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COMMENTARY

Protocolizing perioperative OSA screening and management: moving in the right direction

Commentary on Namen AM, Forest D, Saha AK, et al. Reduction in medical emergency team activation among postoperative surgical patients at risk for undiagnosed obstructive sleep apnea. *J Clin Sleep Med*. 2022;18(8):1953–1965. doi: 10.5664/jcsm.10032

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Obstructive sleep apnea (OSA) is common in the general population[1] and appears to be even more prevalent in those presenting for surgery.[2] For a variety of reasons, OSA remains underdiagnosed,[3,4] and as a result the majority of patients presenting to surgery with OSA will not carry a formal diagnosis.[2,5] This becomes problematic in that OSA places patients at higher risk for adverse postoperative cardiopulmonary outcomes,[6] and these outcomes may be worse in those with suspected but not yet diagnosed OSA.[7,8] As a result of these concerns, there have been calls for increased OSA screening to identify patients at high risk for OSA prior to surgery with general anesthetics and planned postoperative opioids.[9,10] However, there is considerable uncertainty about how best to manage patients at high risk for OSA in the postoperative setting in order to reduce their risks of adverse events. The issue becomes even more complex when limited resource allocation is factored into the decision-making process. Delaying surgery for objective testing, and/or the implementation of OSA therapy, carries significant logistical, clinical, and financial challenges that may render this approach unfeasible.

A variety of alternative approaches have been proposed to reduce postoperative complications in these patients. Relatively simple strategies, such as alerting the perioperative team to the patient's OSA status (known or at-risk), limiting postoperative opioids and sedatives, and elevating the head of the bed postoperatively all make sense by expert consensus or when extrapolated from other nonsurgical literature,[9–12] but there are little controlled data supporting their use in perioperative OSA management. Likewise, enhanced monitoring postoperatively has led to better outcomes in surgical patients,[13] and has been proposed as a strategy to mitigate risk in patients with OSA.[9] Only recently has this been studied in patients with suspected or known OSA undergoing surgery, suggesting some potential benefit.[14] However, the best strategy for the type and duration of postoperative monitoring is uncertain. And finally, the perioperative implementation of positive airway pressure (PAP) is thought to be of help,[15] although data are limited and lacking in robust randomized controlled trials. Furthermore, perioperative adherence to PAP therapy for OSA is known to be problematic.[16,17]

In this issue of the *Journal of Clinical Sleep Medicine*, Namen and colleagues shed some light on how a multifaceted approach to preoperative identification of high risk for patients with OSA and then subsequent intervention could positively influence postoperative outcomes.[18] In a single-center retrospective review of a protocol developed by the authors, they compared outcomes following enactment of their full perioperative OSA protocol with a historic control group during which screening for OSA but no other active intervention took place. The active intervention arm of the protocol included best practice advisories (BPAs) to alert perioperative providers to the patient's OSA status (high risk or known OSA) associated with education on mitigation strategies (limiting opioids/sedatives, elevating the head of the bed, enhanced monitoring) and the encouragement of same-day sleep consultation with the option of PAP therapy. The primary outcome was medical emergency team activations (METAs). The authors found that, compared with the historic control period, there was a significant reduction in METAs (30 per 1,000 surgical patients screened), most notably in the at-risk and high risk for OSA groups. Interestingly, sleep consultation and inpatient PAP "use" were not independently associated with the reduction in METAs, although there was a dramatic increase in utilization of inpatient sleep consultative service (approximately 600 per year, compared with 0 per year pre-protocol) and orders for inpatient PAP (approximately 35%) in those at-risk or high risk for OSA during the protocol time period.

The study provides hope that a comprehensive screening and intervention protocol may improve patient safety for those patients with suspected or known OSA undergoing surgery. The strengths of the study are its large size, rigorous methodology, and ability to show that an overarching protocol for perioperative care can be successfully executed in the right environment and with appropriate education and training. It is also noteworthy that immediate objective sleep testing was not a part of the algorithm, which eliminates a major hurdle in terms of cost and feasibility.

Despite these promising findings, the study has some limitations and raises several questions about how this type of strategy could effectively be implemented in widespread practice. Regarding limitations, there are missing data (ie, opioid use,

details regarding anesthesia technique, type and duration of monitoring, actual PAP use or compliance) that, if available and analyzed, could help provide clues as to which parts of the protocol may have had the biggest impact on outcomes. In addition, the study is not randomized and used a historic control group, so it is possible that unintended biases may have impacted the results. Randomized controlled data would help to resolve some of these issues. And finally, despite significant efforts on behalf of the investigators to increase sleep consultative and PAP use (both of which did occur), the overall utilization remained low leaving one to wonder if the perioperative providers had more fully utilized these services would outcomes be even better.

The feasibility of generalizing a protocol such as this may also be challenging. The study used an advanced sleep registry that the authors developed in their electronic medical record to track patients, as well as to serve as a platform for clinical reporting and for BPAs. Many institutions/facilities may not be able to accomplish this on their own. The organization also had the capability to provide same-day sleep medicine perioperative consults at a rather high volume, a personnel resource many institutions may not have at their disposal. Cost considerations may also play a role as to whether this type of protocol is practical. A well-constructed preoperative OSA screening, testing, and treatment protocol has been found to be cost-effective over the lifetime horizon but not the perioperative horizon.[19] Data for long-term compliance, and mitigation of the burden of OSA-related comorbidities over time, may present another argument justifying implementing such protocols to important stakeholders such as health care systems and hospitals.

This study provides a solid foundation from which to build upon in an area sorely in need of quality data. Robust randomized controlled data evaluating protocols such as this will hopefully provide guidance as to how we can improve perioperative outcomes for potentially vulnerable patients with suspected or known OSA.

CITATION

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DISCLOSURE STATEMENT

Both authors have seen and approved the manuscript. The authors report no conflicts of interest.