# Schwannoma of floor of the mouth

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## Abstract

Schwannoma is an intraoral rare, benign neoplasm arising from and consisting solely of Schwann cells. Its etiology is unknown. It presents as a solitary, slow growing, smooth surfaced, generally asymptomatic firm mass. Schwannomas commonly occur between 30 and 50 years. It is relatively uncommon, although a quarter of all Schwannoma's occurs in the head and neck region. Schwannoma of the floor of the mouth is rare in the oral region. Described is a case of Schwannoma of the floor of the mouth in a 28-year-old male, of large size.

**Key words:** *Benign neoplasm, floor of the mouth, neural lesions, Schwannoma, swelling*

## INTRODUCTION

The Schwannoma is a benign tumor arising from epineurial Schwann cells. Schwannomas commonly occur between 30 and 50 years.[1] 25% to 48% of all Schwannomas occur in the head and neck region.[2] Intraorally, the tongue is the most common location.[3] Here, a case of a schwannoma of the floor of the mouth in a 28-year-old male is presented.

## CASE REPORT

A 28-year-old male patient presented with a complaint of enlarging swelling of 1 month duration in the right anterior floor of the mouth which was otherwise asymtomatic. On intra-oral examination, a 4 × 3 cm swelling in the right anterior floor of the mouth, with smooth surface, well-defined border, covered with normal appearing mucosa, was noted. On palpation, it was firm and tender. Computed tomography (CT) scans (axial view) showed a well-defined heterodense mass measuring 3.5 × 2.5 × 2.5 cm, with specks of calcification in the right sublingual region. There was a hypodense rim around the swelling causing smooth erosion of the adjacent mandible. No evidence of cortical irregularity or periosteal reaction was found. Furthermore, multiple enlarged, submental and bilateral submandibular lymph nodes were seen [Figure 1].

Based on the clinical findings, the CT scan features and anatomical location a provisional diagnosis of salivary gland tumor involving sublingual gland was given. The patient underwent surgical excision of the mass under general anesthesia; the post-surgical course was uneventful.

Macroscopically, the resected mass was encapsulated, greyish-white in color, measuring 4 × 4 × 3 cm. It was oval, smooth and firm in consistency [Figure 2]. Microscopic examination revealed a well encapsulated tumor exhibiting areas of organized spindle-shaped cells in palisading arrangement around acellular, eosinophilic areas forming Verocay bodies giving Antoni type 'A' pattern. Other areas with Antoni type 'B' pattern exhibited less cellularity, less organized cells, which were plump, spindle-shaped and were generally seen adjacent to densely vascular areas [Figure 3]. Immunohistochemical investigation of the tumor cells showed diffuse, strongly positive staining for S-100 protein [Figure 4]. These findings were compatible with the diagnosis of Schwannoma.

## DISCUSSION

Neurilemoma/Schwannoma, is a benign tumor arising from and consisting solely of Schwann cells.[1,4] It ranges from a few millimeters to several centimeters in size.[2] It affects the genders in roughly equal numbers.[5] Extracranially, about a quarter of all Schwannomas occur in the head and neck region. Only 1% of these show an intraoral origin.[4,6,7] Intraorally, the tongue is the most common location.[3]

Schwannomas are usually solitary lesions; however, some are seen as multiple lesions as part of Neurofibromatosis type I.[1] The solitary neurilemoma is a slow growing, encapsulated tumor that typically arises in association with a nerve trunk. As it grows it pushes the nerve aside. Usually the mass is asymptomatic, although tenderness or pain may occur in some instances.[2] In the present case the Schwannoma presented as an asymptomatic, enlarging, well circumscribed mass in the right anterior floor of the mouth in a 28-year-old male.

Schwannoma in the floor of the mouth or tongue has an intact overlying epithelium and, therefore, resembles any of the benign lesions known to occur in this region.[1] The histological finding of the present case consists of a well-defined fibrous capsule having two patterns.

Antoni 'A' areas are composed of compact spindle-shaped cells with twisted nuclei, indistinct cytoplasmic borders and occasional clear intranuclear vacuoles arranged in bundles or inter lacing fascicles.[5] In the Antoni 'A' areas there was nuclear palisading, whirling of cells and Verocay bodies formed by two compact rows of well aligned nuclei separated by fibrillar cell processes. Antoni 'B' areas were far less orderly and cellular. The spindle or oval cells were arranged haphazardly in the loose textured matrix, which was punctuated by microcystic change, inflammatory cells and delicate collagen fibres. These tumors may undergo degenerative changes in the form of cyst formation, hyalinization, calcification, hemorrhage, and nuclear atypism, but, are nonetheless benign.[1]

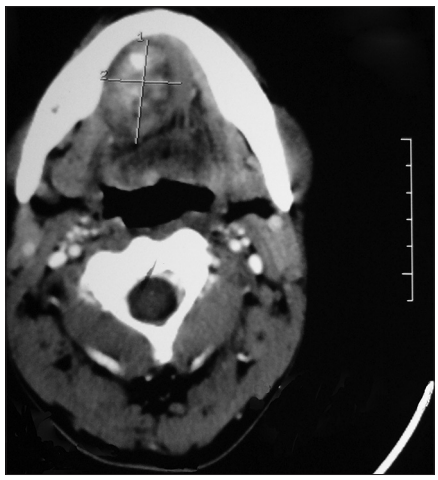

**Figure 1:** Computed tomography scan in axial view showed a well-defined heterodense mass with specks of calcification in the right sublingual region

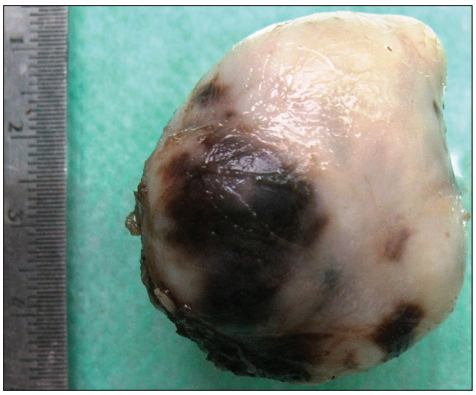

**Figure 2:** Gross appearance of the resected tumor mass

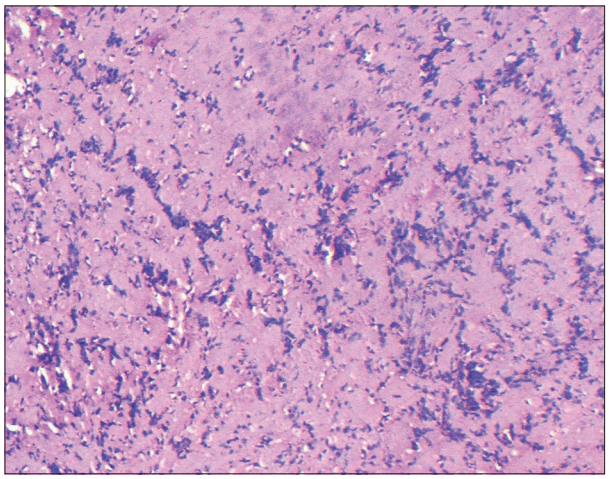

**Figure 3:** Depicts Antoni type 'A' tissue with spindle-shaped cells, palisading nuclei and Verocay bodies, (H and E, ×10)

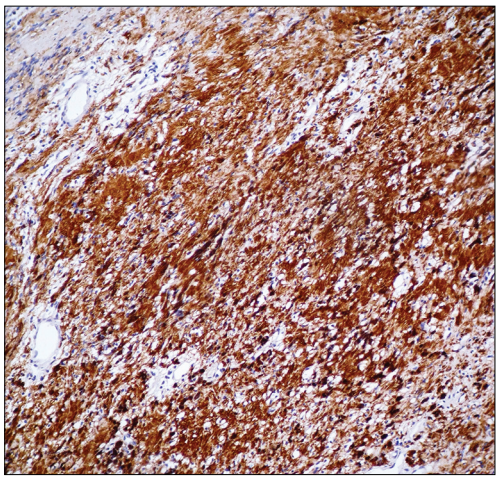

**Figure 4:** Immunohistochemical staining of the tumor cells showing diffuse, strong positivity for S-100 protein, (×10)

The observation of tumor acquiring such a large size within duration of 1 month is conflicting with routinely observed slow growing nature of Schwannoma. However, its inconspicuous location in the floor of the mouth and asymptomatic behavior combined with well encapsulated nature and some areas of degenerative changes in the form of hemorrhage indicate that the tumor mass is of long standing nature.

S-100 is strongly expressed by most cells in Schwannoma in contrast to cells of neurofibromas, which variably expresses the antigen. Although the expression of S-100 is diminished in Antoni B areas, immunostaining for this protein is so consistent and of such intensity that it serves as an important diagnostic tool.[5] In our patient, almost all tumor cells stained strongly for the S-100 protein, presenting as a proliferative lesion of Schwann cells. S-100 staining and the characteristic hematoxylin and eosin staining pattern confirmed the diagnosis of Schwannoma.

The solitary Schwannoma is treated by surgical excision; the lesion normally will not recur. Malignant transformation is extremely rare.[2] The extensive size of this lesion, occurrence in an uncommon location and in a short period of time led to a clinical diagnosis of a malignant lesion. However, its typical histological picture of Schwannoma of both 'A' and 'B' type compelled us to include this large-sized tumor under the benign category as one of the diagnosis.

## REFERENCES


1. Marx RE, Stern D. Benign soft tissue tumors of mesenchymal origin. In: Bywaters LC, editor. Oral and Maxillofacial Pathology: A Rationale for Diagnosis and Treatment. Carol Stream: Quintessence Publishing Co, Inc.; 2003. p. 395-461.
2. Neville BW, Damm DD, Allen CM, Bouquot JE. Soft tissue tumors. Oral and Maxillofacial Pathology. 3rd ed. St. Louis: Elsevier; 2009. p. 507-70.
3. Gallesio C, Berrone S. Schwannoma located in the tongue. A clinical case report. Minerva Stomatol 1992;41:583-90.
4. Shu-Hui Li, Long-Chang Chang, Herng-Sheng Lee, Kuo-Chou Chou, Huan-Ching Su, Yi-Shing Shieh. Schwannoma of the Alveolar Mucosa. J Med Sci 2006;26:149-52.
5. Weiss SW, Goldblum JR. Benign tumors of peripheral nerves. In: Strauss M, editor. Enzinger and Weiss's soft tissue tumors. 4th ed. St. Louis: Mosby; 2001. p. 1111-207.
6. Pfeifle R, Baur DA, Paulino A, Helman J. Schwannoma of the tongue: Report of 2 cases. J Oral Maxillofac Surg 2001;59:802-4.
7. Arda HN, Akdogan O, Arda N, Sarikaya Y. An unusual site for an intraoral schwannoma: A case report. Am J Otolaryngol 2003;24:348-50.



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