

## Sleep Medicine

### Effect of Uvulopalatopharyngoplasty on Retropalatal Region

Hasan Tanyeri (presenter); Gediz M. Serin, MD; Senol Polat, MD

**Objective:** Retropalatal region is a part of upper airway contributing to obstructive sleep apnea (OSA). We aimed to demonstrate the changes in the retropalatal surface area (RPSA) after uvulopalatopharyngoplasty (UPPP) in an attempt to exhibit enlargement as a predictor of surgical treatment.

**Method:** Twenty patients with OSA who underwent UPPP were retrospectively evaluated. Pre and postoperative respiratory disturbance index (RDI), RPSA measurements were studied. Retropalatal region photos were captured at the base of uvula during fiber optic nasopharyngolaryngoscopy to measure RPSAs using AutoCad2004. RDI levels, RPSA measurements were compared using paired t test.

**Results:** The RPSA measurements in the preoperative subjects were between 20 and 72 (mean 44.18). The RPSA measurements in the postoperative patients were between 37 and 107 (mean 72.82). The RPSA significantly increased in postoperative patients ( $P = .001$ ). The mean RDI decreased from  $27.5 \pm 22.2$  to  $14.6 \pm 12.4$  ( $P > .05$ ).

**Conclusion:** RPSA increases in UPPP patients postoperatively with evidence of an enlarged retropalatal region. Decreased RDI levels indicate amelioration in OSA. RPSA measurements can be used to predict UPPP surgical treatment success.

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### Effects of Minimally Invasive OSA Surgery on Middle Ear

Hsin-Ching Lin, MD (presenter); Michael Friedman, MD

**Objective:** Study the impact of Pillar implantation plus radiofrequency tongue base reduction (RFBOT) for the treatment of obstructive sleep apnea (OSA) syndrome on middle ear function.

**Method:** The patients who underwent a Pillar implantation combined with RFBOT for OSA were enrolled. All subjects had normal eardrums. Pure-tone audiometry and tympanometry were performed preoperatively, and at 1 day, 7 days, 1 month, and 3 months postoperatively. Baseline and postoperative middle ear pressures (MEPs) in decipascals were compared.

**Results:** Twenty patients (17 men, 3 women; mean age 45.7 years) were reviewed. Six patients (6/20, 30.0%) reported otologic complaints such as ear pressure and/or otalgia within one week postoperatively. No permanent otologic discomfort occurred. A trend toward reduced MEP was noted in this study. The decrease in MEP became apparent on day 1 and 7.

However, mean pressure changes were no longer significantly different from preoperative values by one week after surgery.

**Conclusion:** The minimally invasive surgery with Pillar implantation plus RFBOT for OSA induces changes in middle ear function. However, the changes were temporary and not significant after 3 months follow-up.

## Sleep Medicine

### Effects of Minimally Invasive Surgery for OSA on Quality of Life

Hsin-Ching Lin, MD (presenter); Michael Friedman, MD; Pa-Chun Wang, MD, MSc

**Objective:** Study the impact of Pillar implantation plus radiofrequency tongue base reduction (RFBOT) for the treatment of obstructive sleep apnea (OSA) syndrome on quality of life (QOL).

**Method:** All OSA patients with multilevel obstruction who failed or refused the CPAP treatment and then underwent single-staged multilevel minimally invasive surgery (Pillar implantation and RFBOT) were enrolled. The subjective symptoms and QOL (SF-36 Taiwan Standard Version 1.0) parameters were collected pre- and postoperatively. Postoperative morbidity was recorded.

**Results:** Twenty patients (3 women, 17 men) were reviewed. The mean visual analog scale (0-10) score of postoperative pain was 1.9. One pillar dislocated after implantation. One patient had tongue abscess after RF tongue base surgery. The mean ESS (Epworth Sleepiness Scale) changed from  $11.9 \pm 5.1$  to  $10.4 \pm 5.0$  ( $P = .049$ , Wilcoxon signed rank test). The mean snoring VAS reduced from  $9.8 \pm 0.6$  to  $4.9 \pm 2.0$  ( $P = .000$ ). The mean score of SF-36 increased from  $65.5 \pm 19.6$  to  $75.2 \pm 16.7$  ( $P = .000$ ). The SF-36 sub-scales in bodily pain, general health, vitality, social functioning and role-emotional showed statistically significant changes.

**Conclusion:** This study has demonstrated that the single-staged multilevel minimally invasive surgery (Pillar implantation and temperature-controlled radiofrequency of the base of tongue) appears to be an effective and safe tool for treating OSA patients who may be unresponsive to conservative therapy.

## Sleep Medicine

### Evaluation of Palatal and Tongue Base Hyperaemia and Its Relationship to Snoring and Obstructive Sleep Apnea Using Narrow-Band Imaging

Vyas Prasad (presenter); Bhikhilal Kotecha; Paul Stimpson; Rebecca Heywood; Edward J. Chisholm, MBBS, MRCS

**Objective:** Evaluate digital still images and video recordings utilising narrow-band imaging (NBI) in order to assess whether this modality of fiberoptic investigation can be used to