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## Reply to “Obstructive sleep apnea prevalence and adverse respiratory events in surgical patients”



## Resposta a “Prevalência de apneia obstrutiva do sono e eventos respiratórios adversos em pacientes cirúrgicos”

We thank Dr. Ricardo Reis and Ana Antunes for their interest in our manuscript and for the comments related to our observational study.<sup>1</sup> We agree that not having done polysomnography on our patients was a limitation of the study but as it is stated by Chung et al.<sup>2</sup>: “owing to its high sensitivity at a score of  $\geq 3$ , the STOP Bang questionnaire is considered very helpful to rule out patients having moderate and severe OSA.” As we state in introduction section although polysomnography (PSG) is considered the gold standard for the diagnosis of OSA it is not performed as a routine preoperative assessment tool for OSA patients in our hospital because it is an expensive and labor-intensive test. We choose STOP questionnaire because it has been considered a practical step forward in identifying patients with OSA and because of the known sensitivity and specificity in diagnosing OSA. We agree that we may have a lower incidence of OSA patients compared to the report incidence of High Risk of OSA patients. That is why we reported the results of our study considering a group of patients we have named specifically High Risk of OSA because we agree we could not confirm the OSA diagnosis in all patients.

Indeed HR-OSA was not a risk factor for Acute Respiratory Events considered as a unique group; in our study only mild/moderate hypoxia had a higher incidence in HR-OSA patients. We agree with you and that is stated in discussion section “there was a greater risk of postoperative hypoxemia in HR-OSA patients in comparison with those without the diagnosis. However, in our study...analysis of perioperative adverse events did not show significant respi-

ratory morbidity in HR-OSA patients compared to the LR-OSA patients. In fact in our study we did not find that HR-OSA was a determinant for ARE.”

We think that we should be little cautious concluding “previous papers have shown that OSA itself is associated with a statistically significant higher incidence of respiratory complications” or at least understand some limitations of these studies. In fact there are studies (by Liao Pu<sup>3</sup> and Gupta RM<sup>4</sup>) that apparently have succeeded in demonstrating that patients with OSA have a higher incidence of postoperative complications compared with matched non-OSA surgical patients. In the study by Liao PU<sup>3</sup> Oxygen desaturation with  $SpO_2 < 90\%$  was also the most common complication but this study has also a limitation with the sampling methodology for group selection that should be addressed.

In the study of Gupta RM<sup>4</sup> the authors concluded that adverse outcomes were more common in OSA patients but the considered outcomes included other complications and even in what concerns respiratory complications they too failed to demonstrate that respiratory complications were more frequent in OSA group of patients. In their study even episodic hypoxia was not more frequent in OSA patients.

In the study by Memtsoudis S<sup>5</sup> OSA was considered an independent risk factor for perioperative pulmonary complications although their considered outcomes were clearly different and the studied respiratory complications were pneumonia, ARDS and respiratory failure. We may think that it is fundamental to verify if these acute events occurring at PACU are related to respiratory failure occurring after discharge from the PACU and perhaps this could be a challenge to future investigation.

## Conflicts of interest

The authors have no conflicts of interest to declare.

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## Video-mediastinoscopy is still the gold standard



### A video-mediastinoscopia é ainda o gold-standard

Dear Editor,

We read with great interest the article by Bugalho et al., entitled “Endobronchial ultrasound-guided transbronchial needle aspiration for lung cancer diagnosis and staging in 179 patients”<sup>1</sup> as well as the editorial by Herth entitled “Access to the mediastinum—The standard has changed”.<sup>2</sup>

In fact, for patients with lung cancer, despite improvements in the accuracy of imaging modalities over the last decade, invasive mediastinal lymph node staging remains necessary in cases of mediastinal lymph node enlargement, positron emission tomography (PET) positive mediastinal and/or hilar lymph nodes and/or a centrally located tumor.<sup>3</sup> For a long time, cervical mediastinoscopy has been considered the gold standard in mediastinal staging, given the high negative predictive value (NPV) if well performed. However, during the last decade, oesophageal ultrasound-guided fine needle aspiration (EUS-FNA) followed by endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) has emerged as a minimally invasive alternative, reducing the need for a cervical mediastinoscopy as a first-line staging procedure. Nevertheless, when the result of endoscopic staging appears negative, a subsequent mediastinoscopy is currently recommended to exclude mediastinal lymph node metastases in patients with clinical suspicion.<sup>2</sup> But, since the sensitivity of EBUS-FNA seems to exceed that of mediastinoscopy,<sup>4</sup> there is a tendency to cut down on the need for surgical confirmation. Accordingly, in routine practice an additional mediastinoscopy is often regarded as overdone. However, only recently the combination of endosonography followed by mediastinoscopy was shown to be more accurate in mediastinal nodal staging than just mediastinoscopy alone. In patients with non-small-cell lung cancer and an indication for mediastinal staging, performing a cervical mediastinoscopy after a negative result of endosonography reduced the number of futile thoraco-

tomies by 50%. Overall, an average of 8.8 patients had to undergo an additional mediastinoscopy to find one false-negative result of endosonography, but when only patients with suspicious mediastinal lymph nodes on FDG-PET are taken into account, this NNT comes down to 6.1 patients.<sup>5</sup>

We agree with Dr. Herth. The standard has changed. In fact, EBUS and EUS should be used in conjunction with PET and considered as an alternative to mediastinoscopy. However, the gold standard is still video-mediastinoscopy, because in patients with a high probability of mediastinal metastases, a cervical mediastinoscopy should not be omitted after a negative result of endosonography, not even when the aspirate seems representative, based on the presence of a sufficient number and maturation of lymphocytes.

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