Many types of tumors arise from the peripheral nerve sheath, eg, neurofibroma, schwannoma, palisaded encapsulated neuroma (PEN), traumatic neuroma, mucosal neuroma associated with multiple endocrine neoplasia (MEN III), nerve sheath mixoma and granular cell tumor. Usually the tumors are localized in the neck on the lateral side, followed by the trunk, mediastinic region, and limbs. In the oral cavity, peripheral nerve sheath tumors are very rare, comprising only 1% of all tumors of the head and neck (excluding the olfactory and optic nerves). Generally, the site of this neoplasia in the oral cavity is the tongue, especially at basal region, but also described on the palate, oral floor, oral mucosa, gingival, labial vestibule, and temporomandibular region of the jaw. Neoplasias are solitary, slow growing, smooth surfaced, possess a hard rubbery consistency, are whitish-gray in color and well defined.

They occur chiefly in 30- to 60-year-old patients, without any gender predilection or clinical pain, until the neoplasia strains the external tissues and compresses nerves. Microscopically, they are characterized by encapsulation, by so-called Antoni A and B tissue areas in variable proportions. Antoni A areas may exhibit nuclear palisading and Verocay bodies, while Antoni B regions show low-cellular nonorganoid areas with a low degree of organization. There are several histopathological variants, including the cellular, plexiform, epithelioid, ancient, and melanotic types.

CASE DESCRIPTION

An 81-year-old male patient presented at the Oral Pathology and Laser Therapy Department of the Italian Stomatologic Institute with a medium-sized neoforation on the left side of the tongue that had rapidly grown in six months. The patient complained of masticatory and phonation difficulties and isolated episodes of hyposthesia (Fig 1).
Clinical examination revealed a well-defined hard-elastic mass, painful during palpation, covered with normal-appearing mucosa (Fig 2) and showing no other abnormality on the head and neck.

For this reason, the patient underwent mass resection with a diode laser 830 ± 10 nm, power 2.0 W in continuous wave (CW) mode, using a 300-µm fiber (Figs 3 to 6). This technique is less traumatic compared to the conventional method. We used the fiber in contact mode to place a single incision on the central part of the tissue with an axial orientation to the muscle bundles in order to avoid scarring. No local anesthesia was used. The laser cut is clean, thin and fast, often without bleeding; pain and postoperative edema are limited. Because of the excellent hemostatic properties of this diode laser, sutures are usually unnecessary.6 However, in this case, we used silk sutures owing to the extent of the incision.

A histopathological examination was required for a definitive diagnosis. The histological examination biopsy 3180/02 was done at the Institute of Pathological Anatomy, Oral Pathology Section, Milan State University. Upon macroscopic analysis, the mass appeared nodular, yellow in color, and measured 2.1 x 0.6 x 0.6 cm, surrounded by a thin capsule (Fig 9). The neoplasia showed more adjacent nodules, well encapsulated with spindle cells and palisading nuclei, surrounded by an interstitial substance that forms the Verocay bodies (Figs 10 and 11). Sometimes the nuclei are atypical, hyperchromatic, without malignancy. Antoni B areas represented the predominant microscopic pattern (Fig 12), alternating with occasional Antoni A areas. All the cells were immunohistochemically positive for S-100 protein.

The postoperative course proceeded without complications, and wound healing was obtained in 3 weeks (Figs 7 and 8). In the 2-year follow-up period, the patient had no recurrence of the tumor.

DISCUSSION

In the past, the term schwannoma has been applied to both neurofibroma and neurilemmoma. In any case, their histogenesis remains controversial. Some authors maintain that both tumors originate from Schwann cells and perineural connective cells. Others are of the opinion that the former originates from perineural cells, while the latter from Schwann cells.

The more frequent neoplasias in the oral cavity which originate from the peripheral nerve sheath are schwannoma (1%)1,13,17,18 and neurofibroma (4% to 7%); the most common site is the tongue.5,7,9,10,13,14,17,19 Only immunohistochemistry makes the differential diagnosis easier; in this case report the neoplasm was identified with the histopathological examination and confirmed by immunohistochemistry.8 The importance of immunohistochemistry for diagnosis and classification of neural tumours has been emphasized in a work which describes how the origin and differentiation of a connective tissue tumor may be confirmed by specific staining for S-100 protein, epithelial membrane antigen, CD-57 antibodies, and for IV collagen.3 Immunohistochemistry has revealed that neurofibromas, traumatic neuromas, and PEN contain many axons. Although every neural tumor contains S-100 protein cells, schwannomas and encapsulated neuromas contain the most.

Another important factor is the low frequency of
The diode laser (830 ± 10 nm) incision using a 300-μm-diameter fiber without local anesthesia: note absence of bleeding.

The neoplasm appears under the epithelium.

The schwannoma's dimensions.

The surgical silk suture.

The examination 1 week postoperatively.

The examination 2 weeks postoperatively.
malignant transformation of schwannomas (5% to 16%), compared to neurofibromas in neurofibromatosis.

CONCLUSION

Complete resection of this benign neoplasm with laser surgery is indicated. Although there are a few recurrences after total excision and a very slight possibility of malignant transformation, the prognosis is good. Diode laser treatment proves its versatility once again.

REFERENCES


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CASE REPORT

Atlas of Oral and Maxillofacial Rehabilitation

Edited by Kan-ichi Seto

Recent advances in reconstructive surgery have greatly expanded the cure rate for malignancies of the oral cavity. This atlas presents the prosthetic rehabilitation of maxillofacial defects arising from congenital malformation, injury, inflammation, and cancer. It provides a comprehensive overview of the patterns and classifications of defects found in each region along with step-by-step procedures for fabricating the forms or appliances for treating them.

Contents

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