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An Algorithm for Preoperative Screening and Management of Sleep Apnea: Have We Created a Monster?

Deborah C. Richman, MBChB, FFA(SA); Jorge M. Mallea, MD; Paul S. Richman, MD; and Pater S.A. Glass, MBChB
Stony Brook University Medical Center, Stony Brook, NY

Background and Purpose: Obstructive sleep apnea is a prevalent and underdiagnosed/underreported condition. The screening worksheet in our preoperative assessment clinic included the question: "Have you ever been diagnosed with sleep apnea?" This identified many patients with the disease who did not otherwise report it on a standard history. Undiagnosed patients were still presenting with perioperative complications.

Description: We recently refined the screening process by adding the "STOP"[1] questions. The worksheet already included age, gender, and height/weight (3 of the 4 elements of "Bang"[1]). Nurses screened all questionnaires for "positive" STOP responses. An anesthesiologist reviewed the screen-positive cases to select the patients at high risk of perioperative complications from sleep apnea. Our collaborating sleep center added urgent consult slots to accommodate patients needing consultation.

Results: In the initial 4 weeks, 958 patients were seen in preoperative clinic; the 106 screen-positive patients were managed as follows:

- 68 had modifications in the timing and location of surgery, or type of anesthesia administered, per American Society of Anesthesiologists practice guidelines.[2]
- 12 high-risk patients were referred for a preoperative sleep consultation.
- 26 were having procedures under local anesthesia and were advised to follow up with their primary care physicians or were having major cancer surgery and were being closely monitored postoperatively anyway.

Of the 12 patients referred for sleep consults, polysomnography (PSG) was advised in all 12. Six agreed to immediate PSG. All were positive for sleep apnea.

Conclusions:

1. Our algorithm for active management of sleep apnea screening:
   - Changed the timing and/or location of surgery or the type of anesthesia in 7% of cases.
   - Led to considerable time-consuming work for the preoperative staff and some patient inconvenience.
   - Increased the number of sleep consult referrals.
   - Detected sleep apnea in all patients referred for PSG.
2. The fact that all patients undergoing PSG had sleep apnea indicates that our algorithm does not lead to frivolous preoperative testing. It also suggests

many other patients are going undetected; despite the extra workload, we are seeing only the tip of the iceberg. We have established a database to further assess and refine the process.

1. *Chung F, Yegneswaran B, Liao P, et al. STOP questionnaire: a tool to screen patients for obstructive sleep apnea. Anesthesiology 2008; 108:812–821.*
2. *Gross JB, Bachenberg KL, Benumof JL. Practice guidelines for the perioperative management of patients with obstructive sleep apnea: a report by the American Society of Anesthesiologists Task Force on Perioperative Management of patients with obstructive sleep apnea. Anesthesiology 2006; 104:1081–1093.*