

# Intraoral Lipoma in a Young Male Patient: A Case Report

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## Abstract

Lipomas are benign tumours of mesenchymal origin (mature adipocytes) that are comparatively uncommon in the oral cavity corresponding to less than 4.4% of all benign oral soft tissue tumors. Clinically, they present as slow growing, soft, asymptomatic masses that are usually less than 25 mm in size. Histopathologically, they appear as thinly encapsulated lesion composed of mature adipocytes with inconspicuous vascularity. The pathogenetic mechanisms of oral lipomas are still unclear. Their diagnostic importance lies in the distinction from cysts, other mesenchymal and salivary gland neoplasms in this region. They are usually treated by surgical excision and bear excellent prognosis. Here we report a case of intraoral lipoma in an 18 year old male patient in the buccal mucosa that was treated by surgical excision without any postsurgical complication or recurrence after 2 years of follow up.

**Keywords:** Lipoma, Adipocytes, Buccal mucosa

## INTRODUCTION

Lipomas are the most common benign mesenchymal tumors in the body. They are benign mesenchymal neoplasms composed of fat cells usually surrounded by a thin fibrous capsule.<sup>1</sup> It mainly affects the region of the trunk, shoulders, neck and axilla with only about 15-20% of cases occurring in the head and neck region.<sup>2</sup> Oral lipomas represent only 1-4% of all benign oral soft tissue tumors.<sup>3</sup> The most common intraoral site for lipoma is buccal mucosa and buccal vestibule.<sup>4</sup> The unusual intraoral sites include the lips, gingiva and palate.<sup>2</sup> Lipomas of the oral and maxillofacial region have shown equal predilection for involvement of men and women.<sup>4</sup> Lipoma is uncommon in younger age group and affects patients mostly above 40 years of age with peak occurrence in the fifth or sixth decades of life.<sup>2</sup> The size of tumor depends on the location but rarely exceeds 25 mm in diameter. Lipomas are usually asymptomatic until they grow to large size and may interfere with speaking and mastication.<sup>5</sup> The diagnosis is mainly based on clinical findings with histopathology to rule out other lesions in the same site. The accepted classification of benign lipomas includes: classic lipoma; lipoma variants (e.g. angiolipoma, chondroid lipoma, myolipoma, spindle cell lipoma); hamartomatous lesions; diffuse lipomatous proliferations; and hibernoma.<sup>6</sup>

Here we report a case of intraoral lipoma occurring in the buccal mucosa of a young male patient and treated by surgical excision with no recurrence and complications.

## CASE REPORT

An 18 year old patient reported with a chief complaint of painless swelling in the right cheek region which had increased in size for the past three months to the present size (Figure 1). The swelling was not associated with other symptoms like paresthesia, ulceration or discharge. On extra oral examination, a solitary swelling was seen in the right side of the mandible in the body region extending 3 cm from the angle of the mouth to the angle of the mandible anteroposteriorly and extending 1 cm below from a line joining the corner of the mouth to the tragus to the inferior border of the mandible superoinferiorly. On intraoral examination, solitary, soft, sessile, lobulated swelling is seen in the right buccal mucosa, round in shape, 2x2 cm in size located opposite to second premolar and first molar, non-tender, mobile and fluctuant (Figure 2). A provisional diagnosis of lipoma was made. An excisional biopsy was carried out under local anesthesia. Longitudinal incision was made over the buccal mucosa and the lesion was removed through blunt dissection to avoid

rupture of any feeder vessels and the specimen was submitted for histopathological examination. The gross specimen showed the tumour mass measuring 4x2.5x2.5 cm in size, yellowish-white in colour, soft in consistency with surface lobulations. The specimen was observed to be floating in the container with formalin thus indicating its lipomatous nature. On microscopic examination, the excised tissue mass showed well circumscribed, lobular proliferation of mature adipocytes with clear cytoplasm and flattened, eccentrically placed nuclei separated by connective tissue septae. The section showed lack of cellular atypia or metaplasia with minimal vascularity (Figure 3). A final diagnosis of lipoma was made.



**Figure 1: Extraoral photograph with swelling on the right side of the mandible**

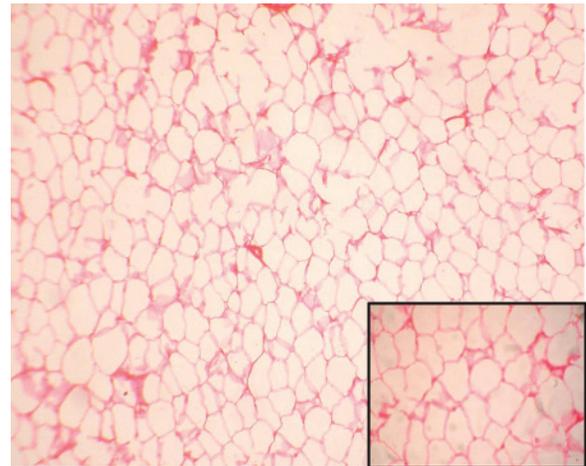


**Figure 2: Excisional biopsy of the intraoral tumour mass**

## DISCUSSION

Lipoma is the most common neoplasm arising from fat tissue. Lipomas presenting as intraoral masses is an uncommon intraoral finding. They are usually slow growing, soft and silent masses.<sup>7</sup> The buccal mucosa is the most affected site (53.7%), followed by the buccal

sulcus (14.6%) and tongue (9.8%). The tumor can present as a swelling upto 10 cm in size.<sup>8</sup> The majority remain unulcerated but ulceration leads to difficulty in diagnosis. Some deep lipomatous lesions produce only slight elevation of the surface while others can cause changes in function.<sup>9</sup> The first description of oral lipoma was provided in 1848 by Roux in a review of alveolar masses which he referred it as a “yellow epulis”.<sup>10</sup>



**Figure 3: Histopathology (H and E stain) of the lesion showing mature adipocytes with inconspicuous vascularity(10x). Inset: Histopathology at 40x**

The pathogenesis of lipoma is still not clearly understood. They do not decrease in size if the caloric intake is reduced which suggests that its behaviour is independent of whole body metabolism.<sup>11</sup> Earlier view regarding aetiology was that it may originate from embryonic rests of lipoblasts and proliferating embryonic mesoderm or fatty degeneration of other cells or metaplasia of muscle cells. Heredity, fatty degeneration, endocrine disturbances and trauma are probable etiologic agents for lipomas.<sup>12</sup>

Cytogenetic analysis of adipose tissue tumors has shown that the various histopathologic subtypes are characterized by distinctive clonal chromosomal abnormalities. It has been shown that while classic lipomas typically harbour abnormalities involving 12q13-15 or 6p or 13q, spindle cell and pleomorphic lipomas typically display complete or partial loss of 13q and chromosome 16. The molecular genetic changes associated with karyotype anomalies in lipoma pointed to the generation of fusion products capable of inducing proliferation but not malignant transformation. Translocations with and rearrangements affecting the 12q13-q15 region are the most common. The most frequent translocation is t(3;12)(q27-q28;q13-q15), seen in almost 25% of lipomas.<sup>13</sup>

Though diagnostic imaging may have a limited role as the diagnosis is usually made clinically, modalities such as CT,

MRI and ultrasound may be performed in certain cases to know the extent, location and delimitation of the margins of the mass. Lipomas have a characteristic homogeneous appearance with the same density as subcutaneous fat in CT examination. On MRI examination, they show a strikingly high intensity signal, equal to that of the subcutaneous adipose tissue on both T1- and T2-weighted images. Ultrasound findings suggest hypoechoic masses in majority of the cases with small echogenic lines.<sup>14</sup>

Clinical diagnosis of superficial lesion seldom poses a problem due to the ease of palpation and the yellow colour of the lesion.<sup>2</sup> However, deep seated lesions like in our case, warrants differential diagnosis from other lesions in this site such as granular cell tumor, neurofibroma, traumatic fibroma, lymphoepithelial cysts, dermoid and epidermoid cysts, minor salivary gland tumours and malignant lipomatous tumours which has to be confirmed histopathologically.<sup>5</sup>

Histologically, oral lipomas are composed of mature fat cells arranged in lobular fashion simulating extraoral subcutaneous lipoma and the normal surrounding fat. Typically, they are encapsulated or well circumscribed with rare exceptions.<sup>15</sup> Based on microscopy, it is not possible to distinguish these lipomas from normal adipose tissue.<sup>2</sup>

Immunohistochemically, adipose cells in lipomas are positive for S-100 $\alpha$  and S-100 $\beta$ .<sup>16</sup> Fregnani *et al.* studied immunohistochemical expression of PCNA and Ki-67 in the different histological variants of lipoma. The proliferative rate of fibrolipomas was greater than common lipomas, but no differences in clinical behaviour were noticed after surgical treatment.<sup>1</sup> It has been shown that the white fat in lipoma can be distinguished from brown fat in hibernoma immunohistochemically. Tumour cells in hibernoma show intense positive staining for CD31 in the cell membrane and membranes of intracytoplasmic vacuoles whereas it is negative in neoplastic cells of lipoma. CD31 characterizes the vascular network distinctive in brown fat.<sup>17</sup>

History of trauma should help in distinguishing it from the herniated buccal fat pad.<sup>15</sup> Differential diagnosis should also be done between lipoma and dermoid and lymphoepithelial cysts, epidermoid cysts, ranula, mucocele, pleomorphic adenoma and mucoepidermoid carcinoma. Mesenchymal neoplasm should be also included in the differential diagnosis. Oral lymphoepithelial cyst differs from oral lipoma due to smaller nodules and it usually occurs between the first and third decade of life. A majority of these cysts in oral cavity is found in soft palate, pharynx mucosa and lymph nodes. Dermoid and epidermoid cysts are also found as submucous nodules which usually occur

in the midline of mouth floor, in different locations on the oral mucosa.<sup>18</sup>

The treatment is conservative local excision with rare cases of recurrence. The histologic variants have no bearing on the prognosis except the intramuscular lipomas due to their infiltrating nature, but this variant is seen rarely in the oral cavity.<sup>4</sup> Accurate clinical and surgical details are necessary as the histopathological features are not different from normal mature fat tissue.<sup>11</sup>

## CONCLUSION

Lipomas are common benign tumours of mature adipocytes, however their intraoral occurrence is relatively rare. Although they are common in buccal mucosa among the various intra oral sites, their diagnosis warrants exclusion of other connective tissue, salivary gland neoplasms and malignant adipocytic neoplasms occurring in this location. The histopathologic features should lead to a confirmatory diagnosis of lipoma. MRI and CT scan may be used as adjunctive diagnostic aids in cases of infiltrating lipomas to gauge the extent of infiltration. Treatment by careful and complete surgical excision is the treatment of choice and recurrence is reported rarely.

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