

Endoscopic sphenopalatine artery coagulation for posterior epistaxis: A case report and review of literature

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Abstract

Posterior epistaxis is a potentially life threatening condition and remains a challenging problem for otorhinolaryngologists. We report a case of posterior epistaxis managed with endoscopic sphenopalatine artery coagulation. To the best of our knowledge, this is the first case report from Nepal. A brief review of literature is also included.

This work was done in Ganesh Man Singh Memorial Academy of ENT and Head and Neck Studies, Maharajjung, Kathmandu, Nepal.

INTRODUCTION

Epistaxis is one of the most common otorhinolaryngologic emergencies having sudden onset.^{1,2} Most cases do not have an easily identifiable cause.³ Epistaxis is managed by cautery (chemical or electric), anterior nasal packing (ANP), posterior nasal packing (PNP), arterial ligation or by embolisation technique.⁴ Apart from the considerable discomfort that nasal packing causes to the patient, it is also known to cause hypoxia and airway compromise.⁵ The mucosal trauma and necrosis in the nasal cavity can lead to a vicious cycle of re-bleeding and re-packing. Because of these problems, angiography with embolisation and arterial electro-coagulation or ligation has been emphasized as an alternative to nasal packing.

Traditional techniques of arterial ligation such as transantral ligation of the internal maxillary artery or ligation of the external carotid artery have been associated with the failure rate of as high as 10-15%.⁶ The reasons for failure include cross anastomosis, the dominant contralateral internal maxillary artery and also failure to identify and ligate all branches.

In general, the more proximal the ligation and the farther from the end artery, the greater is the failure rate because of the anastomosis between circulations.⁷ This concept of ligation "as close as possible to the bleeding point" enables a ligation hierarchy to be developed with the sphenopalatine artery being the ligation of choice i.e. most distal, followed

by internal maxillary artery and external carotid artery.

CASE REPORT

A 36 years old male presented to Ganesh Man Singh Memorial Academy of ENT and Head and Neck Studies, Kathmandu with the history of bleeding from right nasal cavity for 1 day. There was no history of precipitating factors of bleeding nose. There was history of similar illness in the past controlled by anterior nasal packing (ANP). He consumes alcohol occasionally but does not smoke. One examination his vitals were stable and anterior rhinoscopy revealed bleeding both anteriorly and posteriorly (exact site of bleeding could not be localized). His routine blood examination including coagulation profile and liver function test were normal. The patient underwent anterior nasal packing despite which on next day he again bleeds. Again ANP was done but the patient was bleeding from posterior part which was trickling from right side of posterior pharyngeal wall. He underwent emergency endoscopic sphenopalatine artery bipolar coagulation on right side under general anaesthesia. Loose anterior nasal packing with Bismuth Iodoform Paraffin Paste was done and removed on first post operative day. The patient was discharged from hospital on second postoperative day and there was no further episode of bleeding of nose till six months follow up.

DISCUSSION

The sphenopalatine artery, one of the terminal branches of maxillary artery, enters the nose via sphenopalatine foramen and supplies approximately 90% of the nasal mucosa.⁸ Traditionally, internal maxillary artery ligation via transantral approach, ligation of ethmoidal vessels or

external carotid artery are performed. Transantral ligation of maxillary artery may cause damage to the nasolacrimal duct or infraorbital nerve and predispose to oro-antral fistula.^{9,10} Ligation of external carotid artery can be complicated by injury to the vagus and hypoglossal nerve and failure rate due to extensive anastomosis distal to ligation.⁷

In 1976, Prades described a microsurgical approach for ligating the sphenopalatine artery at its exit foramen, as a surgical landmark for vidian nerve¹¹ and in 1992 Budrovich and Saetti described microscopic and endonasal endoscopic approaches for sphenopalatine artery ligation to treat epistaxis.¹² Since that time, there have been a number of case series reporting high success rates and varying techniques of ligation.^{9,13,14} But, to the author's best knowledge, there has been no case report from Nepal regarding sphenopalatine artery coagulation till date.

In recent years, the advent of endonasal endoscopy with a better understanding of nasal anatomy has facilitated direct approach to the sphenopalatine artery.¹⁴ This avoids the morbidity associated with the more traditional surgical methods, which can rise upto 25%.¹⁵

Kumar and colleagues reviewed the available evidence for the efficacies of sphenopalatine artery occlusion surgery to treat epistaxis.¹⁵ Eleven studies were identified and the efficacy of the operation to stop epistaxis was found to be between 92-100%.¹⁵ In our case also, the patient is completely well with no history of re-bleeding till the preparation of this manuscript (6 months).

Sometimes when the side of bleeding from nasal cavity is not ascertained, bilateral sphenopalatine artery coagulation may be needed. In our case, the bleeding side was ascertained and the sphenopalatine artery was coagulated. The hospital stay was short (only one day) after the procedure with no complications to the patient.

CONCLUSION

Endoscopic coagulation of the sphenopalatine artery is a simple and safe alternative method of controlling posterior epistaxis in expert hand.

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