



Sinonasal Schwannoma Presenting as a Polypoidal Mass of the Posterior Ethmoid and Sphenoid Sinus: A Rare Case Report with Radiological and Histopathological Correlation

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Received: March 04, 2026

Revised: March 15, 2026

Accepted: April 02, 2026

Published: April 20, 2026

Abstract

Background: Sinonasal schwannomas are rare benign tumors arising from peripheral nerve sheath cells, accounting for less than 4% of head and neck schwannomas. We report a case of a 49-year-old male presenting with unilateral nasal obstruction and a polypoidal mass arising from the right posterior ethmoid and sphenoid sinus. Imaging revealed a soft tissue attenuating lesion without significant bone destruction. Endoscopic surgical excision was performed. Histopathological examination confirmed schwannoma with characteristic Antoni A and Antoni B areas. This case highlights the importance of considering schwannoma in the differential diagnosis of unilateral sinonasal masses.

Keywords: Sinonasal schwannoma, Ethmoid sinus tumor, Sphenoid sinus mass, Endoscopic excision, Peripheral nerve sheath tumor



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INTRODUCTION

Schwannomas are benign encapsulated tumors originating from Schwann cells of peripheral nerves. In the head and neck region, they commonly arise from cranial nerves; however, sinonasal schwannomas are rare due to sparse innervation.

They most frequently originate from:

- Branches of the trigeminal nerve (V1, V2)
- Autonomic nerve fibers

Their nonspecific presentation often mimics:

- Nasal polyps
- Inverted papilloma
- Malignancy

Thus, radiological and histopathological confirmation is essential.

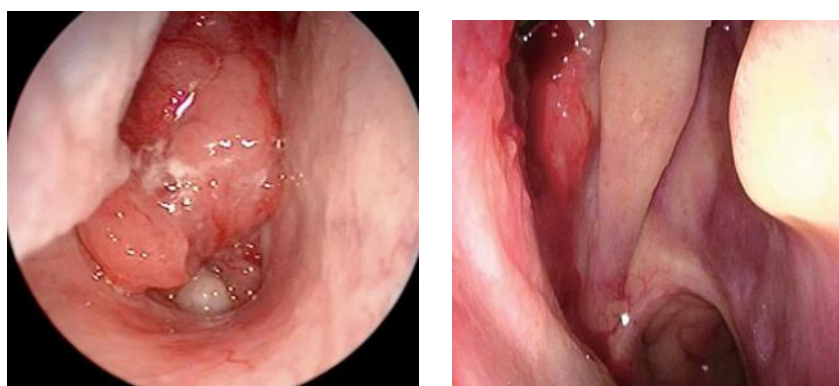
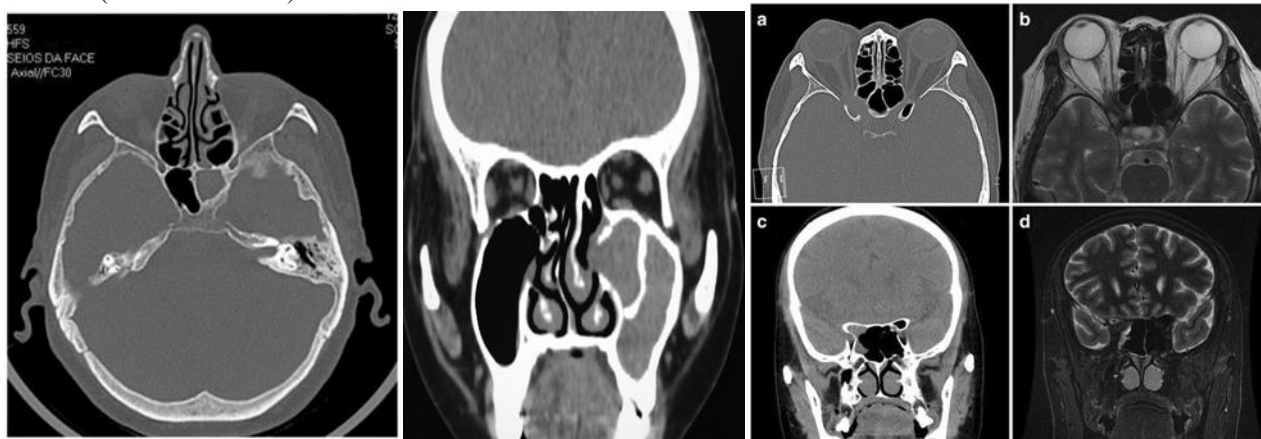
Case Presentation

Patient Details

- Age/Sex: 49-year-old male
- Presenting complaints:
 - o Progressive unilateral nasal obstruction (right side)
 - o Occasional nasal discharge
 - o No epistaxis or visual symptoms

Radiological Findings

CT PNS (Axial & Coronal)



Key Findings:

- Polypoidal soft tissue density mass in:
 - o Right posterior ethmoid sinus
 - o Sphenoid sinus
- Mild heterogeneous enhancement
- No significant bone destruction
- No intracranial or orbital extension

👉 Suggestive of benign expansile lesion

Intraoperative Findings

- Polypoidal, lobulated mass
- Moderately vascular
- Origin: posterior ethmoid region extending to sphenoid
- Complete excision done endoscopically
- Minimal intraoperative bleeding

Histopathological Findings

Gross

- Multiple soft tissue fragments
- Largest $\sim 3 \times 1.5 \times 1$ cm

Microscopy

- Biphasic pattern:
 - o Antoni A areas: hypercellular with nuclear palisading
 - o Antoni B areas: hypocellular myxoid regions
- Spindle-shaped cells with wavy nuclei
- No atypia or malignancy

Diagnosis

- ✔ Schwannoma

DISCUSSION

Sinonasal schwannomas are rare and account for a very small fraction of sinonasal tumors.

Origin

Likely from:

- Posterior ethmoidal nerve (branch of V1)
- Sphenopalatine ganglion fibers

Clinical Features

- Unilateral nasal obstruction (most common)
- Rhinorrhea
- Headache
- Rarely epistaxis

Radiological Features

- Well-defined soft tissue mass
- Mild to moderate enhancement
- Bone remodeling rather than destruction

👉 Helps differentiate from malignancy

Differential Diagnosis

- Antrochoanal polyp
- Inverted papilloma
- Fungal sinusitis
- Esthesioneuroblastoma
- Sinonasal carcinoma

Histological Hallmarks

- Antoni A & B areas
- Verocay bodies (occasionally)
- S-100 positivity (if IHC done)

Treatment

- Endoscopic complete excision (gold standard)
- No role of radiotherapy in benign lesions

Prognosis

- Excellent
- Recurrence rare if completely excised
- Malignant transformation extremely rare

CONCLUSION

Sinonasal schwannoma should be considered in unilateral sinonasal masses, especially when imaging shows a well-defined lesion without aggressive bone destruction. Endoscopic excision provides excellent outcomes with minimal morbidity.

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