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Lobular capillary hemangiomas: Case report and review of literature of vascular lesions of the nasal cavity

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ABSTRACT

Vascular tumors of the nasal cavity can represent a variety of pathologies. In this case report, we discuss two patients presenting with a large vascular lesion occupying the nasal cavity. Significant bleeding was encountered during the initial attempts for endoscopic surgical resection. One lesion was successfully excised following preoperative embolization while a second following sphenopalatine artery vascular ligation. In both cases, final pathology showed lobular capillary hemangioma (LCH). We present a literature review and discussion of LCH and other vascular tumors that present in the nasal cavity. In addition, we discuss the utility of pre-resection vascular control of these tumors.

1. Introduction

There are numerous types of vascular tumors that can develop in the nasal cavity. Nasal tumors often present with non-specific characteristics of nasal congestion, rhinorrhea, epistaxis, or anosmia. Less common manifestations include vision changes, headaches, local swelling or pain. Imaging modalities such as computed tomography (CT) and magnetic resonance imaging (MRI) are valuable for surgical planning, but histology is needed for definitive diagnosis. Recommended treatment varies based on the presenting pathology.

Histology includes lobular capillary hemangioma (LCH), hemangiopericytoma, angiofibroma, leiomyoma, glomus tumor, angiosarcoma and kaposi's sarcoma [1]. In this paper, we discuss two cases of a patient presenting with a nasal cavity mass with final pathology showing LCH as well as provide a review of vascular nasal cavity tumors included in the differential diagnosis.

2. Case report 1

A 60 year-old female presented to clinic with 4 months of left nasal passage obstruction. She had been experiencing intermittent nasal bleeding that occurred with manipulation of the left nasal cavity. She also endorsed posterior nasal drainage and significantly decreased sense of smell. On exam, there was complete obstruction of the left nasal cavity with a vascular appearing mass (Fig. 1).

A CT scan was obtained demonstrating a large nasal cavity mass with remodeling of the surrounding structures and mucosal inflammation within the left paranasal sinuses. The patient was brought to the operating room for resection. In the operating room, any manipulation of the tumor resulted in significant bleeding. After approximately 800 ml of blood loss, the tumor had only been debulked about 1 cm and procedure was aborted. Pathology returned as acute on chronic inflammation and granulation tissue proliferation with no evidence of neoplasm.

Given the significant blood loss and benign preliminary pathology, we allowed 6 weeks to lapse to allow recovery from the blood loss. Subsequently, the patient underwent preoperative embolization of the left internal maxillary artery (Fig. 2) and returned to the operating room the following day for definitive resection. Although approximately 1200 ml of blood was lost and the patient was transfused 3 units of packed red blood cells, bleeding was much less brisk and manageable compared to during the initial surgical attempt. The lesion appeared to be emanating from the superior aspect of the middle turbinate with a prominent arterial supply at that level. Upon resection of the posterior aspect, there was minimal bleeding, consistent with embolization of the internal maxillary artery. Once the arterial supply emanating from the middle turbinate region was cauterized, there was no further significant bleeding from the tumor (Fig. 3). Final pathology showed a proliferative vascular lesion with acute on chronic inflammation consistent with LCH. Patient recovered well and has no evidence of residual or recurrent neoplasm at last follow up of 6 months.

3. Case report 2

A 36 year-old female presented with 6 months left sided nasal airway obstruction and left maxillary region pressure with recurrent

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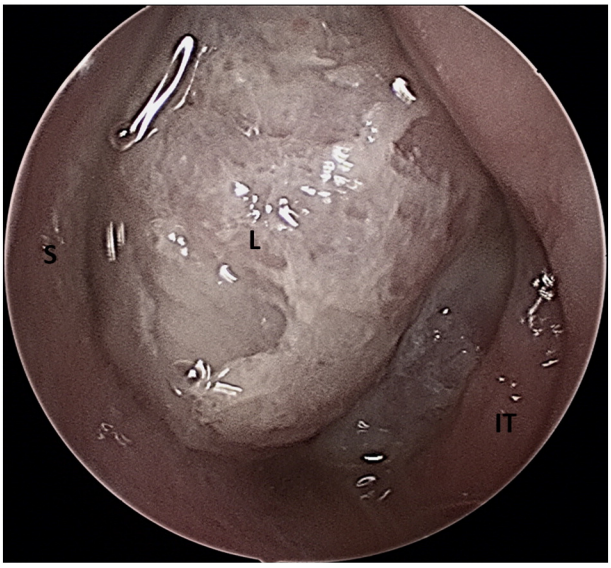

Fig. 1. Large friable appearing mass occupying the entire anterior left nasal cavity. Lesion (L), septum (S), inferior turbinate (IT).

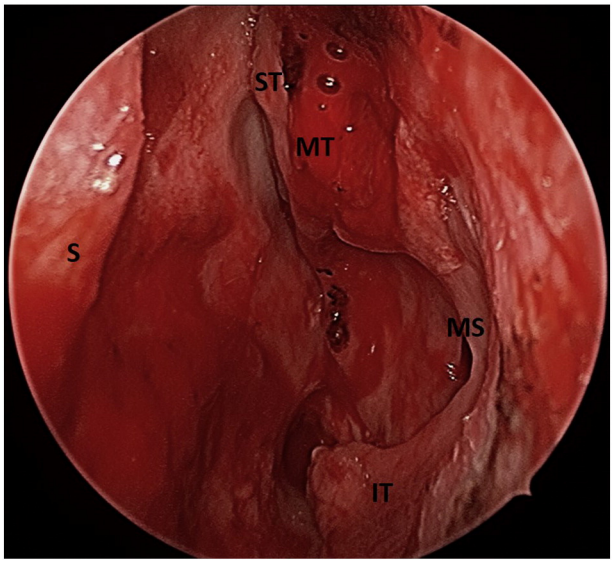

Fig. 3. Post-resection image showing complete resection of the lesion with remodeling of the surrounding nasal structures. Septum (S), inferior turbinate (IT), middle turbinate (MT), superior turbinate (ST), maxillary sinus (MS).

episodes of sinusitis. The patient was initially taken to the operating room by a community otolaryngologist for resection. Unfortunately, significant intraoperative bleeding was encountered and the procedure was aborted. Tissue specimen sent from this procedure was consistent with a benign vascular lesion. The patient was referred to our institution for further care.

CT showed a soft tissue mass appearing to arise from the left inferior turbinate. Exam showed a vascular lesion along the mid aspect of her inferior turbinate with some extension into the medial aspect of the maxillary sinus. The patient was taken to the operating room for excision of her left nasal mass. Left sphenopalatine artery ligation was initially performed and the lesion was then grossly resected in conjunction with the involved inferior turbinate. At no time was there significant bleeding encountered and the final blood loss was 50 ml. Final pathology returned as a benign vascular lesion consistent with LCH.

4. Discussion

4.1. Vascular tumors of the nasal cavity

Nasal LCHs are benign growths that can occur in the nasal cavity and paranasal sinuses. They arise from vascular endothelial cells and have capillaries arranged in a characteristic lobular pattern [2]. Historically, these lesions were referred to as pyogenic granulomas, but this is a misnomer given that they are neither infectious nor granulomatous. They are the most common vascular tumor of the nasal cavity [2]. These tumors can often grow to a large size and can sometimes be misdiagnosed as nasopharyngeal angiofibroma (NA). Grossly, these lesions appear as red, exophytic masses and frequently present with bleeding.

In the head and neck, the most common presenting location are the lips (38%) [2]. The nasal cavity represents 7 to 29% of head and neck LCH [2]. Within the nasal cavity, the anterior nasal septum and the tip of the turbinate are the most common sites [2]. The etiology of these lesions is unknown. There appears to be a hormonal component as these lesions occur commonly in pregnancy and in patients on oral contraceptive pills [3]. There are also reports of development of LCH following local trauma [4,5].

On CT, LCH typically presents as a well-defined soft tissue mass, sometimes demonstrating bony destruction. The mass shows intense enhancement with contrast. MRI shows intermediate signal on T1 and heterogeneous signal with flow voids on T2. The tumor shows intense enhancement with gadolinium [6,7]. Treatment is total excision, and

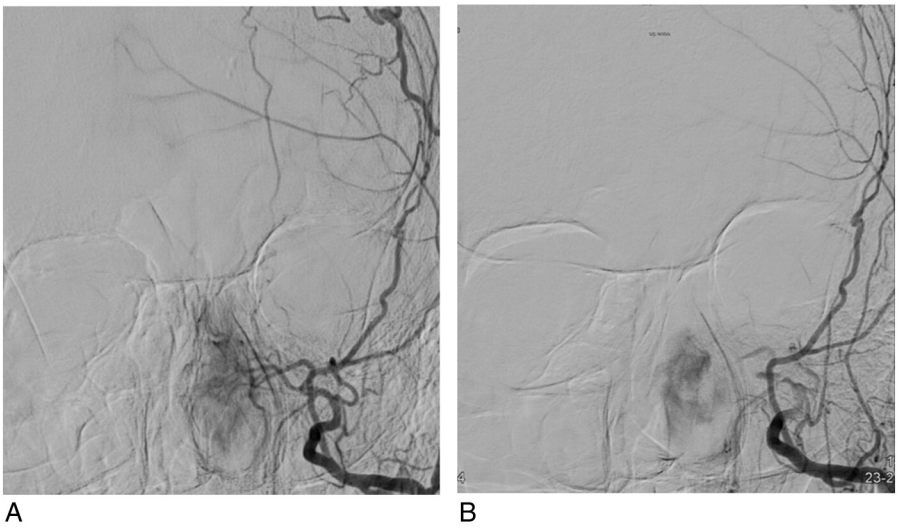

Fig. 2. Fluoroscopy for embolization a) anterior-posterior pre-embolization b) anterior-posterior post-embolization of the left internal maxillary artery.

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