Endoscopic Coagulation of Sphenopalatine Artery for Posterior Epistaxis

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ABSTRACT

Objective: To present our experience of endoscopic electrocoagulation of sphenopalatine artery for persistent posterior epistaxis despite conservative measures.

Methods: Seven endoscopic electrocoagulation of sphenopalatine artery was done for four patients from early 2001 till the present for recalcitrant epistaxis despite conservative treatment. The basic principle of this surgical method is to identify the sphenopalatine artery via endonasal endoscopy and to electrocoagulate the vessel.

Results: Seven procedures were carried out in four patients. Endoscopic coagulation of sphenopalatine artery was carried out unilaterally in one patient and bilaterally in three patients. The artery was identified in all cases with successful post-operative results.

Conclusion: This method is an effective surgical technique for persistent posterior epistaxis with low morbidity.

Keywords: epistaxis, endoscopic coagulation of sphenopalatine artery

INTRODUCTION

The management of epistaxis has always revolved around surgical intervention when conservative measures fail. The traditional surgical approaches were ligation of internal maxillary artery via Caldwell-Luc, ligation of ethmoidal arteries via Howarth’s incision and even external carotid artery ligation in severe cases. These were associated with significant morbidity. The use of endoscopes has revolutionised many nasal surgeries including the management of epistaxis. Posterior epistaxis can be successfully treated with endoscopic coagulation of sphenopalatine artery with successful results and minimal complication.
RESULTS

Seven endoscopic coagulation of sphenopalatine artery was carried out in four patients. This procedure was carried bilaterally in three patients and unilaterally in one patient (Table I). All four patients were middle-aged or elderly: three of them were in their 40s (male) and while the other was 72 years old (female). They presented with severe posterior epistaxis. The etiology of epistaxis differed. One of them had marked hypertension despite medication while the other had a transseptal transphenoidal hypophysectomy performed for pituitary tumour six weeks prior to admission. The other two patients’ epistaxis was idiopathic. The 72-year-old patient was well with conservative measures; however her epistaxis recurred soon after discharge. The other three patients had persistent epistaxis despite conservative measures and hypertension controlled with medication. Post operatively, all four patients’ epistaxis was controlled. They were discharged home and followed up in the clinic. On follow-up, they underwent endoscopic nasal examination. No significant complication or morbidity has been noted till the present.

DISCUSSION

Epistaxis still remains one of the common ENT emergencies. Epistaxis can be fatal, thus the urgency in management and the use of surgical modalities in persistent epistaxis.

The nasal cavity receives blood supply from both external carotid and internal carotid artery. The anterior and posterior ethmoidal artery from internal carotid and branches from sphenopalatine artery from external carotid artery have numerous anastomosis and form a rich vascular plexus in the submucosal region. The etiology of epistaxis varies. Although the majority of epistaxis is of idiopathic origin, the other common causes are malignancies e.g. nasopharyngeal carcinoma, post trauma and secondary to coagulopathies.

Conservative management, which still remains the mainstay of treatment, is effective in the majority of cases. Once anaemia and coagulopathies are identified and corrected if present, nasal packing is usually effective in arresting epistaxis. Anterior epistaxis can be managed with anterior nasal packing with Merocel or BIPP. Posterior epistaxis is usually controlled with Folleys catheter with its balloon inflated with 12-15 ml of air.

However, these measures are often very troublesome to patients and can lead to prolonged hospital stay\(^{12,2}\).

Surgical intervention to arrest epistaxis has a vital role in persistent epistaxis despite conservative measures. Traditionally, internal maxillary artery ligation via transantral approach, ligation of ethmoidal vessels or external carotid artery are performed. Although effective, these procedures are associated with morbidity. Transantral ligation of maxillary artery via Caldwell-Luc approach can damage the infraorbital nerve, dental roots and predispose to oro-antral fistula\(^{15}\). Howart’s approach leaves a scar and can cause damage to the orbit, lacrimal sac and occasionally, even injure the optic nerve.

Ligation of external carotid artery can be complicated by injury to the vagus and glossopharyngeal nerve. This open procedure leaves a scar and the internal carotid artery can be accidentally ligated by an inexperienced surgeon with disastrous results.

In recent years, the advent of endonasal endoscopy with a better understanding of nasal anatomy has facilitated direct approach to the sphenopalatine artery\(^{21}\). This avoids the morbidity associated with the more traditional surgical methods, which can rise up to 25%\(^{16}\).

In our series, one patient had unilateral coagulation of sphenopalatine artery as intraoperative endoscopic examination revealed bleeding from unilateral sphenoid recess while in the other three patients, the bleeding was from both sides of posterior choana, thus bilateral coagulation of sphenopalatine artery was carried out.

Endoscopic coagulation of sphenopalatine artery has been used effectively in persistent epistaxis with minimal morbidity and complication\(^{14}\).
The submucoperiosteal dissection reduces bleeding, shortens operating time and allows relatively easy identification of sphenopalatine artery. This allows direct positive control over the major vessel supplying the posterior nasal cavity. The length of hospitalisation was reduced to two days postoperatively. In our experience, with conservative measures, a further five to seven days stay might have been required.

**CONCLUSION**

Endonasal endoscopic coagulation of sphenopalatine artery is a safe and efficient method of controlling persistent posterior epistaxis with minimal complication.

**REFERENCES**


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**8th World Down Syndrome Congress**

Date: 1 – 5 October 2003  
Venue: Suntec Singapore  
Host Organisation: Down Syndrome Association (Singapore)  
Co-sponsor: KK Women's and Children's Hospital Singapore  
Participating Institution: Down Syndrome Medical Interest Group  
Website: [www.downsyndrome-singapore.org](http://www.downsyndrome-singapore.org)

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