European Respiratory Society
Annual Congress 2012

Abstract Number: 1426

Publication Number: P3180

Abstract Group: 4.2. Sleep and Control of Breathing

Keyword 1: Sleep disorders **Keyword 2:** Sleep studies **Keyword 3:** Adolescents

Title: Surgery for obstructive sleep apnea: Sleep endoscopy determinants of outcome

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Body: Although drug-induced sleep endoscopy (DISE) is often employed in order to determine the site of obstruction in patients with obstructive sleep apnea (OSA) who will undergo upper airway surgery, it remains unknown whether its findings are associated with surgical outcome. This study tested the hypothesis that DISE variables can predict the outcome of upper airway surgery. Forty-nine OSA patients [41 men; mean apnea-hypopnea index (AHI) 30.9±18.5 events/h] underwent firstly DISE, secondly upper airway surgery, and thirdly follow-up polysomnography to assess surgical outcome. Twenty-three patients (47%) were responders and twenty-nine non-responders (53%). Non-responders had a higher occurrence of complete or partial circumferential collapse at velum, and of complete antero-posterior collapse at tongue base or epiglottis, in comparison with responders. Multivariate logistic regression analysis revealed that, among baseline clinical characteristics and DISE findings, the presence of complete circumferential collapse at velum, and of complete antero-posterior collapse at tongue base were the only independent predictors of upper airway surgery failure.

Patterns of collapse on DISE associated with failure. A. complete circumferential collapse at velum. B. complete antero-posterior collapse at tongue base C. complete antero-posterior collapse at epiglottis. In conclusion, DISE findings are predictors of upper airway surgery outcome in OSA.