International Journal of Otorhinolaryngology and Head and Neck Surgery
Kumari D et al. Int J Otorhinolaryngol Head Neck Surg. 2026 Feb;12(1):105-108
http://www.ijorl.com
pISSN 2454-5929 | eISSN 2454-5937
DOI: https://dx.doi.org/10.18203/issn.2454-5929.ijohns20260074

Case Report

A rare recurrent case of lateral nasal wall schwannoma: mimicking sinonasal carcinoma

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Received: 11 August 2025
Revised: 08 December 2025
Accepted: 08 December 2025

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ABSTRACT

Schwannomas are rare, benign, and slow-growing tumors that originate from the Schwann cells of peripheral nerves. They exhibit no sex predilection and are often characterized by a variable and delayed clinical presentation. The definitive diagnosis is established through histopathological examination. In this report, we present a rare case of a schwannoma arising from the lateral wall of the nasal cavity in a 45-year-old male patient. The tumor was successfully excised via endoscopic nasal surgery, and there was no recurrence observed at six-month follow-up.

Keywords: Schwannomas, Nasal cavity, Diagnosis, Management

INTRODUCTION

Schwannomas, also referred to as neurilemmomas, are benign, slow-growing tumors that originate from the Schwann cells of peripheral nerves. Typically solitary in nature, they most commonly affect components of the autonomic nervous system and the ophthalmic or maxillary divisions of the trigeminal nerve.[1] First described by Verocay in 1910, these tumors are well encapsulated and exhibit characteristic histopathological patterns that aid in diagnosis.[2]

Approximately 25–45% of schwannomas occur in the head and neck region; however, involvement of the nasal cavity is rare, accounting for only about 4% of these cases.[3] Although malignant transformation has been documented, it remains an uncommon occurrence, typically associated with long-standing lesions.[1-3]

Clinically, nasal schwannomas often present as a unilateral, progressively enlarging soft tissue mass, leading to nasal obstruction. Associated symptoms may include epistaxis, hyposmia, anosmia, and headache. There is variability in the literature regarding the prevalence of epistaxis while some authors report it as an infrequent finding, others suggest it is a common clinical feature.[4,5]

On examination, patients may demonstrate mucopurulent yellowish discharge, and the lesion may appear as a polypoid, greyish encapsulated mass with variable vascularity. It may bleed slightly on contact but is typically non-tender.[4,5] In rare instances, schwannomas may occur in association with neurofibromatosis type 2 (NF2), potentially presenting with additional features such as vestibular dysfunction and juvenile cataracts.[3] These tumors are most commonly diagnosed in individuals between the ages of 40 and 60 years, with no gender predilection. Within the nasal region, the ethmoid

sinus is the most frequently involved site, followed by the maxillary sinus, nasal cavity, sphenoid sinus, and nasal septum, in decreasing order of prevalence. Less common sites include the nasal tip, turbinates, and nasopharynx. The ethmoid sinus is particularly prone to involvement, likely due to its complex and abundant innervation.[2-6] The differential diagnosis for a nasal mass of this nature includes neurofibroma, antrochoanal polyp, inverted papilloma, lymphoma, mucocele, hemangioma, concha bullosa, and juvenile nasopharyngeal angiofibroma.[3,4] Here we present a rare case of a 57-year-old male patient with a sinonasal schwannoma arising from the lateral wall of the nasal cavity, causing bone erosions and presenting as epistaxis, thus mimicking a case of sinonasal neoplasm.

CASE REPORT

A 57-year-old male, a lawyer by profession, presented to the ENT outpatient department with complaints of nasal obstruction and recurrent episodes of epistaxis from the right nasal cavity. The bleeding was bright red in colour and resolved spontaneously within 10 minutes, soaking an entire handkerchief. There were no associated symptoms such as anosmia, facial pain, or persistent nasal blockage. The patient reported having experienced four similar episodes over the past two years. On further questioning, he revealed a history of nasal obstruction due to a nasal polyp, for which he had undergone sinus surgery 10 years ago at a private hospital.

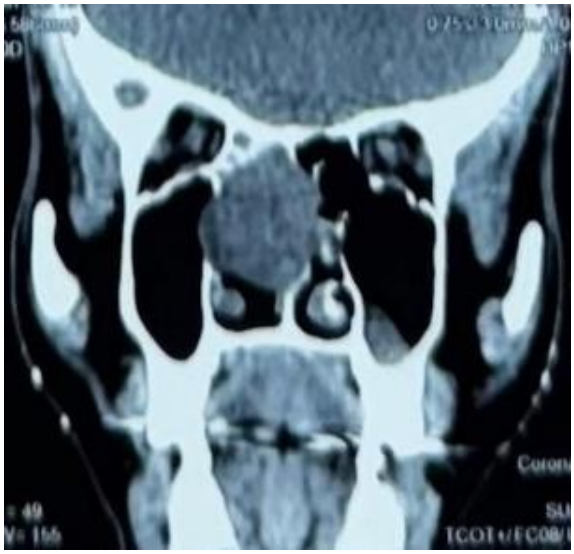

Figure 1: Coronal cut of an NCCT PNS study in soft tissue window showing a well defined round to oval mass lesion almost completely obliterating the upper portion of the right nasal cavity and anterior ethmoid complexes and causing erosion of the adjacent bones.

Following a detailed clinical history, anterior rhinoscopy was performed, which appeared normal. Subsequently, diagnostic nasal endoscopy was carried out, revealing a pale, polypoidal, non-pulsatile, firm mass arising from the lateral wall of the right nasal cavity, partially obscuring the nasal passage. A small amount of mucoid nasal discharge was also noted along the floor of the nasal cavity.

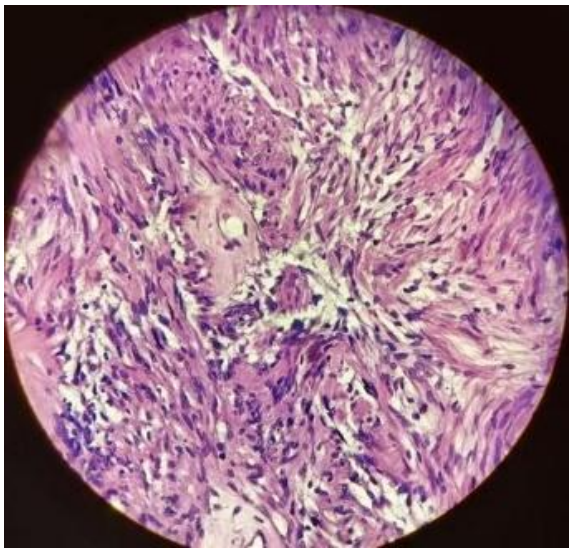

Figure 2: This histopathological image appears to show Antoni A areas of a schwannoma. The photo shows a wavy collagenous stroma, a highly cellular pattern of elongated, spindle-shaped nuclei, and some nuclear palisading patterns that are suggestive of verocay bodies, characteristic of antoni A areas.

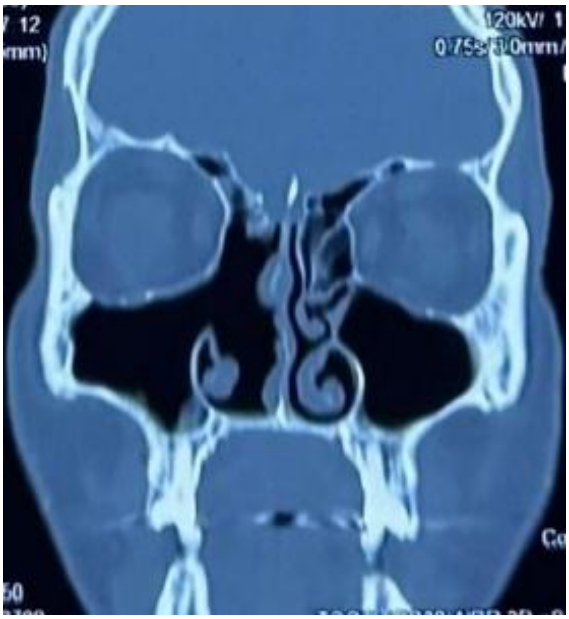

Figure 3: Coronal cut of an NCCT PNS study in bone window showing postoperative changes like absent right middle nasal turbinates and anterior ethmoid cells with widened ostia of the right maxillary sinus, and no residual lesion.

For radiological evaluation, a non-contrast CT scan of the paranasal sinuses (NCCT PNS) was ordered in both bone

and soft tissue windows. Imaging revealed a 36×33×29 mm mildly enhancing soft tissue lesion originating from the lateral wall of the right nasal cavity, causing deviation and resorption of the posterior nasal septum toward the contralateral side (Figure 1).

The patient underwent endoscopic excision of the mass, and the tissue was sent for histopathological examination. On low-power microscopy, the lesion appeared well-circumscribed, composed predominantly of spindle-shaped cells arranged in interlacing fascicles. On high-power view, the spindle cells had elongated nuclei and eosinophilic cytoplasm, with relatively uniform nuclei and a collagenous background stroma (Figure 2). Immunohistochemistry showed positive staining for S-100, confirming the diagnosis of a benign nerve sheath tumour (schwannoma). At 6-month follow-up, there was no evidence of recurrence (Figure 3).

DISCUSSION

Sinonasal schwannomas are rare neoplasms, accounting for roughly 4% of head and neck schwannomas.[7] They most commonly arise in the ethmoid sinus or nasal septum, with far fewer cases originating in other sites of the nasal cavity. Schwannomas truly limited to the lateral nasal wall are exceptionally uncommon a recent literature review found only about 20 reported nasal cavity schwannomas, almost all arising from the septum, with only a single case attributed to the nasal sidewall.[8] The present case is therefore unique in its lateral nasal wall origin. Moreover, our patient's history of prior functional endoscopic sinus surgery (FESS) for nasal polyposis a decade earlier adds an unprecedented aspect; to our knowledge, this is the first report of a schwannoma presenting in a post-FESS cavity. Another distinctive feature was the mode of presentation. While progressive unilateral nasal obstruction is the most frequent symptom of sinonasal schwannoma, epistaxis is reported variably, some series note it as an infrequent finding. In contrast, others have identified epistaxis as a standard feature.[3,4] In our case, recurrent unilateral epistaxis was the prominent complaint, an unusual scenario that initially mimicked the presentation of a vascular malignant tumor. These atypical aspects of location, history, and symptoms underscore how a benign schwannoma can deviate from the expected clinical profile and masquerade as a more aggressive sinonasal neoplasm.

This case highlights the diagnostic dilemma in distinguishing a benign schwannoma from malignant tumors of the sinonasal tract. The combination of an eroding mass on imaging, prior surgery, and brisk epistaxis had raised a strong suspicion of malignancy such as sinonasal carcinoma at presentation. Indeed, radiologic features alone are not pathognomonic: benign schwannomas can produce pressure remodeling or erosion of adjacent bone, whereas malignant tumors more often cause frank bone destruction.[9]

In general, benign lesions tend to be well-circumscribed and cause smooth bony thinning or outward bowing, in contrast to the ill-defined margins and invasive bone loss seen in carcinoma.[12] However, these distinctions are not absolute. Notably, the cellular variant of schwannoma can be locally aggressive, lacking a true capsule and invading surrounding tissue, and has been reported to cause bone erosion and even intracranial extension, thus closely mimicking an invasive malignancy.[10] In our patient, definitive diagnosis was achieved only through histopathology and immunohistochemistry. The resected tumor demonstrated the characteristic alternating Antoni A and Antoni B areas, with diffuse S-100 protein positivity and no cytokeratin expression, confirming a benign schwannoma. The differential diagnosis in such cases is broad, including inverted papilloma, angiomatous polyps, hemangioma, juvenile nasopharyngeal angiofibroma, and carcinoma, and misdiagnosis is an ever-present risk.[3,4] In particular, unilateral epistaxis in an adult is often a red-flag sign for malignancy; in an adolescent, it classically suggests a juvenile angiofibroma. Our case illustrates that a schwannoma, albeit rare, can present similarly. Thus, clinicians should include schwannoma in the differential diagnosis of unilateral nasal bleeding or mass lesions.

Once a schwannoma is diagnosed, complete surgical excision is the treatment of choice. These tumors are generally resistant to radiation therapy, and there is no role for chemotherapy in benign cases. Endoscopic resection is often feasible and preferable for tumors confined to the nasal cavity or sinuses, as it allows excellent visualization with minimal morbidity. In our patient, the tumor was successfully removed via an endonasal endoscopic approach, and careful follow-up has shown no evidence of residual disease or recurrence. Schwannomas of the sinonasal tract have a very low recurrence rate when fully excised. Even in the rare event of recurrence, malignant transformation is exceedingly uncommon.[5,6,8]

Our case also highlights a few gaps and controversies in the literature. The occurrence of a schwannoma in a patient with prior sinus surgery is intriguing. It raises the question of whether surgical trauma or altered innervation could have contributed to tumor development in this unique situation, or whether an unrecognized schwannomatous lesion was present years ago. There is no evidence in the literature definitively linking FESS to schwannoma genesis, so this remains speculative. Another persistent challenge is identifying the nerve of origin for sinonasal schwannomas. Given the rich but delicate innervation of the nasal cavity, it is usually impossible to pinpoint the exact nerve from which the tumor arose. Schwannomas in this region are thought to originate from small branches of the trigeminal nerve (ophthalmic or maxillary division) or autonomic nerves within the sinonasal mucosa.[6,8] In practice, however, the tumor often displaces or engulfs the parent nerve, and no obvious nerve stump is seen during surgery. This

uncertainty has minimal impact on immediate management but represents a gap in our understanding of the tumor's pathogenesis. Finally, this case reiterates the importance of correlating radiological findings with histopathology before finalizing a treatment plan. Benign schwannomas can present with alarming features (such as bone erosion, rapid growth, or bleeding) that radiologically simulate malignancy, leading even experienced clinicians toward an initial incorrect impression. Awareness of this potential imaging pitfall can prevent misdiagnosis and overtreatment.[8,9]

CONCLUSION

This rare case of a lateral nasal wall schwannoma, in a post-FESS patient and masquerading as a sinonasal carcinoma, underlines several key points. Unilateral nasal tumors with epistaxis should not be presumed malignant without histopathological confirmation. The diagnosis of schwannoma is crucial in managing unusual sinonasal lesions and guiding proper surgical intervention. Such awareness will help avoid both missed diagnoses and overly aggressive treatments in patients with sinonasal tumors.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

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Cite this article as: Kumari D, Hoda Z, Singh A, Kumar A, Raj R, Sinha R, et al. A rare recurrent case of lateral nasal wall schwannoma: mimicking sinonasal carcinoma. Int J Otorhinolaryngol Head Neck Surg 2026;12:105-8.