

Case Report

Schwannoma of the Tongue Base: A Case Report

Mehdi Farzadnia¹, Mehdi Bakhshae², Reza badiei²

1. Dept. of Pathology, School of Medicine, Emam Reza Hospital, Mashhad University of Medical Sciences, Mashhad, Iran

2. Dept. of Otorhinolaryngology, Head, and Neck Surgery, School of Medicine, Emam Reza Hospital, Mashhad University of Medical Sciences, Mashhad, Iran

ABSTRACT

Tongue base lesions have a diverse and extensive etiology. One of the benign tongue base lesions is schwannoma. Schwannoma and neurofibroma are two tumors of the peripheral nerves originating in the nerve sheaths. Schwannoma account for just over 1% of benign tumors which have been reported in the oral cavity and base of the tongue and with regard to its involved area in the oral cavity is very rare. Here, we report a case of a 13-years-old girl with a schwannoma in the base of tongue, without any symptoms or signs that explored accidentally.

Key words: Schwannoma, Tongue, Neurilemmoma

Introduction

The differential diagnosis of a lesion in the base of the tongue is very extensive. Malignant lesions include squamous cell carcinoma, cancer of salivary gland origin, and soft tissue sarcoma. Metastasis to the base of the tongue from distant origin has also been reported. Benign lesions include granular cell tumors, tumors of salivary gland origin, leiomyoma, rhabdomyoma, lymphangioma, hemangioma, epidermoid cyst, lipoma, inflammatory lesions, and lingual thyroid (1).

Schwannoma or neurilemmoma and neurofibroma are two tumors of the peripheral nerves originating in the nerve sheaths (2). Neurilemmoma is a common tumor in the head and neck region (3). Schwannoma accounts for just over 1% of benign tumors which have been reported in the oral cavity (2). However, reports of tongue-base tumors are scarce in the literature. This report describes a case of schwannoma arising from the base of the tongue.

Case report

A 13-years-old girl was admitted to the Otolaryngology Department at the Medical University of Mashhad for evaluation of a mass in the base of her tongue. She noticed her tongue base mass, accidentally on mirror 3 months ago. She had not articulation difficulty, odynophagia, dysphagia, rhinolalia, and a history of the same mass, of seizure, or skin lesions. On physical exam, all cranial nerves were normal. There was not any obvious problem in tongue movements and sensation. Taste was also normal. Only there was a well defined 3×2 cm, firm mass on the right side of the base of the tongue, with normal mucosal surface but with a little yellowish discoloration (Fig.1). The tumor was excised under general anesthesia. The well capsulated specimen was yellow-gray and oval, measuring 2×1×1 cm (Fig. 2). A CT-scan with IV contrast was obtained that revealed a superficial, well demarcated homogenous mass at the base of the tongue, without invasion to the surrounding tissues and without compromising the airway (Fig. 3).

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Address communications to: Dr. Mehdi Farzadnia, Department of Pathology, School of Medicine, Emam Reza Hospital, Mashhad University of Medical Sciences, Mashhad, Iran.

Email: mhdfarzadnia@yahoo.com



Figure 1: Preoperative view. A 3×2 cm, red, non-tender, smooth surfaced, slightly firm tumor on the base of the tongue



Figure 2: The well capsulated specimen was yellow-gray and oval, measuring 2×1×1 cm



Figure 3: CT Scan of the tongue, with a well demarcated homogenous mass at the base
 Histopathologic examination showed an encapsulated spindle cell tumor, with two different

patterns; a hypercellular area (Antoni A area), composed of spindle cells often arranged in a palisading fashion (Verocay bodies) (Fig. 4). In less-cellular Antoni B area, the collagen fibers were abundant but lacked an organized architecture (Fig. 5). Antibody binding with S-100 protein in cells was strongly positive (Fig. 6). Mitoses, necrosis, and atypia of the tumor cells were not seen.

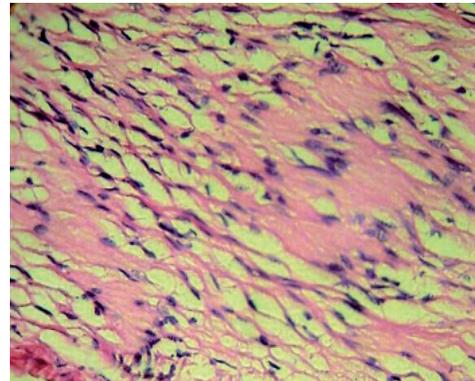


Figure 4: nuclear palisading with formation of numerous Verocay bodies within Antoni A area of neurilemmoma (Hematoxylin and Eosin ×400)

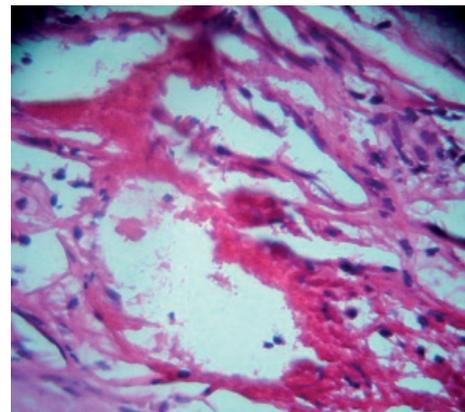


Figure 5: Loose myxoid Antoni B area of neurilemmoma (Hematoxylin and Eosin ×400)

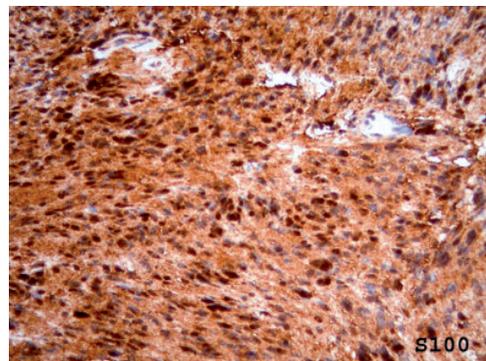


Figure 6: Immunohistochemical staining with S100 protein antibody shows that the tumor cells are diffusely and strongly positive.

Discussion

Schwannomas are benign slow-growing solitary tumors of nerve sheath origin and can arise from any myelinated nerve. They have been reported to occur in most parts of the body with the highest incidence (25%) in the head and neck region, although tongue base lesions are rare (4). It usually arises in the cranial nerve, especially the vestibular nerve, spinal roots, or peripheral nerves. Neurilemmomas may occur at any age but are common between the ages of 20 and 50 years (5). Neurilemmomas of the tongue have only been sporadically reported in the literature. Vague symptoms and limited knowledge of this kind of tumor may result in long delays before diagnosis and treatment (6). It occurs often in the head and neck (11-45%), trunk (13%-29%), upper extremity (12-19%), and lower extremity (13.5-17.5%) and rarely in the hand and wrist (0.2-16%) (7). Extracranial neurilemmoma in the oral cavity, tongue, and floor of the mouth is rare (8). The mobile portion, such as the dorsum of the tongue is the most commonly affected site, but the base of the tongue is rarely involved (9). In the recent reports, only two cases were on the base of the tongue (10). Two cases of neurilemmoma of the tongue were reported in the Korean literature (11, 12). Mevio and Gorini also reported one case of Schwannoma of the tongue (7). The cause of the tumor is unknown, but they indicate a spontaneous growth, external injury, chronic irritation, or exposure to radiation (11).

Schwannoma of the tongue always presents as a painless mass on the lingual surface and exhibits no gender preference (13). Clinical diagnosis of neurilemmoma of the oral tongue is difficult because the tumor mimics other painless soft tissue tumors such as neurofibroma, mesenchymal tumor, lingual cyst, and minor salivary gland tumor of the tongue (14) and the patient is free of any neurologic signs (15). Symptoms which take the form of slight hypoesthesia and vague paresthesia may lead to the suspected diagnosis of this type of neoplasia. The final diagnosis is always made after a definitive histological examination (2).

Grossly, neurilemmoma is so well capsulated that the dissection may be easy. Nerve fibers tend to spread beyond the surface of the tumor as it grows. Histologically, there are three criteria for making a diagnosis of neurilemmoma: the presence of a capsule, the presence of Antoni A or Antoni B stroma, and positive stain with S-100. Positive reactivity to S-100

protein and Leu-7 antigen supports the Schwann-cell nature of this tumor on immunohistochemistry (16).

The distinction between benign and malignant neurilemmomas is based on the morphologic features such as cellular atypia, necrosis, and mitoses, as commonly seen in all malignant tumors of soft tissues (7). Malignant degeneration of neurilemmoma is extremely rare (16). The tumor in our case was essentially benign. Total surgical excision is the treatment of choice. The tumor is not radiosensitive. Tumor recurrence is rare when the tumor is completely excised (15).

References

1. Ying YL, Zimmer LA, Myers EN. Base of tongue schwannoma: a case report. *Laryngoscope*. 2006 Jul;116(7):1284-7.
2. Gallesio C, Berrone S. Schwannoma located in the tongue. A clinical case report. *Minerva Stomatol*. 1992 Dec;41(12):583-90.
3. Nakasato T, Kamada Y, Ehara S, Miura Y. Multilobular neurilemmoma of the tongue in a child. *AJNR Am J Neuroradiol*. 2005 Feb;26(2):421-3.
4. Mehrzad H, Persaud R, Papadimitriou N, Kaniyur S, Mochloulis G. Schwannoma of tongue base treated with transoral carbon dioxide laser. *Lasers Med Sci*. 2006 Dec;21(4):235-7.
5. Wiess SW, Goldblum JR. Benign tumors of peripheral nerves. In: Enzinger FM, Weiss SW, editors. *Soft tissue tumors*. 4th ed. St. Louis: Mosby Year Book; 2001. p.1111–1207.
6. Spandow O, Fagerlund M, Bergmark L, Boquist L. Clinical and histopathological features of a large parapharyngeal neurilemmoma located at the base of the tongue. *ORL J Otorhinolaryngol Relat Spec*. 1999 Jan-Feb;61(1):25-30.
7. Rockwell GM, Thoma A, Salama S. Schwannoma of the hand and wrist. *Plast Reconstr Surg*. 2003 Mar;111(3):1227-32.
8. Mevio E, Gorini E, Lenzi A, Migliorini L. Schwannoma of the tongue: one case report. *Rev Laryngol Otol Rhinol (Bord)*. 2002;123(4):259-61.
9. Hatziotis JC, Asprides H. Neurilemmoma (Schwannoma) of the oral cavity. *Oral Surg Oral Med Oral Pathol* 1967;24:510–526.
10. Pfeifle R, Baur DA, Paulino A, Helman J. Schwannoma of the tongue: report of 2 cases. *J Oral Maxillofac Surg*. 2001 Jul;59(7):802-4.
11. Lee WS, Lee SN. Neurilemmoma of the tongue. The

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Korean Journal of Dermatology 1998;26:94-7 .

12. Ju KR, Kang JK, Kang MJ. A case report of neurilemmoma. J Kor Surg Assoc 1977;19:79-81.

13. Hsu YC, Hwang CF, Hsu RF, Kuo FY, Chien CY. Schwannoma (neurilemmoma) of the tongue. Acta Otolaryngol. 2006 Aug;126(8):861-5.

14. Hwang K, Kim SG, Ahn SI, Lee SI. Neurilemmoma

of the tongue. J Craniofac Surg. 2005 Sep;16(5):859-61.

15. Myers EN. Unusual tumors. In: Calcaterra TC, Wang MB, editors. Cancer of the Head Neck. Philadelphia: WB Saunders; 1996. p.645-6.

16. Rosen FS, Pou AM, Quinn FB Jr. Obstructive supraglottic schwannoma: a case report and review of the literature. Laryngoscope. 2002 Jun;112(6):997-1002.