SCHWANNOMA OF THE NASAL SEPTUM: A CASE REPORT

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Schwannoma is a neurogenic tumor arising from the sheath of myelinated nerves. Only 4% of schwannomas located in the head and neck region involve the sinonasal tract, and those arising from the nasal septum are exceedingly rare. We report a case of a 55-year-old male who presented with only right nasal obstruction. Computerized tomography and clinical examination suggested a benign tumor before the tumor was completely removed by transnasal endoscopic surgery. When encountering a mass in the nasal cavity, schwannoma should be borne in mind in the differential diagnosis. We discuss the clinical presentation, histologic features, differential diagnosis, and therapeutic options for such a rare lesion.

Key Words: nasal septum, neurilemoma, schwannoma
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Schwannoma is a benign tumor arising from the sheath of myelinated nerve fibers and may occur in any part of the body. Most schwannomas occur in the head and neck region, accounting for about 25% to 45% of all schwannomas [1]. However, only 4% of all head and neck schwannomas originate from the nasal cavity; paranasal sinus and the ethmoid sinus, maxillary sinus, lateral nasal wall, and sphenoid sinus are involved in decreasing order [1]. The nasal septum is one of the rarest sites of origin of schwannomas, with less than a dozen reported in the English literature. We report a case of schwannoma of nasal septal origin and discuss the clinical manifestations, histologic features, differential diagnosis, and treatment of choice for this rare entity.

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CASE PRESENTATION

A 55-year-old male patient was referred to our hospital with a mass in the right nasal cavity. He had suffered from nasal obstruction for 1 year. Aggravation of the right nasal obstruction during recent months urged him to seek medical help. He denied having epistaxis, anosmia, paresthesia, and headache, but had purulent rhinorrhea. He also denied having any systemic disease or surgical history. He was a general surgeon in another hospital.

Rigid rhinoscopy showed a large, smooth, pale, polypoid mass completely occupying the right nasal cavity. Some yellowish mucopus was also found in the nasal floor. The inferior turbinate was atrophied, possibly secondary to the mass effect of the tumor. The upper, lateral, and inferior surfaces of the mass were free of adhesion to surrounding tissue, and the origin of the mass seemed to be the posterior nasal septum.

Computerized tomography (CT) scan of the sinus showed a large soft tissue mass without central necrosis in the right nasal cavity (Figure 1). There was bony erosion of the inferior and middle turbinate and medial wall of the maxillary sinus. In addition, soft tissue density was noted in

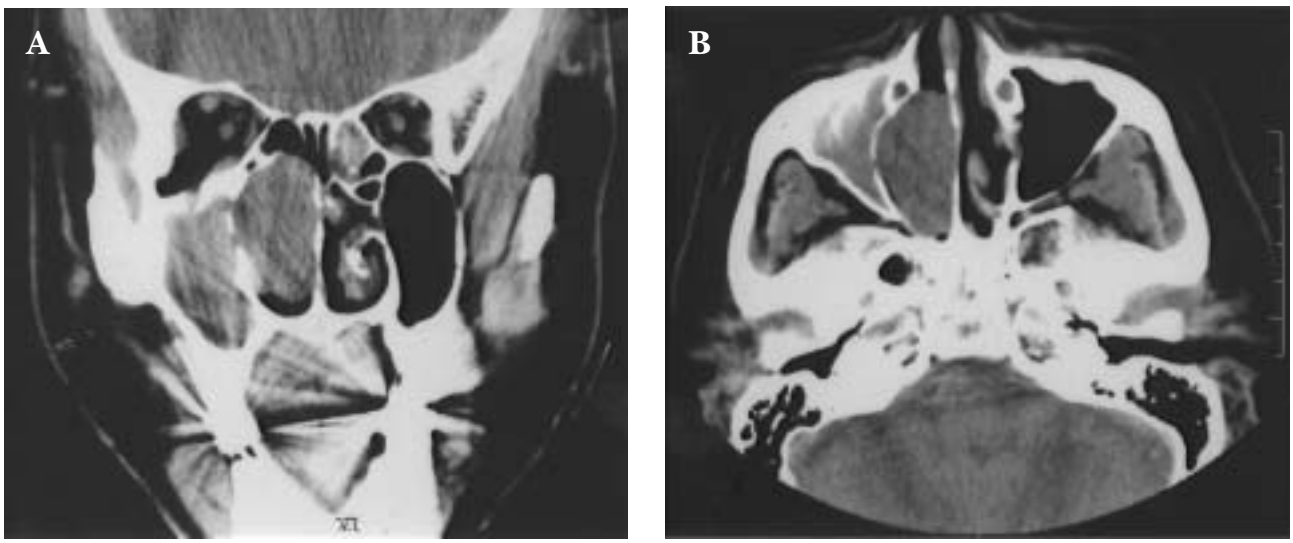

Figure 1. *(A) Coronal section and (B) horizontal section computerized tomography scans show a large soft tissue mass in the right nasal cavity with bony erosion of the inferior and middle turbinate and medial wall of the maxillary sinus. There is total opacity in the right maxillary sinus.*

the right maxillary sinus, compatible with sinusitis due to obstruction of the sinus orifice by the mass. The ethmoid sinus, frontal sinus, and sphenoid sinus were clear. Both clinical examination and CT scan suggested that the mass was benign. Endoscopic sinus surgery was carried out under local anesthesia for a polypoid mass and unilateral maxillary sinusitis. As the tumor was huge and fragile, it was impossible to remove it *en bloc*. It was completely removed piece by piece and the base was excised with a safe margin of surrounding normal septal mucoperiosteum. The operative course was smooth and the patient's condition was stable postoperatively.

The gross appearance of the mass was yellowish white and soft. Histologic examination showed spindle-shaped cells arranged in bundles, sometimes resembling a palisade (Figure 2A). Nuclear atypia was absent and no mitotic figures were observed. Immunohistochemically, the tumor cells were strongly positive for neuron-specific enolase and S-100 protein (Figure 2B) in both the nuclei and cytoplasm. Therefore, the diagnosis of benign nasal schwannoma was confirmed.

The patient recovered uneventfully, with no postoperative hyperesthesia or paresthesia of the nose after surgery. To date, no evidence of recurrence has been found during follow-up.

Discussion

The manifestations of sinonasal schwannoma are nonspecific, usually resulting from the expansion of the tumor. Generally, a progressive unilateral nasal obstruction is the most common complaint. Other symptoms include epistaxis, anosmia, headache, and diplopia. Solitary schwannoma has no predilection for race or gender, and the age distribution ranges from 6 to 78 years, with the greatest incidence between the second and fourth decades [2]. The possible source for a schwannoma arising from the nasal septum includes the sympathetic nerve to the septal blood vessels, the parasympathetic nerve to the septal mucous glands, and the sensory nerve to the septum.

The differential diagnosis of sinonasal schwannoma includes carcinoma, inverted papilloma, sarcoma, lymphoma, neurofibroma, and esthesioneuroblastoma. The experienced pathologist will not encounter difficulty in differentiating these tumors because they have distinct histologic appearances. Immunohistochemical stain will aid in correct diagnosis in controversial cases. However, some problems may be encountered in differentiating schwannoma from neurofibroma, especially in small biopsy or curettage specimens, since these two tumors share overlapping histologic features. Histologically, schwannoma is encapsulated, containing hyalinized blood vessels but not axons. In addition, it occupies an eccentric position in relation to its nerve of origin. In contrast, neurofibroma is non-encapsulated, with axons traversing the tumor mass [3]. Because of the more malignant potential and locally aggressive nature of neurofibroma in comparison to schwannoma, the pathologist should make every effort to differentiate between the two.

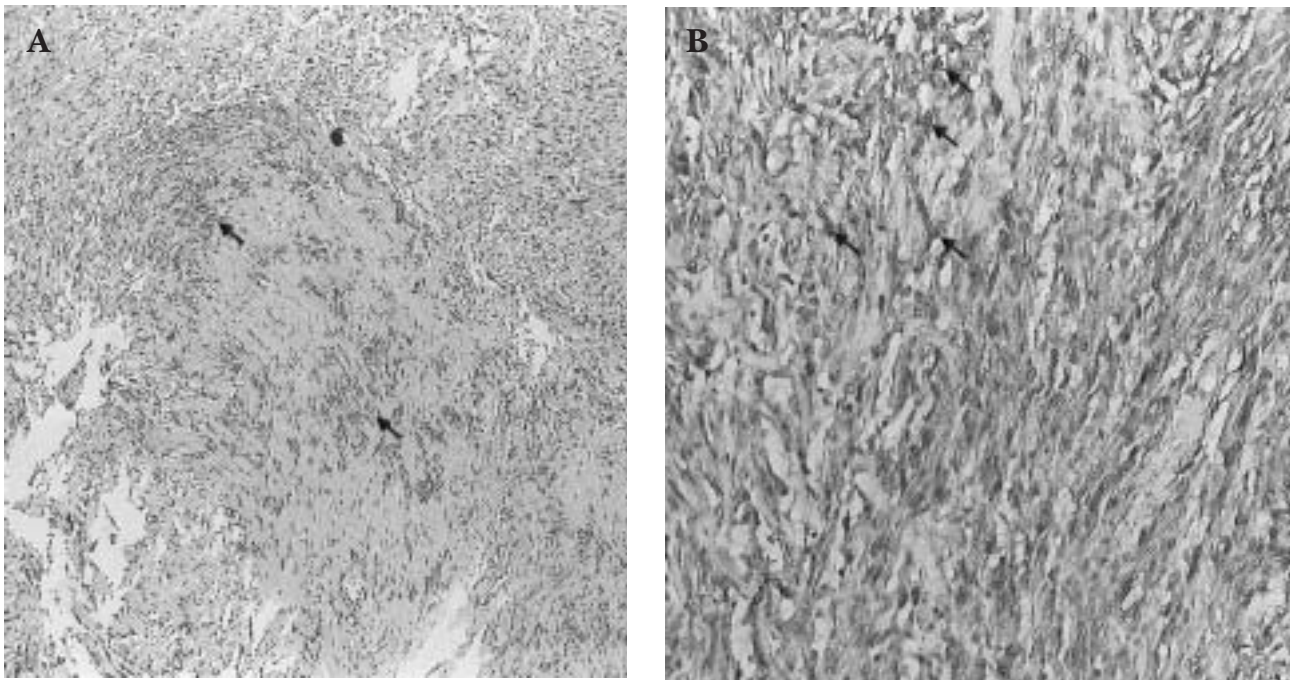

Figure 2. *(A) Weary spindle cells with high cellular density are arranged in a palisading pattern (hematoxylin & eosin, × 100). (B) S-100 immunohistochemical staining (S-100 protein, × 200).*

There are two histologic patterns for schwannoma: Antoni type A (fasciculated), characterized by an orderly arrangement of spindle-shaped cells with elongated nuclei arranged in rows or in long whirling strands to form the so-called "palisading" pattern, and Antoni type B (reticular), which has a loosely arranged stroma in which the fibers and cells form no distinct pattern. Sometimes, the neoplasm shows a mixed structure of types A and B with a demarcation line between the two areas [3]. In a review of published cases, Antoni type A was the most common (64.3%), followed by mixed type (23.7%), and Antoni type B (12%) [2]. Although the differentiation between type A and B cellular patterns has no prognostic significance, pattern identification aids in diagnosis.

Although specific diagnosis from imaging study is difficult, CT scan is helpful in defining the origin and location of the tumor and the involvement of vital structures around the lesion.

This case is a reminder to include schwannoma in the clinical differential diagnosis in patients who present with a nasal mass. Although a recurrence rate of 23% has been reported [4], nasal schwannoma usually has a benign clinical course. Local wide excision is the first choice in management and is concluded by the complete extirpation of the tumor mass and a margin of normal tissue. In our opinion, it is possible to remove the tumor in numerous pieces without compromising the completeness of surgery. Endoscopic sinus surgery was sufficient to remove most of the benign tumor because of its definite origin and benign nature. In addition, the transnasal approach had the advantage of not jeopardizing the patient's appearance. Other authors drew similar conclusions [5,6]. However, an external approach, including lateral rhinotomy, degloving, and medial maxillectomy, might be more feasible for extensive or malignant lesions, since they are not radiosensitive.

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鼻中隔之神經鞘瘤一病例報告

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Schwannoma 是源於神經鞘膜的良性腫瘤，位於頭頸部的 schwannoma 中僅有 4% 是源於鼻腔及鼻竇，而源於鼻中膈的 schwannoma 則非常少。根據文獻記載，全世界僅有 12 例。本文報告一例源於鼻中膈的 schwannoma ，患者為 55 歲男性，臨床表現僅有單側鼻塞，病人的影像學檢查及理學檢查皆顯示右側鼻腔內之腫瘤具良性特徵。我們安排經鼻內視鏡手術將此腫瘤完全切除，病人預後良好，沒有復發現象。此病例報告提醒我們必須將 schwannoma 列入鼻腔腫瘤的鑑別診斷中。

關鍵詞： 鼻中膈；神經鞘瘤；schwannoma

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