CASE REPORT

Primary schwannoma of maxillary sinus masquerading as malignant tumour

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SUMMARY

Polyp and mucocele are the commonest sinonasal tumours and schwannoma is rarely found in the paranasal sinuses. We report a case of a 64-year-old man presenting with progressive nasal obstruction and numbness on left cheek for the past 2 months. High-resolution CT found a soft tissue mass in the maxillary antrum with bony destruction. Clinical features, radiological scan and nasal endoscopic examination were suggestive of a malignant tumour. Tumour was excised through Caldwell-Luc's approach and histopathological examination found a mixed schwannoma.

BACKGROUND

Schwannoma arises from the sheath of peripheral nerves. Parapharyngeal space is the commonest site of this rare tumour of head and neck region. Furthermore, sinonasal schwannoma is quite rare with very few case reports on maxillary schwannoma.¹⁻⁴ In this report, we present a case of benign maxillary schwannoma with features of a malignant tumour.

CASE PRESENTATION

A 64-year-old man presented with progressive nasal obstruction and numbness over left cheek and gingiva for the past 2 months. These symptoms were associated with pain and excessive watering in the left eye. There was no other contributory history. Local examination of the nose found a tender, firm and vascular mass in the middle meatus. Paranasal sinus, eye and oral cavity were normal except decreased sensation over left maxillary gingiva and cheek. These clinical features prompted us to keep the possibility of a malignant maxillary tumour and subject the patient to further diagnostic investigations.

INVESTIGATIONS

We performed nasal endoscopic examination of the patient under local anaesthesia. There was a vascular firm mass in the left middle meatus arising from the maxillary antrum. We encountered profuse haemorrhage during tissue biopsy and therefore, medicated nasal packing was done.

A high-resolution CT (HRCT) of the nose and the paranasal sinus was performed to assess the extent of tumour. HRCT showed a soft tissue mass (30–55 HU) in the left maxillary antrum with thinned out orbital floor. The tumour had destroyed anterior and medial walls of the left maxilla (figures 1 and 2). However, tumour was not extending to other paranasal sinuses, skull base and brain. The radiologist suggested the possibility of a malignant maxillary tumour.

Figure 1 HRCT scan (axial section) showing soft tissue mass causing medial and anterior wall destruction of left maxilla.

The histopathological examination of tissue biopsy found a mixed type of schwannoma consisting of Antoni-A and Antoni-B types.

Figure 2 HRCT scan (coronal section) showing tumour in the left maxillary sinus causing thinning of orbital floor (superior maxillary wall).

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DIFFERENTIAL DIAGNOSIS

Clinical features and HRCT were suggestive of malignant tumour but histopathology found a benign schwannoma. This divisive situation steered us to keep a possibility of malignant component in the schwannoma.

Allergic polyp and inverted papilloma are other common tumours of paranasal sinus but bony destruction is absent in these diseases.

Invasive fungal rhinosinusitis is another disease prevalent mainly in immuno-compromised patients. It is an aggressive disease that presents with bony destruction and characteristic radiological features of hypo-hyperdense areas.

Neurovascular tumours like schwannoma and haemangioma are rare and do not present with bony destruction and paraesthesia.

TREATMENT

We decided surgical excision through Caldwell-Luc's approach because of bony destruction, vascularity and possibility of malignant component in the tumour. Under general anaesthesia, a sublabial incision was made from first premolar to the lateral incisor on left maxillary gingiva. Muco-periosteal flap was raised and tumour was removed completely. There was negligible orbital floor defect with no herniation of orbital content. Middle meatal antrostomy was performed and incision was closed in layers. The patient was extubated without any complication.

OUTCOME AND FOLLOW-UP

Patient had un-eventful postoperative period. Histopathological examination of the excised tumour did not find malignant component in the tissue and confirmed benign mixed type schwannoma. We did not find recurrence (on clinical/nasal endoscopic examination) in a year follow-up.

DISCUSSION

Polyp (allergic and non-allergic), fungal ball and mucocoele are the common benign tumours of the maxillary cavity. These tumours usually present with nasal obstruction, facial fullness or facial disfigurement because of expansible nature and bone remodelling.

Schwannoma is a peripheral nerve tumour and extremely rare in sinonasal region.^{3–8} Sinonasal schwannoma contributes about 4% of head and neck schwannomas.^{1 2 9 10} It arises from autonomic nerves and branches of the trigeminal cranial nerve.^{7 8} Schwannomas do not arise from the olfactory and optic cranial nerves as these cranial nerves lack neural sheath¹; however, cranial nerve paralysis has been reported with schwannoma of sphenoid.¹¹

It remains asymptomatic for quite long period because of slow growth. Nasal obstruction is the main symptom of this tumour. Pain, bony dehiscence including skull base and neural symptoms develop later as the tumour enlarges. It can also simulate rhinosinusitis as clinical features are similar.⁹

About 90% of schwannoma are sporadic in nature; however, irrespective of occurrence, majority of them show inactivation of NF2 gene.⁸ Schwannoma is an encapsulated tumour with two histological variants described by Antoni in 1920.⁹ Antoni 'A' shows hypercellularity whereas, Antoni 'B' has myxoid component. They stain for S-100 protein that differentiates them from neurofibroma.⁸ Cystic changes in the tumour carry poor prognosis.¹²

Endoscopic examination helps in the provisional diagnosis of nasal mass. However, CT remains the investigation of choice as it delineates the bony anatomy better, a pre-requisite for

endoscopic sinus surgery. MRI should be performed after CT in selected cases as it helps to know the intracranial extension and differentiation of tumours. However, occasionally these investigations can be misleading¹³ as occurred in our case.

Endoscopic surgery is the latest modality for the treatment of sinonasal tumours.¹⁴ Hegazy *et al*⁹ managed a case of ethmoid schwannoma with intracranial extension through nasal endoscopic surgery. Open surgery remains the standard option in cases with extensive disease, revision surgery and endoscopy failure. Facial degloving, lateral rhinotomy and Caldwell-Luc's approaches help in the removal of large extensive tumours. Complete removal is the rule otherwise recurrence is inevitable.

This case report emphasises the rarity of schwannoma in maxillary sinus and its presentation as a malignant tumour.

Learning points

- ▶ Malignant tumours of paranasal sinus present with progressive nasal obstruction, epistaxis, facial pain and numbness.
- ▶ CT scan is the investigation of choice but sometime can mislead.
- ▶ Benign tumours do not present with bony destruction except fungal ball that has characteristic radiological features.
- ▶ Primary maxillary schwannoma is rare but it should be considered in the differential diagnosis of maxillary tumours.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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