

# Nasopharyngeal cavernous hemangioma: an approach to remove

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## Introduction

Few nasal cavernous haemangiomas have been previously reported, only nasopharyngeal cavernous hemangiomas have been reported; both arise from the lateral wall of the nasopharynx. We reported the case of a 27-year-old woman who had repeated severe epistaxis and nasal obstruction of 6 months duration. Computed tomography showed a large vascular nasopharyngeal mass. Complete endoscopic removal of the mass that was found to arise from the posterior end of the nasal septum was achieved without complications. Histopathology showed a cavernous hemangioma. Epistaxis completely stopped throughout the 12-month follow-up. This is the first work to describe the management of nasopharyngeal cavernous hemangiomas originating from the posterior end of the nasal septum. Transnasal endoscopic approach permits adequate exposure of the lesion, control of bleeding, and complete hemangioma removal.

## Keywords:

cavernous haemangioma, computed tomography, epistaxis, FESS, nasal septum, nasopharynx, nose

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## Introduction

Hemangioma is a benign vascular tumor that can be histopathologically categorized into the common capillary type, mixed types, and the less common cavernous type [1–3]. Although hemangiomas are common in the head and neck, they are rare in the nasal cavity and paranasal sinuses [2].

Few cavernous haemangiomas have been previously reported to arise from the nasal cavity, namely from the inferior turbinate [3], middle turbinate [4], middle meatus [5], and the vomer [6]. Only two nasopharyngeal cavernous hemangiomas have been previously reported, both arise from the lateral wall of the nasopharynx [7,8].

To the best of our knowledge, nasopharyngeal cavernous haemangiomas (CAs) that originate from the posterior end of the nasal septum has not been previously reported in the literature. Thus, this study aimed to describe hemangioma with such new origin in detail of its diagnosis and treatment.

## Case report

A 27-year-old woman presented with a history of recurrent and conspicuous left-sided epistaxis and bilateral nasal obstruction of 6 months duration. Repeated anterior nasal packing and cauterization of the anterior septum were done elsewhere failed to control the epistaxis. The hemoglobin concentration

was 7.8 g at presentation with normal coagulation profile. Endoscopic nasal examination was difficult and not informative as blood clots, crusts, and active bleeding obscured the view.

Contrast-enhanced computed tomography (CT) showed a heterogeneous well-defined large soft tissue density nasopharyngeal mass completely filling the nasopharynx with areas of calcification (Figs 1 and 2). The exact origin of the mass could not be identified because of its large size.

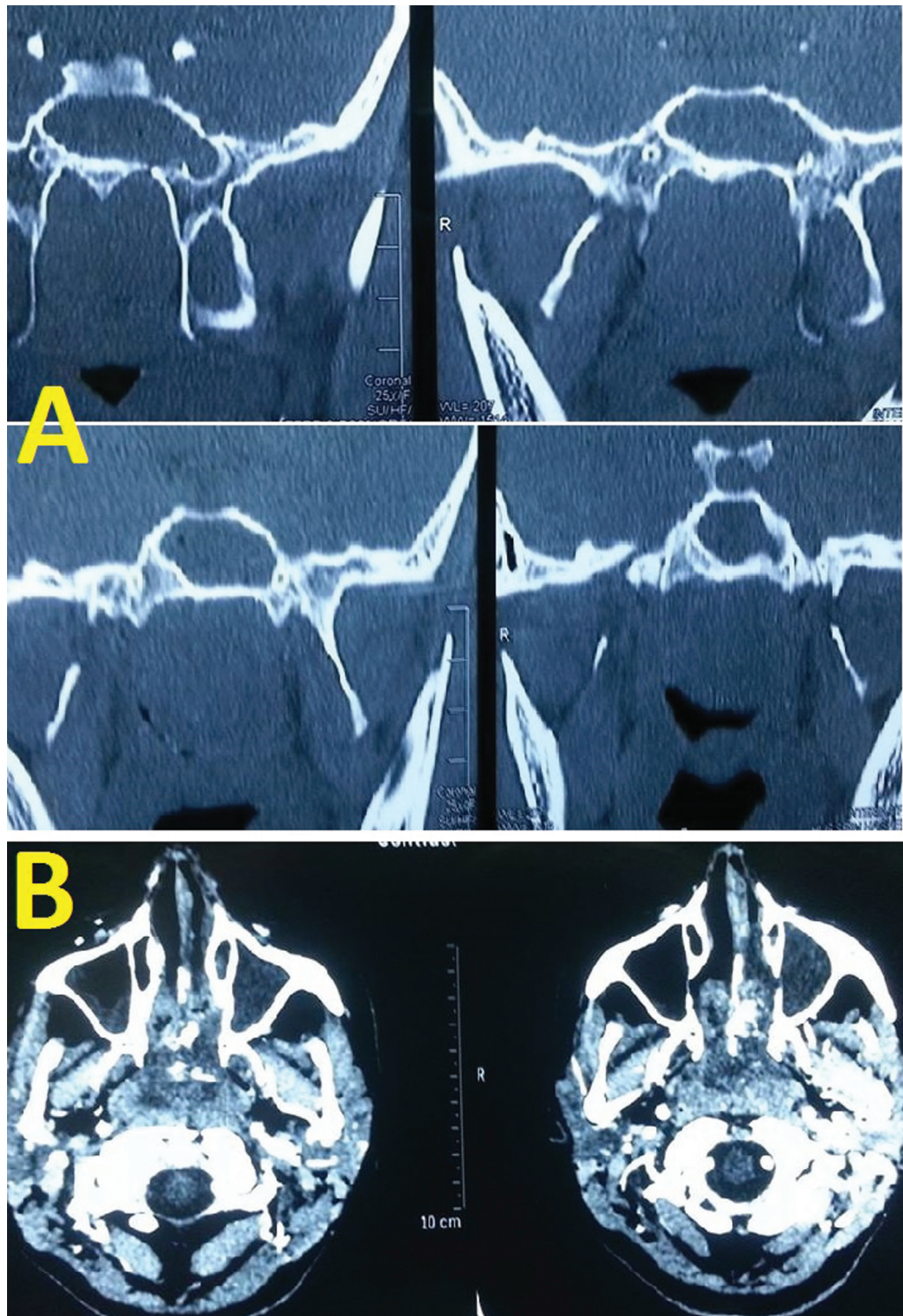
Diagnostic angiography showed leakage of the contrast media of both sphenopalatine arteries but no embolization was done.

After informed written consent was obtained, surgical intervention was undertaken under general hypotensive anesthesia. Transnasal endoscopic sinus surgery was used.

After suction of blood clots, a reddish highly vascular mass, bleeding extensively on touch completely filling the nasopharynx was found. A septal origin of the mass was proposed as it could not be pushed posteriorly. Endoscopic cauterization of the left sphenopalatine

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Figure 1

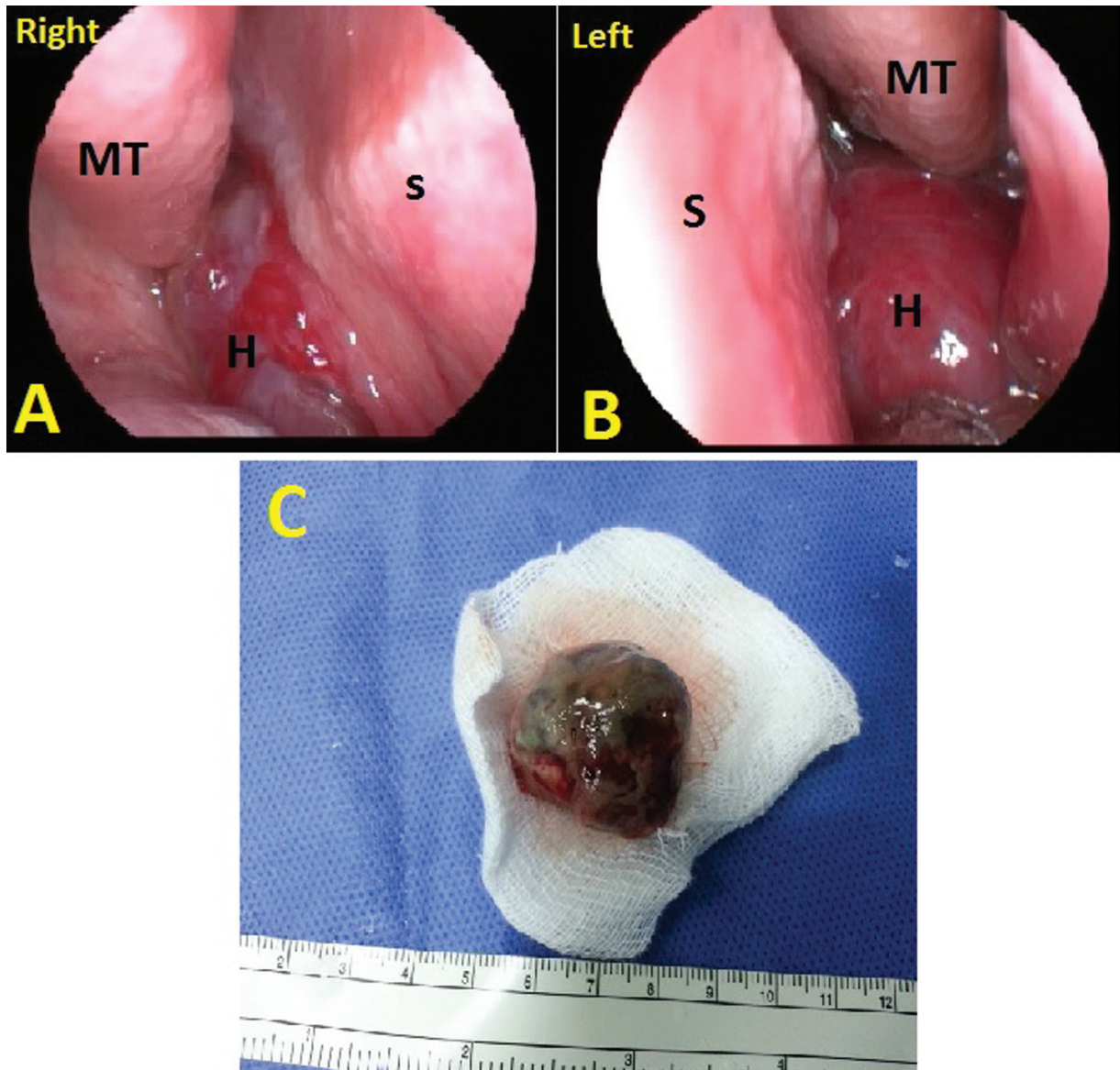


Computed tomography. (a) coronal views and (b) axial views show large soft tissue density nasopharyngeal mass completely filling the nasopharynx with areas of calcification (b).

artery was achieved after raising a flap through a widened middle meatal antrostomy. This resulted in partial but not complete decrease in the amount of bleeding from the mass. Surface bipolar cauterization of the mass was tried but did not control the bleeding. A right-sided posterior septal incision was done 1 cm anterior to the mass. Septal flap was elevated and

submucosal removal of the bone was done till the mass was reached. Bipolar cauterization of the posterior septum submucosally resulted in devascularization of the mass and stoppage of bleeding. The mass was separated completely and removed through the oral cavity. The posterior end of the septum was cauterized and removed by the

Figure 2



(a) Intraoperative endoscopic view showed the nasopharyngeal hemangioma completely closing the right choana. (b) Intraoperative endoscopic view shows the hemangioma completely closing the left choana and encroaching on the left nasal cavity. (c) The cavernous hemangioma specimen after excision.

backbiter. After removal of the mass, there was no bleeding and no packs were used. The patient was discharged on the second postoperative day and was prescribed saline nasal irrigation.

Histopathological examination proved that the lesion was a cavernous hemangioma. Epistaxis completely stopped and nasal obstruction improved. There was no recurrence of the lesion throughout the 12-month follow-up.

### Discussion

Cavernous hemangioma is usually composed of large endothelium-lined vascular spaces with unclear pathogenesis and without degenerative potential.

When hemangiomas arise in the nasal cavity, they are predominantly of the capillary type and arise from the anterior part of the nasal septum in about 80% of the cases, namely at the Little's area or Kiesselbach's triangle [9]

In the current case report, we described the first nasopharyngeal hemangioma with attachment to the posterior end of the nasal septum. Only two nasopharyngeal hemangiomas have been previously reported [7,8] and both originated from the left nasopharyngeal wall (Table 1).

The current case presented with left recurrent severe epistaxis and bilateral nasal obstruction, while the two

**Table 1** Reported nasopharyngeal hemangiomas

Number and site	References	Age (years)	Sex	Symptoms	Signs	CT	Treatment	Recurrence
One nasopharyngeal	Khil <i>et al.</i> , 2013 [8]	45	Male	Intermittent left nasal obstruction left hearing loss	Protruding reddish lesion in the left nasal cavity	Oval well-defined heterogeneously enhanced mass (3×3.5×5.9 cm) in left nasopharynx and left oropharynx	Embolization Then endoscopic excision	7 days follow-up
One nasopharyngeal	Testa <i>et al.</i> , 2015 [7]	26	Female	Recurrent sever left epistaxis +left nasal obstruction	Cystic mass of left wall of nasopharynx, covered by intact mucosa.	Homogeneous enhancement and lamella calcifications	Endoscopic excision No SPA ligation	No, 24 months follow-up
One nasopharyngeal from posterior end of septum on left side	This study	27	Female	Bilateral nasal obstruction, left recurrent sever epistaxis, anemia	Reddish highly vascular mass, bleeding extensively on touch and completely filling the nasopharynx	Heterogeneous well-defined mass completely filling the nasopharynx with areas of calcification	Endoscopic excision after cauterization of left SPA and its vascular supply at posterior end of septum on left side	No, 12 months

CT, computed tomography; SPA, sphenopalatine artery.

previously nasopharyngeal hemangiomas complained of left nasal obstruction with severe left epistaxis. So cavernous hemangiomas should be suspected in the differential diagnosis of severe epistaxis and that of the nasopharyngeal mass.

The radiological features, however, do not always give the differential diagnosis with the most common epithelial tumors [10]. Thrombi within the vascular spaces may occasionally calcify and are identified at CT as phleboliths [5]. Evidence of phleboliths and calcifications may suggest the presence of a cavernous hemangioma. However, it is not always present, so the definitive diagnosis is histological. In our patient, calcifications were seen in her CT, together with the severe bleeding suggested the lesion to be a hemangioma and no biopsy was taken before the definitive surgery similar to the case reported by Testa *et al.* [7].

Punch biopsy was not done because the mass was covered by mucosa and was highly vascular and bleed severely on touch. This is in agreement with the previously reported nasopharyngeal cavernous hemangiomas [7,8] (Table 1).

Management of nasal hemangioma involves complete resection of the tumor with a part of the underlying mucosa and perichondrium and ligation or cautery to the feeding vessels [10]. This was applied in the current case.

An alternative form of management of these tumors, providing there is favorable anatomy, is embolization of the haemangiomas, which is, however, only possible if appropriate angiographic facilities are available.

Angiography needs to detect the precise arterial supply of the lesion and there is always a possibility of complication such as visual affection. Radiation therapy is reserved for arresting the progression of unresectable or inaccessible lesions [4]

In the absence of risk of malignant transformation, the transnasal endoscopic approach [functional endoscopic sinus surgery (FESS)] has been proposed as the technique of choice for the complete removal of the tumor in cases of haemangiomas confined to the nasal cavity and extended into the ethmoid to the sphenoid sinus [1]. So endoscopic excision was the chosen treatment in current cases and previously reported nasopharyngeal carcinomas [7,8].

Follow-up is necessary in order to identify recurrences, which may occur late.

The unusual site of origin and unspecific clinical appearance can make the diagnosis and treatment of a cavernous hemangioma of the nasopharynx difficult, but it should be considered in such cases particularly those complained of epistaxis.

In the present case, the minimally invasive transnasal endoscopic technique has proven to be reliable in terms of adequate exposure and visualization of the lesion, control of bleeding, and complete removal of the tumor. A similar approach was used effectively by Testa *et al.* [7] and Khil *et al.* [8].

Although some authors used preoperative embolization [8], embolization was not done in the

current case. However, control of bleeding and complete removal of the mass was achieved during the surgery. This was helped by sphenopalatine artery ligation and submucosal dissection of the posterior septum till the origin of the lesion was reached, cauterized, and separated.

## Conclusion

To the best of our knowledge, this is the first description of nasopharyngeal cavernous hemangioma originating from the posterior end of the nasal septum. Transnasal endoscopic technique was a reliable safe and effective approach for complete hemangioma removal with control of bleeding.

## Bullet point summary

- (1) A female case is presented of repeated severe epistaxis and nasal obstruction was reported to have nasopharyngeal cavernous hemangioma originating from the posterior end of the nasal septum.
- (2) Transnasal endoscopic approach permits adequate exposure and complete excision of the hemangioma.
- (3) Cavernous hemangioma should be considered in the differential diagnosis of the nasopharyngeal mass and in cases with repeated epistaxis.

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Mohammad Waheed El-Anwar reports the case, reviews literature, shares in preparation of the patients for surgery, shares in surgery, interpretation of collected data, writes the manuscript, and helps in preparing figures and tables.

Ismail Elnashar reports the case, performs surgery, interpretation of collected data, revises the manuscript, and helps in preparing figures and tables. Ezzeddin Elsheikh reports the case, interpretation of collected data, and revises the written manuscript.

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## Conflicts of interest

There are no conflicts of interest.

## References

- 1 Bakhos D, Lescanne E, Legeais M, Beutter P, Morinière S. Cavernous hemangioma of the nasal cavity. *Ann Otolaryngol Chir Cervicofac* 2008; 125:94–97.
- 2 Batsakis JG, Rice DH. The pathology of head and neck tumors: vasoformative tumors, part 9A. *Head Neck Surg* 1981; 3:231–239.
- 3 Akiner MN, Akturk MT, Demirtas M, Atmis EO. Intraosseous cavernous hemangioma of inferior turbinate: a rare case report. *Case Rep Otolaryngol* 2011; 2011:431365.
- 4 Caylakli F, Cagici AC, Hürçan C, Bal N, Kizilkiliç O, Kiroglu F. Cavernous hemangioma of the middle turbinate: a case report. *Ear Nose Throat J* 2008; 87:391–393.
- 5 Archontaki M, Stamou AK, Hajjiannou JK, Kalomenopoulou M, Korkolis DP, Kyrmizakis DE. Cavernous haemangioma of the left nasal cavity. *Acta Otorhinolaryngol Ital* 2008; 28:309–311.
- 6 Nakahira M, Kishimoto S, Miura T, Saito H. Intraosseous hemangioma of the vomer: a case report. *Am J Rhinol* 1997; 11:473–477.
- 7 Testa D, Motta S, Massimilla EA, Tafuri D, Russo D, Russo A, *et al.* Cavernous hemangioma of rhinopharynx: our experience and review of literature. *Open Med* 2015; 10:523–528.
- 8 Khil EK, Hong HS, Park JS, Chang KH, Kim HK, Byun JY. Nasopharyngeal hemangioma in adult: a case report. *J Korean Soc Radiol* 2013; 68:391–395.
- 9 Amato B, Compagna R, Della Corte GA, Martino G, Bianco T, Coretti G, *et al.* Peripheral blood mono-nuclear cells implantation in patients with peripheral arterial disease: a pilot study for clinical and biochemical outcome of neoangiogenesis. *BMC Surg* 2012; 12:S1.
- 10 Hyung JK, Jung HK, Jae HK, Eui GH. Bone erosion caused by sinonasal cavernous hemangioma: CT finding in two patients. *Am Soc Neuroradiol* 1994; 16:1176–1178.