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Case Report

Schwannoma of the nasal columella: a rare presentation and surgical management through open rhinoplasty

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ABSTRACT

Schwannomas are rare benign tumors arising from Schwann cells, with infrequent occurrence in the nasal cavity and paranasal sinuses. Even more uncommon is their presence in the nasal columella, where only a few cases have been reported. We report the case of a 64-year-old female presenting with a slow- growing, firm, non-tender mass in the left nasal vestibule, arising from the membranous septum. The lesion measured 1.5×1.2 cm, causing partial nasal obstruction. The patient had a complex oncological history, including treated breast cancer and suspected CNS metastases. Computed tomography (CT) imaging revealed a well-defined hypodense mass at area I of Cottle. Complete surgical excision was performed via open rhinoplasty, allowing optimal access and aesthetic preservation. Histopathology revealed Verocay bodies in Antoni A pattern. Immunohistochemical staining was positive for S-100 and vimentin, confirming the diagnosis of schwannoma. Postoperative recovery was uneventful. This case highlights a rare location of sinonasal schwannoma and supports open rhinoplasty as an effective approach for diagnosis and treatment, providing both functional and cosmetic benefits.

Keywords: Schwannoma, Nasal columella, Open rhinoplasty, Sinonasal tumor, Nasal obstruction, Immunohistochemistry

INTRODUCTION

Schwannomas are benign tumors that originate from Schwann cells, which form the sheath of cranial, peripheral, and autonomic nerves. They are slow-growing neoplasms with a predilection for the head and neck region, accounting for 25–45% of all schwannomas. However, only 4% of these occur in the nasal cavity and paranasal sinuses.[1]

The most common site for nasal schwannomas is the nasal septum, with approximately 31 cases reported to date.[2] Schwannomas, also known as neurilemmomas, typically present between the fifth and sixth decades of life and show no gender or racial predilection.[3] They usually arise from the trigeminal nerve (especially ophthalmic or maxillary branches) or autonomic nerves, but never from the optic or olfactory nerves, which lack Schwann cell sheaths.[4]

Clinically, sinonasal schwannomas cause nonspecific symptoms such as unilateral nasal obstruction, epistaxis, headache, or altered olfaction, depending on tumor size and location.[5] Radiologic imaging including sinonasal computed tomography (CT) and magnetic resonance imaging (MRI) helps assess lesion extension, but histological analysis remains essential for diagnosis.[6] Histologically, schwannomas demonstrate Antoni A and B patterns and positive immunostaining for S-100 protein.[7] The treatment of choice is complete surgical excision, with the endoscopic or open approach determined by lesion site

and size. Recurrence is rare, and long-term follow-up may not be necessary.[8-11]

CASE REPORT

A 64-year-old female presented with a one-year history of progressive left-sided nasal obstruction caused by a firm, non-tender mass. The lesion was slow-growing and located in the left nasal vestibule, arising from the membranous septum (Cottle area I). The patient had a history of right breast cancer treated with total mastectomy and lymphadenectomy in 2013, followed by an unspecified dose of tamoxifen, discontinued three years ago. She was also under surveillance for a probable frontal meningioma and a suspected metastasis at the bulbomedullary junction, for which she underwent radiotherapy in 2024.

Physical examination revealed a mesorrhine nose with a central columella. Nasal endoscopy showed an approximately 1×1 cm firm, regular, non-painful lesion in the left vestibule, partially obstructing the airway by about 50% (Figure 1).

Figure 1: Basal view of the external nose demonstrating a rounded columellar mass causing asymmetry of the nostrils prior to surgical intervention.

CT imaging confirmed a 14×12 mm well-defined, hypodense nodular mass (26 UH) in the anterior septal region (Cottle area I) (Figure 5).

Surgical excision was performed under general anesthesia using an open rhinoplasty approach. A soft, well-encapsulated mass was found between the medial crura of the lower lateral cartilages. The lesion was completely excised without adhesion to surrounding structures and measured approximately 1.5×1.2 cm (Figures 2 and 3).

Figure 4 shows postoperative basal view showing complete resolution of the columellar swelling with restoration of nasal symmetry.

Histopathological examination revealed a stacked arrangement of two rows of elongated palisade nuclei alternating with acellular zones composed of cytoplasmic processes of schwann cells, also known as Verocay bodies in Antoni A pattern. Immunohistochemistry was positive for S-100 protein and vimentin, confirming the diagnosis of schwannoma. The patient's postoperative course was uneventful, with no evidence of recurrence at follow-up (Figure 6).

Figure 2: Intraoperative view obtained through an open rhinoplasty approach, exposing the lesion located within the columellar soft tissue.

Figure 3: Gross specimen of the excised columellar schwannoma, measuring approximately 2 cm in greatest dimension.

Figure 4: Postoperative basal view showing complete resolution of the columellar swelling with restoration of nasal symmetry.

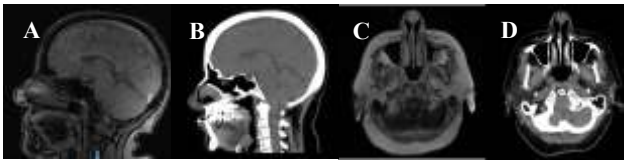

Figure 5 (A-D): Imaging findings of a nasal vestibular schwannoma. Sagittal MRI shows a well-circumscribed soft-tissue mass arising from the nasal vestibule. Sagittal CT demonstrates a soft-tissue lesion without significant bony erosion. Axial MRI reveals a homogeneous, contrast-enhancing mass in the anterior nasal cavity. Axial CT delineates the lesion's anatomical relationship with the nasal septum, turbinates, and surrounding soft tissues.

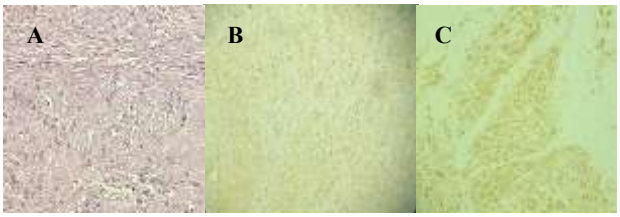

Figure 6: (A) 10x hematoxylin and eosin staining shows a second population of elongated cells forming palisades (verocay bodies). (B) 10x antibodies to vimentin showed diffuse and intense positivity. (C) 20x elongated and polygonal shaped cells with vacuolated cytoplasm and spindle cells showed diffuse and intense positivity for ps100, ema and negative chromogranin.

DISCUSSION

Schwannomas of the nasal cavity are rare, and those located in the nasal columella are even less common, with only a handful of cases described in the literature.[1,2,4] This case aligns with the demographic and clinical pattern of sinonasal schwannomas, which typically affect individuals between 50 and 60 years of age and present with nonspecific symptoms.

In this case, the mass caused partial nasal obstruction and was initially suspected to be a benign vestibular tumor. Radiologic findings were nonspecific, and definitive diagnosis required histopathological confirmation. The tumor's positivity for S-100 protein and vimentin is consistent with previous reports, reinforcing the value of immunohistochemistry in differentiating schwannomas from other sinonasal tumors.[7]

The surgical approach was selected based on tumor location. While endoscopic resection is standard for many sinonasal lesions, an external approach via open rhinoplasty allowed optimal visualization and ensured complete excision without compromising nasal aesthetics or function. This technique has been advocated for anterior lesions when cosmesis is a concern.[10]

Our case contributes to the limited literature on columellar schwannomas and highlights the importance of including them in the differential diagnosis of anterior nasal masses. It also supports the use of open rhinoplasty as a safe and effective surgical strategy in selected cases.

CONCLUSION

This case demonstrates that schwannomas, though rare in the nasal columella, should be considered in the differential diagnosis of anterior nasal masses. Histopathological and immunohistochemical analysis remain the cornerstone for accurate diagnosis. Open rhinoplasty provides excellent access and cosmetic results, supporting its use in the management of anterior sinonasal lesions.

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