Is Obstructive Sleep Apnoea Associated with Hypoxemia and Prolonged ICU Stay after Type A Aortic Dissection Repair?

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Abstract

Background : Although obstructive sleep apnoea (OSA) is prevalent among patients with aortic dissection, its prognostic impact is not yet determined in patients undergoing major vascular surgery. We aimed to investigate the association of OSA with hypoxemia and with prolonged intensive care unit (ICU) stay after type A aortic dissection (TAAD) repair.

Methods: This study enrolled 83 patients who underwent TAAD repair. OSA diagnosis was confirmed by a preoperative STOP-BANG questionnaire and a sleep test performed within 90 days postoperatively. OSA was defined as an apnoea hypopnea index (AHI) of $\geq 15/h$, while an AHI of $>30/h$ was defined severe OSA. Hypoxemia was defined as an oxygenation index (OI) of <200 mmHg, 6 h postoperatively and prolonged ICU referred to an ICU stay of >72 h. Multivariable analysis was performed to assess the association of OSA with hypoxemia and prolonged ICU stay.

Results: OSA was diagnosed in 41 patients (49.4%), which was consistent with the detection by using a preoperative STOP-BANG score of ≥ 4 (Kappa=0.424, $P<0.01$). Hypoxemia occurred postoperatively in 56 patients (67.5%). Postoperatively hypoxemia developed mostly in OSA patients (52.4% vs. 83.0%, $P<0.01$), and particularly in those with severe OSA (52.4% vs. 90.5%, $P<0.01$). The postoperative OI could fairly predict a prolonged ICU stay (area under the curve, 0.719; 95% CI 0.595-0.843; $P=0.002$). Severe OSA was a predictor of both postoperative hypoxemia (odds ratio [OR] 6.65; 95% CI 1.56-46.26, $P<0.01$) and prolonged ICU stay (OR 5.58; 95% CI 1.54-20.24, $P<0.01$).

Conclusions: OSA was common in patients with TAAD. Severe OSA was predictive of hypoxemia and prolonged ICU stay after TAAD repair. The STOP-BANG score may offer diagnostic clues to OSA in patients with TAAD.

Full Text

Due to technical limitations, full-text HTML conversion of this manuscript could not be completed. However, the latest manuscript can be downloaded and [accessed as a PDF](#).

Figures

Figure 1

Flow chart of patient enrollment

Figure 2

Length of intensive care unit (ICU) stay stratified by apnoea hypopnea index (AHI)

Figure 3

Receiver-operating characteristic curve of postoperative oxygenation index threshold for predicting prolonged intensive care unit stay