Case Report

Nasal Schwannoma

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Abstract
Schwannomas are benign tumors of nerve sheath. According to the literature half of the schwannoma cases occur in head and neck and less than 4% occur in the sino-nasal tract. We present a case of a 22 years old female patient with a history of left sided nasal obstruction and purulent rhinorrhea. CT scan revealed a mass filling the left nasal cavity. Pathological examination revealed encapsulated tumor with pallisading cellular arrangement and high cellular density. Diagnosis of nasal schwannoma was made and was removed surgically. The patient was followed for 6 months post operatively.

Keywords: Chronic Nasal Obstruction, Nasal Schwannoma, Nasal Polyp

Introduction
Schwannoma (neurilemmomas or neurinomas or perineurialfibroblastomas) are benign encapsulated nerve sheath tumors composed of schwann cells. This tumor most frequently originates from the acoustic nerve in the head and neck region. 45% of all schwannomas occur in body and 25% as extracranial schwannomas. It has also been observed in the neck, pharynx, larynx, scalp, face, oral cavity, middle ear and internal auditory canal. However involvement of nasal cavity and para-nasal sinuses is rare. Incidence is 1 in 3000 schwannomas.1

Case Report
A 22-year-old female presented with 6 months history of progressive left sided nasal obstruction, purulent rhinorrhea and epistaxis. There was no history of anosmia, facial pain, headache and recent nasal trauma. Patient was neither suffering from any comorbid diseases, nor reported any such family history. Anterior rhinoscopy revealed a large polypoidal mass almost completely filling the left nasal cavity. The polyp was firm in consistency and appeared to be covered by normal nasal mucosa. The nasal septum was deviated to opposite side and right nasal cavity was clear.

X-Ray PNS showed opaque left nasal cavity. Maxillary and frontal sinuses were normal. CT scan of paranasal sinuses displayed a homogenous mass, completely filling the left nasal cavity, causing its expansion and thinning of the walls and deflection of nasal septum to right side. The mass also had intra-cranial, extra-dural extension, with erosion of cribriform plate of ethmoid. The mass showed patchy enhancement on post-contrast images.

MRI para-nasal sinuses was done, which showed a mass of intermediate signal intensity on T1 and heterogeneous to high signal on T2 filling and expanding the left nasal cavity. Mass showed heterogeneous enhancement after gadolinium administration. MRI further confirmed erosion of cribriform plate and intra-cranial extra-dural extension.

The differential diagnosis of Nasal schwannoma or Hemangioma was made. Patient then underwent biopsy under local anesthesia. Histopathological examination showed both spindle shaped schwann cell rich area with nuclear palisading (Antoni A) and schwann cell poor loose myxoid areas (Antoni B). Verocay bodies were present without any evidence of ancient or malignant changes. The histopathological diagnosis was schwannoma.

The mass was surgically removed and patient followed for 6 months and showed no recurrence of the tumor.

Discussion
Schwannoma is not a common tumor in the sinonasal tract. Only about 70 cases have been recorded in literature. A sinonasal schwannoma can be found in many sites including the nasal septum, paranasal sinuses, tip of the nose, turbinate and nasopharynx. The presenting symptoms of the tumor are always non-specific depending on the site of the mass.2

Generally, a unilateral nasal obstruction is the most common symptom where patients usually feel a progressive unilateral nasal obstruction for a long period of time. Unilateral epistaxis is also a frequent complaint. Anosmia, painful sensation and headache are noted because of the mass effect.
of the tumor.\textsuperscript{2} Epistaxis is common in tumors of ethmoid sinus and nasal fossae, while pain is related to lesions of maxillary sinus.\textsuperscript{3} Grossly the schwannoma is usually reported to be an encapsulated mass with a smooth surface. Microscopically Antoni A and Antoni B arrangements are diagnostic for this tumor. On account of hypercellular pattern of nasal schwannoma, it is always important to consider the possibility of malignancy. However, a scanty mitotic change in the average high power view may support the diagnosis of benign schwannoma.\textsuperscript{2}

![Contrast enhanced CT Paranasal sinuses](image)

**Figure 1:** Contrast enhanced CT Paranasal sinuses(a) Coronal image: A mass filling the left nasal cavity causing its expansion and thinning of the walls with erosion of cribiform plate of ethmoid and intra-cranial extra-dural extension of the mass. Mass is showing patchy enhancement (b) Axial image: heterogeneously enhancing mass causing expansion of left nasal cavity with deviation of nasal septum to the right. (c) MRI para-nasal sinuses T2 image: Mass having heterogeneous to high signal filling the left nasal cavity causing its expansion with deviation of nasal septum to the right with erosion of cribiform plate and intra-cranial extra-dural extension of the mass.

Cellular schwannoma also has a benign clinical course. There was no malignant cell infiltration, which further supports its benign nature.\textsuperscript{2,4} Immunohistochemical stains help in differential diagnosis. Weary spindle cells are suggestive of nerve or muscle origin. The tumor cells are strongly and diffusely positive for vimentin and S-100 stainings.\textsuperscript{2} According to one report, schwannoma without a fibrous capsule has also been noted in gastric schwannoma. It is considered to be from the autonomic myenteric plexus because of the absence of a fibrous epineural sheath. Therefore, it is possible that nasal schwannoma in our case is from autonomic nerve origin.\textsuperscript{2} Although the olfactory nerve is close to the location of tumor, lack of schwann cells in the olfactory nerve excludes this possibility.\textsuperscript{2} There have been reports of patients with neurofibromatosis who developed nerve sheath tumors in paranasal sinuses and nasal cavity. Although extremely rare, this possibility should be kept in mind and careful clinical history and physical examination should be undertaken to exclude neurofibromatosis in patients with sinonasal schwannomas.\textsuperscript{5} Nasal Schwannomas usually have benign clinical course and local wide excision of the tumor may be the first choice of management.\textsuperscript{2} It is worthwhile to take a biopsy specimen before the operation for determining an appropriate surgical procedure. MRI evaluation before surgical exploration is recommended. Schwannoma presents as a solitary soft mass with a high signal on T2 weighted image on MRI. In some cases, the nerve is usually at the peripheral side of the mass. These examinations promote better comprehension of the nature and the extent of the tumor.\textsuperscript{2}

**References**