The Role of Drug-Induced Sleep Endoscopy and Position-Dependency in the Diagnostic Work-Up of Obstructive Sleep Apnea

P.E. Vonk
Summary

In this thesis we evaluated the role of different passive maneuvers during drug-induced sleep endoscopy (DISE) in obstructive sleep apnea (OSA) patients. Jaw thrust is performed to mimic the effect of a mandibular advancement device (MAD); lateral head rotation to simulate lateral sleeping position. Based on a theoretical model we concluded that the effect of jaw thrust was greater and the effect of lateral head rotation was less than what was expected based on treatment outcome of MAD treatment and positional therapy described in the literature. The effect of lateral head, and both head and trunk rotation, on upper airway patency during DISE was significantly different in patients with positional OSA (PP), but similar in patients with non-positional OSA (NPP) at the level of the velum, tongue base and epiglottis. Secondly, we found only slight to moderate agreement in degree of obstruction measured with jaw thrust and a boil-and-bite MAD in situ during DISE. These findings should be taken into consideration we want to use DISE as a screening tool for non-surgical interventions for OSA, in which an alternative for jaw thrust to predict MAD treatment outcome is of paramount importance.

In the second part of this thesis the influence of position-dependency and surgical outcome was evaluated. Although preoperative characteristics in PP (e.g., lower BMI and apnea-hypopnea index [AHI]) seem to be in favor for higher surgical success compared to NPP, it remains unclear whether or not position-dependency is a predictor for surgical outcome. The largest differences and expected preoperative and postoperative changes occur in non-supine AHI. In PP, the preoperative non-supine AHI is already lower compared to NPP suggesting a lower chance of surgical success in PP.