Yes
	0=No taken today
	BMI more than 35 kg/m ² ?
Age	<input type="radio"/> 0=No <input type="radio"/> 1=Yes
	1=Yes taken today
	Age over 50 yr old?
Neck Circumference	<input type="radio"/> 0=No <input type="radio"/> 1=Yes
	0=No taken today
	Neck circumference greater than 40 cm (16 inches)?
Gender	<input type="radio"/> 0=No <input type="radio"/> 1=Yes
	1=Yes taken today
	Gender male?
Total for Yes	<input type="text" value="5"/>
	5 (calculated) taken today

Figure 1. STOP-Bang screening tool screenshot. BMI, body mass index. This figure is available in color online at www.jopan.org.

gender being male.¹¹ Although a score of three or more on this tool indicates high risk for OSA,¹¹ a score of five or more on the STOP-Bang screening tool identified patients with a high probability of moderate to severe OSA.¹²

A 3-month random chart audit of 25 surgical patient records from October to December 2011 determined that 32% of patients scored as high risk for OSA based on the STOP-Bang score of three or more (Figure 2). This was a rate higher than that stated in the literature of 9% to 24% of all surgical patients at high risk for OSA.⁴ In a 6-month chart audit of 135 patient records between January and September 2012, 27% of patients at high risk for OSA experienced adverse postoperative events, including oxygen desaturation, reintubation, cardiac arrhythmias, and myocardial infarction. Although a screening tool was used, there was no guideline in place to manage perioperative patients screened at high risk for OSA. Based on these findings, an opportunity to improve patient safety and standardize care was identified. The purpose of this project was to promote patient safety for adult surgical patients identified as high risk for OSA.

Objectives

The American Society of PeriAnesthesia Nurses' OSA Practice Recommendation Strategic Work Team suggested that each institution develop a multidisciplinary guideline to meet the needs of its patient population and resources.¹³ The objectives of this project were to develop and implement an evidence-based guideline to manage patients identified as high risk for OSA in the perioperative setting; create a communication tool to enhance awareness of OSA risk and promote

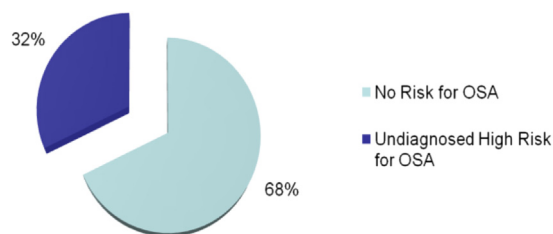


Figure 2. Percentage of patients identified as high risk for OSA. STOP-Bang score ≥ 3 . Chart audit October to December 2011. N = 25. OSA, obstructive sleep apnea. This figure is available in color online at www.jopan.org.

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