CASE REPORT

Nasal septal schwannoma: a rare sinonasal tumour with certain peculiarities

K Devaraja, Dipak Ranjan Nayak, Balakrishnan Ramaswamy, Prerit Rao

Department of
Otorhinolaryngology and Head
and Neck Surgery, Kasturba
Medical College, Manipal,
Karnataka-576104, India

Correspondence to
Dr K Devaraja,
deardr@gmail.com

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SUMMARY

Sinonasal schwannomas constitute 4% of head and neck nerve sheath tumours; however, schwannomas involving the nasal septum are quite rare. We present a 57-year-old male patient with nasal septal schwannoma who was managed successfully by endoscopic excision. 32 cases of septal schwannoma have been reported so far in the literature. This report discusses certain peculiar features exhibited by schwannomas of the nasal septum. Septal schwannoma does not show any age, sex or side predilection. However, they tend to involve posterior part of the septum and presumed to arise from the nasopalatine branch of the trigeminal nerve. Imaging findings of the sinonasal schwannoma are non-specific, but the histopathological characteristics are diagnostic, with seldom need for immunohistochemistry. Endoscopic excision is the safe and effective treatment option for the septal schwannoma of any size and location. Recurrence has not been reported in the literature following endoscopic excision.

BACKGROUND

Schwannomas are benign tumours of nerve sheath cells. Nearly half of reported schwannomas are seen in head and neck region. Among these head and neck schwannomas, sinonasal schwannomas constitute only 4% and those arising from the nasal septum are very rare.¹ While sharing our experience in managing one such case of septal schwannoma, we discuss certain peculiarities identified while the review of the literature. The schwannomas rising from the nasal septum are found to have distinct

clinical–pathological characteristics compared with their other sinonasal counterparts.

CASE PRESENTATION

A 57-year-old male patient was referred to the tertiary care centre with a 4-month history of unilateral progressive nasal obstruction. He had no other complaints like epistaxis or sneezing spells and had no prior illnesses. On examination, there was a smooth polypoidal lesion inside the right nasal cavity with normal overlying mucosa as shown in [figure 1A](#). Rest of the examination was unremarkable.

INVESTIGATIONS

The non-contrast CT showed homogenous soft-tissue density in the right nasal cavity, seeming to be arising from posterior bony septum as shown in [figure 2](#).

TREATMENT

The patient was taken up for endoscopic excision under general anaesthesia. The tumour was found to have adhered to posterior part of the nasal septum, adjacent to the floor of the nose. It was removed completely as in [figure 1B](#). Posterior ethmoids and sphenoid sinus were found to contain mucous secretions, which could be because of the tumour obstructing the respective outflow tracts. However, after exteriorising the air cells, mucosa of these sinuses was found to be healthy. Histopathological examination of the resected specimen showed nerve sheath tumour with Antoni A and

Figure 1 Clinical picture showing mucosa-covered tumour attached to the posterior part of the septum (A) and gross tumour specimen after excision (B).

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Figure 2 (A) Coronal and (B) axial CT images, showing soft-tissue lesion involving the right nasal cavity attached to the posterior septum.

Antoni B patterns along with S-100 positivity on immunohistochemistry, as in [figure 3](#).

OUTCOME AND FOLLOW-UP

The patient is disease free at 6-month follow-up and has no sinonasal symptoms.

DISCUSSION

Schwannoma is one of the most common neoplasms of head and neck region. Most commonly, it arises from lower cranial nerves in the skull base or in the neck. Maxillary sinus, ethmoids and sphenoid sinuses are the commonly described sites to harbour sinonasal schwannomas. However, schwannomas arising from the nasal septum are much rarer. So far, 32 cases of nasal septal schwannomas have been reported in the English literature.^{2,3} Generally, the symptomatology of paranasal schwannoma is non-specific and depends on the site of origin as well the extent of the tumour. Nasal septal schwannoma most often presents with unilateral nasal obstruction, epistaxis, headache or rhinorrhoea in that order of frequency.² The affected patients could also manifest with snoring, proptosis, blurring of vision and/or cheek swelling depending on the spread of the tumour. Epistaxis, if present, could be due to secondary ulceration or erosion of the surface mucosa. Septal schwannoma, like schwannomas arising from any other site of the sinonasal area, does not show any predilection for particular age group or particular sex.² Due to some reason unknown, sinonasal schwannomas have been reported to involve left side nasal cavity more commonly; however, no such distribution is noted with septal schwannomas.^{1,2} On

examination, any sinonasal schwannomas including that attached to the septum would appear as a smooth-surfaced, mucosa-covered mass in the nasal cavity. This mass lesion may cause the blockade of paranasal sinuses' ostia hampering their mucociliary clearance and thus may predispose to sinusitis.

CT findings of sinonasal schwannoma include homogenous soft-tissue opacity with or without bony erosion; however, these characteristics are generally non-specific and could be seen in many benign lesions of the sinonasal region.^{4,5} The common differential diagnosis includes inflammatory polyp, neurofibroma, chondroma and inverted papilloma.⁶ Though rare, malignant lesions like lymphoma or carcinoma may also exhibit similar characteristics on CT.⁶ CT also demonstrates the site of origin (or attachment) of the lesion along with the status of surrounding paranasal sinuses. Septal schwannomas commonly involve the posterior part of the nasal septum and are said to arise from the nasopalatine branch of the trigeminal nerve.² On MRI, sinonasal schwannomas would appear as intermediate signal intensity lesions on T2-weighted images and would exhibit enhancement on giving contrast.⁷ Time-intensity curve characteristics of dynamic contrast-enhanced MRI helps in differentiating the schwannomas from other sinonasal tumours.⁷

Surgical excision is the treatment of choice for sinonasal schwannoma, including those involving the nasal septum. Conventionally, sinonasal schwannomas arising from or extending laterally to infratemporal fossa or lateral skull base would require an open approach.⁸ In contrast, septal schwannomas of any size and location can be effectively treated by

Figure 3 Histopathological images. (A) H&E (40x) showing Antoni A and Antoni B pattern of tumour cells. (B) Immunohistochemistry (40x) showing S-100 positivity.

endoscopic approach alone.² Of late, various authors have demonstrated that the endoscopic piecemeal excision is safe and effective even for large and laterally located schwannomas.¹

Histopathologically, schwannomas are made of spindle-shaped cells which are rich in the eosinophilic cytoplasm. These cells are arranged in a characteristic biphasic pattern of Antoni A and Antoni B, the areas of compactly arranged cells and loosely arranged cells, respectively. Interestingly, Antoni A pattern is seen predominantly in sinonasal schwannomas, including those arising from the nasal septum.⁴ Immunohistochemistry showing S-100 positivity confirms the diagnosis of schwannoma, when in doubt. The recurrence following surgical excision is quite rare in sinonasal schwannomas and in case of nasal septal schwannomas, no recurrences have been reported in the literature.⁴ Septal schwannoma has not recurred even when an excised margin was not free of tumour.⁶ Sinonasal schwannomas could have a malignant transformation like schwannomas of any other site; however, there are no reports of malignancy in septal schwannomas.⁹

Learning points

- Schwannomas rarely arise from the nasal septum, and these septal schwannomas behave peculiarly.
- Septal schwannomas generally involve posterior septum.
- Endoscopic excision is sufficient even in large tumours.
- No recurrence or malignant transformation has been reported for septal schwannoma.

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