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Otorhinolaryngology

A RARE CASE OF CAVERNOUS HEMANGIOMA OF THE NASAL SEPTUM IN AN ADOLESECENT MALE

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ABSTRACT Cavernous hemangioma is a benign vascular tumor rarely arising from the nasal septum. This is a case report of a 17-year-old male who was diagnosed with cavernous hemangioma of the nasal septum. He presented with epistaxis and right sided nasal obstruction. A smooth, reddish-purple vascular mass was identified in the right nasal cavity. Contrast enhanced CT of the Nose and PNS was done. Complete excision of the mass was achieved by trans-nasal endoscopic approach. Histological diagnosis was reported as cavernous hemangioma. There was no recurrence or signs of residual disease in the 10 months follow-up period.

KEYWORDS : cavernous hemangioma, nasal septum, epistaxis, trans-nasal endoscopic approach utilization.

INTRODUCTION

Hemangiomas are benign vascular tumors that arise from skin, mucosa, salivary gland, muscle and bones(1). A wide range of tumors can be seen in the nasal cavity. Nonepithelial tumors are uncommon and most of them are benign (2). Hemangiomas of the nasal cavity compose of less than 20% of all benign nasal cavity tumors (1). They are classified by Batsakis as capillary, cavernous, and mixed (3). Among these types cavernous is the rarest (4).

Nasal hemangiomas have to be differentiated from any intranasal benign or malignant tumor, such as nasal polyps, inverted papilloma, olfactory neuroblastoma, lymphoma, hemangiopericytoma, hemangioendothelioma, arteriovenous fistula, lymphangioma, melanoma, adenocarcinoma, squamous cell carcinoma or metastatic malignancies, etc.

Herein we present a case of a 17year-old male, who was diagnosed with a cavernous hemangioma of the nasal septum.

CASE REPORT

A 17-year-old male was admitted in our ENT Department in November, 2021 for recurrent epistaxis, post-nasal drip and right nasal obstruction. These symptoms started 3 months previously after he was diagnosed with Dengue fever. During these 3 months he had 6 episodes of profuse bleeding from the right nasal cavity, which resolved after applying pressure. There was accompanied progressive right nasal obstruction and postnasal drip. On anterior rhinoscopy, a smooth reddish-purple mass was seen. The mass was soft and bleeding on touch. No other significant findings were seen in the head and neck examination. On DNE, the mass was noticed in the anterior part of right nasal cavity at the level of middle turbinate and the nasopharynx had no significant findings. The origin of the mass could not be delineated. An 8cm Merocel was used for nasal packing and hemostasis was achieved.

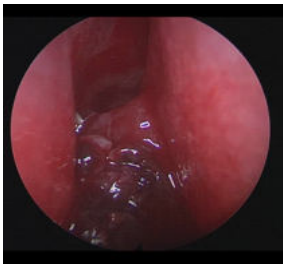


Figure 1: DNE showing reddish-purple mass in right nasal cavity.

Contrast CT-Nose and Paranasal sinuses revealed a small area of arterial blush of size 10 x 8 x 7 mm (CC X A X T) is seen in the antero-superior aspect of the right nasal cavity in the arterial phase. It shows progressive enhancement in the venous phase. It is isodense on plain study. No erosions of adjacent bone and no soft tissue invasion.

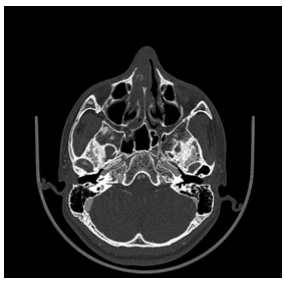


Figure 2: CECT of Nose and PNS (axial) showing isodense opacity of right nasal cavity.

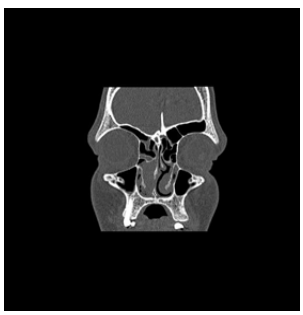


Figure 3: CECT of Nose and PNS (coronal) showing isodense opacity of right nasal cavity.

Complete excision of the mass was achieved by trans-nasal endoscopic approach under general anesthesia. The mass was considered to be arising from the middle turbinate or the middle meatus. Intraoperatively we discovered that it was arising from the nasal septum. A 5mm margin of normal nasal mucosa around the mass was excised along with it and sent for histopathological examination. The nasal cavity was packed with Merocel for hemostasis. The packing was removed on the second post-operative day. The post-operative course was uneventful.

Microscopically, it was a well circumscribed tumor composed of dilated vascular spaces lined by bland endothelial cells and the stroma was edematous with large areas of hemorrhages. There was no evidence of malignancy. Histological diagnosis was reported as cavernous hemangioma.

Figure 4: Histopathological examination (low power) showing dilated vascular spaces

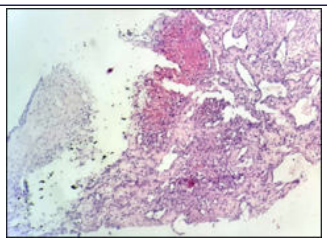
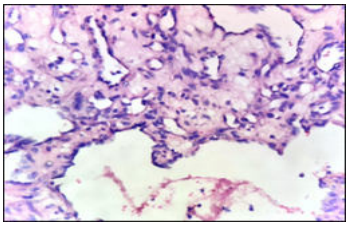


Figure 5: Histopathological examination (high power) showing vascular spaces lined by bland endothelial cells and edematous stroma.



On follow-up at 10 months follow-up visit, the patient did not have any more episodes of epistaxis. The site of excision of the hemangioma was healthy and no signs of residual disease was found during the post-operative endoscopic examination.

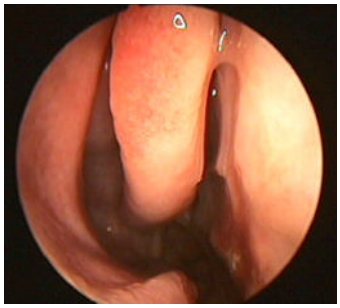


Figure 6: Post-operative DNE of right nasal cavity showing Healed mucosa at the site of excision of the hemangioma.

DISCUSSION

Hemangiomas are benign vascular tumors that arise from skin, mucosa, salivary gland, muscle and bones. They are composed of newly formed vessels with endothelial lining. Though they are the most common soft tissue tumors in head and neck, they are rare in the nasal cavity and paranasal sinuses (3). They were also known as 'bleeding polyps of the nose'(5).

Depending on the dominant vessel size at microscopy, they are of three types- capillary, cavernous and mixed. The most common type of hemangiomas in nasal cavity is the capillary type composed of capillary sized vessels, occurring more commonly in the nasal septum or vestibule and is more common in children, while cavernous hemangiomas more commonly arise from the lateral wall of the nasal cavity. Cavernous hemangiomas appear at around fourth decade and shows no sex predilection (6).

The propensity of these tumors to cause bone erosion makes it difficult to differentiate them from more common malignant epithelial tumors on basis of radiology (7). The International Society for the Study of Vascular Anomalies (ISSVA) describes cavernous hemangioma as pseudotumor anomalies (8). These can arise either from osseous tissue or mucosa. Macroscopically, they are well demarcated solitary lesions arising from medial wall of maxillary sinus or osteomeatal complex extending laterally (9). Histologically, they are composed of large flattened endothelial lined vascular spaces in a lobular or diffuse pattern.

Osborn has done one of the largest studies presented in the literature in 1959 reviewed 51 patients with hemangiomas of the nose, seen over an 11-year period, and he found that only two were of the cavernous variety(5).

Clinical Presentation: The most common clinical presentation includes nasal obstruction, epistaxis and occasionally visible mass. But in cases of large hemangiomas causing pressure effect cheek swelling, loosening of the maxillary teeth, epiphora, and proptosis are also seen. Clinically, they are locally aggressive and destructive by virtue of its pressure effect. They are not known to undergo malignant transformation (7). In this case the patient had recurrent episodes if epistaxis and nasal obstruction. Physical examination revealed a reddish-purple bleeding mass in the right nasal cavity.

Because of their high vascularization, in order to obtain a histopathological diagnosis, the preoperative biopsy of hemangiomas, is not an easy task and must be performed with great care to avoid severe bleeding. It is recommended to perform an imaging investigation (CT or MRI scans) prior to any biopsy. In this case we excised the tumor after imaging was done without a prior biopsy because of the limited extent of the tumor.

Contrast CT-scan examination usually reveals the anatomic location of the tumor and its extent. The characteristic image shows a well circumscribed mass, with non-homogenous enhancement after injection of i.v. contrast substances. Usually, the underlying bone is normal, but it may be remodeled by adjacent long-standing pressure of the expanding mass. The bone remodeling or lysis could be mistaken for malignant changes. A characteristic feature of cavernous hemangiomas is the occurrence of phleboliths. They form because of dystrophic calcification following intravascular thrombosis.

Magnetic resonance imaging shows extensively dilated vessels and isointense on T1 and predominantly hyperintense on T2, compatible with low flow vascular structures Angiography is both a diagnostic and therapeutic investigation that reveals a hyper vascular lesion with dilated feeding arteries and draining veins but stagnation of contrast agent and persistence of blush on late film are present with regular contour

Differential diagnosis: As this patient is an adolescent male who presented with recurrent epistaxis, the nasal mass was initially diagnosed as an angiofibroma clinically and this diagnosis was supported with radiology as a vascular neoplasm, probably an angiofibroma. But the histopathological examination revealed a cavernous hemangioma of the nasal septum, which was unusual during that age and at that site.

Other differential diagnosis includes long standing Sino nasal polyps, neuroma, inverted papilloma, polypoid cystic masses, mucoceles, pyogenic granuloma, organized hematoma, bacillary angiomatosis, Kaposi sarcoma and other vascular tumors of paranasal sinuses like angiosarcoma.

Management includes complete removal of the mass by open or endoscopic procedure. In this case a minimally invasive trans-nasal endoscopic approach was used to give a good exposure for bleeding control and complete excision of the tumor. Thangavel S et al., operated on a case of cavernous hemangioma of the maxillary sinus by both endoscopic and open methods and have achieved complete removal (7). The surgical technique used depends on the location of the tumor and its extension. Preoperative transarterial embolization could help in decreasing the tumor size and hemorrhage during surgery and can be useful in extensive tumors. Other treatment modalities like laser and steroids have not been used for nasal hemangiomas.

CONCLUSION

Hemangiomas of the nasal cavity are a rare entity. A high index of suspicion is needed to help for early diagnosis. Imaging with CT scan can help in the diagnosis and planning the management. The treatment of choice is complete excision of the tumor. Embolization can be avoided in most of the cases. In this patient complete excision was achieved by endoscopic approach and no recurrence is seen.

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