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Tongue-Base Surgery for Obstructive Sleep Apnoea: Why we do it, who we do it for and when.

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Patients suffering from obstructive sleep apnoea (OSA) often also show an obstruction at the level of the tongue base. Although the surgical approach to treat such patients will usually not be limited to the tongue base, our experience has shown that treatment of the tongue base is beneficial in conjunction with other surgical techniques. In our clinical practice we successfully make use of the CURIS® tongue-base radiofrequency procedure. Our experience shows that when using this minimally invasive method together with other surgical techniques, the outcome of sleep-related breathing disorder surgery can be improved.

Fig. 1: Bipolar tongue-base probe (REF 700499) Sutter Medizintechnik GmbH/Germany

Introduction: Tongue-base obstruction is known as one of the levels of obstruction in OSA. Surgical treatment of the palate alone has been shown to be ineffective in patients with high Mallampati grades and tongue-base collapse seen on Muller's maneuver. Severity of OSA is currently known to correlate with the degree of tongue base and lateral pharyngeal wall collapse.

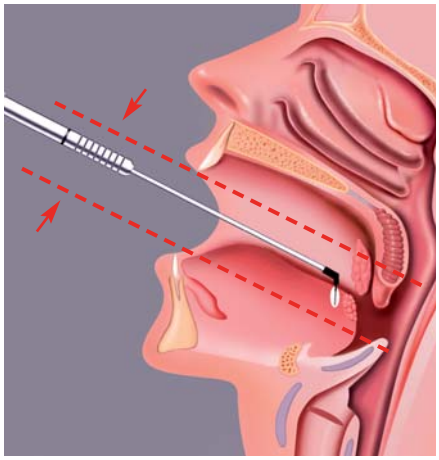

Fig. 2: The low profile of the instrument and its strong shaft enable the surgeon to insert the probe at the back of the tongue.

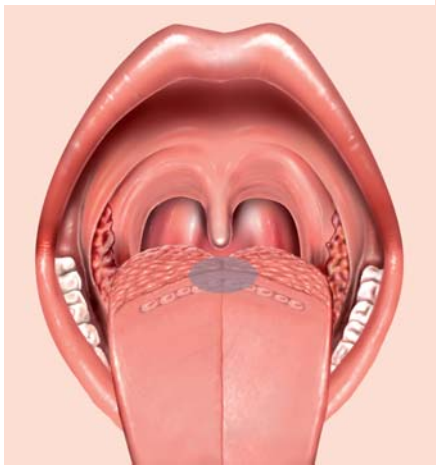

Fig. 3: Treatment area of the tongue base

Material and Methods: Pang et al. (1) showed in 102 patients with OSA, that patients with severe OSA are 10 times more likely to have tongue base obstruction. According to Friedman's clinical staging (2), patients with stage II and III, with a big tongue would require some form of tongue- base procedure in order to increase the success rate of surgery. Various tongue- base surgical techniques are discussed, ranging from radiofrequency of the tongue base, genioglossus advancement, hyoid suspension, laser midline glossectomy, and the tongue suspension.

The CURIS® tongue-base radiofrequency procedure is performed together with the palate procedure. We do the Expansion Sphincter Pharyngoplasty technique mostly for our patients with palate collapse under general anaesthesia. These procedures may be done together with hyoid suspension, and/or nasal turbinate reduction, and/or septoplasty. The patient is given intravenous dexamathsone at induction and for 2 days post-operatively. Surgery is done with the sterile procedure first (the hyoid suspension), followed by the oral and/or nasal procedures, namely, palate and tongue surgery.

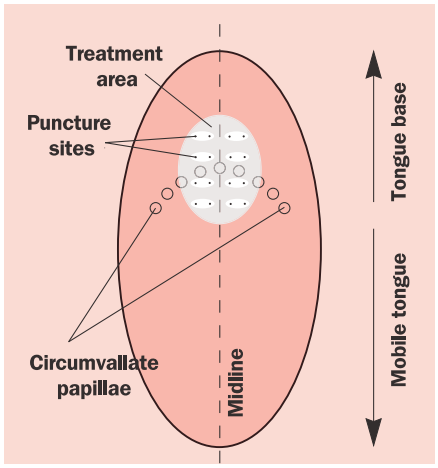

Fig. 4: Puncture sites for the treatment of the tongue base

Fig. 5: CURIS® radiofrequency unit (Sutter Medizintechnik GmbH/Germany)

The CURIS® tongue-base probe is used at 8 to 10 spots in the tongue-base region, posterior to the circumvallate papillae and in the midline. The CURIS® machine is set at 12 to 14 watts, RaVoR™ setting, with the audio-feedback on. A stay suture is used in order to extend the tongue as forward as possible. The radiofrequency is then applied to the tongue base. Post-operatively, a nasal airway is used to stent the tongue-base area for one night in the high dependency ward.

Conclusion: The use of tongue-base surgical procedures is imperative in the armamentarium of the treatment of obstructive sleep apnoea. The CURIS® tongue-base radiofrequency treatment is useful and should be considered in the treatment of patients with tongue-base collapse.

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References: 1. Pang KP, Terris, DJ, Podolsky R. Severity of obstructive sleep apnea: correlation with clinical examination and patient perception. Otolaryngol Head Neck Surg. 2006 Oct;135(4):555-60. **2.** Friedman M. Clinical aging. Uvulopalatopharyngoplasty. Chapter 9. Section 9.2. In: Fairbanks DNF, et al. Snoring and Obstructive sleep apnea. 3rd edition. Lippincott Williams & Wilkins. 2003: 120-127.

Ordering Information

Featured Product

1:1

700499 – Bipolar needle tongue-base probe

Qty.	REF	Description
1	700499	Bipolar needle electrode for the tongue base

870010 – CURIS® basic set with single-use patient plates

Qty.	REF	Description
1	360100-01	CURIS® radiofrequency generator (incl. mains cord, user manual and test protocol)
1	360110	Footswitch with two pedals for CURIS® (cut & coag), 4 m cable
1	370154 L	Bipolar cable for CURIS®, length 3 m
1	360704	Monopolar handpiece (pencil) cut & coag, shaft 2.4 mm, cable 3 m
1	360236	Cable for single-use patient plates, length 4.5 m
1 (x50)	360222	Safety patient plates, single use, packing 5 x 10 pcs. (not shown)
Optional		
1*	360226	Patient plate with cable, re-usable, length 4 m

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