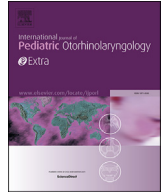




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Case Report

Schwannoma of the nasal septum: Rare presentation and literature review

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ABSTRACT

Schwannomas are benign primary tumors of the Schwann cells of the nerve sheath known to occur throughout the body. We present a unique case of a schwannoma arising from the nasal septum in a healthy 16-year-old adolescent boy. The patient had approximately two months of left-sided nasal obstruction after sustaining a lacrosse injury to the nose. Imaging revealed a nonspecific soft tissue mass, which after nasal endoscopy and excision was revealed to be a schwannoma. We discuss our results as well as present a review of the existing literature.

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1. Introduction

Schwannomas are benign tumors of the nerve sheath commonly associated with cranial nerve VIII. Reportedly 25–45% of all schwannomas are found within the head and neck [1]; however, only 4% of all schwannomas are associated with the sinonasal tract. More uncommon is the nasal septum presenting as the site of origin of schwannomas [1–6]. We present a case of a young patient presenting with four months of nasal obstruction secondary to a septal schwannoma.

2. Case presentation

A 16-year-old adolescent boy was referred to our office for an evaluation of a possible nasal bone fracture. The patient had reportedly fractured his nose two years prior while boxing. It was untreated and left him with a twisted nose deformity to the left. He then sustained nasal trauma during a lacrosse game two months prior to being seen in clinic and described left-sided nasal obstruction since the event. He denied any epistaxis, rhinorrhea, anosmia, facial numbness, or purulent discharge. His past medical, surgical, and family history were noncontributory.

On exam, his nose was externally notable for a twisted nose

deformity to the left. Anterior rhinoscopy revealed a midline septum with a large submucosal mass within the nasal vault. The mass was firm, nontender, noncompressible, and appeared relatively fixed to the septum. The rhinoscopic exam was otherwise normal.

A computed tomography (CT) scan was recommended to further evaluate the lesion. This was performed and revealed a $1.0 \times 1.5 \times 2.1$ cm soft tissue attenuating mass within the left nasal airspace in close proximity to the septum (Figs. 1 and 2). There were no signs of bony destruction, and the only other abnormal findings were the presence of a healing nondisplaced, bilateral nasal bone fracture and a nasal tip slightly deviated to the left.

The patient was taken to the operating room for bilateral nasal endoscopy and excisional biopsy of the left nasal septal lesion. A pale, reddish lesion on the anterior, caudal septum was encountered completely obstructing the left nasal vault (Fig. 3). A hemitransfixion incision was used to expose the lesion in the submucoperichondrial plane. The lesion was completely excised en bloc. The lesion upon excision was yellowish, firm, and rubbery in appearance (Fig. 4), and the specimen was sent fresh to pathology. The patient tolerated the procedure well and without complication.

Histopathological exam revealed a $2.0 \times 1.0 \times 8$ cm well-encapsulated nodular mass with a pale tan, rubbery, and whorled cut surface. Microscopic examination revealed a partially encapsulated tumor which was biphasic with compact areas (Antoni A) and some more loose areas (Antoni B). The cells were spindle-shaped with eosinophilic cytoplasm and elongated nuclei. Some

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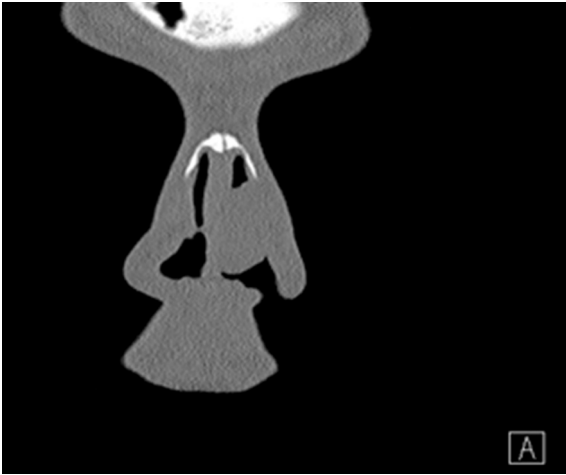


Fig. 1. Coronal CT cut illustrating left nasal mass filling nasal vault and overlying the nasal septum.



Fig. 2. Axial CT cut showing left nasal lesion approximating the nasal septum and obstructing the left nasal vault. Also note no evidence of bony erosion.

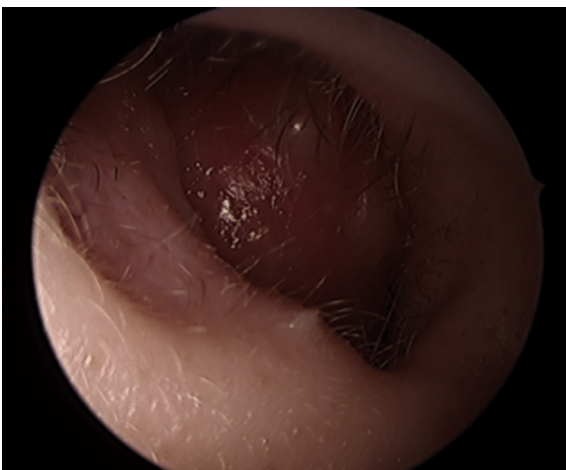


Fig. 3. Endoscopic view of left nasal lesion.

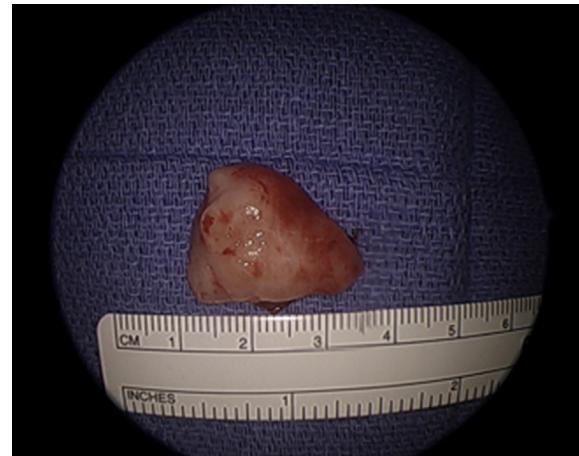


Fig. 4. Macroscopic view of left nasal lesion after excision.

At 1-month follow up, the left nasal vault was healed with no clinical evidence of recurrence.

3. Discussion

Schwannomas are benign nerve sheath tumors commonly seen in the head and neck region. Reportedly 25–45% of schwannomas are found within the head and neck region, and 4% of those are found within the sinonasal tract [3]. Furthermore, at the time of this literature review (Pubmed search through June 2017), a total of 19 schwannomas originating on the nasal septum were reported, for a total of 20 reported cases after inclusion of this case report. This total also matched an excellent literature review from Min et al. from January 2017 [4]. There is no sex predilection, and rates are 1 in every 3000 patients. It can occur in any age demographic, but is more common in the 2nd through 4th decades (Table 1) [5].

Common symptomatology seen in the literature review included unilateral nasal obstruction, epistaxis, headache, rhinorrhea, and pain. Orbital symptoms can occur in severe cases. Our case illustrates the first instance trauma was detailed and may have played a role in the etiology of disease, as the previous cases reported no instances of facial trauma; however, no such link between trauma and schwannomas occurring in other anatomical locations has been definitively proven. Schwannomas of the septum can originate from an autonomic or sensory nerve sheath; however, the exact nerve of origin is unclear [6]. Our patient was relatively asymptomatic other than the obstructive nature of the lesion. Other reports note bony destruction in some instances.

The differential diagnosis of a unilateral nasal mass is exhaustive. In a 2010 study, the prevalence of etiologies were found to be, in decreasing order, nasal polyposis (22%), antrochoanal polyp (19%), chronic rhinosinusitis (13%), concha bullosa (11%), inverted papilloma (6%), and retention cysts (6%).

Magnetic resonance imaging (MRI) and CT are considered in evaluation of the lesion, although findings may be relatively nonspecific. Imaging can specifically help narrow the extensive differential diagnosis of sinonasal masses noted above [7]. There are a few findings seen in MRI that suggest nerve sheath tumors, such as the “target sign” and the “fascicular sign,” which previous case reports regarding nasal septal schwannomas did reproduce [8–11].

Schwannomas are definitively diagnosed by histopathologic examination. Using basic Haematoxylin and Eosin staining, schwannomas will characteristically show Antoni A or B cell type

of the schwannoma cells were palisading, forming Verocay bodies. Immunohistochemical stain for S100 was diffusely positive (Fig. 5). Histopathologic diagnosis was schwannoma.

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