Schwannoma of the tongue—A common tumour in a rare location: A case report

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Schwannoma is a benign tumour that arises from Schwann cells of the peripheral nerve sheath, and is a common tumour of the head and neck. However, intraoral location is very uncommon (only 1% of all head and neck schwannomas).

We report a rare case of lingual schwannoma in a 20-year-old male patient who presented with a small, slow-growing mass over the right lateral border of the tongue with 1 year of evolution and that became recently ulcerated. The patient underwent MRI examination and complete surgical excision. Histopathological and immunohistochemical examination confirmed the diagnosis.

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1. Introduction

Schwannoma is a benign, encapsulated, slow-growing and generally solitary tumour that arise from Schwann cells of the peripheral nerve sheath. Approximately 25–45% of all schwannomas are seen in the head and neck. Of these, approximately 1–12% occur intraorally with the tongue being the most common site [1].

There are two types of peripheral nerves nerve sheath tumours: neurofibroma and schwannoma. Neurofibromas are composed of neurites, Schwann cells, and fibroblasts within a collagenous or myxoid matrix. Schwannomas originate from Schwann cells and are commonly encapsulated [2,3].

The neoplasm can occur alone or as a part of genetically inherited diseases: neurofibromatosis type 1 (NF1) or type 2 (NF2) and schwannomatosis. NF2 gene functions as a tumour suppressor and a regulator of Schwann cells [4]. These tumours can arise from any nerve covered with a Schwann cell sheath, which include the cranial nerves (except for the optic and olfactory), the spinal nerves, and the autonomic nervous system [1]. In the tongue, identification of the originating nerve may be difficult (hypoglossal, glossopharyngeal and lingual) given their proximity [5].

Schwannomas of the tongue most commonly occur between the second and fourth decades of life and display no gender predilection (52.8% female vs 47.2% male) and often present as a painless mass (69.6%). Schwannomas are likely to elicit distressing symptoms when they occur in the posterior tongue or approach 3 cm [1]. The intensity of symptoms is determined by the location and size of the tumour [6].

Transoral resection is the standard approach for the treatment of the vast majority of these tumours. The recurrence rate is very low and malignant transformation is very rare. [6].

We present a case of lingual schwannoma in a 20-year-old male patient, involving the right border of the tongue, which was slow growing and became recently ulcerated, with MRI, histopathological and immunohistochemical correlation.

2. Case report

A 20-year-old male patient complained of a slow growing and painless lump on the right border of the tongue, noticed 1 year ago, that became recently ulcerated and tender. The patient was otherwise healthy. No significant personal or family medical history were reported.

Intraoral clinical examination revealed the presence of a nodule (1.5 × 1.5 cm in size), firm, tender and ulcerated, without fluctuation. Cervical lymph nodes were not palpable and the remaining clinical examination was normal.

A MRI was performed to characterize the lesion, revealing the presence of an ovalated nodule in the right tongue, well-circumscribed, homogeneously isointense to muscle on T1WI and
homogeneously hyperintense on T2WI, showing homogeneous hypervascular enhancement in the contrast dynamic study (Fig. 1). MRI was unable to make a definite diagnosis, however reported the benign characteristics of the lesion. The mass was excised under local anesthesia. Gross examination revealed an encapsulated nodule 1.9 \times 1.5 \times 1.4 \text{cm} in size, which had a moderately firm white pink cut surface with an ulcerated surface. The histopathological and immunohistochemical examination confirmed the diagnosis of schwannoma (Fig. 2).

### 3. Discussion

Schwannoma is a benign, encapsulated, slow-growing and generally solitary tumour that arise from Schwann cells of the nerve sheath. Approximately 25–45% of all schwannomas are seen in the head and neck. The most commonly affected nerve in the head and neck is the vestibulocochlear nerve. Only approximately 1–12% of the head and neck schwannomas occur intraorally [1]. In the oral cavity, the tongue is most commonly affected, followed by the roof of the mouth, the floor of the mouth, the buccal mucosa, the gingiva, the lips and the vestibular mucosa [7].

The most recent review of the literature report no gender predilection, and a significantly higher incidence between the second and fourth decades. The average size was 2.4 cm with a typical location in the anterior third of the tongue (66% vs 34% in the posterior two thirds). Patients with small tumours (less than 2 cm) in the anterior tongue are usually asymptomatic. Typically, patients with larger tumours (more than 3 cm) or tumours located on the two posterior thirds of the tongue are more likely to experiment symptoms, as the more posterior lesions may cause snoring and dysphagia [1].

Histologically, schwannomas display several characteristic features. Virtually all have a capsule (Fig. 2A). The tumour is composed of alternating hypercellular spindle cell areas (Antoni A) and hypocellular round cell areas (Antoni B). Nuclear palisading is usually present in Antoni A areas and may be prominent and form nuclear palisades around a collagenous hyalinised core (Verocay bodies). Antoni B areas are paucicellular with small round cells, within a myxoid stroma (Fig. 2C). Schwannomas are characterized...
by strong and diffuse immunoreactivity for S-100 protein (Fig. 2D), which is the clue for the diagnosis [8,9].

The imaging modality of choice for lingual schwannomas is MRI. The better tissue contrast of the MRI, compared to computerized tomography (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. The typical features on MRI are: a well-circumscribed small nodule, homogeneously isointense to muscle on T1WI (Fig. 1A) and homogeneously hyperintense on T2WI (Fig. 1B), showing homogeneous enhancement after contrast administration (Fig. 2C,D) [1].

4. Conclusion

The imaging modality of choice for the evaluation of a patient with a slow-growing tongue mass should be MRI. Lingual schwannoma is a very rare tumour, however it should be considered in the differential diagnosis list when a well-circumscribed small nodule with typical signal and dynamic characteristics is present. The final diagnosis should be done after histopathological and immunohistochemical examination.

Transoral resection is the standard approach for the treatment of the vast majority of these tumours. The recurrence rate is very low and malignant transformation is exceptionally rare.

Conflict of interest

The authors declare not to have any conflicts of interest associated with this publication and did not receive any funding.

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