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Radiofrequency Surgery (RF Coagulation) for Treatment of Recurrent Epistaxis

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Blood vessels on the surface of the nasal mucosa are often the cause for recurrent nasal bleeding. Figure 2 shows a patient with Rendu-Osler-Weber syndrome with pronounced large-surface and voluminous telangiectasia of the nasal mucosa, for which even repeated laser treatments had not been successful. Radiofrequency coagulation (RF coagulation) may be a new method for the treatment of such vessels with the advantage of causing less thermal damage to the surrounding mucosa. Recurrent epistaxis predominantly occurs in Osler's disease. Despite a broad armamentarium of treatment methods, successful therapy in this patient group is difficult to achieve. RF coagulation is an inexpensive alternative to laser treatment, and preliminary results are promising.

Material and methods: The method was applied to a total of 15 patients (13 to 76 years of age; 11 adults with Rendu-Osler-Weber syndrome and 4 teenagers) suffering from recurrent nasal bleeding. The unit used was the RF generator BM-780 II with the ORL set Marinescu (Sutter Medizintechnik, Freiburg/Germany) and a straight ball electrode (long shaft, electrode diameter 3 mm) in the monopolar mode (see Figure 1).
With the help of a 30 degree angeled endoscope pathologically affected vessels could be sealed systematically. Setting: monopolar coagulation, contact mode at "level 2" (power approx. 10 Watts). The duration of each application was only a few seconds. The intraoperative situs during radiofrequency treatment of nasal hereditary haemorrhagic telangiectasia is shown in Figure 3. Radiofrequency treatment is particularly recommended for patients with a disease pattern that does not respond to laser therapy. After treatment the nose was packed with carboxymethyl cellulose mesh (CMC, Sinu-Knit) and rinsed with distilled water. Postoperatively antiseptic nasal ointment was applied 3 times daily.

Results: None of the patients suffered from intraoperative complications. During the average post-operative follow-up time of six months (time frame: 2 to 12 months) no major complications occurred (such as septal perforation, major intraoperative or postoperative bleedings, large surface thermal mucosa damage). The frequency and intensity of recurrent bleeding could be reduced by 70 % in the patients treated. Figure 4 shows the results six months postoperatively after radiofrequency coagulation of nasal hereditary haemorrhagic telangiectasia of the nasal mucosa of the anterior septum. The mucosa has healed completely with little scarring underneath.

Figure 1: Radiofrequency unit (RF generator) BM-780 II with 2 mm straight and 3 mm angled ball electrodes

Figure 2: Patient with Rendu-Osler-Weber syndrome, preoperative findings

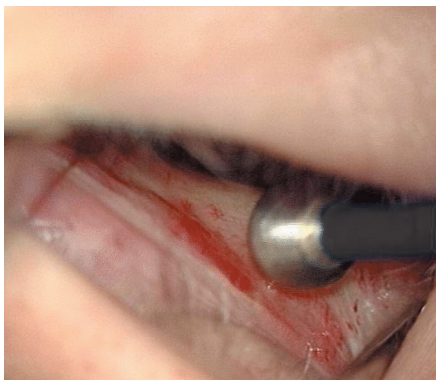

Figure 3: Intraoperative situs during radiofrequency treatment of nasal Hereditary Haemorrhagic Telangiectasia

Discussion: Several surgical options for the treatment of recurrent epistaxis, in particluar in combination with the Rendu-Osler-Weber syndrome, have been used successfully, e. g. Nd: YAG laser therapy or the use of a diode laser. However, these treatment options require expensive equipment and have high maintenance costs. RF coagulation may be a cost-effective alternative, especially for the treatment of small and medium-sized telangiectasia of the nasal mucosa, without leading to significant tissue disorder. For the treatment of larger telangiectasia it is also possible to switch to the bipolar RF coagulation mode with the tissue temperature remaining far below that of conventional bipolar coagulation (80° Celsius). Endoscopically guided RF coagulation can be easily repeated. In Rendu-Osler-Weber syndrome patients this is of importance, due to the fact that new telangiectasia occurs within 6 -12 months.

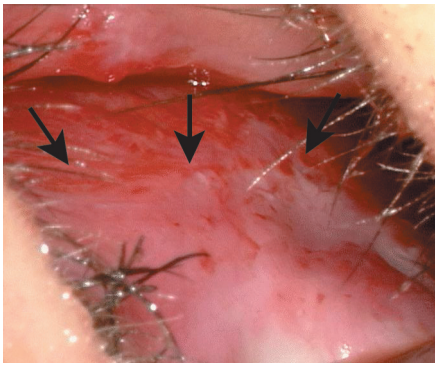

Figure 4: Result of radiofrequency treatment six months postoperatively

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Literature: Marinescu A. Innovative bipolar radiofrequency volumic reduction with "ORL-Set" for treatment of habitual snorers. Laryngorhinootologie. 2004; 83:610-616; Folz BJ, Zoll B, Alfke H, Toussaint A, Maier RF, Werner JA. Manifestations of hereditary hemorrhagic telangiectasia in children and adolescents. Eur Arch Otorhinolaryngol. 2006; 263(1): 53-61; Werner JA. Treatment concept for recurrent epistaxis in patients with hereditary hemorrhagic telangiectasia. HNO. 1999; 47(6): 525-527;

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Featured Product

360817 – Flexible radiofrequency ball electrode

Qty.	REF	Description
1 (x5)	360817	Flexible radiofrequency ball electrode, shaft diameter Ø 3,0 mm
1 (x5)	360447	Radiofrequency ball electrode, shaft diameter Ø 2,0 mm

860010 – BM-780 II basic Set with single-use patient plates

Qty.	REF	Description
1	360080-01	Radiofrequency-Generator BM-780 II (incl. mains cord, user manual, test protocol and instruction CD-ROM)
1	360105	Footswitch, protection class, IP X8
1	370130 L	Bipolar silicone cable, length 4.5 m
1	360218	Monopolar pencil for Ø 2.4 mm shaft electrodes, cable length 4 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

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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