

CASE REPORT

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A rare case of schwannoma of the nasal vestibule

Ashish Agarwal, Pallika Kumar^{*} , Noopur Gupta and Nishi Sharma

Abstract

Background Schwannomas of the nose and paranasal are extremely rare. Few schwannomas arising from within the lateral wall of the nose have been reported to date.

Case presentation A 32-year-old male presented to us with complaints of left-sided nasal obstruction and a mass in his nasal cavity. The evaluation revealed a benign spindle cell lesion arising from within the lateral wall nose which was excised. The final histopathology report revealed a nasal schwannoma.

Discussion Schwannomas are benign tumors arising from Schwann cells. Schwann cells are responsible for the formation of the myelin sheath. They are rare, slow-growing tumors. Twenty-five to 45% tumors arise in the head and neck, of which only 4% were arising from nasal cavity and paranasal sinuses.

Conclusion To generate awareness about the varying clinical presentations of Schwannomas in the nose and paranasal sinuses and their management.

Keywords Sinonasal schwannoma, Benign spindle cell lesion, Lateral wall nose

Background

Schwannomas are benign encapsulated tumors composed of Schwann cells. They were first described by Verocay in 1908. They are also known as neurilemmomas, neurinomas, or perineural fibroblastomas [1]. They can arise from any nerve in the peripheral nervous system that possesses a myelin sheath. Thus, schwannomas may occur anywhere in the body. In the head and neck, they have been observed in the neck, pharynx, larynx, scalp, face, oral cavity, middle ear, and internal auditory canal. Involvement of the nasal cavity and paranasal sinuses is extremely rare. Of these, involvement of the ethmoid sinus, maxillary sinus, nasal fossa, sphenoid sinus, and nasal septum has been reported [2–5]. An extensive review of available literature revealed that nasal

schwannomas usually arise from the medial wall of the nose. In this case report, we present a rare schwannoma arising from the nasal vestibule.

Case presentation

A 32-year-old male presented to the outpatient Department of Otorhinolaryngology of Dr. Ram Manohar Lohia Hospital, New Delhi, with complaints of left-sided nasal obstruction for 1 year. The patient was employed in the telecommunication industry. A detailed history revealed that he had observed a mass in his nasal cavity which progressively increased in size leading to complete obstruction of the left side. No positive history of trauma, nasal bleeding, nasal discharge, diplopia, or facial pain was recorded. On anterior rhinoscopy, a smooth, well-circumscribed mass was visible in the left nare with obliteration of the nasolabial fold on the left and bulging of the nasal ala (Fig. 1). Diagnostic nasal endoscopy revealed a mass in the left nasal cavity arising from the within the lateral wall inferior to the inferior turbinate. It was pinkish in color, well-circumscribed, and did not bleed on touch. The rest of the nasal cavity appeared

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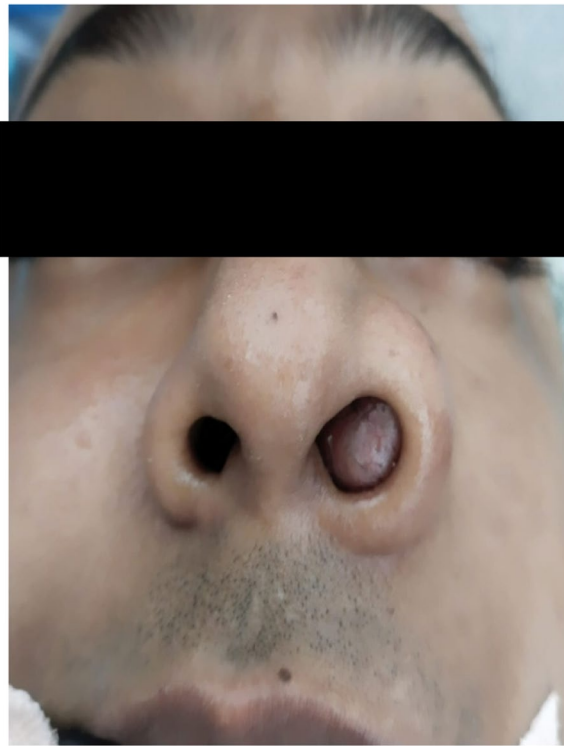


Fig. 1 Mass arising from left nasal cavity causing unilateral nasal obstruction

normal. The remaining otorhinolaryngological examination was normal.

A fine needle aspiration cytology (FNAC) was attempted which revealed moderate cellularity. Single clusters of benign round to oval and spindle cells were arranged in a mesenchymal matrix along with a few singly scattered spindle cells—suggestive of benign spindle cell lesion. Contrast-enhanced computed tomography of the nose and paranasal sinuses (CECT Nose PNS) (Fig. 2) showed a well-defined soft tissue lesion 27×20 mm involving the lateral wall nasal cavity and alar region and lateral wall of nostril extending till nasolabial folds.

On the basis of clinical, pathological, and radiological findings, the tumor appeared to be a benign spindle cell lesion, and thus, excision was planned under general anesthesia (GA). Due pre-anesthetic workup was done, and well-informed written consent was taken. The patient was taken up for the procedure wherein GA was given and 2% xylocaine with adrenaline (1:200,000) was infiltrated in the nasomaxillary groove and floor of nasal cavity on the left side. The incision was given in the left nasomaxillary groove and extended inferiorly along the floor of the nasal cavity. The soft tissue was dissected. The skin incision was given between mass and ala and dissection continued after raising the flap. A broad-based globular mass was found arising from within the lateral nasal wall and excised in toto (Fig. 3). Suture was done in 2 layers (Fig. 4). Bilateral nasal cavity packed with mero-coele was soaked in soframycin. The postoperative period was uneventful, and the pack was removed after 2 days.

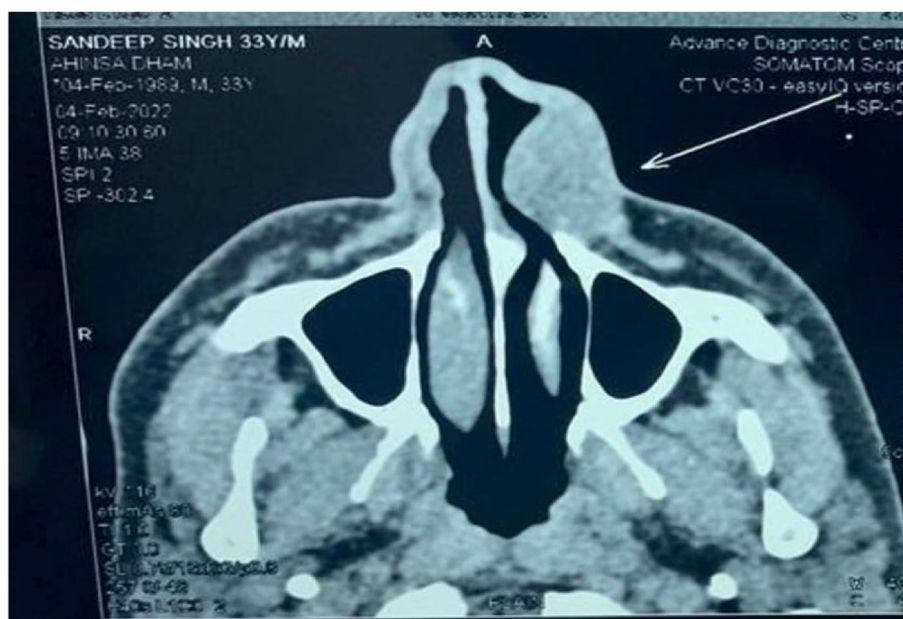


Fig. 2 Axial cuts of computed tomography scan of the nose and paranasal sinuses showing a mass arising from within the lateral wall of the left nasal cavity



Fig. 3 Excised nasal mass



Fig. 4 Post-excision sutured nasal cavity

Grossly, the tumor was a gray-white soft tissue of $3.5 \times 2 \times 1$ cm. The external surface was bosselated with few hemorrhagic areas. The cut section revealed a homogenous gray-white mucoid. Microscopically, the sections showed capsulated tumor nodules. The tumor was composed of alternating hypercellular and hypocellular areas. Hypercellular (Antoni A) areas show interlacing bundles of the spindle-to-oval cells arranged in a whirling pattern with nuclear palisading forming Verocay bodies (Fig. 5). These cells show spindle-to-oval nuclei with granular chromatin, inconspicuous nucleoli, and fibrillary eosinophilic cytoplasm. Interspersed myxoid hypocellular areas (Antoni B) show hyalinized congested vessels and mild lymphocytic infiltration. The features were suggestive of schwannoma. These histopathological findings were consistent with prior cytological findings.

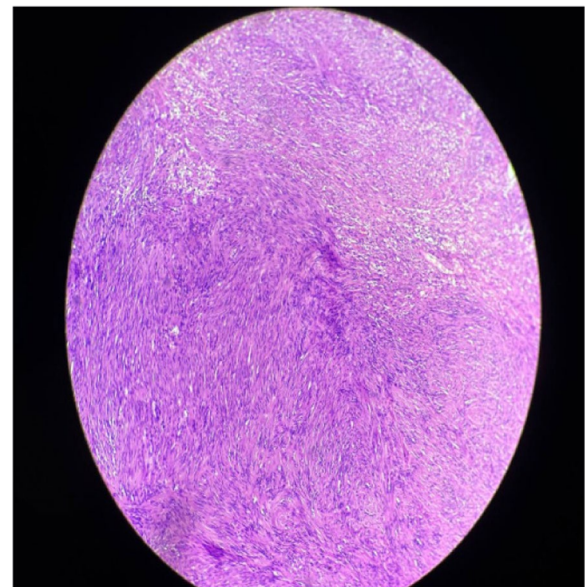


Fig. 5 HPE schwannoma 20× magnification (Verocay body at center showing palisading of nuclei)

Discussion

Schwannomas are rare, benign, slow-growing tumors arising from Schwann cells which are responsible for the formation of the myelin sheath. Twenty-five to 45% of tumors arise in the head and neck, of which only 4% were arising from the nasal cavity and paranasal sinuses [6, 7]. Only 20 cases of nasal schwannoma have been reported to date. They occur equally in both genders in the 5th or 6th decade of life. However, in our case, the patient was 32 years of age. The most frequent origin is from the vestibulocochlear nerve [8]. Sinonasal schwannomas arise from branches of the trigeminal nerve (ophthalmic/maxillary divisions),

sphenopalatine ganglion, and nerves innervating the nasal mucosa [9, 10]. The lateral wall of the nose is supplied by the anterior ethmoidal nerve, lateral posterior superior, and inferior nasal nerve, so we thought that the origin of the tumor would be from the aforementioned nerves. But it would be difficult to make a definitive statement regarding the nerve involved. Hence, further research is warranted to identify the nerve of origin in nasal schwannomas.

Majority of schwannomas present with unilateral nasal obstruction, pain, headache, epistaxis, and rarely diplopia, proptosis, and ptosis. Habesoglu et al. in their study of 207 patients with complaints of unilateral nasal obstruction reported that 20.6% were neoplastic etiologies. Of neoplastic etiologies, inverted papilloma was the most common pathology and the least common tumors were schwannoma, ameloblastoma, pleomorphic adenoma, non-Hodgkin lymphoma, and squamous cell carcinoma; accounting for only 1.6% [11].

Generally, nasal schwannoma arises from the middle meatus and in rare cases—the nasal septum [5, 12–14] and lateral wall. Only one case of schwannoma arising from the nasal vestibule has been reported to date [15].

Our patient presented with nasal obstruction, lack of features of facial pain, headache, and facial fullness further pointed to the fact that sinuses were uninvolved and the osteomeatal complex was clear. Most of the cases reported bleeding on touch. However, in our case, since it was arising from within the lateral nasal wall, it did not bleed on touch. In a single case reported of a tumor arising from the lateral wall of the nose, the tumor was a pedunculated skin-lined mass. However, in our case, the mass had a broad-based globular appearance. A classic feature of head-and-neck schwannomas is a well-defined capsule, with the exception of tumors of the nose and paranasal sinuses, which have been reported in all prior cases, as being acapsular. Other authors have theorized that the lack of a capsule could be attributed to these tumors deriving from the autonomic nerves of the sinonasal mucosa, which lacks perineural cells. Contrary to the above finding, histopathology in our case revealed a well-encapsulated schwannoma. The tumor was composed of alternating hypercellular and hypocellular areas. Hypercellular (Antoni A) areas show interlacing bundles of the spindle-to-oval cells arranged in a whirling pattern with nuclear palisading forming Verocay bodies.

The treatment of schwannoma is excision. The surgery can be done endoscopically or by an external approach. Since in our case the size of the tumor was such that it was not possible to excise the tumor endoscopically due to the inability to navigate the endoscope further, the tumor was excised by an external approach under general anesthesia. The skin incision was given over the alar crease. The mucosal incision was given over the

mucocutaneous junction over the swelling in the nasal vestibule all around the alar rim. Mucosal flaps were raised, and swelling was identified. Dissection was done, and swelling was freed from the surrounding structures. The mucosal layers were sutured using absorbable sutures. The skin closure was done with fine sutures to maintain cosmesis. Recurrences are rare to occur. The patient is doing well on follow-up.

Conclusion

The purpose of reporting this case of nasal schwannoma is to generate awareness among young clinicians of its varying presentations. Due to its benign course, the disease can be easily managed by surgical excision granting significant relief to the patient.

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Authors' contributions

AA and NG wrote the report. PK edited the manuscript. NS supervised the management. NG and AA edited the photographs. The authors read and approved the final manuscript.

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Declarations

Ethics approval and consent to participate

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Consent for publication

Written informed consent was taken from the patient.

Competing interests

The authors declare that they have no competing interests.

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