

# Oral Soft Tissue Lipomas: A Case Series

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## SOMMAIRE

**Objectif :** Les lipomes sont des tumeurs relativement peu répandues de la cavité buccale, puisque seulement 1 % à 4 % de ces tumeurs siègent à cet endroit. Dans cette étude, nous décrivons les manifestations cliniques et histopathologiques de 6 cas de lipome de la cavité buccale.

**Méthodologie :** Entre 1997 et 2005, les dossiers de tous les cas de lipome de la cavité buccale recensés par la Division de pathologie buccale de l'Université de Ribeirão Preto, à São Paulo au Brésil, ont été récupérés pour être étudiés. Les données cliniques ont été extraites de ces dossiers, et tous les cas ont fait l'objet d'un examen microscopique et ont été classés.

**Résultats :** Trois des 6 cas touchaient des hommes et 3 s'étaient manifestés chez des femmes; l'âge moyen des sujets était de 50,2 ans (fourchette : de 28 à 78 ans). La plupart des tumeurs siégeaient dans la muqueuse buccale et mesuraient en moyenne 3,0 cm (fourchette : de 1,5 à 5,0 cm). À l'examen microscopique, 4 tumeurs se sont révélées être des lipomes, une étant un fibrolipome et l'autre un lipome intramusculaire ou infiltrant. Tous les cas ont été traités par excision chirurgicale simple et aucune récurrence n'a été observée après un traitement d'une durée moyenne de 50,3 mois (fourchette : de 8 à 72 mois).

**Conclusion :** Les lipomes de la cavité buccale sont des tumeurs peu répandues, qui se manifestent principalement dans la muqueuse buccale et qui sont associées à un excellent pronostic.

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Lipomas are benign mesenchymal neoplasms composed of mature adipocytes, usually surrounded by a thin fibrous capsule.<sup>1</sup> They are the most common soft tissue tumour, and about 20% of cases occur in the head and neck region. However, only 1% to 4% of cases involve the oral cavity.<sup>2,3</sup> Oral lipomas represent 0.5% to 5% of all benign oral cavity neoplasms and usually present as painless, well-circumscribed, slow-growing submucosal or superficial lesions, mainly lo-

cated in the buccal mucosa.<sup>1,4</sup> Imaging can be useful in the diagnosis and delimitation of oral lipomas. Recently, magnetic resonance imaging of a sialolipoma showed high intensity in the T1-weighted image and isointensity in the T2-weighted image.<sup>5</sup> Although oral lipomas are well-circumscribed soft-tissue lesions, rarely they give a radiographic impression of an intraosseous neoplasm within the mandibular canal.<sup>6</sup>

**Table 1** Clinical features, histologic subtypes and follow-up for 6 cases of oral lipoma

Patient's age; years	Gender	Site of tumour	Size of tumour; cm	Duration of complaint; months	Histologic subtype	Follow-up; months <sup>a</sup>
54	F	Buccal mucosa	3.0	12	Lipoma	72
37	M	Buccal mucosa	3.0	NA	Lipoma	71
78	F	Buccal mucosa	2.0	NA	Lipoma	66
42	M	Lower lip	1.5	NA	Fibrolipoma	60
28	M	Buccal mucosa	3.5	24	Lipoma	25
62	F	Tongue	5.0	48	Intramuscular lipoma	8

NA = not available. In these cases, the patient did not know when they had noticed the tumour, reporting the presence of the tumour for several years.  
<sup>a</sup>All cases were surgically treated and there were no cases of tumour recurrence.

Microscopically, it is not possible to distinguish these lipomas from normal adipose tissue, despite their different metabolism (they are not used as an energy source as is normal adipose tissue), probably due to high lipoprotein lipase activity in neoplastic lipoma cells.<sup>1,7</sup> Based on their histopathologic features, lipomas can be classified as simple lipomas, fibrolipomas, angioliipomas, intramuscular or infiltrating lipomas, pleomorphic lipomas, spindle-cell lipomas, salivary gland lipomas (sialoliipomas), myxoid lipomas and atypical lipomas.<sup>3,4</sup> As oral lipomas are relatively rare, few large case series have been published in the English-language literature.<sup>1,8,9</sup> The aim of this study was to assess the clinical and histopathologic features of 6 cases of lipomas located in the oral cavity and to discuss these features, as well as the differential diagnosis.

### Materials and Methods

Between 1997 and 2005, among 2,270 cases of oral lesions diagnosed in the oral pathology division, University of Ribeirao Preto, São Paulo, Brazil, 6 cases (0.27%) were oral lipomas. All these cases were retrieved for this study. Clinical data, such as age and gender of the patient, site and size of the tumour, duration of the complaint, treatment and follow-up were obtained from the patients' records. All cases were reviewed microscopically and classified according to Gnepp.<sup>3</sup>

### Results

The clinical features, duration of complaint, histologic subtype, treatment and outcome of the 6 cases of oral lipoma are summarized in **Table 1**. Three of the patients were men and 3 women, with a mean age of 50.2 years (range: 28–78 years). In 3 cases, the reported duration of the complaint varied from 12 months to 48 months (mean: 28 months). The other 3 patients did not know exactly when they noticed the tumour and simply reported that it had been present for several years. All patients complained of a painless nodule at the lesion site. The most common site was the buccal mucosa

(4 cases), followed by the tongue (1 case) and lower lip mucosa (1 case). The size of the tumours varied from 1.5 cm to 5.0 cm (mean: 3.0 cm). Clinically, all cases presented as painless, well-circumscribed, submucosal nodules, with fibro-elastic consistency, yellowish colour and a covering of smooth mucosa (**Fig. 1**). All but the intramuscular lipoma were mobile; this lipoma exhibited diminished mobility. All patients were treated by surgical excision of the tumour with no recurrence after a mean time of 50.3 months (range: 8–72 months).

In gross appearance, the tumours were round, well circumscribed, elastic in consistency and presented a yellowish cut surface. Microscopically, 4 cases were classified as simple lipomas (66.6%), 1 as fibrolipoma (16.7%) and 1 as intramuscular lipoma (16.7%). Mature adipose cells, without atypias or necrosis, formed the simple lipomas. The fibrolipoma was composed of the same adipose cells, but they were surrounded by dense fibrous connective tissue (**Fig. 2**). Adipose neoplastic cells involving or infiltrating skeletal muscle cells were seen in the intramuscular lipoma (**Fig. 3**).

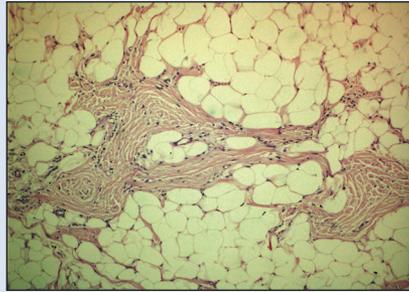
### Discussion

Lipomas are adipose mesenchymal neoplasms; they are relatively uncommon in the oral cavity, representing about 0.5% to 5% of all benign oral tumours. Generally, their prevalence does not differ with gender, although a predilection for men has been reported,<sup>8</sup> and they occur most often in patients older than 40 years.<sup>1,10</sup> Although the mean age of the patients in the current study was 50.2 years and most were older than 40 years, 1 patient was 28 years old and another 37 years. The most common site for oral lipomas is the buccal mucosa (as in the current study), followed by the tongue, lips and floor of the mouth.<sup>1–3</sup> None of the tumours in our series affected the floor of the mouth. However, in view of the limited number of cases, this study may not reflect the true intraoral frequency distribution of lipomas.

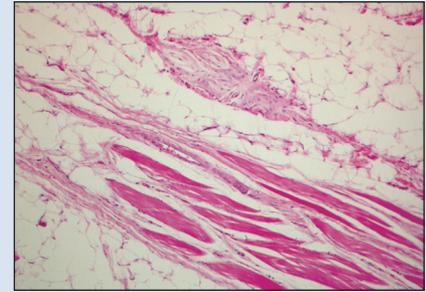
Oral lipomas are slow growing, and patients commonly present with a well-circumscribed nodule that has been



**Figure 1:** Painless, well-delimited, yellowish nodule located on the tongue.



**Figure 2:** Adipose neoplastic cells surrounded by dense fibrous connective tissue characterizing a fibrolipoma (hematoxylin–eosin, original magnification  $\times 100$ ).



**Figure 3:** Tumour cells involving or infiltrating skeletal muscle cells in intramuscular lipoma (hematoxylin–eosin, original magnification  $\times 100$ ).

developing for several years.<sup>1,11</sup> Most of the patients in our series reported the presence of an oral lesion for a long time, although in 2 cases, the duration of the complaint (12 and 24 months) was shorter than the mean period reported in the literature.<sup>1,11</sup>

Clinically, oral lipomas generally present as mobile, painless, submucosal nodules, with a yellowish colour,<sup>1</sup> as observed in the current series. In some cases, oral soft tissue lipomas can present as a fluctuant nodule.<sup>12</sup> Because of these clinical features, other lesions, such as oral dermoid and epidermoid cysts and oral lymphoepithelial cysts, must be considered in the differential diagnosis of oral lipomas.<sup>13</sup> Although oral lymphoepithelial cysts present as movable, painless submucosal nodules with a yellow or yellow-white colouration, they differ from oral lipomas in that the nodules are usually small at the time of diagnosis and usually occur in the first to third decade of life. Also, most oral lymphoepithelial cysts are found on the floor of the mouth, soft palate and mucosa of the pharyngeal tonsil,<sup>14</sup> which are uncommon sites for oral lipomas. Oral dermoid and epidermoid cysts also present as submucous nodules and, typically, occur on the midline of the floor of the mouth.<sup>15</sup> However, oral dermoid and epidermoid cysts can occur in oral mucosa at other locations. Because an oral lipoma can occasionally present as a deep nodule with normal surface colour, salivary gland tumours and benign mesenchymal neoplasms should also be included in the differential diagnosis.<sup>12</sup>

The occurrence of multiple lipomas is associated with Cowden's syndrome or multiple hamartoma syndrome. This condition is either familial or sporadic and is associated with the predominantly postpubertal development of a variety of cutaneous, stromal and visceral neoplasms, resulting from mutations of the phosphatase and tensin homolog (PTEN) gene.<sup>16</sup> It can involve various organs, such as the skin, oral mucous membrane, thyroid, breast, ovaries and central nervous system. The most commonly affected extracutaneous sites are the breast and thyroid. Among the most common mucocutaneous lesions observed in people with this syndrome

are small papular lesions in the palate and gingiva with up to 3 mm extension, which have a tendency to coalesce, papillomatous and verrucous lesions in the buccal mucosa, fissured tongue and cutaneous multiple lipomas.<sup>17</sup> Although multiple oral lipomas are rare in Cowden's syndrome, it should still be considered in the presence of multiple lipomas in the oral cavity.

Because of the histologic similarity between normal adipose tissue and lipoma, accurate clinical and surgical information is very important in making a definitive diagnosis. Thus, a clinician sending a surgical specimen for microscopic analysis must provide the oral pathologist with all available clinical and surgical information. Simple lipomas are the most frequent histologic subtype,<sup>2,9,10</sup> as we observed in the current study. But other authors have found equal incidences of lipomas and fibrolipomas,<sup>1,18</sup> although this is probably due to different diagnostic criteria.<sup>1</sup> In our series, the fibrolipoma consisted of adipose cells surrounded by dense fibrous connective tissue.

The other histologic subtype identified in this study was an intramuscular or infiltrative lipoma. In addition to the oral cavity, this variant usually affects the large muscles of the extremities in adult men; it is usually painless and characterized by infiltrating adipose tissue and muscle atrophy. At these sites, the recurrence rate after surgical resection is higher,<sup>4</sup> whereas, it rarely recurs in the oral cavity after complete removal.<sup>4,10</sup> Oral intramuscular lipomas show a slight predominance in the tongue and generally present as a not-well-circumscribed nodule.<sup>1,10</sup> The intramuscular lipoma of this series was located on the tongue, was well defined and did not recur after excision. Although intramuscular or infiltrative lipomas are recognized as a histologic subtype, there is speculation that they are simply lipomas with entrapped muscle fibres.<sup>1</sup>

The treatment of oral lipomas, including all the histologic variants, is simple surgical excision. No recurrence is

observed.<sup>1</sup> Although the growth of oral lipomas is usually limited, they can reach great dimensions, interfering with speech and mastication<sup>19</sup> and reinforcing the need for excision. In the current series, all tumours were excised surgically, and no recurrence was observed after a mean of 50.3 months of follow-up.

## Conclusion

Oral lipomas are relatively uncommon tumours; they have no gender predilection and they predominantly affect the buccal mucosa. Other lesions with similar clinical features can be considered in the differential diagnosis and clinicians must be able to recognize this oral lesion to carry out the correct treatment or refer the patient to a specialist. The most common histologic subtype is the simple lipoma. The ideal treatment is surgical excision, and no recurrence is expected. ➤

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