



LOBULAR CAPILLARY HEMANGIOMA OF THE NASAL CAVITY: A RETROSPECTIVE AND PROSPECTIVE STUDY

Pathology

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ABSTRACT

Background: Lobular capillary hemangioma of the nasal cavity is an uncommon benign vascular tumor of unknown etiology. There have been only very few studies in the literature.

Aims: This study aimed to analyze the clinical features, radiological findings, treatment modalities, and outcome of lobular capillary hemangioma.

Materials and Methods: Retrospective and prospective chart reviews were performed on patients who were diagnosed with lobular capillary hemangioma of the nasal cavity from January 2014 to November 2016. Data retrieved included age, gender, clinical symptoms, computed tomography (CT) findings, treatment modalities, and outcome for further analysis.

Results: Of the 30 patients identified, there were ten males and twenty females ranging from 17 to 86 years of age, with a mean age of 43.8 ± 20.2 . Epistaxis was the most common presenting symptom. All patients presented a unilateral nasal lobular capillary hemangioma. The most commonly affected site was the anterior nasal septum, followed by the inferior turbinate, vestibule, middle turbinate, and posterior nasal septum. All lesions presented as soft tissue density without bony erosions under CT examination. Endoscopic excisional surgery (n=24) or classical local excision (n=6) was performed for complete removal of the hemangioma. No evidence of recurrence was observed with 6 to 12 months of follow-up.

Conclusion: Lobular capillary hemangioma of the nasal cavity was usually found to occur in anterior septum with epistaxis. Complete excision with endoscopic surgery or classical local excision was recommended and recurrence can be prevented.

KEYWORDS

Endoscopic surgery, epistaxis, lobular capillary hemangioma, nasal cavity.

INTRODUCTION

Hemangiomas are benign tumors made up of blood vessels that most commonly occur in the skin, mucosa, and internal organs such as the brain and liver. Hemangiomas are categorized to capillary, cavernous and mixed types according to the histopathological features. Lobular capillary hemangioma, also known as pyogenic granuloma, is uncommonly seen localized in the nasal cavity¹. Current information on this disease is mostly derived from case series of western populations and little is known about this disease in Asians. In the present study, 30 patients diagnosed and treated with lobular capillary hemangioma of the nasal cavity were reviewed. The clinical features, radiological findings, treatment modalities, and outcomes were analyzed.

MATERIAL AND METHODS

A retrospective and prospective chart review of patients who were diagnosed with lobular capillary hemangioma of the nasal cavity between January 2012 to November 2016.

Patients who had undergone biopsy procedures without surgical excision were excluded from this study. Information on patient age, gender, clinical symptoms, CT findings, treatment modalities, and outcomes was collected for analysis.

RESULTS

There were 30 patients enrolled in this study, including ten males (33.3%) and twenty females (66.7%) with a male:female ratio of 1:2. The mean age was 43.8 ± 20.2 , ranging from 17 to 86.

Approximately 73.3% (22/30) of the patients were between 20 and 60 years of age. Twenty four patients had no underlying diseases, whereas the remaining six had diabetes mellitus, hypertension, and rheumatoid arthritis.

All patients presented with unilateral lobular capillary hemangioma of the nasal cavity with 60.0% (18/30) of them lesions on the left side and 40.0% (12/30) on the right.

The presented symptoms included epistaxis (28/30, 93.3%), followed by nasal obstruction (24/30, 80.0%), rhinorrhea (16/30, 53.3%),

protruding tumor (6/30, 20.0%), facial pain (4/30; 13.3%), and headache (2/30; 6.7%). The mean duration of symptoms prior to admission was 3.4 ± 3.9 months (ranging from 2 weeks to 12 months). The most common site of the lesion was the anterior nasal septum (12/30, 40.0%), followed by the inferior turbinate (8/30, 26.6%), nasal vestibule (6/30, 20.0%), posterior nasal septum (2/30, 6.7%), and middle turbinate (2/30, 6.7%).

Rigid endoscopy found a single dark-red to purple polypoid mass which bled easily when the lesion was touched by a telescope. On CT examinations, the lesions were all characterized by the presence of well-defined, enhancing soft tissue density without bony erosions (Figure 1). Maxillary sinusitis was found in four patients (13.3%). Among them, two had a lobular capillary hemangioma over the middle turbinate and the other two had a hemangioma over the inferior turbinate. All these patients underwent surgical removal of the hemangioma. While six patients with a lesion over the nasal vestibule underwent classical local excision, the others underwent endoscopic excisional surgery. There were no postoperative complications observed. The follow-up periods ranged from 6 to 12 months. No recurrence was observed in the present case series.



Fig 1:CT scan of nose and paranasal sinuses showing hyper dense lesion in the right middle meatus.

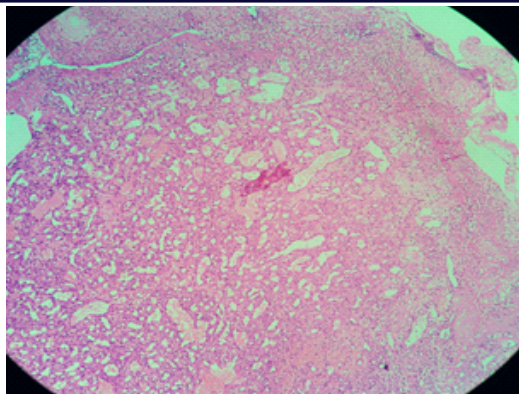


Figure 2 H&E sections from nasal polyp show capillary hemangioma features.

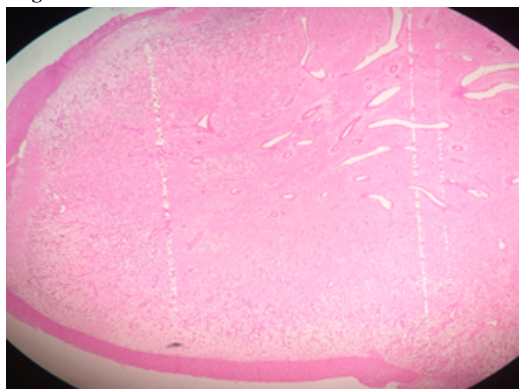


Figure 3 H&E sections from nasal polyp show capillary hemangioma features.

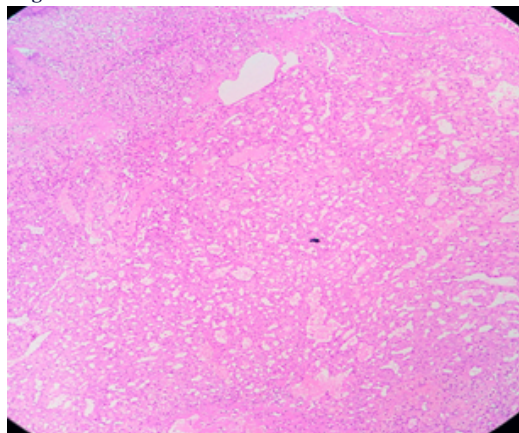


Figure 4 H&E sections from nasal polyp show capillary hemangioma features.

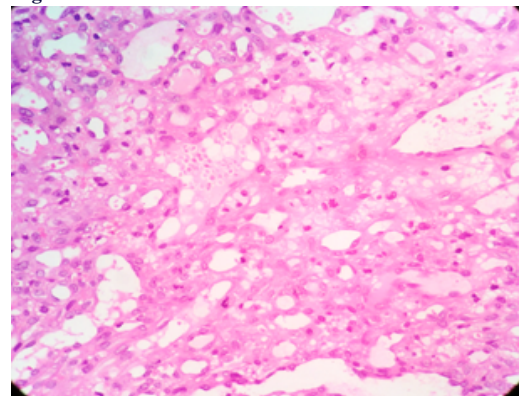


Figure 5 H&E sections from nasal polyp show capillary hemangioma features.

DISCUSSION

Lobular capillary hemangioma was first described as human botryomycosis by Poncet and Dor in 1897⁷. In the practice of otolaryngology, lobular capillary hemangioma is a benign vascular lesion commonly occurring in the skin and mucosa of the oral cavity, and is less commonly found in the nasal cavity. Proposed contributing factors for the development of lobular capillary hemangioma include trauma, hormones, viral oncogenes, arteriovenous malformations, and angiogenic growth factors⁵. In the present series, underlying rheumatoid arthritis in one patient was considered to be the triggering factor of the nasal lobular capillary hemangioma. The increased blood levels of angiogenic growth factors in rheumatoid arthritis patients, namely vascular endothelial growth factor (VEGF) and basic fibroblast growth factor (b-FGF), may be critical in triggering the formation of hemangiomas⁵.

According to the literature, lobular capillary hemangioma of the nasal cavity show a female predominance, and most commonly occur in the third decade of life⁷. In our series, although two-thirds of the patients were female, no peak incidence was found in the third decade. Nearly 75% of the patients in this study were between 20 and 60 years of age.

Epistaxis was the most common presenting symptom in this series, followed by other intra-nasal symptoms including nasal obstruction and rhinorrhea. Extra-nasal symptoms such as facial pain and headache were less commonly observed. Puxeddu et al.⁶ reported that the most common site of a nasal lobular capillary hemangioma is the nasal septum (55.0%), followed by the nasal vestibule (17.5%), inferior turbinate (12.5%), middle turbinate (7.5%), and uncinate process (7.5%). This is consistent with our results showing that the nasal septum, especially the anterior region, was the most frequent occurring site.

In view of the similar clinical features of the intranasal mass, the differential diagnosis should include inflammatory lesions such as sarcoid, Wegener's granulomatosis, neoplastic lesions such as sinonasal papillomas, hemangiopericytoma, histiocytoma, leiomyoma, osteoma, squamous cell carcinoma, adenocarcinoma, esthesioneuroblastoma, angiosarcoma, and even foreign bodies⁷. CT examination or magnetic resonance imaging (MRI) can be applied to exclude bony erosions or considerations of malignant formations. In this study, all lesions presented as enhancing soft tissue without bony erosions under CT examination. The tumor may also affect the patency of the osteomeatal complex, leading to poor sinus drainage and maxillary sinusitis.

Surgical excision is the preferred treatment for lobular capillary hemangioma of the nasal cavity. The surgical methods used for this lesion include electrocoagulation, cryotherapy, LASER, excisional surgery, and excisional surgery following angiography with embolization^{6,8}. In our study, all patients underwent excisional surgery with classical local excision or endoscopic excisional surgery without preoperative embolization. The recurrence rate for hemangioma ranges from 0% to 42.0%, depending on the case series and the duration of follow-up^{6,8,9}.

On the basis of 6 to 12 months of follow up, no complication or recurrence was found in our series.

CONCLUSION

The present study found that lobular capillary hemangioma of the nasal cavity is an uncommon disease in the practice of otolaryngology, and the incidence is higher among females than males. When lobular capillary hemangiomas occurred in the nasal cavity, epistaxis and nasal obstruction were the common initial presenting symptoms, and the anterior region of the nasal septum was the most frequent lesion site. According to the CT findings, all patients presented with well-defined, enhancing soft tissue density lesions without bony erosions. All were successfully treated with classical local excision or endoscopic excisional surgery and no complications or recurrence were observed.

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