

Radiofrequency Subtotal Tonsillectomy

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Fig. 1: ARROWtip™ electrode (REF 36 03 25)

Introduction: With Scherer [1] und Hultcrantz [2] carrying out successful long-term studies for partial tonsillectomy (tonsillotomy) in children with obstructive sleep apnea, partial tonsil resection has become widely established in Europe. Lower post-operative bleeding and less pain during recovery certainly speak in favor of preserving tonsil tissue intentionally. The method has hardly been accepted in adult patients. This is primarily due to the fact that complete, extracapsular tonsil removal has been considered the gold standard for the treatment of recurring inflammations of the palatine tonsils as infectious focus [3]. When taking a closer look at tonsil infections in adults, it must, however, be taken into account that the majority of sore throat cases are of viral origin. Classical bacterial, cryptic tonsillitis with an indication for tonsillectomy is caused by a germ conglomeration in the debris of tonsillar crypts that are deep and scarred [4].

Indication: Adults with hyperplasia of the tonsils and OSAS as well as with halitosis due to debris in the tonsils (tonsil stones) are considered suitable patients for subtotal tonsil removal. During the intervention, a



Fig. 2: Tonsil bed with residual lymphatic tissue covering the underlying muscle completely.

slim margin of tissue with lymphatic activity and almost no crypts is spared in the tonsillar bed to preserve the underlying muscle and larger vessels. As a result, postoperative healing will be faster and accompanied by less pain and a lower bleeding rate. Pain in particular is usually caused by an injury of the pharyngeal constrictor muscle directly affecting the fibers of the glossopharyngeal nerve. It remains to be determined through short-term and long-term studies whether this method is also indicated for the treatment of acute, recurring tonsillitis or focus revision (e.g. for PFAPA syndrome).

Procedure: The highly focused plasma field at the tip of ARROWtip™ probes lends itself especially well to the dissection of spongy tissue with a high-water content such as lymphatic tonsil tissue. However,



Fig. 1: Subtotal tonsillectomy with straight ARROWtip™ probe.

the probe will not find its way on its own in the small, pitted tonsils of adults. We recommend visual magnification with loup lenses with a magnification of 2.5 x 3.5 or even an operating microscope [5]. It is important to work in the lymphatic tissue



Fig. 4: Dissection with the help of an operating microscope.



Fig. 3: By comparison tonsil bed with extracapsular total tonsillectomy and exposed muscle.

only and not dissect into the underlying capsule or muscle. In case of doubt, it is better to preserve lymphatic tissue rather than cut away too much. In fact, it is always possible to re-address tissue. We used a 65 mm long, straight ARROWtip™ probe with the radiofrequency generator CURIS® in CUT II mode at an adjustment of 12 watts (ARROWtip™ and CURIS® by Sutter Medizintechnik GmbH, Germany).

After surgery a small margin of tonsillar tissue should remain. Bleedings must be stopped by applying swab pressure for at least one minute. Afterwards persistent bleedings of the tonsil tissue may be stopped by means of bipolar coagulation.



Fig. 3: CURIS® RF unit (Sutter, Germany).

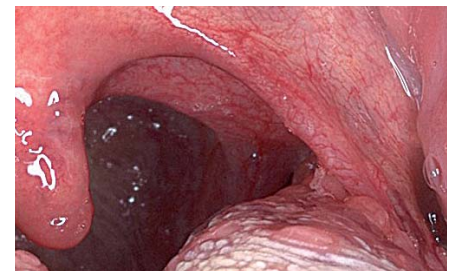


Fig. 5: Postoperative results after 6 week following subtotal tonsillectomy on left side after case history revealed tonsil stones.

Results: No post-operative bleeding occurred in any of the 10 patients who were treated for halitosis. Patients complained significantly less of pain than patients with total tonsillectomy, even without perioperative infiltration anesthesia [6].



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References: 1. Scherer H. [Tonsillotomy versus tonsillectomy]. *Laryngorhinootologie*. 2003 Nov;82(11):754-755. 2. Hultcrantz E, Linder A, Markstrom A. Long-term effects of intracapsular partial tonsillectomy (tonsillotomy) compared with full tonsillectomy. *Int J Pediatr Otorhinolaryngol*. 2005 Apr;69(4):463-469. 3. SCHMIDT W. [Is there continued justification for tonsillotomy?]. *Med Klin*. 1950 Mar 31;45(13):403-404. 4. Swidsinski A, Goktas O, Bessler C, et al. Spatial organisation of microbiota in quiescent adenoiditis and tonsillitis. *J Clin Pathol*. 2007 Mar;60(3):253-260. 5. Andrea M. Microsurgical bipolar cautery tonsillectomy. *Laryngoscope*. 1993 Oct;103(10):1177-1178. 6. Stelter K, Hempel JM, Berghaus A, Andratschke M, Luebbbers CW, Hagedorn H. Application methods of local anaesthetic infiltrations for postoperative pain relief in tonsillectomy: a prospective, randomised, double-blind, clinical trial. *Eur Arch Otorhinolaryngol*. 2009 Jan 22.

Featured Product

360325 – ARROWtip™ electrode

Qty.	REF	Description
2	360325	ARROWtip™ electrode, straight, Ø 2.4 mm, working length 30 mm



360328 – ARROWtip™ electrode

Qty.	REF	Description
2	360328	ARROWtip™ electrode, angled, Ø 2.4 mm, working length 30 mm



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

Qty.	REF	Description	Unit settings / Other accessories
1	360100-01	CURIS® radiofrequency generator (incl. main cord, user manual and test protocol)	CURIS®
1	360110	Footswitch two pedals for CURIS® (cut & coag), 4 m cable	ARROWtip™ electrode: Monopolar CUT 2
1	370154L	Bipolar cable for CURIS®, length 3 m	Power adjustment: 12 watts
1	360704	Monopolar handpiece (pencil) cut & coag, shaft 2.4 mm, cable 3 m	
1	360238	Cable for single use patient plates, length 3 m	
1 (x50)	360222	Safety patient plates, single use, packing 5 x 10 pcs. (not shown)	



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