

Radiofrequency Tonsillotomy in Children with Tonsillar Hyperplasia

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Tonsillotomy with radiofrequency is a safe and easy-to-learn procedure. Children with symptomatic tonsillar hyperplasia profit from it enormously. Compared to all other procedures removing parts of or even all tonsillar tissue we prefer radiofrequency tonsillotomy (RF-TT) in children with symptomatic tonsillar hyperplasia without chronic tonsillitis.



Fig. 1: Micro-dissection ARROWtip™ for tonsillotomy (Sutter) REF 36 03 42

Introduction: With approximately 80.000 tonsillectomies performed annually, this surgical procedure represents one of the most common operations in Germany, mainly performed on children for treatment of recurrent tonsillar infections, or in order to reduce obstructions from enlarged tonsils. Regular Tonsillectomy (TE) is still the preferred procedure in spite of its post-operative morbidity. German children usually stay in hospital for about a week and need another week or two to recover from the procedure.

Different approaches have been taken to reduce the serious risk of postoperative bleeding (1-20%) [1] and pain with ensuing difficulties in eating and drinking. There is both the human incentive to reduce a child's suffering and the economic incentive for both parents trying to reduce the number of days to stay home from work to take care of a child.

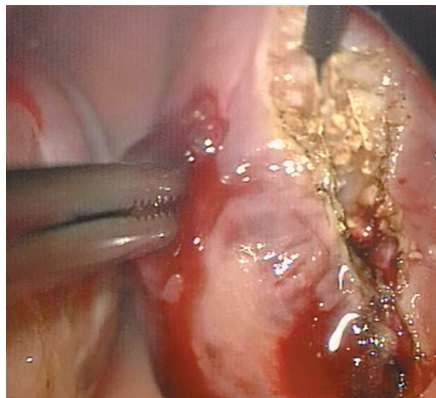


Fig. 2: Surgical site during radiofrequency tonsillotomy

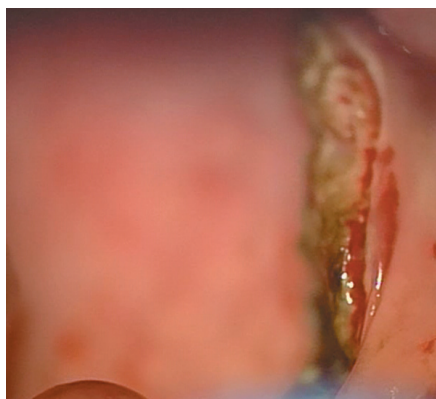


Fig. 3: After radiofrequency tonsillotomy

Several techniques have been developed as alternatives to the traditional blunt dissection. Most of them are based on electrosurgery. They all appear to work well for the removal of the tonsils with less bleeding, but they do differ in postoperative pain levels.

Methods: In our department children with symptomatic tonsillar hyperplasia who did not have repeated tonsillar infections undergo a tonsillotomy (TT) with the radiofrequency-unit CURIS® (Sutter Medizintechnik, Freiburg/Germany) in the "Cut 1-modus" at an intensity of 3 to 3.5 (approx. 25 Watt). With this method we have treated about 40 children so far.

In our procedure the tonsils are held with forceps while the protruding part of the tonsils is removed with a micro-dissection electrode for tonsillotomy (ARROWtip™, Sutter Medizintechnik). Hereby the incision line is performed in parallel and close to the anterior pillar without any traction of the tonsil. During the removal of the protruding part of the tonsils the anterior and posterior pillars have to be preserved. After removal the surface of the remaining tonsillar tissue does not look dry or burned. Bleeding occurs very rarely and if it does, bipolar coagulation is used to stop it.

Results: Compared to TE, tonsillotomy is a safe procedure with a minimal risk of severe postoperative bleeding and less pain. No postoperative bleeding occurred with any RF-TT patients. Intraoperative bleeding was rare, only in 5 cases we had to use bipolar forceps. Patients with TT were also more alert after surgery.

Comparing RF- to Laser-TT there was no noticeable difference regarding the risk of postoperative bleeding. But intraoperatively we had to use the bipolar forceps more often than with RF. Also Laser-TT took more time than RF-TT. Compared to RF, children were more subdued after Laser-TT and needed more analgesic drugs.

Discussion: Tonsillotomy, also called partial or intracapsular tonsillectomy, is a surgical procedure that has been established for several years now to treat the symptomatic tonsillar hyperplasia mainly in children. TT is associated with rare postoperative bleeding and less pain than the traditional TE [3,5]. Until recently TT was mostly done with CO2 lasers [2].

Although only parts of the tonsils are



Fig. 4: CURIS® RF unit (Sutter, Germany)

removed and the capsule between the pillars remains, children still suffer pain after surgery. A greater thermal lesion of the surrounding tissue due to greater heat created by laser could explain this feature. Our results showed less pain with radiofrequency compared to laser surgery. Comparisons of radiofrequency vs. monopolar electrosurgical procedures have shown similar results [4].

Conclusion: Tonsillotomy with radiofrequency is a safe and easy-to-learn procedure. Children with symptomatic tonsillar hyperplasia profit from TT enormously. Compared to all other procedures removing parts of or even all tonsillar tissue we prefer RF-TT in children with symptomatic tonsillar hyperplasia without chronic tonsillitis.



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Featured Product

1:1



360342 – Micro-dissection electrode for tonsillotomy

Qty.	REF	Description
1 (x2)	360342	ARROWtip™ electrode, 45° angled, work length 65 mm, Ø 0,3 mm

1:1



360365 – Micro-dissection electrode for tonsillotomy

Qty.	REF	Description
1 (x2)	360365	ARROWtip™ electrode, 45° angled, needle 10 mm, Ø 0,3 mm



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

Qty.	REF	Description
1	360100-01	CURIS® radiofrequency generator (incl. mains cord, user's manual and test protocol)
1	360110	Footswitch two pedals for CURIS® (cut & coag), 4 m cable
1	370154L	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 model

CURIS® basic set with re-usable patient plate (REF 870020)



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