

474146 - THE EFFECT OF SURGERY ON THE SLEEP ARCHITECTURE - A PILOT STUDY

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Introduction: Anesthetics, analgesics and surgery may have a tremendous impact on the sleep architecture of patients in the postop period. This is a preliminary report of an ongoing study designed to investigate the effect of surgery and anesthesia on the sleep of surgical patients.

Methods: After hospital ethics approval, preoperative patient over 18 years old were recruited. The patients were screened with STOP questionnaire. Patients classified as high risk of having OSA were invited to undergo polysomnography (PSG) with a portable device (Embletta x100) preop at home, first and third night postop in the hospital. The PSG was scored by a certified sleep technologist. The data were input into a specifically designed MS Access database and analyzed by SAS 9.1.

Results: A total of 16 patients completed all three nights of sleep study. The average age was 65 ± 9 ; 11 male, 5 female; BMI 32.8 ± 6 kg/m²; neck circumference 39.5 ± 7.5 cm. The average preoperative apnea hypopnea index (AHI) was 22.4 ± 15 and 15 patients (93.8%) were AHI > 5. Compared with preop PSG, the sleep efficiency, percentage of REM and slow wave sleep (stage 3 and 4) on first and third postop night were significantly decreased. The stage 2 sleep was significantly increased. AHI on third postop night was significantly increased vs preop (50.1 ± 38 vs 22.4 ± 15 , p < 0.05). The oxygen desaturation index on third postop night was also significantly increased vs preop and first night (41.2 ± 34 . vs 15.8 ± 14 preop and 15.1 ± 18 first night, p < 0.05). Average SaO₂ and lowest SaO₂ were also significantly lower in third versus first postop night.

Discussion: Following surgery, the patients at high risk of OSA had significantly lower sleep efficiency. REM and slow wave sleep was significantly reduced. In the third postop night, AHI and oxygen desaturation index were significantly increased versus preop or first night.

References: NO