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CASE REPORT

Cavernous Hemangioma of the Maxillary and Ethmoid Sinus Treated Endoscopically

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ABSTRACT

Hemangiomas are a benign vascular tumor and are of two types: capillary and cavernous. Isolated cavernous hemangiomas of paranasal sinuses are rare. We report a case of hemangioma involving the left maxillary and ethmoid sinus managed endoscopically.

Keywords: Hemangioma, Cavernous, Paranasal sinuses, Excision.

INTRODUCTION

Hemangioma is a benign vascular tumor and is of two types: Capillary and cavernous. Though often identified in the head and neck region, rarely involve the paranasal sinuses.[1] Nasal hemangiomas are capillary in nature and usually congenital whereas paranasal sinus hemangiomas are cavernous in nature. Isolated cases of cavernous hemangioma of paranasal sinuses have been described in literature arising from either bone or mucosa of the maxillary sinus.[2-4]

We report a case of cavernous hemangioma involving the left maxillary and ethmoid sinus managed endoscopically.

CASE REPORT

A 40-year-old male patient presented with history of left sided nasal bleeding for 9 days. He was referred to the Department of ENT at St John's Medical College and Hospital, a tertiary referral center at Bengaluru, Karnataka, India. Diagnostic nasal endoscopy (DNE) with biopsy showed a bluish grey mass partially occluding the left nasal cavity, arising from middle meatus and extending into the choana. Histopathological examination of the biopsy was suggestive of a vascular tumor, angiofibroma or a hemangioma.

Contrast-enhanced computed tomography of paranasal sinuses (CT PNS) showed a heterogeneous, moderately enhancing soft tissue lesion completely filling the left maxillary sinus causing erosion of the medial wall. Similar lesion was noted opacifying the left ethmoid and left nasal cavities. The findings pointed towards tumors that are characterized by high vascularity, sinonasal malignancy or a tumor of vascular origin as differential diagnosis (Figs 1 and 2).

After preoperative work-up, under hypotensive anesthesia the lesion was excised endoscopically. During surgery, a dark necrotic material was seen filling the lesion in the maxillary sinus. After endoscopic medial maxillectomy the entire lesion was removed and antral mucosa was noted to be normal. Anterior ethmoidectomy was done and a similar mass was removed. Sphenoidotomy was done and found to be free of tumor. Intraoperative bleeding was not excessive though preoperative angiography and embolization was not done. On histopathological examination, the lesion was described as cavernous hemangioma (Fig. 3). No sign of recurrence has been observed with a follow-up of 18 months.

DISCUSSION

Cavernous hemangioma of the paranasal sinuses is a benign vascular tumor. It can present with recurrent epistaxis, nasal obstruction, rhinorrhea, facial pain or central facial deformity. It has a slow course with a tendency for bone erosion due to its compressive effect ranging from simple erosion to complete destruction.[5,6]

CT demonstrates a heterogeneous lesion with moderate or partial contrast enhancement and detects focal areas of bone lysis. Zones of necrosis and bleeding in the tumor are

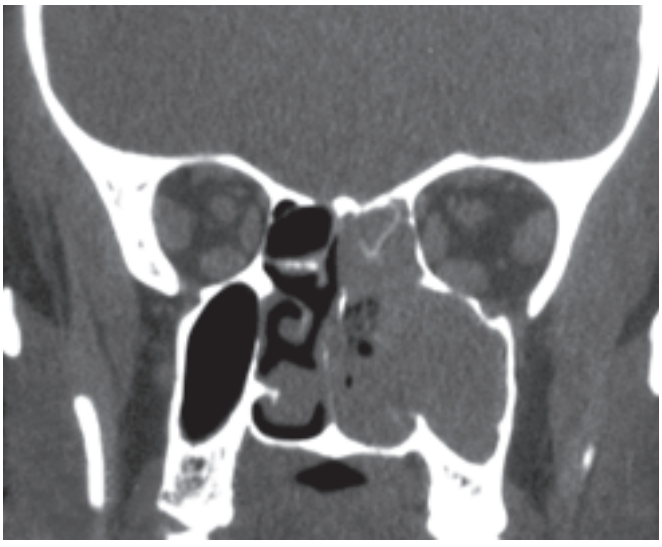

Fig. 1: Plain computed tomography of paranasal sinuses (CT PNS), coronal view, showing a heterogeneous, moderately enhancing soft tissue lesion completely filling the left maxillary sinus causing erosion of the medial wall

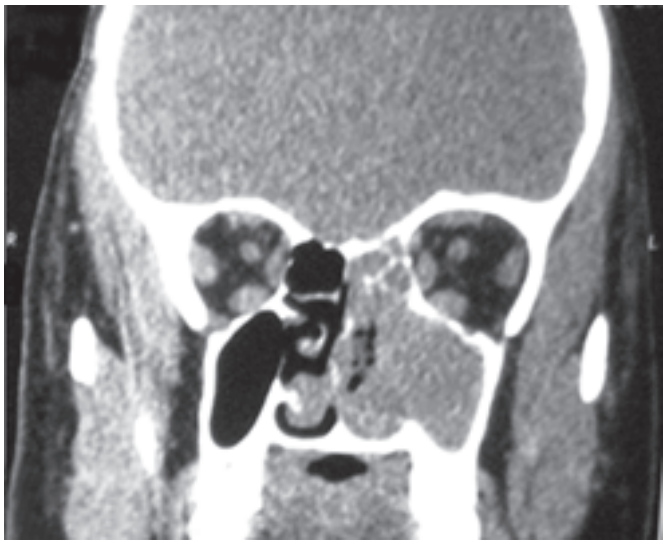

Fig. 2: Contrast-enhanced computed tomography of paranasal sinuses (CT PNS), coronal view, showing a heterogeneous, moderately enhancing soft tissue lesion completely filling the left maxillary sinus causing erosion of the medial wall

not contrast enhancing. MRI demonstrates isointense lesion on T1-weighted sequences and hyperintense lesion on T2-weighted sequences, compatible with low-flow vascular structures.[5,7]

The differential diagnosis of hemangioma includes inverted papilloma, pyogenic granuloma, mucocele, hematoma, polypoid cystic masses and bacillary angiomatosis, Kaposi's sarcoma and other vascular tumors of the paranasal sinuses, like angiosarcoma.[5,9]

Hemangiomas of the paranasal sinuses can be difficult to diagnose for many reasons. Obtaining a biopsy specimen for diagnosis can be dangerous in view of the potential for profuse bleeding. Mortality has been described in two cases of sphenoid hemangioma as a result of hemorrhage secondary to biopsy.[8]

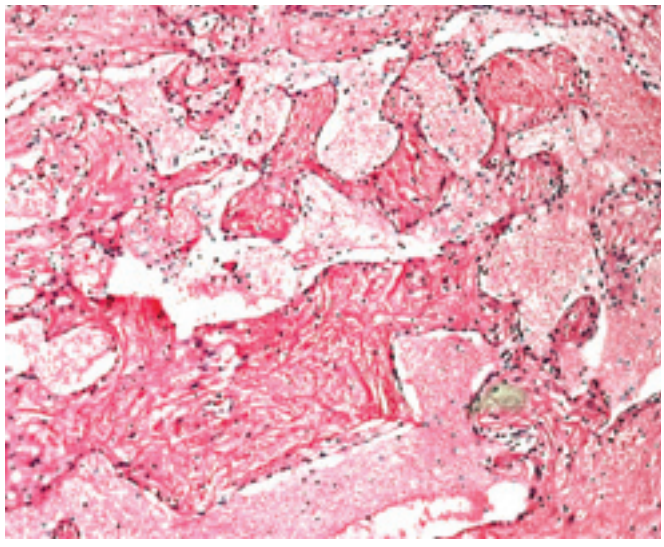

Fig. 3: Histopathology showing the lesion composed of thick and thin-walled vascular channels separated by sparse cellular fibrous tissue and anastomosing cavernous blood vessels consistent with cavernous hemangioma (H&E stain)

Management of maxillary hemangioma includes pre-operative embolization followed by open or endoscopic resection of the tumor to avoid hemorrhage.[2,10] Hemangiomas are considered to be resistant to radiotherapy but evidence is anecdotal. Surgery is the primary treatment described. Kim et al[7] also presented two cases where surgery did not result in severe bleeding. This is because hemangiomas are venous malformations supplied by small to medium sized vessels and may also reflect a low or nonarterial circulation. Partial resection of tumor has also been advised in order to preserve adjacent vital structures.[2,10] This was true in our case where biopsy did not result in severe bleeding and hence preoperative angiography and embolization was not done.

Hemangiomas are histopathologically classified into two types: Capillary (small space) and cavernous (large space), depending on the microscopic size of the vessels that are predominant in the tumor. Though common in the head and neck area, they hardly occur in the paranasal sinuses. Cavernous hemangioma of the maxillary sinus is rare.[5,6,9] Histologically, sinonasal hemangiomas can be similar to that of other lesions, such similarities can make it difficult to establish a definitive diagnosis on the basis of small-sample biopsies. The current lesion composed of thick- and thin-walled vascular channels separated by sparse cellular fibrous tissue and anastomosing cavernous blood vessels consistent with cavernous hemangioma.

The final diagnosis of hemangioma is based on the lesion's histological appearance. However, histological diagnosis is complicated as the primary components seen

in hemangioma; vascular structures and fibrous stroma are also seen in many other lesions found in this region. The distinction between a cavernous and a capillary lesion is not always sharp as the size of the vessels can vary in different parts of the tumor.[11]

CONCLUSION

Cavernous hemangioma of the paranasal sinus is rare. Hemangiomas usually present with epistaxis as the most common symptom. It is difficult to diagnose based on radiological findings and histology of small sample biopsies. Management options are limited and decision is complicated as the natural history and recurrence rates of paranasal sinus hemangiomas are unknown. This is because very few cases have been reported in literature. Surgery is the primary treatment. Cavernous hemangioma can be completely excised endoscopically without excessive bleeding.

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