Unmasking The Culprit: Recurrent Nosebleeds From Masson's Tumor

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Abstract

Summary: Masson's tumor, also called Intravascular papillary endothelial hyperplasia (IPEH), is a benign condition affecting various parts of the body; nonetheless, sinonasal cavity involvement is uncommon.
We present the case of a 32-year-old male who experienced recurrent epistaxis and frontal headaches for 13 years. Despite multiple nasal surgeries, his symptoms persisted without a confirmed diagnosis. Physical examination revealed numerous adhesions near the middle turbinate, which were more pronounced on the left side. A contrast-enhanced CT scan revealed a heterogeneously enhancing soft-tissue lesion in the left maxillary sinus that extended into the nasal cavity, with erosion of the sinus walls. Histopathology confirmed Masson's tumor. The patient underwent several surgeries, including lateral rhinotomy and excision of a fleshy mass in the maxillary cavity. One-year post-surgery, there was no recurrence or re-bleeding.
IPEH of the sinonasal region should be part of the differential diagnosis of recurrent epistaxis; otherwise, it can present an ENT surgeon with a diagnostic conundrum.

Keywords: Nasal cavity, Epistaxis, Maxillary sinus, Nasal surgical procedures, Vascular malformations.

Introduction

Masson's tumor, also known as intravascular papillary endothelial hyperplasia, is a rare entity that originates in various sites of the body, including the Head and Neck, digits, and trunk. Until now, only a few cases have been reported in the Sinonasal cavity, particularly the maxillary sinus. It is a benign vascular malformation that results in thrombus formation, inflammation, and vascular stasis within a vessel, leading to endothelial cell proliferation.[1] This paper describes a case of recurrent epistaxis diagnosed as Intravascular papillary endothelial hyperplasia of the Maxillary sinus.

Case Presentation

A 32-year-old male, known hypertensive, presented with recurrent epistaxis for the past 13 years. It was associated with a Frontal Headache. There was no history of trauma or Visual Disturbances.
The patient underwent multiple Nasal surgeries over the course of 13 years, which led to no relief of his symptoms nor a confirmed diagnosis of his pathology.
The physical examination revealed no definite mass in the nasal cavities; however, multiple adhesions were noted near the middle turbinate, which were more pronounced on the left side.

Investigations

A computed tomography scan with contrast showed a heterogeneously enhanced soft tissue lesion measuring about 2.7 x 2.3 x 1.8 cm in the left maxillary sinus.It is shown to expand into the left nasal cavity, accompanied by erosion of the medial and anterior walls of the maxillary sinus.
The histological analysis indicated intravascular proliferation of reactive endothelial cells, resulting in many papillary forms lined by a single layer of endothelial cells, thus validating the diagnosis of Masson's tumor.

Treatment

The patient underwent multiple surgeries, including a previous lateral rhinotomy. In addition, his anterior and medial maxillary walls were deficient, providing complete access to the maxillary cavity. A visible fleshy mass was present along the anterior half of the cavity, which was then excised. A nasal endoscopy was done, and a point of origin in the apex of the maxillary cavity was identified and removed.
There has been no recurrence or rebleeding at a one-year follow-up.

Discussion

Intravascular papillary endothelial hyperplasia (IPEH), also known as Masson's tumor, is an uncommon benign vascular lesion characterized by reactive endothelial proliferation and thrombus formation. Since its initial description in 1923, it has been documented in numerous anatomical sites; however, involvement of the sinonasal cavity remains exceedingly rare. Recent reviews consistently highlight the infrequency of maxillary sinus involvement, with fewer than 20 cases documented in the English literature to date.[3,11,12]
IPEH typically arises within the lumen of dilated vessels, pre-existing vascular malformations, or organizing hematomas, supporting its classification as a reactive rather than neoplastic process.[2] Contemporary studies reaffirm that endothelial proliferation is secondary to vascular stasis and thrombosis, rather than uncontrolled cellular atypia.[3,11]

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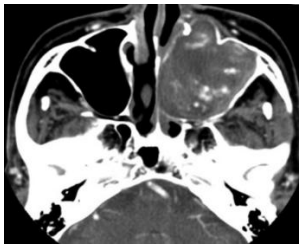

Figure 1 Axial CT showing a soft tissue lesion in the left maxillary sinus extending into the left nasal cavity

Figure 2 (A) shows an Open lateral rhinotomy owing to past surgeries

Figure 2 (B) shows an anteriorly deficient Maxillary wall on an Open Lateral rhinotomy.

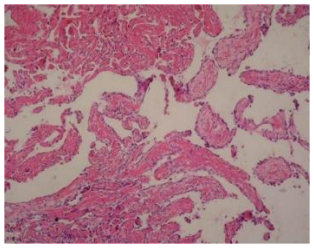

Figure 3: Histopathological image showing papillary structures in a vessel (H&E x 40)

Clinically, sinonasal IPEH presents with nonspecific symptoms depending on the site and extent of involvement. Recurrent epistaxis remains the most frequently reported presenting complaint, followed by nasal obstruction, rhinorrhea, facial pain, headache, epiphora, and anosmia.[11] Radiologically, IPEH poses a diagnostic challenge due to its aggressive-appearing features. Recent reports consistently describe heterogeneously enhancing sinonasal masses on contrast-enhanced CT, often accompanied by bone remodeling or erosion, findings that may raise suspicion for malignancy.MRI has been shown to provide superior soft-tissue characterization, typically demonstrating intermediate T1 and heterogeneous T2 signal intensities with contrast enhancement, aiding in surgical planning and assessment of local extension.[12]

Table 1: Reports on maxillary IPEH in literature

Author	Year of publication	Age/sex	Location	Symptoms	Imaging	Surgical techniques
Stern et al.[6]	1991	17/M	Right maxillary sinus, ethmoid, and nasal cavity.	Frontal headache, pain in the right cheek, proptosis.	CT	Caldwell Luc excision.
Lancaster et al.[7]	1998	67/F	Left maxillary sinus and ethmoid.	Left nasal blockage, rhinorrhea, postnasal discharge, cheek pain.	CT	Endoscopic excision.
Wang et al.[8]	2009	42/M	Left maxillary sinus, ethmoid, frontal, and nasal cavity.	Left nasal blockage, rhinorrhea, frontal headache, epistaxis.	CT/MRI	Endoscopic excision.
D'Aguanno et al.[9]	2019	67/F	Right maxillary sinus, nasal cavity.	Right cheek pain, rhinorrhea, and postnasal drip.	CT/MRI	Caldwell Luc, and endoscopic excise.
Cooke et al.[10]	2020	28/M	Right maxillary sinus, B/L nasal cavity, and B/L ethmoid sinus	B/L nasal blockage, epistaxis, headache, Right cheek pain, and itchy eyes.	CT	Endoscopic excision and skull base repair.
Voruz F et al.[3]	2020	46/M	Left maxillary sinus	Left nasal blockage and bloody serous rhinorrhea.	CT/MRI	Endoscopic excision.
Voruz F et al.[3]	2020	76/M	Right maxillary sinus, nasal cavity.	Epistaxis and rhinorrhea.	CT/MRI	Endoscopic excision.
Voruz F et al.[3]	2020	33/F	Right maxillary sinus.	Rhinorrhea, orbital pressure, and headache.	CT/MRI	Endoscopic excision.
Nakamura et al.[11]	2023	58/M	Left maxillary sinus, B/L nasal cavity, and B/L ethmoid sinus.	B/L nasal blockage, epiphora, epistaxis.	CT/MRI	Endoscopic excision.
Maiti et al.[12]	2025	29Y/M	Right nasal cavity, nasopharynx, maxillary sinus	Right-sided nasal obstruction, blood-tinged mucopurulence	CT/MRI	Endoscopic excision
Present case	2025	32/M	Left maxillary sinus and left nasal cavity.	Epistaxis.	CT	A combined approach of open lateral Rhinotomy and endoscopic excision.

The differential diagnosis of sinonasal IPEH is broad and includes angiosarcoma, inverted papilloma, inflammatory polyps, lymphoma, squamous cell carcinoma, and metastatic disease.[4] Among these, angiosarcoma represents the most critical diagnostic pitfall due to its close histologic resemblance. Recent literature highlights the importance of correlating radiologic, histopathologic, and immunohistochemical findings to avoid overtreatment.[9,11]

Definitive diagnosis relies on histopathological examination, which typically reveals papillary fronds composed of a single layer of bland endothelial cells lining fibrinous cores, with minimal atypia and absence of necrosis. Immunohistochemistry consistently demonstrates positivity for endothelial markers such as CD31, CD34, and factor VIII–related antigen, findings that have been reconfirmed in recent series.[3,5,12]
Surgical excision remains the treatment of choice, with complete resection being curative in nearly all reported cases. Recent studies support endoscopic excision as the preferred approach when feasible, offering excellent visualization with minimal morbidity. However, open or combined approaches may be necessary in cases with extensive disease, previous surgeries, or compromised anatomy, as demonstrated in our patient.[11,12] Recurrence is exceedingly rare and is typically associated with incomplete excision.
This case underscores the importance of considering IPEH in the differential diagnosis of long-standing recurrent epistaxis, particularly when imaging reveals a vascular sinonasal mass with bone erosion. Awareness of this rare entity among otolaryngologists, radiologists, and pathologists is essential to ensure accurate diagnosis, appropriate surgical management, and avoidance of unnecessary aggressive treatment.

Learning Outcomes
• Despite its rarity in the nasal cavity, IPEH should be considered in cases of recurrent epistaxis and included in the differential diagnosis of hemorrhagic nasal masses.
• While radiologic imaging is crucial, a definitive diagnosis requires histopathological examination.
• The treatment involves complete surgical excision.

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