Intravascular papillary endothelial hyperplasia (Masson’s tumor) as a nasal mass: a case report and review of the literature
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Intravascular papillary endothelial hyperplasia (Masson’s tumor) is a rare non-neoplastic vascular proliferative process in a normal blood vessel or vascular malformation. Nose and paranasal sinuses are extremely rare location for this type of tumor. We report a case of Masson’s tumor in a 33-year-old female, presented with an obstructing nasal mass in the right side, repeated epistaxis and rhinorrhea for eight months associated with anosmia, frontal headache and proptosis.

Keywords:
intravascular papillary endothelial hyperplasia, Masson’s tumor, soft tissues

Introduction
Intravascular papillary endothelial hyperplasia (Masson’s tumor) is a non-neoplastic vascular proliferative process in a normal blood vessel, or vascular malformation characterized by papillary proliferation of the vascular endothelial cells that mimic angiosarcoma clinically, radiologically, and histopathologically. Although commonly presented in the head and neck region, its occurrence in the nose and paranasal sinuses is extremely rare. This paper describes a case of intravascular papillary endothelial hyperplasia presenting as an obstructing nasal mass extending into paranasal sinuses with successful endoscopic excision. Awareness of this benign lesion and its distinguished histopathological features is essential for correct management.

Report of case
A 33-year-old female patient, who was otherwise healthy, presented with an obstructing nasal mass in the right side, associated with repeated epistaxis and rhinorrhea for 8 months and associated with anosmia, frontal headache, and proptosis. There was no history of trauma or other related otorhinolaryngological illnesses, and there were no other ophthalmological problems.

Physical examination showed an extensive reddish swelling in the right nostril, producing a hump over the nasal bone, with unremarkable ear, throat, and head and neck examination.

Computed tomography scan showed a large heterogeneously enhancing mass lesion seen in the right nasal cavity measuring about 4.28 × 2.7 × 3.7 cm. There was involvement of maxillary, ethmoid, frontal, and sphenoid sinuses with evidence of pressure erosions in the surrounding bone structures.

Histopathological report revealed hemangioma with foci consistent with papillary endothelial hyperplasia with no evidence of malignancy.

Excision was performed through an endoscopic approach, and the patient recovered with no complications or symptoms and was followed up for 4 years with no evidence of recurrence (Figs 1–3).

Discussion
Intravascular papillary endothelial hyperplasia is a peculiar benign reactive condition caused by an excessive proliferation of endothelial cells in blood vessels [1]. It presents in three different settings: as a primary or pure form involving an isolated dilated blood vessel; as a secondary focal change in a variety of pre-existing vascular lesions such as hemangiomas, hemorrhoidal veins, and varices; and, rarely, it can present in an extravascular location in association with a hematoma [2,3].

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The pathogenesis of this lesion continues to remain unclear; most researchers believe that it is an unusual type of organizing thrombus [4–6].

Although these lesions have the predilection to occur in the skin and subcutaneous soft tissue of the hand, head and neck, and trunk, these tumors can occur in any blood vessel [7]. A variety of locations have been described in the literature for the intravascular papillary endothelial hyperplasia. However, its occurrence in the nasal cavity and paranasal sinuses is extremely rare. To the best of our knowledge, there are only three cases of nose involvement and four cases of paranasal sinuses that have been reported. These reports are summarized in Table 1. Our case differs from other nasal cases in that it extends into a wide range of paranasal sinuses.

The lesion has been clinically mistaken most commonly for angiosarcoma [15]. Other lesions that are to be considered in differential diagnosis include intravenous pyogenic granuloma, mucocele, Kaposi's sarcoma, and other vascular conditions such as hemangioma, papular angioplasia, angioendothelioma, Kimura's disease, bacillary angiomatosis, and intravenous atypical vascular proliferation [16–18].

Histopathological examination is the confirmatory diagnosis and it is described by the presence of a single layer of attenuated endothelial cells covering multiple small papillary structures with little or no atypia. Mitosis is usually absent. The papillary core is made up of hypocellular, hyaline collagen in association with occasional small capillaries. It should be differentiated from angiosarcoma in that the latter is usually an extravascular process characterized by an extensive infiltrative or dissecting pattern that exhibits cytologic atypia, endothelial multilayering, mitotic activity, and irregular anastomosing blood vessels [19]. Immunohistochemically, the Masson's tumor tends to show variably positive staining for CD34, CD31, and smooth muscle actin [20–22]. They also show positive staining for ferritin, type VIII collagen, and vimentin [4].

The prognosis is excellent as intravascular papillary endothelial hyperplasia does not transform into malignancy or recur after adequate excision. Its possible location in the sinonasal cavity should be borne in mind and careful histopathological examination is essential to avoid misdiagnosis and inappropriate therapy.

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References
This study
15. This study
33/female
Nasal obstruction, rhinorrhea, and repeated epistaxes
Right nasal cavity, maxillary sinus, ethmoid sinus, and frontal sinus
CT guided functional endoscopic sinus surgery
No

Table 1: Reported cases of Intravascular Papillary Endothelial Hyperplasia

<table>
<thead>
<tr>
<th>References</th>
<th>Age/sex</th>
<th>Presentation</th>
<th>Location</th>
<th>Treatment</th>
<th>Recurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moon et al. [8]</td>
<td>35/male</td>
<td>Decreased visual acuity, hyposmia, intermittent rhinorrhea, and right frontal headaches</td>
<td>Left posterior ethmoid sinus, with extension into and above the sphenoid sinus and the sella</td>
<td>Excision through Weber–Ferguson incision</td>
<td>No</td>
</tr>
<tr>
<td>Hooda et al. [9]</td>
<td>45/female</td>
<td>Epistaxis</td>
<td>Right posterior ethmoid sinuses abutting the medial orbital wall</td>
<td>Denker’s medial maxillectomy</td>
<td>No</td>
</tr>
<tr>
<td>Lancaster et al. [10]</td>
<td>67/female</td>
<td>Left-sided nasal obstruction associated with rhinorrhea and postnasal discharge</td>
<td>Left maxillary antrum and anterior ethmoidal cells</td>
<td>Endoscopic surgery</td>
<td>No</td>
</tr>
<tr>
<td>Stern et al. [11]</td>
<td>17/male</td>
<td>Frontal headaches and pains over right cheek and proptosis</td>
<td>Right maxillary sinus</td>
<td>Caldwell–Luc procedure</td>
<td>No</td>
</tr>
<tr>
<td>Stevens [12]</td>
<td>21/male</td>
<td>Bilateral nasal obstruction, hyposmia, intermittent rhinorrhea, and right frontal headaches</td>
<td>Right inferior concha filling the right anterior nasal cavity</td>
<td>First: septoplasty, outfracture of the inferior concha and bilateral intranasal antrostomies Yes/no</td>
<td></td>
</tr>
<tr>
<td>Safneek et al. [13]</td>
<td>36/female</td>
<td>Worsening right nasal obstruction with nasolabial sulcus fullness</td>
<td>Right anterior intranasal mass</td>
<td>First: transnasal excision Yes/no</td>
<td></td>
</tr>
<tr>
<td>Wang et al. [14]</td>
<td>42/male</td>
<td>Left-sided nasal obstruction, rhinorrhea, repeated epistaxes, and frontal headache</td>
<td>Left nasal cavity, maxillary sinus, ethmoid sinus, and frontal sinus</td>
<td>Endoscopic surgery</td>
<td>No</td>
</tr>
</tbody>
</table>