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Case Report

Schwannoma of the tongue: a case report and review of literature

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ABSTRACT

Schwannomas are rare slow growing benign tumors arising from Schwann cells lining the nerve sheaths of myelinated nerves. Only 25 to 48% of the cases occur in the head and neck region with only 1% showing an intraoral origin. We present a case of lingual schwannoma in a 20 year old patient who presented with painless mass on right ventral surface of tongue, which was excised. The final histopathology report revealed a schwannoma. We report this case owing to rarity of disease. Tongue Schwannomas are rare, benign tumors with an excellent prognosis. Histology remains the gold standard for its diagnosis and Malignant transformation is rare after complete surgical excision. Schwannomas should be considered in the differential diagnosis whenever a benign looking mass is seen inside the oral cavity.

Keywords: Schwannomas, Schwann cells, Transoral resection, Nerve sheath tumor

INTRODUCTION

Schwannomas also known as neuromas, neurilemmomas or neurinomas of 'Verocay', are benign, well encapsulated peripheral nerve sheath tumors composed of Schwann cells derived from the neural crest.[1] Only approximately 1-12% of the head and neck schwannomas occur intraorally with the tongue being the most common site followed by the roof of the mouth, the floor of the mouth, the buccal mucosa, the gingiva, the lips and the vestibular mucosa.[2] Symptoms of tongue schwannoma may range from none to a painless lump, with larger tumours (more than 3 cm) causing dysphonia, snoring, dysphagia or voice changes.[3] Transoral resection is the standard approach for the treatment of the vast majority of these tumours, and histology remains the gold standard for its diagnosis.[4]

CASE REPORT

A 20-year-old male patient presented with complaints of a slow growing, painless lump on the right under surface of the tongue since last 6 months. No significant personal or family medical history were reported. Intraoral clinical examination revealed the presence of a firm, non-mobile, irregular mass (1.5×1 cm) attached to the ventral surface of tongue (Figure 1). Cervical lymph nodes were not palpable. A CE-MRI oral cavity was performed to characterize the lesion, which showed the presence of a well-defined, lobulated exophytic lesion 1.4×1.2×1.8 cm arising from the ventral surface of anterior tongue in the right paramedian location (Figure 2).

Figure 1: Pre op pic.

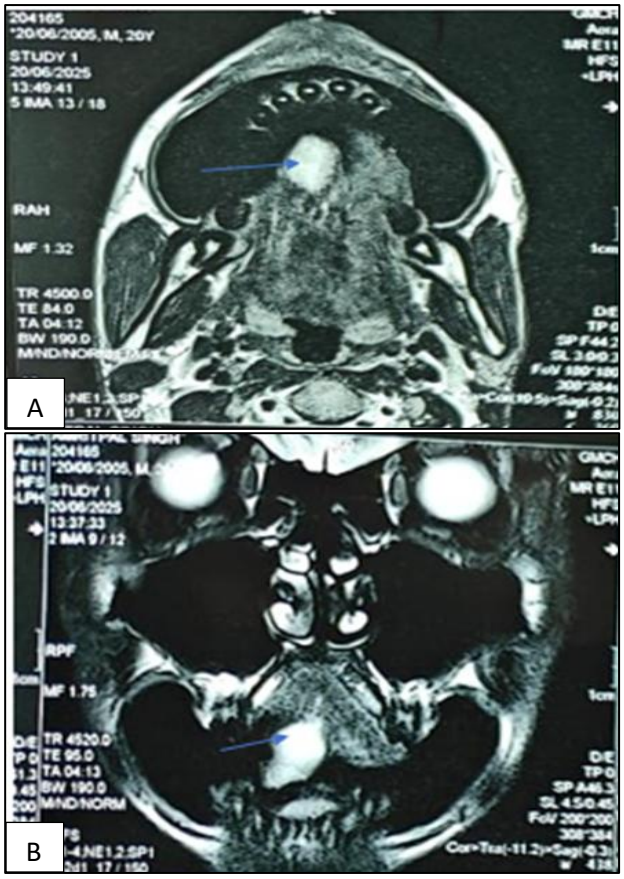

Figure 2 (A and B): CE-MRI oral cavity.

CE-MRI oral cavity showing the presence of a well-defined, lobulated exophytic lesion 1.4×1.2×1.8 cm arising from the ventral surface of anterior tongue in the right paramedian location. The lesion appears isotense on T1W1 and hyperintense on T2W1.

There was minimal intraoperative bleeding The mass was excised completely (Figure 3) under local Anaesthesia via transoral approach (Figure 4) and sent for histopathological examination which showed a well circumscribed, unencapsulated tumor comprising of hypercellular and myxoid hypercellular areas. The hypercellular areas show nuclear palisading and formation of verrocay bodies consistent with Schwannoma.

Figure 3: Excised mass.

Figure 4: Post op pic.

Patient was given liquid diet for a week. Post op period was uneventful without any complications. No recurrence was noted after 3 months of follow up.

DISCUSSION

Schwannomas of the tongue most commonly occur between the second and fourth decades of life and display no gender or racial predilection.[5] Most often these tumors are solitary but can occur in multiple areas also. Multiple occurrences are usually associated not only with neurofibromatosis II but also schwannomatosis. Cytogenetic abnormality of chromosome 22 is seen in 50% cases, and those are associated with neurofibromatosis II.[6]

Schwannomas of the tongue arise from the hypoglossal nerve, but it is difficult to distinguish between tumors of the lingual, hypoglossal and glossopharyngeal nerve due to proximity of nerves.[7] Even though tongue is the most common intraoral tumour location of schwannoma, less than 50 cases of lingual schwannomas have been reported in the literature in the past 20 years.[8] Most common site affected is anterior 2/3rd of tongue (66%) vs 34% in the posterior two thirds. High prevalence of schwannomas in the tongue may be due to the higher incidence of trauma to the tongue and the role of Schwann cells in repair of injured neurons.[9]

The imaging modality of choice for lingual schwannomas is MRI. The better tissue contrast of the MRI, compared to CT, allows a more precise localization and better visualization of the relations to other structures, as well as a more accurate measurement of tumour size.[3]

Schwannomas pose a diagnostic challenge as they are clinically indistinguishable from other soft tissue tumors. The differential diagnosis for a lingual schwannoma includes other benign and malignant tumors like lymphangiomas, hemangiomas, neurofibromas, lingual thyroid and carcinomas.[10]

Hence biopsy and histological examination are essential for a confirmative diagnosis. Schwannomas are characterized by strong and diffuse immunoreactivity for S-100 protein.[11] Complete surgical excision is the treatment of choice with solitary lesion. Schwannomas of oral tongue can be managed with transoral surgical excision. On the other hand, schwannomas at the base of the tongue are usually approached by cervical access (transhyoid or submandibular) or rarely via transoral CO_2 laser excision.[12] The recurrence rate of lingual schwannoma is very low and malignant transformation is very rare.[13]

Table 1: ROL of anterior schwannoma tongue patients.

Authors	Year	Age (in years)/ gender	Site	C/F	Surgical approach
Mercantini and Mopper	1959	22/M	Anterior	Intermittent pain	Transoral
Mercantini and Mopper	1959	25/M	Anterior	Lump	Transoral
Cameron	1959	25/M	Anterior	Lump	Transoral
Pantazopoulos	1965	25/M	Anterior	Lump	Transoral
Firfer et al	1966	28/F	Anterior	Lump	Transoral
	1967	60/F	Anterior	Lump	Transoral
Oles and Werthemier	1967	20/M	Anterior	Lump	Transoral
Paliwal et al	1967	32/M	Anterior	Lump	Transoral
Crawford et al	1968	23/M	Anterior	Lump	Transoral
	1968	24/M	Anterior	Lump	Transoral
Bitici	1969	40/M	Anterior	Slight discomfort	Transoral
Mosadomi	1975	19/M	Anterior	Painful mass	Transoral
Swangsilpa et al	1976	26/M	Anterior	Lump	Transoral
Sharan and Akhtar	1978	30/F	Anterior	Change in voice	Transoral
Akimoto et al	1987	15/M	Anterior	Lump	Transoral
Flickinger et al	1989	28/F	Anterior	Lump	Transoral
Gallesio and Berrone	1992	24/F	Anterior/base	Dysphonia/chewing difficulty	Transoral
Lopez and Ballistin	1993	21/M	Anterior	Lump	Transoral
Haring	1994	49/F	Anterior	Lump	Transoral
Nakayama et al	1996	40/F	Anterior	Lump	Transoral
Pfeifle et al	2001	30/F	Anterior	Lump	Transoral
	2001	18/M	Anterior	Lump	Transoral
Cinar et al	2004	7/M	Anterior	Lump	Transoral
Hwang et al	2005	23/M	Anterior	Lump	Transoral
Vafiadis et al	2005	18/M	Anterior	Lump	Transoral
Hsu et al	2006	38/M	Anterior	Lump	Transoral
	2006	45/M	Anterior	Lump	Transoral
	2006	25/M	Anterior	Lump	Transoral
	2006	39/F	Anterior	Lump	Transoral
	2006	9/M	Anterior	Lump	Transoral
Enoz et al	2006	7/F	Anterior/base	Dysphagia, pain	Transoral
Sethi et al	2008	28/M	Anterolateral/ ventral	Lump	Transoral
Gupta et al	2009	18/M	Anterior/ventral	Lump	Transoral
Cigdem et al	2010	13/M	Anterior/ventral	Lump	Transoral
Leffcoat et al	2010	68/M	Lateral	Lump	Transoral
	2013	21/M	Anterolateral, ventral, tip	Lump	Transoral
Jayaraman et al	2013	25/F	Anterolateral/base	Lump	Transoral
Bhola et al	2014	14/F	Anterolateral /ventral	Lump	Transoral
Moreno-Garcia et al Split, Mandibulotomy	2014	13/F	Anterior/ ventral	Lump	Lip
Kavcic and Bozic	2015	20/F	Anterolateral/ ventral/tip	Lump	Transoral
Thompson	2020	13 cases (9 M/4 F) age (12-82)	Anterior 2/3rd	Lingual mass/ nodule	Transoral
Gayen s	2020	48/M	Ventrolateral	Lump	Incisional biopsy
Present case	2025	20/M	Anterolateral/ ventral	Painless lump	Transoral

Table 2: Differential diagnosis for tongue schwannomas.

D/D	Site	Presentation	Management
Lymphangioma	Anterior2/3rd	Localized/ diffuse growth	Complete surgical excision
Neurofibroma (NF 1)	Multiple	Asymptomatic, firm, irregular tissue masses	Surgical excision
Hemangioma	Ventral surface of tongue	Soft, smooth or lobulated, sessile or pedunculated, reddish blue, blanch on pressure	Complete involution over time, 10-20% require, TT Medical/surgical (Multistage surgery)
Lingual thyroid	Base of tongue	Asymptomatic, smooth lobulated lesion (Bluish red to red)	Hormone therapy/excision (Transoral, CO_2 laser) for smaller lesions/Midline mandibular split osteotomy for larger lesions

CONCLUSION

Schwannomas should be considered in the differential diagnosis whenever a benign looking mass is seen inside the oral cavity.

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