

# Excision of an oral angiolipoma by KTP laser: a case report

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## Summary

**Excision of an oral angiolipoma by KTP laser: a case report.**

**Materials and methods.** A 66 year old woman was referred to our observation, since the presence of a painless swelling located on the right cheek mucosa. A surgical approach with KTP laser was performed with the mucosal preservation technique.

**Results.** Follow up after seven days, sixty days and four months did not showed any complication and the histological examination reported the diagnosis of AL.

**Discussion.** AL is a relatively rare tumor of the head and neck region, although it occurs more commonly in the extremities and the trunk. This tumor has been rarely reported in the oral cavity and when seen in this area, it involves in the lip, cheek, tongue, mandible, and palate. ALs are also intraosseous in the mandible and intramuscular in the pterygoid fossa. KTP laser excision showed to be resolute and avoid of complications.

**Conclusions.** AL of the cheek is a very rare pathology, but when it appears, it requires a surgical excision.

**Key words:** angiolipoma, KTP laser, oral biopsy.

## Introduction

Lipomas are the most common neoplasms arising from fat tissues. They are usually slow-growing, soft and asymptomatic masses. Angiolipomas represent 6-17% of all lipomas. 13% of all lipomas occur in the head and neck, including cheek, tongue, palate, parotid gland, neck and larynx (1, 2).

When angiolipomas occur in the oral cavity, they require a surgical excision: the treatment can be performed with surgical blade or laser, like KTP (Potassium Titanium Phosphate) laser (1,2,3).

The KTP laser has a wavelength of 532 nm and emits a green visible radiation. Light is produced, as in the Nd:YAG laser, by a solid active material (Yttrium, Aluminium Garnet crystal doped with Neodymium). The resulting radiation is filtered by a system of mirrors of Potassium, Titanium and Phosphate, that halves the initial wavelength. The wavelength of the KTP laser is more strongly absorbed by oxyhaemoglobin than any other wavelength, so lower levels of energy and fluence can be used to cut vascularized tissues (4,5,6).

In this report, the authors present a case of non-infiltrating angiolipoma excised from the cheek with KTP laser.

## Case report

A 66 year old woman with no history of systemic diseases, in drug therapy for hypertension, which was referred to our observation, since the presence of swelling three months ago, located on the right cheek mucosa, corresponding to the second premolar and the first molar. The patient reported no pain.

Clinical examination showed a soft, mobile and nodule mass, of about 2 x 1,5 cm, covered with normal mucosa (Fig. 1). Not ulcerated and necrotic areas were found. Surgery was performed with the mucosal preservation technique. After local anesthesia without adrenaline, because the wavelength of the KTP laser is absorbed by oxyhaemoglobin, the lesion was immobilized and highlighted by Collin clamp. Then, it was performed a longitudinal incision by laser with optical fiber of 300 micron at parameters 2 watt in continuous wave and a fluence of 2830 J/cm<sup>2</sup> (Fig. 2). In a second phase, it was possible to separate the le-



Figure 1 - Clinical featuring of the lesion.



Figure 2 - Incision by laser KTP, emitting a green visible light.

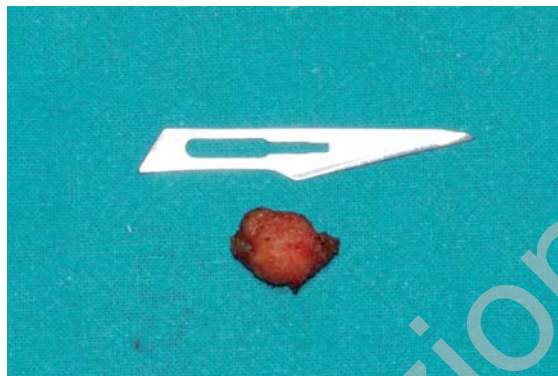


Figure 5 - Surgical sample.



Figure 3 - Dissection of the lesion with Metzenbaum scissors.

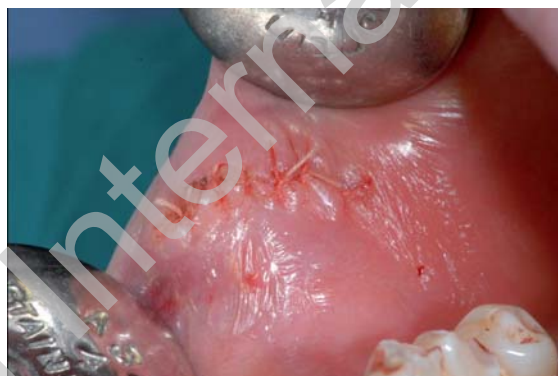


Figure 6 - Resorbable suture.

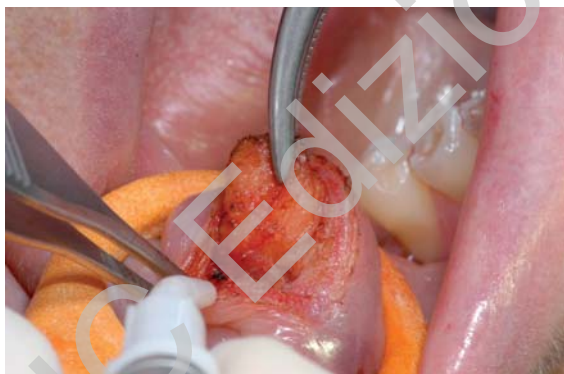


Figure 4 - Taking the lesion with Kelly clamp, being careful to preserve the oral mucosa was carried to enucleated of the lesion.



Figure 7 - Follow up after 7 days, showing the absence of inflammatory process.

sion from tissue below by Metzenbaum scissors (Fig. 3). Then the lesion was excised at 2 watt in pulsed wave (T-on 100 ms, T-off 100 ms) and a fluence of 283 J/cm<sup>2</sup> (Figs 4,5).

Finally, resorbable suture point were applied (Fig. 6). This surgical technique was permit to preserve the oral mucosa overlying the tumor providing an excellent soft tissues healing. Follow up after seven days (Fig.7), sixty days (Fig. 8) and four months (Fig. 9) did not showed any complication and the histological examination reported the diagnosis of AL (Fig.10).

## Discussion

Lipomas represent about 1 to 5% of all neoplasms of the oral cavity (1). They are painless, soft, round and mobile. Angioliipomas, histologic variants of lipoma, are benign mesenchymal tumours made up of mature lipocytes and blood vessels. Multiple lesions are seen in approximately 70-80% of cases. 5% of these cases are familial but the genetic pattern is unclear (2). It has been suggested that the etiology of AL is from a hamartomatous origin. History of trauma, lipomatous differentiation by hormones dur-



Figure 8 - Follow up after 60 days, complete recovery.



Figure 9 - Follow up after 4 months. There are no scars or signs of recurrence and the surgical site appears to be covered by normotrophic mucosa.

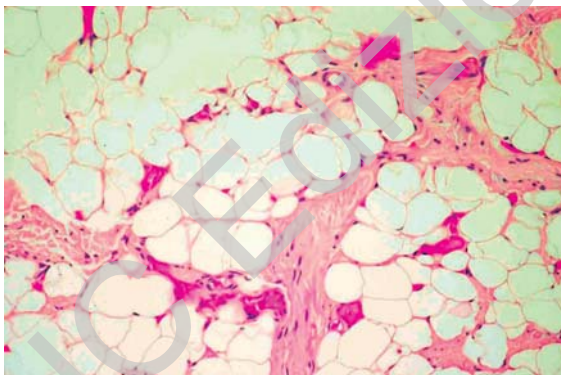


Figure 10 - Histological examination (E.E., 10x). The tumor is composed of a diffuse proliferation of mature fat cells mixed with thick fibrous connective tissues containing many small blood vessels.

ing puberty, fatty degeneration of a central hemangioma and vascular proliferation of a congenital lipoma (congenital origin) have been reported as possible etiologic factors (1). Hemangioma, leiomyoma, neurilemmoma, myxolipoma and Kaposi's sarcoma must be considered in differential diagnosis (8,9). Based on studies by Gonzales-Crussi et al. (1,10), angioliopoma has two histologic types: infiltrating and non-infiltrating. Infiltrating ALs have been diagnosed in the head and neck by their invasion of adjacent struc-

Table 1 - Histologic guidelines for diagnosis of non-infiltrating angioliopoma (2).

<b>Evidence of 50% mature adipocytes in the tumour</b>
<b>Interspersed angiomatous proliferation in the tumor</b>
<b>Well encapsulated</b>
<b>Fibrinous microthrombi</b>
<b>Absence of other mesenchymal elements</b>

tures and the difficulty in separating the cancer from surrounding tissues. Other investigators proposed that the differentiation between non infiltrating and infiltrating form was based on the presence of a complete capsule and rare recurrences in the former, and partial or no capsule with recurrences in the latter (7,11). The non-infiltrating type is the most common. It presents as painless or tender subcutaneous nodules, generally in young patients and its rare before puberty (12,13,14,15). Histologically it is encapsulated, and is a mixture of mature adipocytes and a proliferation of thin-walled vascular channels.<sup>[12]</sup> The diagnosis is based on both the clinical and histologic features (Table 1) (12). Microscopically, AL is characterized by mature adipocytes, interspersed in connective tissues with vascular vessels containing fibrin thrombi and mast cells infiltrations. This features distinct it from usual lipoma (2,13,14,16,17).

As differential diagnosis, lipoma, liposarcoma, hemangioma, leiomyoma, neurilemmoma, lymphangioma and Kaposi's sarcoma can be considered. Lipomas have no predominant vascular component. When CT scan demonstrate the presence of soft tissue or bony infiltration, liposarcoma must be included in the differential diagnosis. Surgical excision is the treatment for both infiltrating and non-infiltrating angioliopomas (1,9,10).

## Conclusions

Angioliopomas are rarely seen in the head and neck region. This case report, showed the typical clinical and histological findings of a non-infiltrating angioliopoma.

The advantages of the employment of the KTP laser in oral soft tissue surgery are its high cutting ability, the bloodless operative field, its relative ease and rapidity of use, and the reduced use of infiltrative anaesthesia. The KTP laser is an effective instrument for performing oral soft tissue excision, because of its excellent surgical properties and the almost total lack of thermal damage. However, these indisputable advantages cannot replace the ability and knowledge of the oral surgeon (4).

The KTP laser demonstrated surgical effectiveness and caused little peripheral damage to the cut edges, and therefore would always allow a safe histological diagnosis to be obtained. Complete surgical excision with a clear surgical margin is the treatment of choice to avoid recurrence; KTP laser in this sense represents a very valuable surgical aid.



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