Anesthesiology 2009; 110:195

In Reply:—We appreciate the questions from Drs. Perez Valdivieso and Bes-Rastrollo regarding our article.[1] When we prepared the manuscript, we were considering publishing postoperative complications as a separate paper. In that way we could have presented data on postoperative complications more comprehensively.

We agree with the doctors that it would be more accurate to state that the STOP questionnaire and American Society of Anesthesiologists (ASA) checklist identified the patients with higher incidence of postoperative respiratory complications. Since the odds ratio was calculated based on the incidence of total postoperative complications, it is not conflicting to the above statement that the 95% CI of the odds ratio presented in table 7[1] for the STOP questionnaire and ASA checklist included the null value.

To further evaluate the predictive value of different apnea-hypopnea index (AHI) cutoffs, high risk score on the STOP questionnaire, STOP-Bang scoring model, Berlin questionnaire, and ASA checklist, we did multivariate logistic regressions on the potential risk factors for total postoperative complications and respiratory complications. The analysis was carried out with the procedure LOGISTIC from the SAS statistical package (SAS Institute Inc., Cary, NC). The candidate factors were selected to enter the model through the stepwise method. The *P* value for an effect to enter and stay in the model was 0.1. In models, AHI $>$ 5, AHI $>$ 15, AHI $>$ 30, STOP questionnaire high risk, STOP-Bang scoring model high risk, Berlin questionnaire high risk, or ASA checklist high risk was respectively combined with age ($>$ 50), sex (male), and preexisting conditions (hypertension, gastroesophageal reflux disease, diabetes, and asthma) as candidate risk factors. The result suggested that AHI $>$ 5, AHI $>$ 15, or STOP-Bang high risk were, respectively, significant predictors for total postoperative complications and respiratory complications, with $P < 0.05$ and a 95% CI of an odds ratio excluding 1. The score of high risk on the STOP questionnaire or ASA checklist was a significant predictor for postoperative respiratory complications. The other predictive factor retained in final models was gastroesophageal reflux disease, with $P = 0.0776$ and odds ratio = 1.828 (95% CI: 0.931–3.592).

Of the 211 patients, 44 had an AHI $>$ 30. Compared with the patients with an AHI $\leq$ 30, this group of patients had a significantly higher percentage of men (75% *vs.* 46%, $P = 0.0005$), bigger neck circumference (42 $\pm$ 8 *vs.* 38.$\pm$4 cm, $P = 0.0035$) and higher prevalence of hypertension (61% *vs.* 39%, $P = 0.0132$). They did show a higher rate of total postoperative complication (25% *vs.* 22.2%), severe desaturation (18% *vs.* 9%), intensive care unit admission (11% *vs.* 5%), and prolonged oxygen therapy (18% *vs.* 10%). However, the differences were not statistically significant. There were several possible explanations why we did not see the significantly increased incidence of postoperative complication in this group of patients. The first is the awareness of obstructive sleep apnea by anesthesiologists and surgeons, because of the requirement of our institutional research ethics board to inform anesthesiologists and surgeons if patients had an AHI $>$ 30. The patients with AHI $>$ 30 from the hospital which automatically monitor a patients in the intensive care unit for first night if the patient had a AHI $>$ 30 showed a lower rate of postoperative complication (21% *vs.* 28%) and increased prolonged oxygen therapy (21% *vs.* 16%), as compared with the patients with AHI $>$ 30 who were from the other hospital, although the difference is not significant. The second possible reason is that the sample size was too small.

As we stated in the original paper,[2] there was a self-selection of patients involved in the process of conducting the study. Because of the difficulty to arrange a sleep study before surgery, and the stress the patients faced before surgery, it was almost impossible to avoid self-selection for this kind of study.

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(Accepted for publication September 16, 2008.)