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CASE REPORT

Giant schwannoma of the left maxillary sinus - a rare case report

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ABSTRACT

BACKGROUND. Polyps, cysts and mucocele are the commonest sinonasal tumors present unilaterally, as well as invasive tumors, such as inverted papillomas and squamous cell carcinomas. On the contrary, Schwannomas are rare lesions found in this area.

MATERIAL AND METHODS. We present a case of a 48-year-old female who presented with a 2-year progressive history of left nasal obstruction, cranio-facial fullness sensation and pain, with intermittent epistaxis. The CT scan of the nose and paranasal sinuses showed complete opacification of the entire left nasal cavity and maxillary sinus, causing a deviated nasal septum to the right side.

RESULTS. The tumor was completely excised endoscopically without any complication. Histopathology was consistent with that of a schwannoma.

CONCLUSION. The diagnosis of sinonasal Schwannomas remains challenging, as it is a rare tumor and sometimes its clinical behaviour and imaging may be misleading. The treatment of choice for paranasal sinus schwannoma is complete excision of the tumor with good prognosis.

KEYWORDS: schwannoma, maxillary sinus, neurilemmoma.

INTRODUCTION

Schwannomas are benign nerve sheath tumors arising from the Schwann cell. It is the most common benign peripheral nerve tumor and it may occur in all parts of the body. The prevalence of Schwannomas in the head and neck region is about 25-45%[1]. However, the involvement of the sinonasal tract is rare, which is about 4%[1]. To date, PubMed search showed about 160 reported cases of schwannomas of the nasal region. However, with the specific keyword of "Schwannoma of the maxillary sinus", we found only 20 reported cases, accounting for 12.5% of PubMed search.

CASE REPORT

A 48-year-old female presented with a 2-year progressive history of left nasal obstruction, pain and cranio-facial fullness sensation, with intermittent epistaxis. Other features of her medical history were otherwise unremarkable.

The nasal endoscopy showed a tumoral mass completely obstructing the anterior part of the left nasal fossa, limiting further examination. The right nasal fossa was clear and permitted the endoscopic visualization of the tumor occupying the left part of the nasopharynx (Figure 1). Examination of the eye and the oral cavity revealed no pathologic changes.

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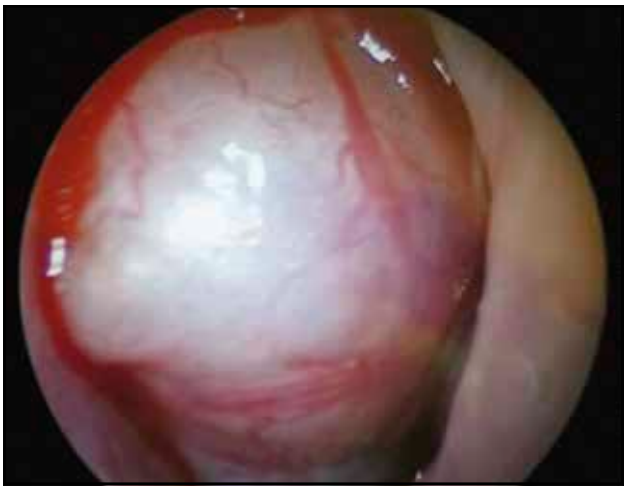

Figure 1. Nasal endoscopy image showing vascular tumoral mass over left nasal cavity.

The CT scan of the nose and paranasal sinuses showed complete opacification of the entire left nasal cavity and maxillary sinus, extending to the choana and causing a deviated nasal septum to the right side. The tumor also caused a significant displacement of the left lateral nasal wall into the maxillary sinus. Also, there was hyperostosis of the maxillary sinus wall and nasal septum. The right nasal cavity and sinuses were within normal limits (Figure 2).

We were unable to proceed with biopsy of the tumoral mass as it appeared vascular and it was easily bleeding when touched, requiring nasal packing. Taking into consideration the patient's severity of symptoms, a complete endoscopic excision was performed regardless of the diagnosis, therefore we felt that a biopsy may not have changed any immediate management. The patient was extubated and had an uneventful postoperative recovery.

The histopathology result came back as schwannoma.

On follow-up, clinically the patient had no more nasal blockage, pain and bleeding from the left nostril. Nasal endoscopy also showed no mass obstructing the left nostril, with the left maxillary ostium open-up and clear. The patient had a full recovery, with no further complications.

There was no tumoral recurrence noted for the past 1 year of follow-up.

DISCUSSIONS

Schwannomas are benign nerve sheath tumors that arise from Schwann cell. They are also known as neurilemmoma, neurolemmoma, neurinoma and peripheral fibroblastoma. Schwannomas of the paranasal sinus can occur at any age; however, one clinical study performed by Hasegawa et al. reported it to be between 38 to 65 years old, with equal sex distribution[2]. The prevalence of head and neck schwannomas is 25-40%, but paranasal sinus schwannomas are uncommon and only encountered about 4%[1]. In our case, the patient was a 48-year-old female and the tumor was located in the left maxillary sinus.

The most common location for paranasal sinus

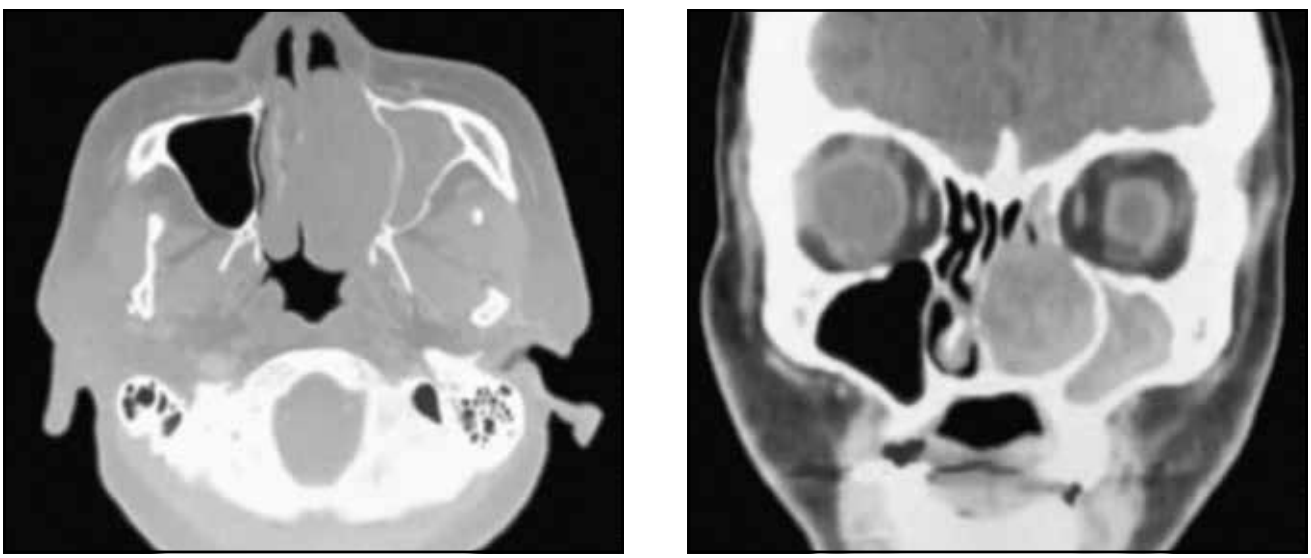

Figure 2. CT paranasal sinus showed complete opacification of the entire left nasal cavity and maxillary sinus, extending to the choana and causing a deviated nasal septum to the right side. The tumor also caused a significant displacement of the left lateral nasal wall into the maxillary sinus. There was hyperostosis of the maxillary sinus wall and nasal septum.

schwannomas is the ethmoid sinus followed by the maxillary sinus and sphenoid sinus[1]. According to the literature, paranasal schwannomas originate from the ophthalmic or maxillary branch of the trigeminal nerve or autonomic nerve to septal vessels and mucosa[3,4]. The origin of the schwannomas was not identifiable in our patient.

The clinical features of paranasal sinus schwannomas depend on tumoral involvement and malignant transformation of the tumor[5]. They are usually slowly growing tumors and discovered late due to lack of early symptoms. According to the study performed by Robitaille et al., schwannomas of the nasal cavity and ethmoid sinus usually presented with epistaxis, whereas pain is usually noticed in maxillary sinus schwannomas[5]. Other symptoms of schwannomas include facial swelling, hypoesthesia, nose block, rhinorrhea, hyposmia as well as exopthalmos[6]. Our case presented with unilateral left nasal obstruction, facial pain and intermittent epistaxis for two years, which was slowly progressive. On nasal endoscopy, an easily bleeding unilateral left sinonasal mass was seen. Therefore, the differential diagnosis of the unilateral sinonasal mass includes polyps, cysts, mucocele as well as invasive tumors such as papillomas and squamous cell carcinoma.

The diagnosis workouts for paranasal sinus schwannomas include imaging such as CT scan and Magnetic Resonance Imaging (MRI) and histopathological examination. CT scan will help to determine the location, size and erosion of the surrounding bone[7,8], while the MRI is helpful in assessing the extension of the tumor towards the intracranial or intraorbital space[9]. Schwannomas can cause bony erosion; therefore, it is not a diagnostic factor for malignancy. The histopathological examination of the tumor shows two distinct patterns called Antoni A and Antoni B. Antoni A is hypercellular area characterized by elongated spindle-shaped cells with long, slender fibers forming a parallel arrangement of nuclei and Verocay Bodies. Antoni B is a hypocellular area with very loose tissue composed by polymorphism of cells and abundant myxoid.

The treatment of choice in paranasal sinus schwannomas is complete surgical excision of the tumor. The approach for the surgery depends on few factors such as location, size and extension of the tumor. There is no role for radiotherapy and chemotherapy in benign schwannomas[10] and the long-term prognosis for the benign schwannomas is good. Our patient underwent complete excision of the tumor via endoscopic approach. There was no recurrence noted for the past 1 year of follow-up.

CONCLUSIONS

Accurate assessment of the tumor extension is important. The diagnosis of sinonasal schwannomas remains challenging, as it is rare and, sometimes, clinical behaviour and imaging may be misleading. Treatment of choice for paranasal sinus schwannoma is complete excision of the tumor with good prognosis.

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