

Benefit of Bipolar Suction Forceps for Sphenopalatine Artery Cauterization in Patients with Posterior Epistaxis

Wirach Chitsuthipakorn

Cauterization of the sphenopalatine artery is an accepted technique in the treatment of posterior epistaxis. This report intends to discuss our experience in using bipolar suction forceps for a modified technique of endoscopic sphenopalatine artery cauterization. We have reported successful cauterization in a total of 24 cases of posterior epistaxis. Excellent results were achieved by both the appropriate technique and instrument employed. With a tool that is versatile to perform cauterization and suction, surgical time is significantly reduced while a high rate of success is achieved.



Fig. 1: Bipolar suction forceps (REF 70 08 64)

Introduction: The aim of posterior epistaxis treatment is to stop the bleeding through posterior packing or arterial ligation. This has become an accepted surgical procedure for the treatment of posterior epistaxis¹ since the introduction of endoscopic sphenopalatine artery ligation (ESPAL). The term “arterial ligation” may either signify ligation by arterial clip or cauterization with an electrocautery device. In our practice we prefer cauterization to ligation as it is simple, readily available, and less costly. Recently, our group has proposed a modified technique to employ the use of cauterization in the specific area. The cauterization takes place at the arterial trunk of the sphenopalatine artery near the foramen; hence the name Endoscopic Sphenopalatine Foramen Cauterization (ESFC). One key element of the technique is the use of bipolar forceps suitable for both, cauterization and suction. The procedure becomes easier and requires less surgical time. This report aims to describe our experience using the bipolar suction forceps (Fig. 1) in our modified technique.

Method: Patients were submitted to general anesthesia in a reverse 15-degree Trendelenburg position. After removal of nasal packing, cotton pads soaked in 1:2000 adrenaline were inserted for 10 minutes. 2 ml of lidocaine 1% with adrenaline 1:200000 were injected at the inferior turbinate and lateral nasal wall. The used cotton pads were then reapplied for another 5-10 minutes. After the pads were removed, middle meatal antrostomy was

performed on the level of the posterior wall of the maxillary sinus. The subperiosteal plane was raised until the ethmoidal crest could be identified. The ethmoidal crest was removed to expose the sphenopalatine artery and sphenopalatine foramen. The posterior wall of the maxillary sinus and the orbital process of palatine bone were removed at least 3 millimeters from the lateral nasal wall until the trunk of the artery became visible (Fig. 2). The electro-surgical generator was set up in bipolar mode and at 15 watts power. Bipolar suction forceps (Sutter, Freiburg, Germany) were used to coagulate the arterial trunk and immediately adjacent SPA branches medially until complete coagulation was achieved (Fig. 3). The resorbable packing was placed in the middle meatus against the mucosa of the palatine bone. The intervention was considered successful after the cessation of epistaxis for at least 3 months postoperatively.

Results: We have reported a total of 24 patients who underwent the ESFC using bipolar suction forceps². The average age was 54.3 years. The mean duration from the onset of the epistaxis to the operation was 7.8 days. The success rate was 100% and the median surgical time amounted to about 60 minutes (interquartile range, 55-67.5). No intraoperative complications have occurred in any of the cases. Three patients (12.5%) experienced numbness at the ipsilateral palate or teeth, but all were resolved spontaneously within two weeks after the operation.

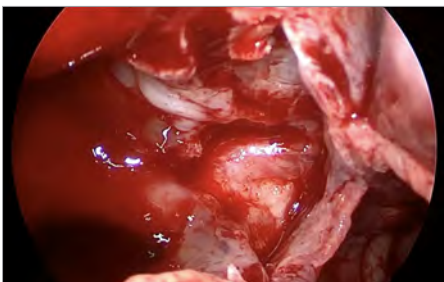


Fig. 2: The trunk of sphenopalatine artery in pterygopalatine fossa.

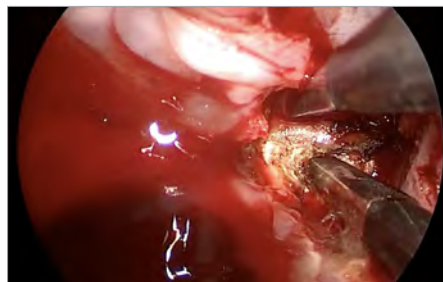


Fig. 3: Coagulation of sphenopalatine artery.



Fig. 4: CURIS® 4 MHz radiofrequency generator

Discussion: Bipolar suction forceps provide a fast and efficient way of performing ESFC. Simultaneous suction and coagulation eliminate the need to exchange instruments during surgery. Moreover, the fine tips (1.4mm) of the forceps increase the precision of cauterization. Even in cases with copious bleeding, the procedure can be performed without much difficulty, especially when bleeding and smoke are continuously removed during cauterization. Furthermore, large middle meatal antrostomy helps to improve surgical visibility. With a clear view and incorporated suction of the forceps, cauterization requires only about one to two minutes and result in shorter surgical time compared to figures quoted in literature.³ In summary, bipolar suction forceps are an essential tool for endoscopic cauterization of the sphenopalatine artery. They help the surgeon to manage the posterior epistaxis cases with confidence.



Wirach Chitsuthipakorn, MD
Rajavithi hospital
Bangkok, Thailand

Correspondence: Wirach Chitsuthipakorn, MD, Department of Otolaryngology, Rajavithi hospital, Rangsit University, 2 Phayathai Rd, Thung Phaya Thai, Ratchathewi, Bangkok 10400, Thailand. E-mail: drwirach@gmail.com

References: 1. Snyderman CH, Goldman SA, Carrau RL, Ferguson BJ, Grandis JR. Endoscopic sphenopalatine artery ligation is an effective method of treatment for posterior epistaxis. *Am J Rhinol.* 1999;13(2):137-140. 2. Chitsuthipakorn W, Seresirikachorn K, Kanjanawasee D, Snidvongs K. Endoscopic sphenopalatine foramen cauterization is an effective treatment modification of endoscopic sphenopalatine artery ligation for intractable posterior epistaxis. *Eur Arch Otorhinolaryngol.* Published online May 3, 2020. doi:10.1007/s00405-020-06005-8 3. Saraceni Neto P, Nunes LMA, Caparroz F de A, et al. Resection of the ethmoidal crest in sphenopalatine artery surgery. *Int Forum Allergy Rhinol.* 2017;7(1):87-90.

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Qty.	REF	Description
1	70 08 64	Bipolar suction forceps , straight, tips: 1.4 mm, total length: 23.0 cm, working length: 12.0 cm



[REF 87 00 10] **CURIS®** 4 MHz radiofrequency generator
basic set with single-use patient plates

Qty.	REF	Description
1	36 01 00-01	CURIS® 4 MHz radiofrequency generator (incl. mains cord, user manual and test protocol)
1	36 01 10	Foot switch two pedals for CURIS® (cut & coag), cable: 4 m
1	37 01 54L	Bipolar cable for CURIS®, length: 3 m (not shown)
1	36 07 04	Monopolar handpiece (pencil) cut & coag, shaft 2.4 mm, cable: 3 m (not shown)
1	36 02 38	Cable for single-use patient plates, length: 3 m (not shown)
1 (x50)	12 80H	Patient plates, single-use, 5 x 10 pcs. (not shown)

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Power adjustment: 15 to 25 watts

* Please consider that this information is not meant to serve as a detailed treatment guide. Always adjust according to patient and application.

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SUTTER MEDIZINTECHNIK GMBH
ALFRED-WALZ-STR. 22 · 79312 EMMENDINGEN/GERMANY
TEL. +49(0)7641-96256-0 · FAX +49(0)7641-96256-30
WWW.SUTTER-MED.COM · INFO@SUTTER-MED.DE