

Case Report

Intraosseous Hemangioma of Nasal Bone: Unusual Location of a Common Tumor with Literature Review

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Abstract

Hemangiomas are very common benign vascular tumors of head and neck. Intraosseous hemangiomas are rare and very few cases of involvement of nasal bone have been found in literature. A slowly growing hard nasal mass should draw clinical suspicion and should be included in differential diagnosis as it carries with it the risk of uncontrollable hemorrhage during surgical procedures. Clinical examination and radiology are contributory but histopathological examination is confirmatory for diagnosis.

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1. Introduction

Hemangiomas are common benign tumors characterized by an increase in the number of normal or aberrant blood vessels. They are usually localized lesions confined to the skin, subcutaneous tissues, and mucous membranes of the head and neck, but they can also be larger and develop internally in the liver, spleen, and kidney [1]. These lesions rarely occur in the bone. Symptomatic tumors are rare, accounting for <1% of all primary bone tumors. The most commonly affected region is the vertebral bodies, followed by the craniofacial skeleton, and finally the long bones, where they tend to involve the metaphyses [2].

2. Case Report

A 41-years-old female presented at the otolaryngology department with nasal mass and nasal obstruction for four months. On examination, it was a slightly tender hard mass. Non-enhanced computerized tomography (CT) scan of nose and paranasal sinuses

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revealed an expansile destructive trabeculated bony lesion with a soft tissue component centered on the right nasal bone measuring approximately 1.5×1.9×1.3 cm in dimensions and appeared inseparable from the underlying cartilaginous nasal septum. No gross extension into the frontal sinus was detected. Minimal right maxillary mucosal thickening was seen, the imaged sinuses and outflow tract were found to be clear. The nasal septum was deviated to right (Figure 1). A histological correlation was suggested. Incisional biopsy was performed and tissue fragments disclosed a lesion composed of variably sized, dilated blood vessels, lined by bland endothelial cells surrounded by stroma made of bland spindle cells encased by lamellar bone trabeculae (Figure 2).

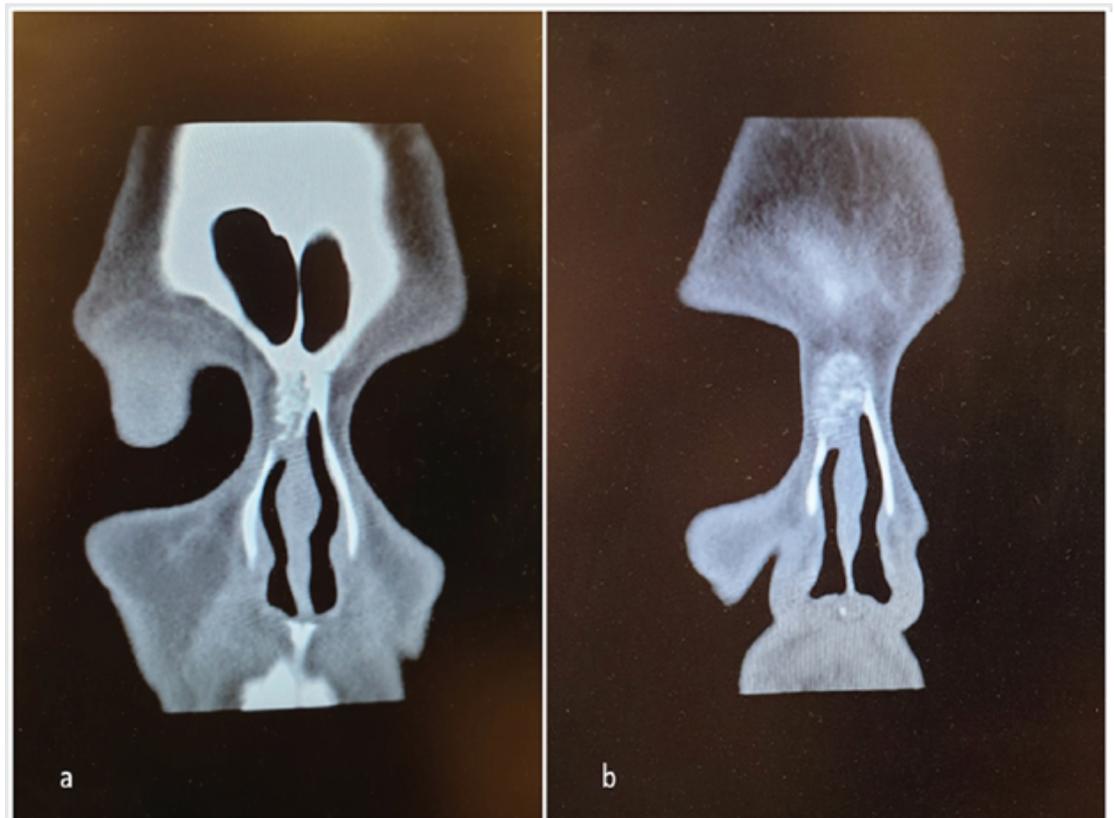


Figure 1: Computerized tomography (CT) of paranasal sinus showing an expansile destructive trabeculated bony lesion with a soft tissue component centered on the right nasal bone inseparable from the underlying cartilaginous nasal septum with its deviation to right.

Immunohistochemistry showed CD31 and CD34 positivity in endothelial cells and smooth muscle actin (SMA) positivity in blood vessels and spindle cells (Figure 3). A diagnosis of benign vascular tumor consistent with intraosseous hemangioma was made.

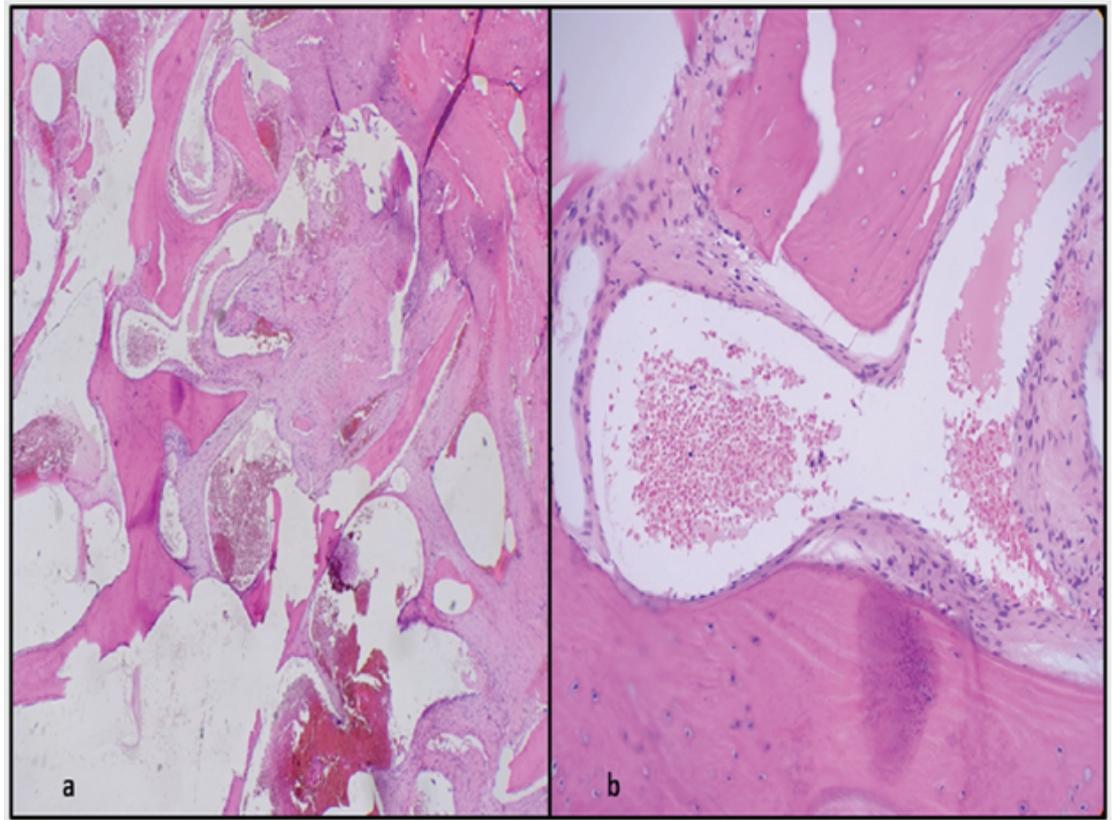


Figure 2: Section from the affected bone showing variably sized, dilated blood vessels, lined by bland endothelial cells surrounded by stroma made of spindle cells encased by lamellar bone trabeculae (Hematoxylin and Eosin: Ax 20X, Bx 40X)

3. Discussion

Hemangiomas are benign vascular tumors of endothelial origin. Intraosseous hemangioma is an uncommon bone tumor that accounts for 0.7–1% of all bone neoplasms. It affects people of all ages, but it is most common in women in their fourth and fifth decades of life [3]. Hemangiomas emerging in the soft tissue are widespread in the head and neck region, although intraosseous hemangiomas in this region are most commonly detected in the skull. Facial bones are uncommonly involved with the orbital bones, mandible, frontal bone, and zygoma being the most commonly affected facial bones [4]. The nasal bone is rarely involved, and Neivert and Bilchik had first documented this in 1936 [5]. Bridger [6], McAllister *et al.* [7], and Vafaei [8] have described the largest number of cases. They appear as a slow-growing bony hard mass in the nasal cavity, which is covered by mucosa. The surrounding tissues are usually unaffected [9]. Hemangiomas in the nasal cavity can have a history of recurrent epistaxis and nasal obstruction, but this is less common in nasal bone hemangiomas. The nasal bone was

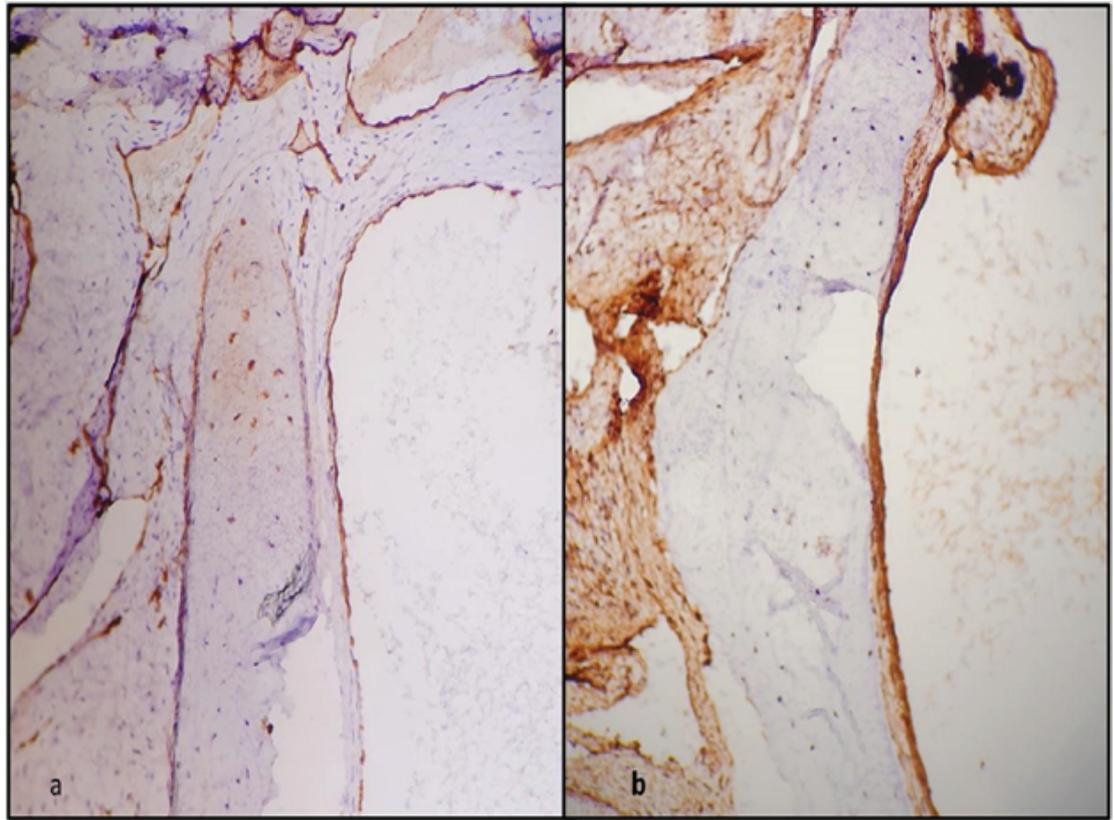


Figure 3: Immunohistochemical study. (a) CD34-positive endothelial cells (X20) (b) Smooth muscle actin (SMA)-positive endothelial cells of blood vessels and spindle cells (X20).

involved in our case, with the lesion extending to the nasal septum, clinically presenting as bony nasal mass and nasal obstruction.

Although the CT imaging can vary, the typical scan shows a lytic lesion that is oval or rounded, expansile, and well-defined, with trabeculae radiating from a common center in the interior, giving the appearance of honeycombing [10]. On CT and MRI, clinically indolent lesions usually contain fat and sclerotic trabeculae. Symptomatic tumors frequently show fat loss and a low signal on T1-weighted imaging and a high signal on T2-weighted imaging [2]. The osteolytic activity of the tumor mass and consequent reactive osteoblastic remodeling with trabecular bone cause these radiologic manifestations. Fibrous dysplasia, osteoma, Langerhans cell histiocytosis, multiple myeloma, and osteosarcoma are among the differential diagnosis for intraosseous hemangioma [11].

Hemangiomas can be capillary or cavernous in appearance. Cavernous hemangiomas are highly infiltrative, often involving deep structures, and do not regress on their own. The tumor is unencapsulated, has infiltrative boundaries, and is made up of large, cavernous blood-filled vascular spaces divided by connective tissue stroma on histologic examination. Intravascular thrombosis and dystrophic calcification are

common associations. They can be locally destructive lesions [1]. A nasal cavity mass can have a differential diagnosis of carcinoma, neuroendocrine tumor, schwannoma, angiofibroma, or aneurysmal bone cyst.

En bloc resection with an adequate normal bone margin is the preferred treatment for intraosseous hemangioma, and the bony defect can be repaired using a variety of techniques. Curettage is a poor treatment option since it can cause significant bleeding and has a high rate of recurrence [11].

In conclusion, intraosseous hemangiomas are benign tumors diagnosed clinically presenting as hard bony mass with characteristic radiological finding. They have high risk of uncontrolled bleeding when subjected to any surgical procedure. Prior diagnosis may reduce the risk of bleeding during resection or biopsy which is mandatory for its confirmation.

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None

Ethical Considerations

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Competing Interests

None.

Availability of Data and Material

All relevant data of this study are available to any interested researchers upon reasonable request to the corresponding author.

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