

Novel method for safe cauterisation of posterior epistaxis

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Abstract

Introduction: In epistaxis, anterior bleeding points are easily cauterised under direct vision, but those which occur in the posterior nose present a greater challenge. Standard cautery techniques limit simultaneous use of other equipment in the narrow posterior nose.

Methods: This article presents a novel device which combines suction, cautery stick and sheath in one single-handed implement for ease of use.

Conclusion: This novel, hand-held device for simultaneous suction and safe cautery of posterior epistaxis is both safe and cost-effective. It enables successful treatment by a single operator and is relatively easy to use by the non-skilled, junior trainee.

Key words: Epistaxis; Nose, Posterior; Cautery; Suction

Introduction

Epistaxis is a common problem and methods of treatment have evolved over time. In these days of the modern health service, with pressure on in-patient bed occupancy, techniques that allow rapid and effective treatment, and thus permit the patient to be discharged, are to be prized. Chemical cautery of the epistaxis bleeding points with silver nitrate is a common and effective method for arrest of bleeding, and can be performed by junior medical staff as definitive treatment. Anterior bleeding points are easily cauterised under direct vision, but those that occur in the posterior nose present a greater challenge.

Chemical cautery for posterior epistaxis is possible with silver nitrate sticks, but morbidity may include inadvertent chemical burns to the anterior nasal cavity, with subsequent adhesion formation. A very effective means of preventing this morbidity is to sheath the cautery stick during its passage through the anterior nose until it is positioned at the posterior bleeding site. This can be done with cut sections of nasogastric tube or suction catheter.^{1–3} Unfortunately, this inevitably increases the overall diameter of the cautery device and so limits simultaneous use of other equipment in the narrow posterior nose.

Adequate visualisation of the posterior nasal cavity is best achieved with a rigid endoscope, such as the Hopkins rod.⁴ Suction at the bleeding site is important to ensure a clear view of the bleeding point, in order to determine the correct site for cautery. Therefore, the requirement for an endoscope, a suction catheter and a sheathed chemical cautery stick make for a very crowded posterior nasal cavity, and thus great difficulty in effecting successful treatment. Also, simultaneous use of these three instruments requires more than one operator.

This article presents a novel device which combines suction, cautery stick and sheath in one single-handed

implement for ease of use. This technique allows successful cautery of posterior epistaxis by a single operator.

Device design and method

In epistaxis treatment, the cautery stick is frequently sheathed with a cut section of suction catheter.³ The proposed device utilises the suction catheter as both a suction device and a sheath. This avoids the requirement for three separate instruments by combining two into one, to be held in the operator's dominant hand. The Hopkins rod can then be manoeuvred separately, in the non-dominant hand.

A finger-operated suction device (e.g. the Kendall Gentle-Flo device; Tyco Healthcare, Dublin, Ireland) of size 16 Ch is cut at its distal end to a length of around 15 cm from the hub. At a position of approximately 3 cm from the hub, a small hole is cut into the upper surface of the tubing (Figure 1). A silver nitrate cautery stick is passed through this hole, and the distal end of the stick is bent to 90° (Figure 2). The hub of the finger-operated suction device can now be connected to the suction tubing.

The resulting combined device can be used with one hand to provide both suction at the site of bleeding and sheathed cautery.

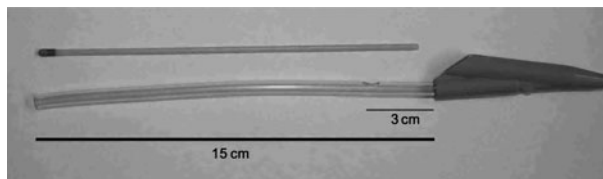


FIG. 1

Suction device cut to 15 cm with hole made at 3 cm.

From the Department of Otolaryngology, Leicester Royal Infirmary, UK.

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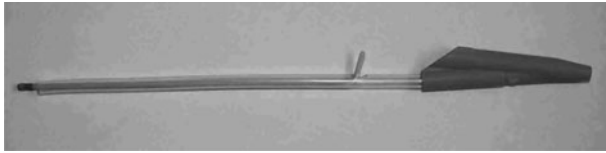


FIG. 2

The silver nitrate is advanced out of the sheath.

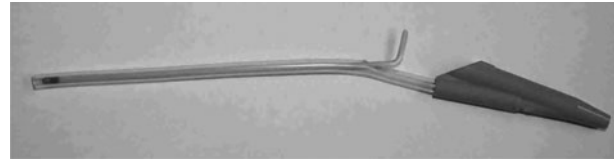


FIG. 3

The silver nitrate is sheathed inside the device.

TABLE I

SUCCESS OF USE OF THE DEVICE

Hospital	Pts treated (<i>n</i>)	Success of device (%)	Further intervention?	Junior trainee operators (<i>n</i>)
A	3	100	No	0
B	10	90	1 pt packed	1
C	4	100	No	2

Pts = patients

Case series

This technique has been used effectively by the author in 17 cases of posterior epistaxis, encountered at three different hospitals. Each patient was successfully cauterised, with only one case of re-bleeding which subsequently required packing. The device has been used successfully by junior trainees on three occasions (Table I). Epistaxis bleeding points were most frequently encountered on the posterior septum (14 of 17 patients); the remainder were on the lateral wall. The one case of re-bleeding was from a bleeding point in the region of the sphenopalatine artery.

Discussion

This novel device for accurate cauterisation of posterior epistaxis bleeding points affords a single operator easy management of this condition. Using the suction tubing for both suction and sheathing minimises instrumentation of the posterior nose. This allows more space for finding and cauterising the bleeding point, and lowers the risk of inadvertent trauma to the delicate mucosa. It also allows single-handed use. The operator's non-dominant hand holds the Hopkins rod endoscope, while the dominant hand holds the cautery device.

Once the posterior bleeding point is identified with the endoscope, the device can be introduced into the nose. Suction can be applied, if necessary, to remove trickles of blood from active bleeding sites, in order to allow more accurate inspection. When clear, the silver nitrate cautery stick can be advanced out of its sheath, and cautery applied (Figure 2). Once cautery has been completed, the cautery stick can be retracted back into its sheath and safely withdrawn from the nose (Figure 3). This method prevents inadvertent chemical burns to the anterior nasal mucosa, during both insertion and withdrawal of the cautery stick.²

The only drawback of this device is its inability to suck large volumes of blood. If large volumes are evacuated via this device, the passage of blood and clots up the suction tube, past the cautery stick, may activate and exhaust the silver nitrate on the tip, effectively 'washing' the chemical off the stick. This renders the device useless for cautery. Therefore, the nose needs to be evacuated of clots prior to the use of this device.

The author suggests that the most safe and cost-effective method of clot evacuation is for the patient to gently blow their nose. If this is not sufficient, suction can be applied using another short-cut, finger-operated suction tube (without a hole for the cautery stick). This soft suction tube is much less traumatic than the traditional Zoellner or Yankauer suckers. Once the nose is clear of clots and most of the blood, the Hopkins rod can be passed and the posterior nose inspected. The inevitable, persistent slow trickle of blood from the posterior bleeding point can then be tackled easily with the hand-held device, as a small volume of blood passing up the suction tube tends not to deplete the silver nitrate chemical.

If brisk bleeding continues, a topical vasoconstrictor may prove useful (e.g. adrenaline-soaked gauze). If bleeding still persists, then traditional posterior nasal packing may be required.

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Address for correspondence:
Mr Owen Judd,
Specialist Registrar in ENT,
Leicester Royal Infirmary,
Leicester Leicestershire, UK.

Fax: +44 1162586082
E-mail: owenjudd@doctors.org.uk

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