

Intra-Oral Lipoma: A Case Report

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Abstract:

Lipoma, a very common benign tumor of mesenchymal origin can emerge anywhere in the body; however, its intra-oral counterparts are very rare, with approximately 1-4% occurring in the oral cavity. Typically appearing as painless, soft, smooth nodules with a yellowish hue, it often affects regions like the buccal mucosa, tongue, and floor of the mouth. Surgical removal is the preferred treatment due to its benign nature and low recurrence rate. Histological examination remains the gold standard in the definitive diagnosis of the lipoma.

Here, we present a case of an intraoral lipoma in a 32-year-old woman located on the right mandibular buccal vestibule, managed through surgical excision. Documenting rare cases like this contributes to a better understanding of the prevalence and clinical features of these tumors.

Keywords: Lipoma, Intra-Oral, Benign Soft Tissue Tumors, Adipose Tissue.

Introduction

Lipomas, originating from mesenchymal cells, are the most common benign tumors, composed of mature adipose tissue predominantly found in subcutaneous and retroperitoneal regions. Most cases of oral lipoma are soft tissue lesions. About 15%-20% of soft tissue lipomas occur in the head and neck area, of which only 1%-4% are observed intraorally.¹

In 1848, Roux initially described soft tissue lipoma as a yellowish epulis.² The tumor's incidence seems to correlate with the abundance of adipose tissue, given the widespread area it affects. Lipomas are most frequently found in the buccal mucosa, which is rich in adipose tissue due to its proximity to the buccal fat pad.^{3,4} Other common sites for lipomas include the lips, tongue, floor of the mouth, palate, vestibule, mandible, and retromolar pad. Conversely, less common sites include the salivary glands, gingivobuccal fold, parotid gland, masseteric region, neck, pharynx, and larynx.⁵

While the exact etiology of these tumors remains unknown, several theories have been proposed. These include genetic factors, hormonal imbalances, fatty tissue changes, trauma, muscle cell transformation, origin from embryonic cell nests, chronic irritation, radiation exposure, tissue infarction, infection, and induction by undifferentiated mesenchymal cells, among others.⁶

These tumors are slow-growing, painless, soft, circumscribed, and associated with submucosal nodules with either a sessile or a pedunculated base. The color of oral lipomas can vary from yellow to pink, influenced by their depth, with most being around 10 mm in diameter.⁵

Histologically, lipomas can be classified into various types, including classical lipomas and variants such as fibrolipomas, fusiform lipomas, pleomorphic lipomas, myxoid lipomas, intramuscular lipomas, angiolipomas, atypical lipomas, or those involving salivary glands.⁷ Classical lipomas consist of mature adipocytes with nuclei located at the periphery, arranged in lobules separated by fibroconnective tissue septa. Treatment typically involves complete surgical removal followed by histopathological examination.⁸ The recurrence rate is low, estimated at 1% to 2%.⁹

Reporting such rare cases of intra-oral lipomas is crucial for several reasons. Firstly, it expands our understanding of the spectrum of this condition, shedding light on its diverse manifestations and potential variations in presentation. This knowledge is invaluable for healthcare professionals, aiding in accurate diagnosis and effective management strategies. Secondly, documenting rare cases contributes to the existing body of medical literature, enriching it with comprehensive data that can guide future research and clinical practice. By highlighting the possibility of encountering uncommon presentations, it emphasizes the need for clinicians to remain attentive to subtle signs and symptoms, ensuring timely diagnosis and appropriate intervention for patients.

Case Report:

A 32-year-old woman presented to Oral Medicine and Radiology Department complaining of painless swelling in the lower right buccal vestibule of mandibular molar region that had been present for approximately two months. The swelling did not cause pain, bleeding, or discharge, and there were no changes in size during meals. The patient denied any history of trauma, pain while chewing or swallowing, and had no significant medical or family history. She mentioned a past dental extraction of tooth 46, fifteen years ago, without any complications, and had no harmful habit.

During the extra-oral examination, no notable findings were observed. Upon intra-oral examination, slight obliteration was noted in the buccal vestibular region around right mandibular first and second molar region (Figure 1). The overlying mucosa appeared normal, without any signs of ulceration or inflammation, and had smooth borders blending with adjacent soft tissues. Palpation revealed a soft, approximately 1cm in size swelling that was non-tender, non-fluctuant, and compressible. A positive slip sign was observed, indicating that the margins of the swelling were slippery under palpation. Aspiration analysis yielded negative results.

Based on the patient's history, clinical examination, and chairside investigations, a provisional diagnosis of intraoral lipoma in the right mandibular buccal vestibule with respect to 46 and 47, was made. Possible differential diagnosis of fibrosed mucocele, lymphangioma, epidermoid cyst, AV malformation, residual cyst with respect to 46 and antibioma were considered. The intraoral periapical radiograph (IOPA) showed a radiographic absence of 46, but no specific findings related to the vestibular swelling were noted (Figure 2). Routine hematological tests were conducted, and the results were within normal ranges.

The patient was referred to the department of Oral and Maxillofacial Surgery where surgical excision of the lesion was performed under local anesthesia (Figure 3). The mass (Figure-4a) was encapsulated, oval-shaped and well-defined within the surrounding tissue, measuring approximately 9mm at its greatest dimension. Upon dissection (Figure-4b), the specimen revealed a pale yellow, lobulated mass. The specimen was subsequently sent for histopathological study.

Histopathological examination (Figure-5) revealed thin septa of connective tissue separating lobules of adipose tissue formed by mature, uniform adipose cells. The adipocytes appeared polygonal in shape

with clear cytoplasm and eccentrically placed nucleus that was compressed against the cell membrane. These findings are consistent with the features of Lipoma.

A final diagnosis of intra-oral Lipoma was confirmed correlating with the history, clinical findings and histopathological examination. The patient was recalled one week later for suture removal, during which satisfactory wound healing was observed. No post-operative complications were reported, and there has been no recurrence during a one-year follow-up period.

Discussion

Lipomas are benign soft tissue neoplasms of mature adipose tissue rarely seen in the oral cavity.⁶ Rare cases of intraosseous lipomas have been described by Oringer and Johnson in the body of mandible and ramus, respectively.¹⁰

Intraoral lipomas are rare, but are more likely to affect males over 40 years of age.¹¹ However, the present case involved a 32-year-old female. Their size can range from 0.2 to 1.5 cm in diameter, although tumors as large as 50 mm have been documented, particularly in the cheek.¹²

Lipomas are described by a proliferation of mature adipocytes alongside varying amounts of connective tissue, which includes bundles of collagen fibers and blood vessels. Typically, each lipoma is surrounded by a fibrous capsule, allowing for the clear delineation of increased adipocyte growth within it.¹³

The differential diagnosis of intraoral lipoma includes oral dermoid and epidermoid cysts, oral lymphoepithelial cysts, benign salivary gland tumors, mucoceles, benign mesenchymal neoplasms, ranulas, and lymphoma. Epidermoid cysts, often located in the floor of the mouth, typically contain sebaceous glands and material, and sometimes hair or hair follicles. Although present at birth, they usually become noticeable later in life, with growth accelerating during puberty. Congenital lesions such as vascular malformations, hemangiomas, and lymphangiomas appear much earlier and are characterized by discolored overlying mucosa. Obstruction or extravasation of salivary ducts causes fluid-filled swellings, identified as mucoceles or ranulas, both of which yield positive aspirates. A non-tender, slowly enlarging swelling without nodal involvement and with normal overlying mucosa generally rules out malignant lesions.⁶

The diagnosis of oral lipomas is typically based on clinical examination. MRI and CT scans further aid in their diagnosis and assessment. MRI reveals fatty lesions with high signal intensity on T1-weighted images and signal loss on fat-saturated images, while CT shows well-defined lesions with low fat attenuation. Histopathological examination remains the gold standard for definitively diagnosing lipomas.¹⁴

The primary treatment for intraoral lipoma is complete surgical excision. Recurrence is uncommon after local excision, but infiltrative lipomas, which are not encapsulated like simple lipomas, may recur if not thoroughly excised. Despite recurrence, there have been no reported cases of malignant transformation.¹⁵ Similarly, in the present case, complete surgical excision was performed, and no recurrence has been reported.

Medical management of lipomas now commonly includes steroid injections, which causes local fat atrophy, thus shrinking the tumor size. These injections are most effective for lipomas less than 1 inch in diameter. A monthly injection of a 1:1 mixture of lidocaine and triamcinolone acetonide into the tumor's center can help reduce the lesion. The average volume of steroid used ranges from 1 to 3 mL, depending

on the tumor's size. Liposuction, using a 16-gauge needle and a large syringe, is also effective for small or large lipomatous growths where minimizing scarring is important.¹⁰

Conclusion

Intraoral lipomas are a rare entity and often identified during routine dental examinations. Due to their benign nature and minimal discomfort, many lipomas go undetected until they become large enough to cause functional or aesthetic issues. The successful management of the patient through surgical excision and the absence of post-operative complications and recurrence highlight the effectiveness of complete surgical removal in treating intraoral lipomas. Emerging nonsurgical treatments are currently being tested and may become viable options in the near future.

Overall, this case report underscores the importance of thorough clinical evaluation, precise diagnosis, appropriate management, and documentation of rare cases to advance medical knowledge and improve patient care.

Conflict of interest

The authors declare that they do not have any conflicts of interest.

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Figure-1: Pre-operative photograph



Figure-2: IOPA Radiograph



Figure-3: Intra-operative photographs showing the exposed surgical site

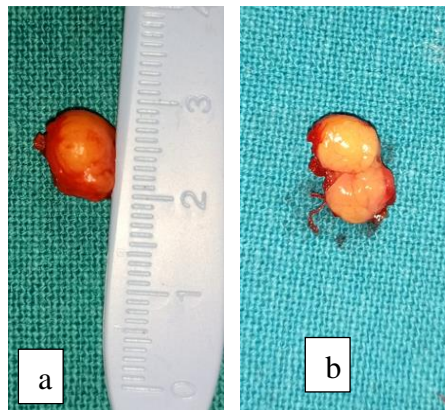


Figure-4: The Excised specimen, a) showing an encapsulated lesion, b) dissected view

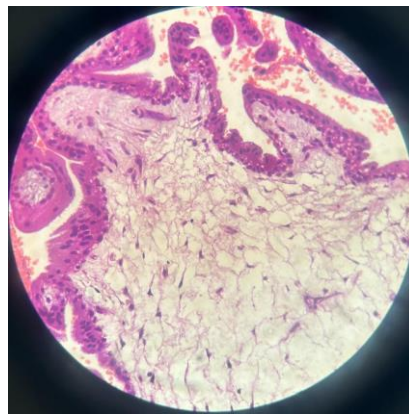


Figure-5: Microscopic view showing adipose cells