Neurilemoma of the Tongue: the Diagnostic Dilemma in A Case

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Summary

Neurilemoma, also termed Schwannoma, is a benign tumor of Schwann cell origin. This neoplasm can occur at any location in the oral cavity and is usually asymptomatic. MRI is an excellent tool for diagnosis. Treatment is by surgical excision and malignant change is rare. We report a case of a young female who was admitted with a swelling in the anterior portion of the tongue. The mass was light purple in color and became larger when the patient flexed her neck. MRI showed a uniformly round or oval mass with a moderately bright signal on T1-weighted image and a bright heterogeneous signal on T2-weighted image. Under the impression of hemangioma, angiography was performed. The tumor was excised and histopathologic examination showed a typical neurilemoma with dilated blood vessels and organizing thrombi. The patient recovered well after surgery with complete and rapid relief of symptoms. No recurrence was noted at one-year follow-up.

Key words: Neurilemoma, MRI, Tongue.

Introduction

Neurilemoma is a benign and encapsulated neoplasm of neuroectodermal origin. It arises from the Schwann cells which make up the inner layer covering the peripheral nerve bundles. Neurilemoma is slow growing, can occur at any age but most commonly arises in the second and third decades. Presentation is usually asymptomatic unless the tumor encroaches on adjacent nerves. Approximately one third of all documented cases are presented in the head and neck region. MRI is an excellent method for the diagnosis of neurilemoma. This tumor shows no recurrence if completely excised and malignant transformation is rare (8-13.9%). This report describes a tongue neurilemoma in a young woman and discusses the pre-operative misdiagnosis of hemangioma.

Case Report

A 24-year-old female sought treatment in
our hospital for a painless and slow-growing mass over the anterior tongue for 2 years. She had received needle aspiration at a medical center and was informed of the bloody content. The tumor was an intrinsic mass in the anterior portion of the tongue, measuring about 2 cm in size. The overlying mucosal surface appeared light purple in color and had a rubbery texture (Fig. 1). MRI showed a well-defined mass with mild heterogeneous signal intensity (Fig. 2A) in T1-weighted image, and the lesion was enhanced with gadolinium contrast (Fig. 2B). A bright heterogeneous signal was found in the T2-weighted image (Fig. 2C). Because a bloody component was drawn at the medical center and the patient also complained that the lesion became larger when her head was lowered. It was diagnosed as hemangioma. Then angiography was performed for concerning about the feeding artery and embolization. Angiography showed no engorged artery supply to the tongue, no abnormal vascular stain, and no vascular tumor was suggested (Fig. 3). Excision of the neoplasm was performed on September 18, 2003. An incision line was made along the ventral side of the tongue, and a well-encapsulated mass was exposed and easily removed (Fig. 4A). A small feeding artery to the lesion was found during the operation and ligated, and the defect was closed layer by layer. Gross examination of the specimen showed an encapsulated mass, measuring about 2 cm in size. A blood clot component in the central portion was found in the lesion (Fig. 4B). Histopathologic findings revealed that the mass was composed of spindle-shaped cells arranged in palisading sheets, as well as less-structured regions in which the cells appeared to be polymorphic. Immunostaining for S-100 protein was strongly positive confirming the tumor to be of neural origin. Histopathological picture was consistent with the diagnosis of neurilemoma. Antoni-type A (Fig. 5A) and Antoni-type B (Fig. 5B) areas were both found, and Verocay bodies were found in the Antoni-type A areas (Fig. 5A). Hemosiderin was also found in the tumor (Fig. 5D). At one-year follow-up, no recurrence was noted, and the tongue texture was soft and pink in color. The patient only noted slight parathesia of the tongue tip when eating spicy or hot food.

Discussion

Intrinsic tongue lesions are rare. The differential diagnosis may include vascular malformations such as lymphangioma, hemangioma, rhabdomyoma, pleomorphic adenoma and neurilemoma. Hemangioma is a benign neoplasm with proliferation of blood vessels, and it is the most common tongue lesion of all the neoplasms. Hemangioma can roughly be classified into two types: the capillary type, which regresses spontaneously, and the cavernous type, which is larger, less circumscribed, and has no regression potential. Neurilemoma is a nerve sheath tumor. About 20–58% of head and neck neurilemomas arise in the oral cavity. A review of the literature reveals that they most often occur in tongue and buccal mucosa, followed by floor of the mouth, palate, lip and gingiva. Neurilemomas affect the sexes in roughly equal numbers. However, intracranial neurilemomas more commonly in female patients. Neurilemomas occur in persons of any age but are most common in patients aged 20–50 years. MRI is an excellent method for the diagnosis of neurilemoma, but neurilemoma presents almost the same picture as hemangioma. The presentation of hemangioma in MRI usually has a low intensity with an irregular margin in T1-weighted
Fig. 1. A 2 cm painless mass in the anterior portion of the tongue.

Fig. 2A. T1-WI shadow. The lesion appeared to be a well-defined mass with mild heterogeneous signal intensity.
Fig. 2B. T1 (with contrast medium injection) shadow we found that the capsular substance was hyper-intensified, and had a heterogeneous appearance.

Fig. 2C. T2-WI. Hyperintensified image is shown.
Fig. 3. Angiography shows that there is no significant engorged artery supplied to the tongue, and no abnormal vascular stain over the tongue.

Fig. 4A. The incision line was made along the ventral side of the tongue; a well-encapsulated mass was exposed.
Fig. 4B. Blood clot component around central portion is shown (after resection of the capsule)

Fig. 5. A Section of specimen shows trabeculae of palisading spindle cells in Antoni type A tissue (original magnification x100).
Fig. 5B. Antoni type B tissue (original magnification x100).

Fig. 5C. Immunohistochemical stain for S-100 protein is strongly positive, reflecting the Schwann cell nature of this tumor (original magnification x20).
image, and in T2-weighted image shows a high signal with heterogeneous content. The MRI of neurilemoma shows a uniformly round or oval mass with a moderately bright signal on T1-weighted image and a bright heterogeneous signal on T2-weighted image. The mass is usually less than 2.5 cm in size. The lesion enhances uniformly with contrast medium. In our case, based on the patient’s complaint and the bloody aspiration in the medical center, even with the well-circumscribed shadow in the MRI, we could not rule out hemangioma. The heterogeneous appearance features of in the MRI finding was probably due to hemorrhage or hemosiderin deposition in the neoplasm.

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舌部神經鞘瘤之困難診斷—病例報告

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摘 要

神經鞘瘤是一種神經上皮瘤(neuroectodermal tumor)源自 Schwann 細胞。此細胞是構成神經束外層之細胞，神經鞘瘤是生長緩慢之腫瘤，可發生在任何年齡層，常在 20-30 歲發現，患者除了腫瘤壓迫到神經造成疼痛及異常的感覺外，其他多無症狀。據統計，神經鞘瘤有 1/3 出現於頭顱部。神經鞘瘤可以 MRI 影像作主要之診斷工具，手術切除為最好之治療方法，若全部切除復發率低且不容易轉為惡性腫瘤。本篇的目的是報告如何診斷較困難的舌部神經鞘瘤。患者在手術前被誤診為血管瘤，在術後其病理報告是神經鞘瘤，藉由回溯病史與 MRI 的影像分析，提供鑑別診斷經驗，以作爲爾後相似病例之參考。

關鍵語：神經鞘瘤，舌部，MRI。

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