Neurinoma in the buccal mucosa

Semib Ozbayrak*/ Vakur Olgac**/ Asim Dumlu*** / Sebnem Ercalik**** /
Filiz Namdar Pekiner*****

A 14-year-old girl was referred to our clinic with a problem of a painless slow growing lesion for approximately three years. MR imaging findings of lesion was "retention cyst of the salivary gland". Controversially, the histological examination of the total excised specimen was "neurinoma" and that was inconsistent with MR findings. Neural tissue tumors of the oral cavity are rare, however, this diagnosis was confirmed by surgical excision and histopathological examination. There was a rare location of the lesion as well.
J Clin Pediatr Dent 25(1): 83-86, 2000

INTRODUCTION

The neurinoma (neurilemoma, Schwannoma) is a benign tumor of the peripheral nervous system arising from cranial and sympathetic nerves. Neurinomas and similar neurogenous tumors occur relatively in the head and neck, and account for about 25% of all neurinomas.[1-11] Neurinomas are slowly growing, benign neoplasm derived from the sheath cells that cover myelinated nerve fibers.[5,7]

The neurinoma occurs at any age from young to old with equal frequency in sexes.[1,2,6] Clinically, neurinomas occur as rounded or ovoid firm masses, which are not tender to palpation. They are generally well encapsulated; the growth is slow and may continue from several months to many years. These tumors may attain great size because of the slow growth and freedom from pain.[3,4,8]

As they grow larger, they tend to outgrow the blood supply and may undergo cystic degeneration in some areas.[8]

On histological examination; the neurinoma is a well-demarcated or encapsulated tumor consisting either of parallel arrays of collagen fibers and spindle-cells with palisade nuclei (Antoni Type A pattern) or of disorderly arranged cells and collagen fibers in a mucin, microcystic stroma (Antoni Type B). Nerve fibers do not run through the lesion, but may be splayed over the capsule.[2,3]

CASE REPORT

A 14-year old girl, complaining of a localized painless growth of the buccal mucosa, came to the Oral Diagnosis and Radiology Department of the Marmara University, Faculty of Dentistry, Istanbul. She had first noticed the growth approximately 3 years before, and it had been growing progressively larger. She finally became concerned and came to the clinic for diagnosis and treatment.

On examination, around "lump" was noticed in the buccal mucosa, located at the ductus parotideus inferior. It was measured about 1.5 by 2.5 cm. This lump

* Semih Ozbayrak, DDS, PhD, Professor, Department of Oral Diagnosis and Radiology, Marmara Umversity, Faculty of Dentistry, Istanbul, Turkey.
** Vakur Olgac, DDS, PhD, Department of Pathology, Istanbul University, Oncology Institute, Istanbul, Turkey.
*** Asim Dumlu, DDS, Resident of Department of Oral Diagnosis and Radiology, Marmara University, Faculty of Dentistry, Istanbul, Turkey.
**** Sebnem Ercahk, DDS, Resident of Department of Oral Diagnosis and Radiology, Marmara Umversity, Faculty of Dentistiy, Istanbul, Turkey.
***** Filiz Namdar Pekiner, DDS, PhD, Department of Oral Diagnosis and Radiology, Marmara University, Faculty of Dentistry, Istanbul, Turkey.

All correspondence should be sent to Professor Semih Ozbayrak, DDS,PhD, Professor, Department of Oral Diagnosis and Radiology, Marmara University, Faculty of Dentistry, Guzelbahce Sk. No. 6, Nisantasi 80200 Istanbul, Turkey.

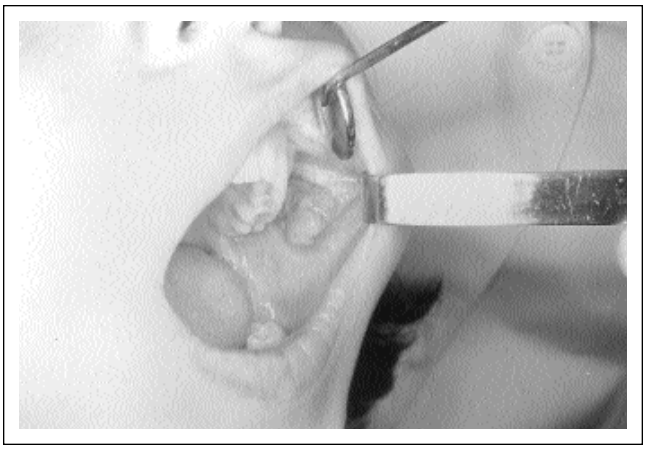
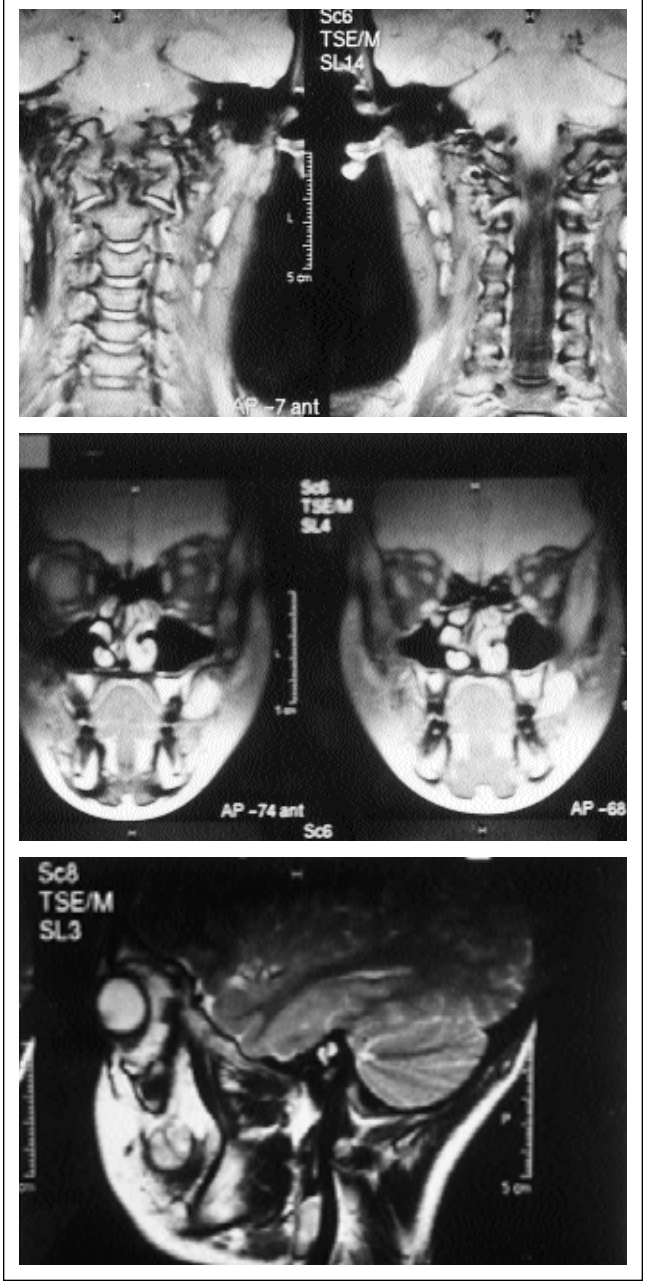
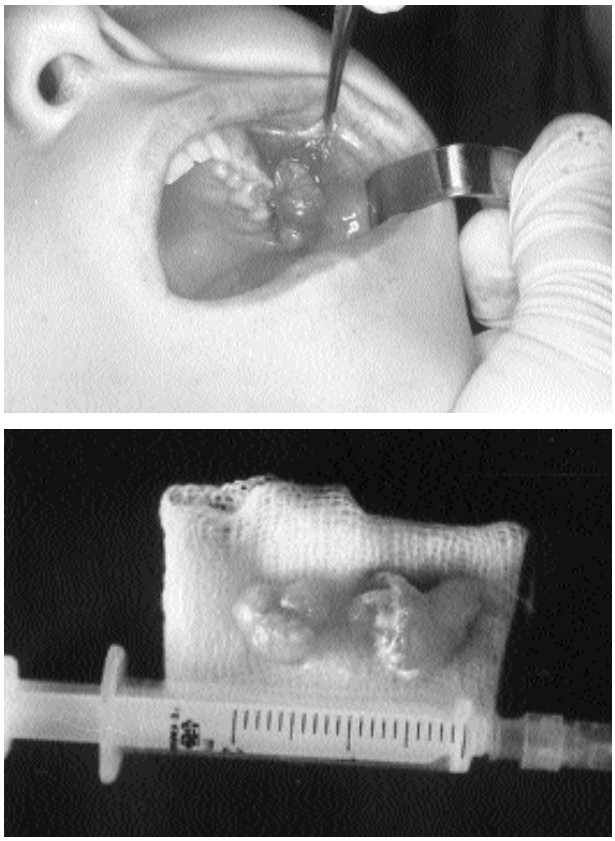


Figure 1. Approximately 1.5cm diameter lump in the buccal mucosa.



Figures 2-4. In the sagittal and coronal sections, T_1, T_2-weight spin echo (SE) images.



Figures 5 and 6. Total excised tumor.

was well defined and was found to be firm and painless upon palpation and there were not any positive findings from the punch biopsy (Figure 1).

The history and physical examination were not contributory, but clinically the lesion was almost consistent with lipoma, lymphangioma and mucosa.

MR was performed and as a result of axial, sagittal and coronal sections, T1, T2- weighted spin echo (SE) images, MRI report was of a well circumscribed interpreted as a moderately sized 12mm x 16mm x 26mm, located in the oral meatus of left ductus parotideus and anteromedial to the masseter muscle (Figures 2, 3, 4). Cervical triangle, and jugular, submandibular regions have multiple lymph nodes bilaterally.

Duplex ultrasonographic examination was performed to compare the MRI. As a result of this, there was not any detectable vascularization, but it included some semisolid and cystic components. In light of those MRI and supported ultrasonography findings, the lesion was thought as a retention cyst of salivary gland.

Under local anesthesia, the tumor was excised totally (Figures 5, 6) and then was submitted for histological examination.

No post-operative complications occurred and sutures were removed in 1 week. Microscopic examination of the hematoxylin-of the biopsy specimen composed mainly of cells and the accurate diagnosis was neurinoma composed of Antoni Type A and Antoni Type B tissue (Figure 9). The sections demonstrated a moderately cellular tumor, which is composed of spindle cells with eosinophilic cytoplasm. The tumor cells were arranged in interlacing fascicles were stained positive with Masson trichrome and Van Grieson stains, which prove tumor cells to be neurogenic origin (Figures 9, 10).

DISCUSSION

Neural tissue tumors of the oral cavity are rare. However, in a study of 41 tumors of Oberman and Sulinger

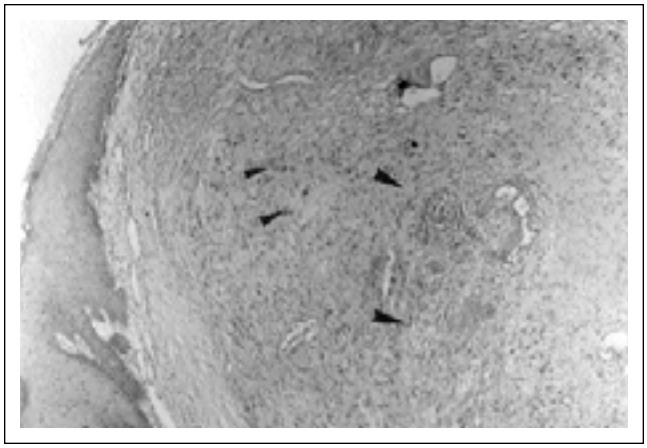


Figure 7. Photomicrograph of the excised lesion reveals tumor cells with parallel nuclei and both Antoni A appearance(➤) and Antoni B (➤). The surface is stratied squamous epithelium, beneath the epithelium is a fusiform shaped lesion. (H&E, 40x).

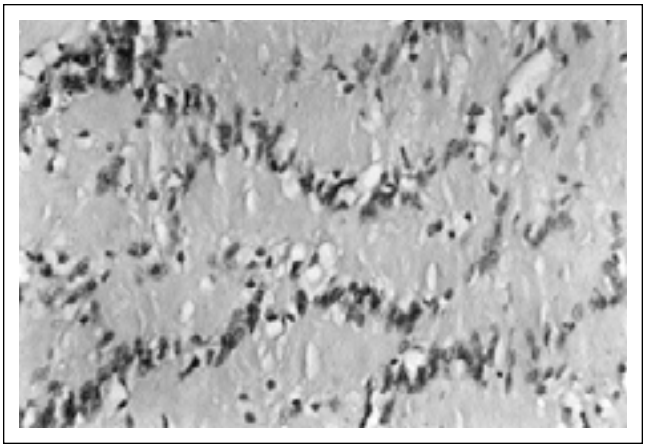


Figure 8. Van Gieson stain exhibits a nuclear palisading Antoni A appearance (250x).

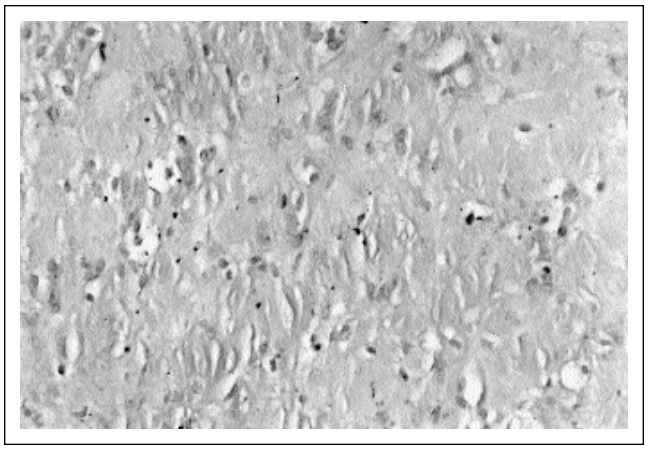


Figure 9. The fusiform cells produce interlacing facilicles, Antoni B areas.

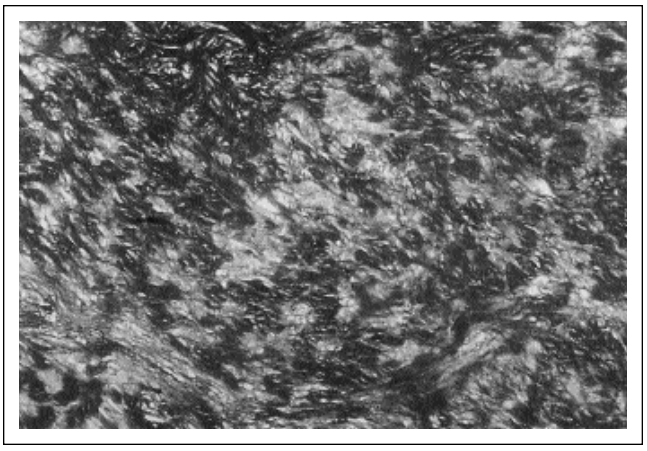


Figure 10. The fusiform cells produce interlacing facilicles, Antoni A-B areas.

reported that 25% were located inside the mouth. Hatziotis *et al*. in a review of intraoral neurinomas found the following location: tongue, 59; palate, 11; floor of the mouth, 10; oral mucosa, 10; gingivae, 7; lip 6; and buccal mucosa.[2,4,5,7]

The diagnosis of benign neural tumors can be challenging, because of occasional histological overlap. Although these tumors share a common neural origin, they exhibit notable microscopic and pathogenic heterogeneity. Neurinoma is an encapsulated tumor composed of Schwann cells arranged in both a cellular palisade pattern (Antoni Type A) and a loose paucicellular pattern (Antoni Type B).[2,4]

The intraoral appearance of a neurinoma is usually that of a single, slowly enlarging, and seldom ulcerated nodule that may be associated with pain or discomfort. Histological features include the presence of a thin fibrous tissue capsule and a tumor mass that generally contains both Antoni-A and Antoni-B tissues with Verocay bodies. Vascularity is not a prominent feature, and necrosis and mitotic activity are seldom encountered. Nerve fibers do not run through the lesion, but may be splayed over the capsule.[4,6]

Excision is usually the treatment of choice and these lesions generally do not occur if completely removed. A capsule is usually present, facilitating surgical removal.[2,4,5,7] In our case, on examination the tumor was thought as a lipoma due to its location, firmness and well-defined contours.

The histopathological examination of total excised specimen was "neurinoma" and that was inconsistent with MRI findings. The MRI in this case did not help accurate diagnosis. This case is one of unusual neurinomas, which located on buccal mucosa[2,9] and the result has to remind the accuracy of histopathological examination for a definitive diagnosis.

REFERENCES

1. Villanueva J, Gigoux C, Sole F. Central neurilemmoma of maxilla, Oral Surg Oral Med Oral Pathol 79: 41-3, 1995.

2. Sollecito TP, Richardson RM, Quinn PS, Cohen SQ. Intracranial schwannoma as atypical facial pain, Oral Surg Oral Med Oral Pathol 76: 153-6, 1993.
3. Ishikawa T, Murakami K, Yasui R, Maeda K, Tanaka K, Shimosato T. Amultifocal schwannoma of the masseter nerve causing hemicrania. Oral Surg Oral Med Oral Pathol 71: 329-32, 1991.
4. Krolls SO, Mc Ginnis Jr JP, Quon D. Multinodular versus plexiform neurilemmoma of the hard palate. Oral Surg Oral Med Oral Pathol 77: 154-7, 1994.
5. Wright BA, Jackson D. Neural tumors of the spectrum of benign and malignant oral tumors of the oral cavity and jaws. Oral Surg Oral Med Oral Pathol 49: 509-21, 1980.
6. Soames JV, Southam JC. Oxford Medical Publications, NY, p. 124, 1993.
7. Goaz PW, White SC. Oral radiology, principles and interpretation, Mosby pp. 458, 1994.
8. Firfer H, Sohn D, Heurlin R, Stuteville OH. Oral Surg Oral Med Oral Pathol 21: 1391-42, 1966.
9. Wallen N. Oral Surg Oral Med Oral Pathol 22: 91-94, 1966.
10. Chrysomali E, Papanicolaou SI, Decker NP, Rezegi JA. Benign neural tumors of the oral cavity. Oral Surg Oral Med Oral Pathol 84: 381-90, 1997.
11. Sadeghi EM, Koenig B, Clark D. Infrabony neurilemmoma: Diagnosis and management. A case report. JADA 129: 729-732, 1998.