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Endoscopic Excision of Cribriform Plate Schwannoma: A Case Report

Kribriform Plate Schwannomasının Endoskopik Yaklaşımı ile Eksizyonu: Bir Olgu Sunumu

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Case Report
Olgu Sunumu

Abstract

Although 25-45% of all schwannomas occur in the head and neck, nasal and paranasal sinus presentations are rare in the literature. Here we report the case of a 67-year-old woman with a nasal schwannoma. Computerized tomography (CT) showed the mass completely occluding the nasal passage with evidence of a secondary maxillary sinusitis. A preoperative biopsy suggested the presence of a benign schwannoma. She underwent a complete endoscopic sinus surgery to remove the mass arising from the cribriform plate. Six years after surgery, the patient remains asymptomatic and without endoscopic evidence of recurrence. This case demonstrates that it is possible to achieve a complete excision of a nasal schwannoma endoscopically, which is similar to results observed for other benign nasal tumors.

Key Words: Schwannoma, nose, endoscopy

Özet

Schwannomalar baş ve boyunda %25 ile 45 arasında görülmesine rağmen burun ve paranazal sinüslerde çok daha ender rastlanırlar. Biz bu yazıda 67 yaşındaki nazal schwannomalı bir hastayı sunduk. Bilgisayarlı tomografide kitlenin tüm nazal kaviteyi bloke ederek sekonder maksiller sinüzite neden olduğu görüldü. Preoperatif biyopside benign schwannoma tanısı kondu. Kribriform plateden kaynaklanan kitle endoskopik sinus cerrahisi ile eksize edildi. Cerrahiden 6 yıl sonrası hasta asemptomatik idi ve endoskopik muayenede rekürrens görülmedi. Bu vaka bize nazal schwannomaların da, diğer benign nazal tümörler gibi tamamının endoskopik olarak eksizyonunun mümkün olduğunu göstermiştir.

Anahtar Kelimeler: Schwannoma, burun, endoskopi

Introduction

Neoplasms of Schwann cell origin can develop in almost any part of the body. However, less than 4% arise in the paranasal sinuses (1). In a review of 430,000 cases, Perzin et al. (2) identified only eleven cases developing in the nasal cavity, paranasal sinuses, or nasopharynx. In contrast to neurofibromas, schwannomas are not usually associated with malignant transformation (3). Therefore, these neoplasms may be suitable for endoscopic removal. This report presents a case of intranasal schwannoma excision using an endoscopic approach.

Case Report

A 67-year-old woman was admitted to our ENT outpatient unit with a two-year history of progressive nasal obstruction. Nasal endoscopy revealed a large pink mass filling the right and left nasal passages. The entire nasal septum was covered with tumor, leaving only the anterior part of the nasal septum intact.

Computerized tomography (CT) indicated a large, extensive mass in the nasal cavity, and a low-density area without enhancement in the bilateral maxillary and ethmoid sinuses (Figure 1). The lesion widened along both sides of the nasal septum into the nasal cavity and extended to the skull base, but not the intracranial space. The tumor was biopsied preoperatively and diagnosed as a benign nerve sheath tumor. Endoscopic surgery was performed to remove the mass in the nasal passage under general anesthesia. Perioperatively, a large mass was observed to extend into the right maxillary and ethmoid sinuses, eroding the nasal septum. It occupied the nasal cavity on both sides and extended along the roof of the nasal cavity. The tumor pedicle was attached to the cribriform plate but did not erode it. The tumor pedicle and an adequate margin of the surrounding mucosa within the cribriform plate was surgically excised. A complete excision of the tumor was performed using endoscopic sinus surgery techniques.

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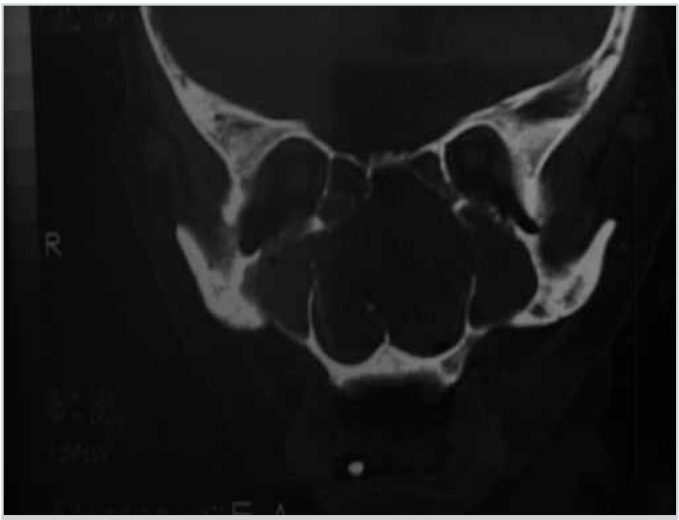

Figure 1. Preoperative paranasal sinus CT

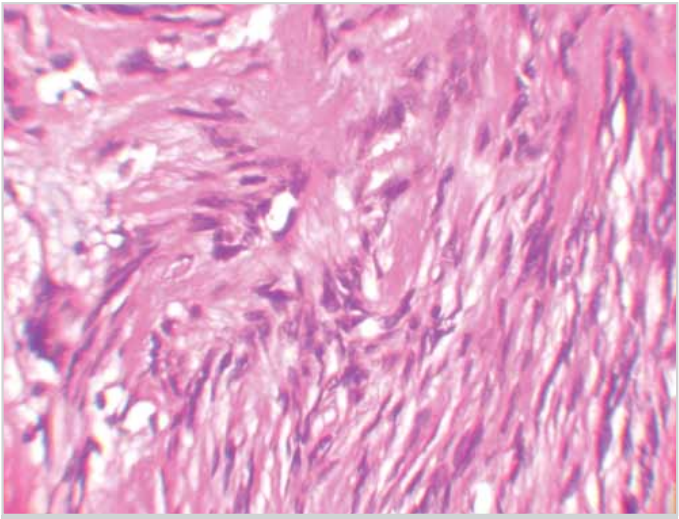

Figure 2. Antoni A areas in tumor (hematoxylin-eosine, x400)

Histopathologic examination of the excised specimen identified it as an Antoni type A schwannoma that consisted of regions of dense spindle cells, arranged in short bundles (Figure 2). Immunohistochemical studies established that the tumor was positive for S-100 protein, confirming the diagnosis of benign schwannoma. The patient was discharged without any complications. During six years of follow-up, there was no schwannoma recurrence as determined by endoscopic evaluation and CT examination of the paranasal sinuses (Figure 3).

Discussion

Schwannoma is a neurogenic tumor that arises from the sheath of myelinated nerves (4). The most frequent site of occurrence is the acoustic nerve (5). In the nasal cavity and paranasal sinuses, the most common location is the naso-ethmoid complex, followed by the maxillary sinus, the intranasal space, and the sphenoid sinus (1). In the sinonasal tract, a schwannoma can originate from the trigeminal nerve (ophthalmic or maxillary branches) or branches of the autonomic nervous system (4).

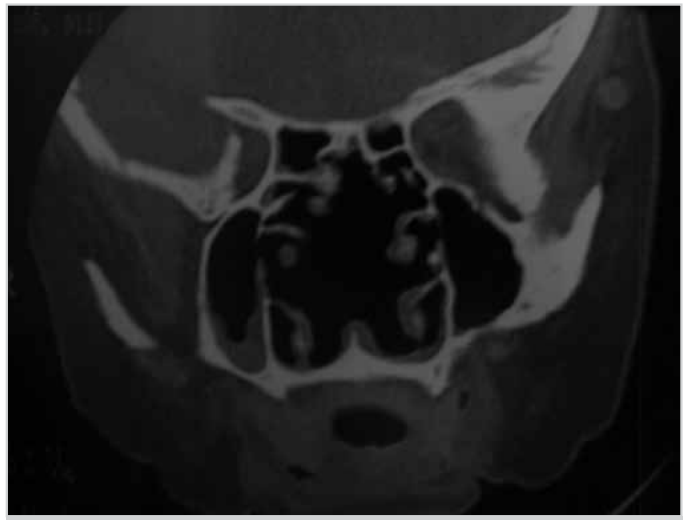

Figure 3. Postoperative paranasal sinus CT

While gender and age do not appear to affect tumor formation, most cases are reported in patients 20-40 years of age (6). The symptoms and signs of the intranasal schwannomas depend on the site of origin and extent of the lesion. Most nasal schwannomas present with nasal obstruction, and often include visible nasal polyps or epistaxis. Other symptoms include mucopurulent rhinorrhea, anosmia, facial swelling and pain. The only presenting symptom in our patient was nasal obstruction. Schwannomas are encapsulated, benign, slow-growing tumors, but intracranial extension has been previously reported (6, 7). In our patient, the tumor extended to the anterior cranial base, but there was no bone erosion. Malignant varieties are uncommon but have been described in the paranasal sinuses (8).

Histologically, classic schwannomas present in one of two distinct patterns called Antoni A and Antoni B types. Type A is cellular and is made up of spindle cells that are often arranged in a palisading fashion (Verocay bodies). In type B, the tumor cells are separated by abundant myxoid stroma that can form cystic spaces.

Computerized tomography and magnetic resonance imaging (MRI) are very helpful in determining the anatomic extent of spread and the location of the lesion, including possible intracranial extension. However, histology is still required to obtain a pathologic diagnosis. CT depicts the relationship of the lesion to the surrounding bone structures. MRI is superior to CT in differentiating a tumor from inflammatory changes and normal tissues, especially in cases with intraorbital or intracranial extension. We did not perform an MRI, but it might have revealed the reactive sinusitis in the left maxillary sinus and ethmoidal cells in our patient.

The primary treatment for schwannoma is complete surgical excision. The lesion is resistant to radiotherapy. The appropriate surgical approach is dictated by the site of the tumor and the extent of its spread. Schwannomas can be excised either externally or with a rigid sinus endoscope. Enbloc excision by medial maxillectomy via lateral rhinotomy or midface degloving is recommended (5, 9). Schwannomas of the paranasal sinuses can be excised endoscopically (4, 10). The key to the success of

this treatment is locating the specific area of origin of the tumor, defining its extent, and completely removing all diseased tissue. Endoscopic surgery reduces the operative morbidity and hospital stay, while avoiding an external scar. This approach allows for careful inspection of the remaining sinus mucosa to ensure there is no tumor involvement. The advent of nasal endoscopes makes this precise visualization, localization, and excision of the schwannoma possible. In the present case, endoscopic excision of the tumor was preferred since the tumor was encapsulated and well-defined, without bone erosion or extranasal extension.

Conclusion

Using endoscopic techniques, many of these tumors may be amenable to transnasal endoscopic resection with minimal morbidity. Nasal endoscopy also facilitates close follow-up of these patients for evidence of tumor recurrence or late complications.

Conflict of Interest
No conflict of interest was declared by the authors.

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Çıkar Çatışması
Yazarlar herhangi bir çıkar çatışması bildirmemişlerdir.

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References

1. Hasegawa SL, Mentzel T, Fletcher CD. Schwannomas of the sinonasal tract and nasopharynx. Mod Pathol 1997; 10: 777-84. PMid:9267819
2. Perzin KH, Panyu H, Wechter S. Nonepithelial tumors of the nasal cavity, paranasal sinuses and nasopharynx. A clinicopathologic study. XII:Schwann cell tumors (neurilemoma, neurofibroma, malignant schwannoma). Cancer 1982; 50: 2193-202. [CrossRef]
3. Persaud RA, Hajioff D, Chevretton EB. Intranasal schwannoma in a young woman. Int j Clin Pract 2004; 58: 426-8. [CrossRef]
4. Srinivasan V, Deans JA, Nicol A. Sphenoid sinus schwannoma treated by endoscopic excision. J Laryngol Otol 1999; 113: 466-8. [CrossRef]
5. Berlucchi M, Piazza C, Blanzuoli L, Battaglia G, Nicolai P. Schwannoma of the nasal septum: a case report with review of the literature. Eur Arch Otorhinolaryngol 2000; 257: 402-5. [CrossRef]
6. Zovickian J, Barba D, Alksne JF. Intranasal schwannoma with extension into the intracranial compartment: case report. Neurosurgery 1986; 19: 813-5. [CrossRef]
7. Siqueira MG, Jennigs E, Moraes OJS. Naso-ethmoid schwannoma with intracranial extension. Arq Neuropsiquiatr 2001; 59: 421-3. [CrossRef]
8. Mannan AA, Singh MK, Bahadur S. Solitary malignant schwannoma of the nasal cavity and paranasal sinuses: report of two rare cases. Ear Nose Throat J 2003; 82: 634-40.
9. Yaqoob N, Soomro I, Moatter T, Zaffar A. Coexistence of benign schwannoma and lymphoma in a nasal polyp. J Laryngol Otol 2002; 116: 865-7. [CrossRef]
10. Pasquini E, Sciarretta V, Farneti G, Ippolito A, Mazzatenta D, Frank G. Endoscopic endonasal approach for the treatment of benign schwannoma of the sinonasal tract and pterygopalatine fossa. Am J Rhinol 2002; 16: 113-8.