Sinonasal Schwannoma: A Rare Sinonasal Neoplasm

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Abstract Neoplasm in sinonasal cavity is dominated by epithelial type. Sinonasal schwannoma is a rare entity represent less than four percent of head and neck schwannoma. Clinically this tumour is commonly misdiagnosed until they are confirmed by histopathological examination. We present a case of schwannoma in sinonasal region with involvement of right side nasal cavity, maxillary sinus and maxillary alveolar process. The tumour was successfully removed by midfacial degloving approach.

Keywords Cellular schwannoma · Nasal cavity · Paranasal sinuses

Introduction

Schwannoma is a benign tumour originating from Schwann cell of the neural sheath. Although schwannomas are common in head and neck, only 4% of schwannomas occur in sinonasal cavity [1]. Clinically schwannoma are commonly misdiagnosed with other sinonasal tumours as they lack any specific clinical signs or symptoms. Patients with sinonasal schwannoma can present with varieties of non-specific clinical symptoms depending on location and size of tumour. Late presentation is common especially if tumour arises from sinus cavity. Published description of the radiologic appearance of these benign tumours indicate that they present as a well demarcated solitary soft tissue mass, most commonly in the nasal cavity or ethmoid sinus

[2]. Over time, constant pressure by the mass on the surrounding structures may lead to bone remodelling and erosion as seen in this case. Complete surgical excision of a schwannoma is curative, and postoperative recurrence is rare.

Case Report

A 32 year old female presented to ENT OPD with complaints of bilateral nasal obstruction, right side more severe, for 6 months. She also had two episodes of mild epistaxis which was self limited. Patient also had anosmia on right side. Anterior rhinoscopy revealed a greyish mass in right nasal cavity and septum was pushed towards the left side. A bulge of mass covered with mucosa was seen on right maxillary alveolar process and adjacent part of hard palate. Endoscopic examination of nasopharynx and oro-laryngopharynx was normal. No neck node was palpable. Vision and ocular motility was normal.

Computed Tomography (CT) scan of head and paranasal sinus revealed a well defined enhancing soft tissue lesion involving right side nasal cavity, maxillary sinus and maxillary alveolar process. Osteomeatal complex was widened and alveolar process and hard palate was eroded. Septum was pushed to left side. No intraorbital or intracranial extension was seen.

A biopsy from nasal mass was taken and microscopic examination revealed a non-encapsulated tumour. Areas of hyper- and hypocellularity was identified, hypercellularity was prominent with cells of spindle shaped nuclei (Antoni type A). Mitosis was occasional and there was no necrosis. The lesion stained strongly and diffusely for S-100.

The tumour was removed completely under general anaesthesia via midfacial degloving approach. Through

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sublabial incision, right side nasal cavity and maxillary sinus was exposed and tumour was removed completely from nasal cavity, maxillary sinus and alveolar process (Figs. 1, 2, 3 and 4).

Discussion

Schwannomas are lesions that arise from the neural sheath of peripheral nerves. Sinonasal schwannomas are uncommon lesions and represent <4% of head and neck schwannomas [1]. In sinonasal cavity, schwannomas are postulated to arise from the ophthalmic and maxillary branches of the trigeminal nerve or from autonomic nerves to the septal vessels and mucosa [1, 3]. Literature revealed that nasal cavity and ethmoid sinus are commonly involved than other sinuses [2, 4]. In our case the tumour involved nasal cavity and maxillary sinus with alveolar process erosion.

Clinically and radiographically sinonasal schwannoma may be easily misdiagnosed with other common sinonasal neoplasm, particularly in light of the aggressive radiographic finding. Recognising the fact that complete surgical excision of schwannoma provide the best prognosis with very less chance of recurrence, proper pre-operative diagnosis is important in providing proper treatment to the patient. Over enthusiasm in removal of sinonasal mass without proper diagnosis should be avoided as this may lead to unnecessary multiple surgical insults to the patient.

Clinically sinonasal schwannoma can present with non specific symptoms like nasal obstruction, epistaxis, anosmia. The ultimate diagnosis is microscopic examination.

Fig. 1 CT scan paranasal sinus coronal section showing soft tissue shadow in right nasal cavity, maxillary sinus and alveolar process eroding hard palate

Imaging modalities (CT scan and MRI) help to map accurately areas of disease extension, particularly into the adjacent orbit and anterior cranial fossa. This role is of vital

Fig. 2 CT scan nasal and paranasal sinus sagittal view showing soft tissue shadow in nasal cavity eroding hard palate

Fig. 3 Post operative specimen of sinonasal schwannoma

Fig. 4 Low power view (×40) of highly cellular spindle cell lesion arrange in interlacing fascicle

importance because it would potentially influence surgical approach. The clinical and imaging differential diagnosis for a sinonasal mass would include squamous carcinoma, adenocarcinoma, lymphoma, esthesioneuroblastoma, meningioma, as well as an aggressive fungal infection [5]. All of these lesions have been noted to affect the sinonasal cavity and can develop intracranial or intraorbital extension. In our case there is no intraorbital or intracranial extension and the tumour is limited to nasal cavity and maxillary sinus with limited alveolar process erosion.

There have been reports of patients with neurofibromatosis (NF) who have developed nerve sheath tumors in the paranasal sinuses and nasal cavity [6]. Although extremely rare, this possibility should be kept in mind, and careful clinical history and physical examination should be undertaken to exclude NF in patients with sinonasal schwannomas more so in patient with family history and clinical stigmata of neurofibromatosis.

The treatment of choice of sinonasal schwannoma is surgical excision [7]. Prognosis is generally excellent.

Conclusion

Sinonasal schwannoma is a rare benign tumor. It can often present with nonspecific symptoms, can attain a large size at presentation, and can invade adjacent critical structures. It should be considered in the differential diagnosis of sinonasal mass lesions.

Compliance with Ethical Standards

Conflict of interest None.

Informed Consent Informed consent was taken from the patient before sending this article to the journal.

Ethical Approval All procedure performed were in accordance with the ethical standards of the Institutional and/or National Research Committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standard.

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