Anterior Nasal Schwannoma: A Rare Sinonasal Neoplasm Case Report

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Abstract

Schwannomas are the most common type of benign peripheral nerve tumor in adults. Schwann cells assist in the conduction of nerve impulses and wrap around peripheral nerves to provide protection and support. Schwannomas typically arise from a single fascicle within the main nerve [1]. This case report will cover a 65-year-old female patient with a rare anterior nasal septal mass that had been causing obstructive nasal symptoms for 3 months prior to evaluation.

Introduction

Schwannomas are a benign peripheral nerve tumor. They affect fewer than 200,000 people and the typical age range of affected individuals is between 50 and 60. No sex or racial predilection is recognized [2]. Head and neck schwannomas comprise about 25%-40% of variants. The most common head and neck variant is a vestibular schwannoma associated with cranial nerve eight. Only 4% of all schwannomas are associated with the sinonasal track. Their occurrence in the region is most common in the nasoethmoidal region followed by the maxillary sinus, frontal sinus and then the sphenoid sinus. Even more rare are schwannomas of the nasal septum [3][4][5].

Case Presentation

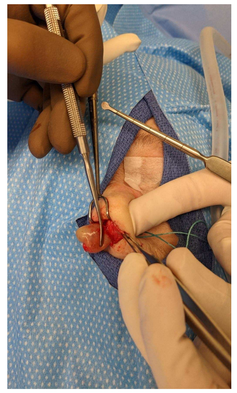

Figure 1: Intraoperative nasal schwannoma specimen

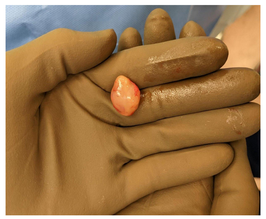

Figure 2: Post operative nasal schwannoma specimen

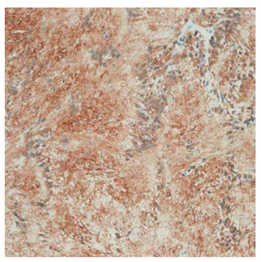

Figure 3: S100 immunochemistry staining

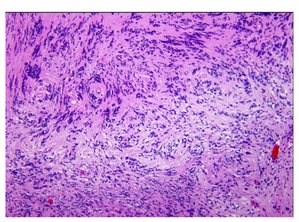

Figure 4: Histological examination of a biphasic tumor with hypercellular (Antoni A) and hypocellular (Antoni B) area

A 65-year-old female was referred to Ear, Nose and Throat outpatient clinic by her primary care provided for evaluation of a lump that had been present in her left nasal cavity for approximately 4 months. She presented with an enlarging mass involving the anterior nasal cavity. She denied any significant nasal obstruction, pain, rhinorrhea, numbness, epistaxis, anosmia, history of squamous or basal cell carcinoma or any history of trauma to the area. Her past medical, family and surgical history were noncontributory.

On exam, she was noted to have a soft tissue expansile mass involving the submucosal tissues of the bilateral anterior nasal cavity just posterior to the columella. Initially the mass appeared to be a cystic lesion. The nasal septum was otherwise midline with no appreciated mucosal edema, intranasal obstruction or discharge on exam.

Fine needle aspiration biopsy was performed which yielded no significant fluid or blood. Specimen was sent for pathological cytological interpretation. The cytology report demonstrated rare atypical cells. The mass was moderately obstructive of the nasal aperture bilaterally and was increasing in size. Given the pathological and physical exam findings, recommendation was made for intraoperative excision.

The patient was taken to the operating room for excision of the anterior nasal cavity submucosal mass. There was prominent bulging soft tissue involving the anterior nasal cavity bilaterally just posterior to the columella. The expansile lesion was moderately obstructing the nasal aperture bilaterally. The mass appeared to involve either the subcutaneous and/ or submucosal planes of the anterior nasal cavity. A pale-colored lobulated soft tissue mass was excised from within the submucoperichondrial plane involving mostly the left side of the anterior nasal septum (See Figure 1). The soft tissue mass measured approximately 2.5 x 1.5 cm in its greatest dimensions (See Figure 2). The specimen was sent for permanent pathological analysis.

Histologic exam of the anterior submucosal mass revealed a 2.1 x 1.7 x 1.1 cm brown-tan, rubbery, polypoid segment of soft tissue. Using S100 stain, lesional cells were highlighted supporting the diagnosis of a Schwannoma (See Figure 3).

One month post op, the widening of the anterior septal mucosa had resolved after excision. The right sided incision had healed and there was no edema present. The patient reported improved nasal obstruction and no cosmetic deformities.

Discussion

- Anterior nasal septal schwannomas are very rare [3]. A review of current literature revealed there were 24 documented cases of an anterior nasal septal schwannoma.
- Clinically diagnosing a sinonasal schwannoma is difficult because of its vague presenting symptoms and the number of differential diagnoses. The most common presenting symptoms of nasal schwannomas include discharge, nasal obstruction, epistaxis, and anosmia [6].
- Due to the rareness of the tumor and broad clinical presentation, differential diagnosis of schwannoma in the nasal and paranasal sinuses includes, but is not limited to, mucocele, inflammatory polyps, angiofibroma, glioma, papilloma, esthesioneuroblastoma, meningioma, sarcoma, squamous cell carcinoma, adenocarcinoma and lymphomas [8].
- Imaging modalities such as CT and MRI help to diagnose the characteristics and extension into surrounding structures of the disease. MRI is superior to CT in differentiating tumors from inflammatory changes and can imply a mass is of neurogenic origin. Confirmation of the diagnosis can only be made with histopathology [9].
- Macroscopically Schwannomas are solid, well-demarcated with an oval round, or fusiform shape, grayish to yellowish in color, fleshy and shiny on the cut surface [10].
- Microscopically, schwannomas are encapsulated tumors with 2 distinct histological regions. Antoni A tissue shows hypercellular spindle cells, sometimes palisade around eosinophilic areas (Verocay bodies). Antoni B tissue shows a hypocellular myxomatous pattern with loose connective tissue (See Figure 4). Immunostaining is positive for S100 protein staining [2][8].
- Treatment is complete surgical excision. Reoccurrence is rare but patients should be monitored short and long-term. The patient in this case did not have reoccurrence at 3 months [11].

Conclusion

Nasal schwannomas are very rare. Their presenting symptoms are common sinonasal complaints making the differential diagnosis list extensive. In office work-up includes nasal endoscope and/or fine needle aspiration depending on location. A preoperative MRI can confirm the mass is of neurologic origin. Diagnosis requires surgical excision and histological evaluation. Nasal Schwannomas are benign masses with low recurrence rates. Patients should be monitored long-term.

References

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