Radiofrequency Surgery for Resection of a Cutaneous Angiosarcoma of the Face

Timon Hussain, MD, Boris A. Stuck, MD, Department of Otorhinolaryngology, Head and Neck Surgery, University Hospital Essen, Germany

Introduction: Angiosarcomas are rare cutaneous tumors, and presentations in the head and neck comprise the most common anatomic sites. For non-metastatic cutaneous angiosarcomas, combined multimodal therapy including surgical resection and radiation therapy has the best clinical outcome. [1,2] Diagnosis is often delayed due to the benign appearance of the disease and excision of large tumors of the scalp and face can be challenging. Precise resection with clear surgical margins is required to ensure regional control while preserving crucial anatomical structures. We demonstrate the use of RF surgery in the case of an 80-year old male patient presenting with a stage IIB angiosarcoma located medial to the left eye with invasion of the upper and lower eye lid.

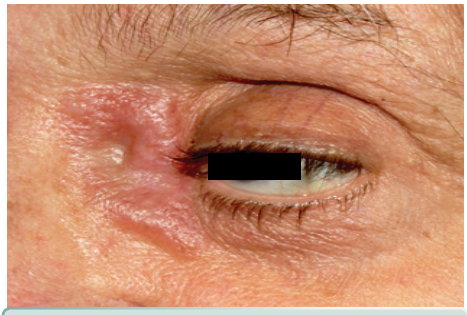

Fig 1: Pre-operative image of the angiosarcoma involving the upper and lower eye lid.

Methods:

We performed primary tumor resection with RF surgery with intraoperative frozen section evaluation. The RF generator BM-780 II was used with an ARROWtip™ microdissection needle (long shaft diameter 0.3 mm) in the monopolar cutting mode (Sutter® Medizintechnik, Freiburg/ Germany). The tumor could be precisely resected with the RF electrode, causing limited bleeding and minimal damage to immediately adjacent orbital structures.

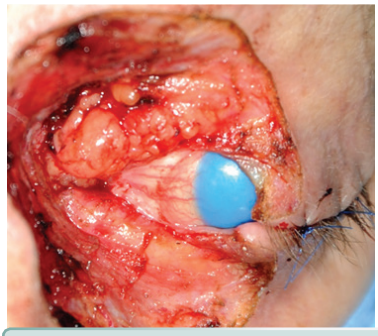

Fig 2: Intraoperative image after tumor resection with the RF device showing minimal thermal tissue damage.

Tissue samples were obtained from all resection borders showing clear surgical margins. In a second procedure, reconstruction of the tissue defect was performed using a pedicled paramedian forehead flap; pedicle division was performed three weeks after reconstruction. Hereby, good aesthetic and functional outcomes were achieved and post-operative ophthalmologic assessment showed no loss in eye movement.

Fig 3: Reconstruction of the large tissue defect with a forehead flap; image acquired after pedicle division.

Discussion: Currently, RF surgery is most commonly used in turbinate, soft palate and base of tongue procedures with low reported complication rates and favorable functional outcomes [3-5]. Here, we show its successful application for the resection of a large malignant facial lesion. Compared to "cold steel" resection, RF technology causes reduced intraoperative bleeding while also inducing less thermal damage to surrounding tissues than standard monopolar resection. Pressure-free resection with the RF electrode proved to be particularly beneficial within the soft facial tissues, enabling highly precise resection. For surgical resection with a scalpel, pressure application and traction are required. In the presented case, orbital structures could be preserved despite their immediate proximity to the tumor. A pedicled forehead flap was used for reconstruction. Pedicled flaps are generally robust thanks to reliable perfusion, and the forehead flap provides sufficient volume to cover large tissue defects with favorable aesthetic results.[6] Post-operative follow-up showed excellent flap vascularization after pedicle division and good aesthetic outcome.

In conclusion, the presented case suggests that RF surgery is a promising technology with easy handling and high device security for the resection of facial lesions. Postoperative functional and aesthetic outcomes were encouraging.

Dr. med. Timon Hussain
University Hospital Essen, Germany

Prof. Dr. Boris A. Stuck
University Hospital Essen, Germany

Correspondance: Dr. Timon Hussain, Dr. Boris A. Stuck,

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Featured Product

360321 – ARROWtip™ electrode

Qty.	REF	Description
1	360321	ARROWtip™ electrode, Ø 0,3 mm, total length 53 mm

Ø 0,3 mm

1:1

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	370138L	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	Divided Premium single-use patient plate adhesive – electrically conductive, measurements: 176 x 122 mm, unit: 5 x 10 pcs.

Unit settings / Other accessories
BM-780 II ARROW*tip*™ electrode : Monopolar CUT 1 Power adjustment: 3-4

SUTTER MEDIZINTECHNIK GMBH
TULLASTRASSE 87 · 79108 FREIBURG / GERMANY · TEL. +49 (0)761 51551-0 · FAX +49 (0)761 51551-30
WWW.SUTTER-MED.COM · WWW.SUTTER-MED.DE · E-MAIL : INFO@SUTTER-MED.DE