

Traumatic Neuroma of the Lower Lip

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ABSTRACT

Traumatic neuroma is a rare disorder that represents a reactive proliferation of neural tissue following damage to an adjacent nerve. Clinically, oral lesions usually appear as a nodule of normal or grayish white smooth surface colouration, and patients may complain of pain as a frequent symptom. We report a case of a painless lower lip traumatic neuroma, clinically misdiagnosed as lipoma, in a 24-year old Caucasian woman. On intraoral examination, a yellowish and smooth sessile, well-delimited, painless, nodular lesion measuring 10 mm x 7 mm x 4 mm in size was observed on the mucosal lower lip. An excisional biopsy was performed and the final diagnosis was traumatic neuroma. After 18 months of follow-up, the patient is asymptomatic and there are no signs of recurrence.

Neuroma Traumático del Labio Inferior

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RESUMEN

El neuroma traumático es un trastorno raro que consiste en una proliferación reactiva del tejido neural tras producirse un daño en un nervio adyacente. Clínicamente, las lesiones orales normalmente aparecen como un nódulo de coloración normal o blanca grisácea, de superficie lisa, y los pacientes pueden quejarse de dolor como síntoma frecuente. Reportamos el caso de un neuroma traumático del labio inferior labio sin dolor, clínicamente mal diagnosticado como lipoma, en una mujer blanca de 24 años. En el examen intraoral, se observó una lesión nodular amarillenta, sésil, lisa, bien delimitada, e indolora, que medía 10 mm x 7 mm x 4 mm de tamaño, en la mucosa del labio inferior. Se realizó una biopsia, y el diagnóstico final fue un neuroma traumático. Después de 18 meses de seguimiento, el paciente se halla asintomático y no hay ninguna señal de recurrencia.

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INTRODUCTION

Traumatic neuroma is a rare disorder (1) that represents a reactive proliferation of neural tissue following damage to an adjacent nerve (2–4). After a nerve has been crushed or transected due to trauma or surgery, the proximal portion attempts to regenerate and re-establish innervation of the distal segment via the growth of axons through tubes of proliferating Schwann cells. Aberrant repair occurs when the regenerative tissues encounter a scar or otherwise cannot re-establish innervation. A tumour-like mass may then develop at the site of injury (3).

In oral tissues, the lesion usually appears clinically as a nodule of normal or grayish white smooth surface colouration (2, 5) with a predilection for the mental foramen area, tongue or lower lip (2, 6). Traumatic neuromas occur in a wide age range, but are typically diagnosed in middle-aged women (2), who may complain of pain as a frequent symptom (5, 7).

We report a case of a painless lower lip traumatic neuroma that was clinically misdiagnosed as a lipoma.

CASE REPORT

A 24-year old Caucasian woman was referred to the outpatient clinic of Oral Diagnosis of the Department of Dentistry, University of Taubaté, Brazil. The patient complained of an asymptomatic nodule on her lower lip, which

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had been present for approximately three years. She had a history of surgery at another service for removal of a lesion without diagnosis at the same location ten years earlier, and she reported that she experienced a difficult recovery period, with pain and swelling. Other factors of the patient's medical history were not contributory.

On intraoral examination, a yellowish and smooth sessile, well-delimited, painless, nodular lesion of fat-like consistency (Fig. 1), measuring 10 mm x 7 mm x 4 mm in size was



Fig. 1: Clinical manifestation of a yellowish and smooth sessile, well-delimited, painless, nodular lesion.

observed on the mucosal lower lip, near the mandibular left cuspid. Superficial blood vessels were readily visible on the mucosal surface of the lesion.

Based on the possible diagnosis of a lipoma, an excisional biopsy was performed. During surgery, a yellow, fat-like round soft tissue structure with direct contact to a nerve in its proximal and distal portions was verified (Fig. 2). This



Fig. 2: A yellow, fat-like round soft tissue structure with direct contact to a nerve in its proximal and distal portions was verified during surgery.

led us to consider traumatic neuroma in the differential diagnosis of the lesion.

The biopsy specimen was embedded in paraffin, sectioned and stained with haematoxylin and eosin. Microscopically, it was composed of irregularly arranged and interlacing nerve fibres, forming disorganized nests of nerves in a fibrous stroma (Fig. 3). Sparse chronic inflammatory cells were interspersed throughout the stroma. Based on these findings, the final diagnosis was traumatic neuroma.

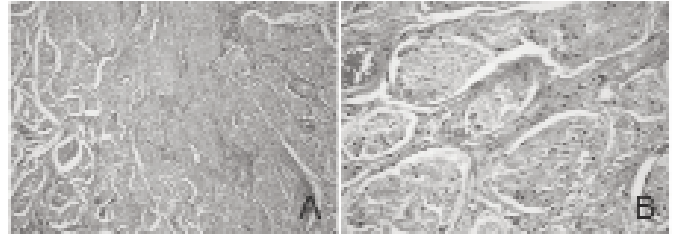


Fig. 3: Microscopic appearance of the lesion characterized by irregularly arranged and interlacing nerve fibres, H&E staining. A) magnification 100x. B) magnification 400x.

After 18 months of follow-up, the patient was asymptomatic and there were no signs of recurrence.

An informed consent was obtained from the patient in order to publish the case.

DISCUSSION

As its name indicates, a history of trauma usually precedes the development of traumatic neuroma, such as an accident, an oral surgical procedure or impingement of an ill-fitting denture (6). Sist and Greene (2) studied 31 cases of oral traumatic neuromas, and most patients were 40 years or older and female. All but one of the neuromas in patients under 20-years of age were in the lower lip and buccal mucosa, sites associated with tissue-traumatizing habits or accidents. In the present case, the lesion occurred in the lower lip where the patient had a previous surgery. There is an extremely strong possibility that the nerve fibres might have been injured or amputated during the first surgery, thus causing the neuroma.

One-fourth of the patients studied by Sist and Greene (2), all females over 35 years old, reported pain. Other authors reported that about half of the patients with oral traumatic neuromas had associated pain which ranged from occasional tenderness to constant and severe pain (7). The cause of the neurologic symptoms may be the compression of the nerve by the tumour. Because such a tumour grows slowly, this allows for compensatory mechanisms until a threshold is reached where the nerve is compromised and the symptoms begin (1). Foltan *et al* (8) suggested that symptomatic traumatic neuromas develop after nerve damage when subsequent contraction of the wound and scar myofibroblasts lead to compression of the regenerating nerve fibres and to further stimulation of the perineurial cell overgrowth. Vora *et al* (9) conducted a light microscopy study and raised the hypothesis that in patients with oral traumatic neuroma, there is an association between inflammation observed in histological studies of biopsy specimens and the symptoms of pain or tingling. However, two years later, the same group of authors (10) conducted immunohistochemical assays and found that inflammatory cells in traumatic neuromas of the lingual nerve had no correlation with the patients' clinical symptoms. In the case presented, the patient had no complaints of pain and chronic inflam-

matory cells were only rarely found throughout the stroma of the lesion.

Rasmussen (5) analyzed seven patients with oral traumatic neuromas, and observed round, grayish white soft-tissue structures in four cases, and in two of these cases, direct contact with a nerve could be observed. In four cases, after biopsy, the consistency was liquid and fat-like, which was why the structures were named “*lipid structures*”. We also found such lipid structures in this case. Clinically, an uncommon obvious yellow hue was detected and it was associated with small visible blood vessels on the surface of the lesion, which is a common characteristic of lipomas (11). This could have led to the clinical misdiagnosis, even though the patient had a history of a previous surgery in the same area as the lesion. At that time, the case was considered to have been a recurrence of the lesion that was previously treated. The direct contact with a nerve that was observed during surgery and the histological appearance were essential to the final diagnosis.

The treatment of choice for traumatic neuromas is surgical excision. An optimal technique with minimal manipulation and severance of nerve fibres is essential for an adequate outcome (1). Most lesions do not recur, but in some symptomatic cases, the pain may persist or return at a later date (3, 5).

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