

Fibrolipoma of the Buccal Mucosa in a Geriatric Patient

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Abstract

Lipoma is the most common mesenchymal tumor seen in the trunk and extremities. It is rarely found in the mouth. Clinically, it resembles other lesions and is not considered in the initial diagnosis. Histopathological evaluation is needed for accurate diagnosis. Surgical excision is the main treatment modality. Histologically, many variants are described of which fibrolipoma is thought to have some recurrence. This article describes a case of fibrolipoma of the buccal mucosa in a geriatric patient.

Keywords: Adipocytes, benign tumor, diagnosis, fibrolipoma, histopathology, lipoma, oral tumor

INTRODUCTION

Lipoma is a well-circumscribed benign tumor arising from adipocytes with unclear etiology. Mechanical trauma, inflammation, endocrine imbalance, and origin from embryonic stem cell capable of differentiating into lipoblasts are some suggested etiologies.^[1,2] Roux in 1948 called it as a “Yellowish epulis.”^[3]

Lipoma of maxillofacial area accounts for 15%–20% of the soft-tissue lipomas. However, the incidence in the mouth is only 1%–4%.^[4] It is often seen in the 4th to 5th decade.^[5] Intraoral lipomas are often reported in women with the ratio of 1.3:1.^[6] They occur mostly in the sites where fat deposition is more like the buccal mucosa owing to its proximity to buccal pad of fat. Other sites include lips, tongue, vestibule, floor of mouth, gingiva, palate, salivary glands, and retromolar region.^[4,7] Although asymptomatic, oral lipomas can cause interference in speech and mastication.^[8] Surgery is usually recommended.^[5]

CASE REPORT

A male patient of 68 years old came with pain and loosening of lower front teeth since 1 month. Clinical examination revealed that the patient was partially edentulous and mandibular incisors showed poor periodontal condition with gingival recession and tenderness on palpation with Grade-3 tooth mobility. Medical history was noncontributory. The patient was

advised for total extraction and complete denture. Incidentally, a solitary growth was noticed in the right cheek mucosa. Patient revealed that the lesion was present since 2 years and was slowly increasing in size with no discomfort. The growth was oval-shaped, pedunculated, light pink in color, with a smooth surface and no surface ulceration, measuring about 0.8 cm × 0.7 cm × 0.5 cm in size, protruding from right buccal mucosa [Figure 1]. It was soft to firm, slightly compressible, and nontender on palpation. Differential diagnosis of lipoma, irritational fibroma, pyogenic granuloma, and minor salivary gland neoplasm was considered. After obtaining informed consent from the patient the lesion was surgically removed. The tissue was submitted for histological evaluation [Figure 2]. Recurrence is not seen during follow-up.

Histopathology revealed a nonkeratinized stratified squamous surface epithelium and subjacent connective tissue with numerous mature adipocytes in lobular arrangement separated by dense fibrous connective tissue septae [Figure 3]. Adipocytes were polygonal-shaped with an eccentrically placed nucleus and clear cytoplasm [Figure 4]. Connective tissue septae showed dense collagen fibers, and few blood capillaries. Since there was a significant fibrous tissue component, a diagnosis of fibrolipoma was made. No cellular

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Figure 1: Intraoral photograph showing a solitary growth on the right buccal mucosa

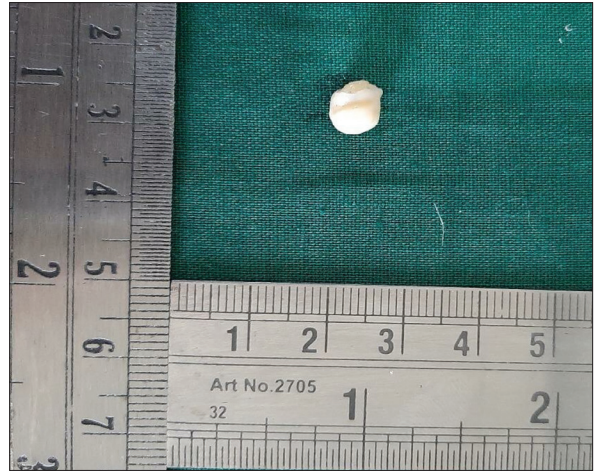


Figure 2: Gross tissue specimen

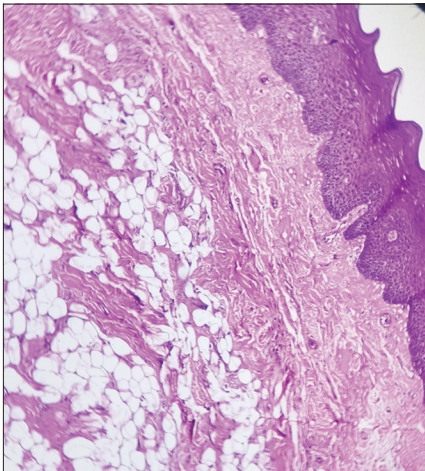


Figure 3: Photomicrograph showing nonkeratinized stratified squamous surface epithelium and subjacent connective tissue with numerous mature adipocytes in lobular arrangement separated with dense collagenous septae (H and E stain, $\times 20$)

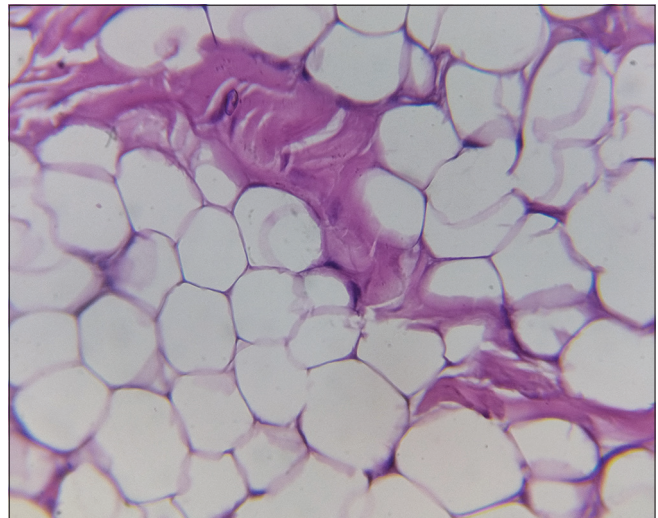


Figure 4: Photomicrograph showing polygonal shaped neoplastic adipocytes with eccentrically placed nucleus and clear cytoplasm (H and E stain, $\times 40$)

and nuclear pleomorphism, necrosis, or mitotic figures were observed.

DISCUSSION

Lipoma is a well-encapsulated benign lesion consisting of mature adipocytes. It is often seen in the trunk and peripheral region but rarely reported in the mouth. It is a slow-growing benign neoplasm and is histologically similar to the normal fat cells.^[5]

Etiology and pathogenesis

The etiopathogenesis is uncertain; factors such as hereditary, trauma, inflammation, and endocrine stimulus may be contributors.^[6] According to “hypertrophy theory,” the obesity and related proliferation of the adipocytes may be a reason contributing to this lesion. However, it fails to explain the tumor seen in areas deficient of adipocytes.^[9] Moreover, they are not utilized during metabolic activity like fasting as is in case of the normal adipose tissue. “Metaplasia theory” states that lipoma

arises from *in situ* connective tissue cells that differentiate into lipoblasts.^[10] Lipomas are believed to be congenital originating from the embryonic multipotential cells that had remained subclinically dormant till their differentiation into adipocytes during adolescence under hormonal influence.^[11] Trauma and long-standing irritation may trigger the formation of these lesions.^[4] In few cases, chromosomal aberration in 12q, 13q, and 6p chromosomes was observed.^[12]

Clinical features

Lipomas usually occur in adult patients and are uncommon in the pediatric group. Intraoral lipomas are more commonly seen in females,^[6] although some believe it is more common in males.^[2] Buccal mucosa is the most favored location. They may be seen on labial mucosa, floor of the mouth, retromolar area, and gingiva.^[4,7]

These lesions are often asymptomatic, well-circumscribed, smooth or lobulated surfaced, slow-growing submucosal

masses which are either sessile or pedunculated. The color of the superficial lesions may have yellow hue, whereas deeper lesions appear pinkish.^[7,13] Deeply seated lesions may however produce only slight elevation, diffuse and less delineated.^[14] The size of the tumor varies and maybe up to 2.5 cm. They may be soft to firm doughy in consistency based on the amount of collagenous component and on how deep the lesion is situated.^[15] Difficulty in speech, swallowing, and mastication are some rarely encountered functional problems. Pain may be seen when they compress peripheral nerves. Laryngeal lipomas may cause airway obstruction.

Intraoral lipoma has been classified according to morphology into three types: Diffuse variety often seen in deeper tissue, superficially-placed variety and variety showing encapsulation.^[5] Intraosseous form has also been reported. Lipomas can be solitary or multiple. Occurrence of multiple maxillofacial lipoma in various syndromes such as neurofibromatosis, multiple familial lipomatosis, Gardner's syndrome, encephalocraniocutaneous lipomatosis, adiposis dolorosa, Madelung's disease, and Proteus syndrome are reported.^[16]

Investigations

Clinical examination often leads to the identification of these lesions. However, various diagnostic tools such as fine-needle aspiration cytology, magnetic resonance imaging (MRI), computed tomography (CT) scan, and ultrasonography show distinctive features. Ultrasound demonstrates a well-defined lesion with intact capsule, which are hypoechoic with echogenic lines or spots. "CT scan shows high density from 83 to 143 HU with either well defined or poorly defined margin."^[17] MRI shows high intensity on both T1 and T2 whereas in fibrolipoma due to its high collagenous content may show low intensity on T.^[18] However, histopathological evaluation is needed for the accurate diagnosis of lipoma.

Histopathology

This lesion is well-circumscribed with a thin capsule having well-differentiated adipose cells in lobular arrangement separated by the collagenous septae. There are different histologic variants of lipoma based on its microscopic appearance [Table 1].^[5,19,20] However, these microscopic variants have no prognostic significance.

Immunohistochemistry

These lesions show vimentin positivity. Higher Ki-67 antibody expression on immunohistochemical staining is seen in fibrolipoma as compared to the conventional and other histologic types suggesting that fibrolipoma has higher proliferating potential.^[18]

Differential diagnosis

Lipoma may mimic herniated buccal fat; however, the former lacks a history of trauma and is well-circumscribed. Neoplastic cells may show varied size usually larger (up to 200 mm in diameter), vary metabolically and express higher lipoprotein

Table 1: Histologic variants of Lipoma^[5,19,20]

Histologic variants of lipoma	Description
Classic or conventional lipoma	Most common variant characterized by mature adipose cells in lobes with minimal connective tissue stroma
Fibrolipoma	Adipocytes intermixed with densely packed collagen bundles. Significant fibrous component is seen.
Angiolipoma	Rarely found and shows combination of adipocytes and numerous small blood vessels
Spindle cell lipoma	Presence of abundant spindle-shaped cells with lipomatous component
Pleomorphic lipoma	Spindle-shaped cells and pleomorphic multinucleated giant cells showing hyperchromatic nuclei often showing a floret-like appearance. Histologically resembling spindle cell variant but pleomorphism seen
Adenolipoma	Presence of scattered duct or tube-like adnexal structure in a lipomatous background
Sialolipoma	Lipomatous proliferation with salivary gland structures with varying degree of acinar atrophy, often seen in parotid and rarely seen in minor salivary glands
Chondrolipoma	Adipocyte proliferation associated with mature cartilaginous/chondroid tissue
Osteolipoma, or ossifying lipoma	Metaplastic osteoid scattered in a background of lipomatous proliferation
Intra and intermuscular lipoma	Deeply situated and extends between skeletal muscle bundles. They show predilection for tongue. "Myolipoma" is often used term if the lesion arises in smooth muscle and shows spindle-shaped cells
Myxolipoma	Numerous adipocytes and scattered spindle cells in a myxoid background

lipase activity than the normal adipose cells. Tumor cells do not serve as energy source unlike normal adipose cells.^[21]

Clinically, these lesions mimic benign mesenchymal neoplasms such as fibroma, and neurofibroma, dermoid cyst, benign salivary gland tumor, mucocele, thyroglossal duct cyst, and lymphoma. Histologic differential diagnosis includes schwannoma, fibroma, myxoid neurofibroma, neuroma, leiomyoma, malignant fibrous histiocytoma, nodular fasciitis, lymphoepithelial cyst, hibernoma, lipoblastoma and atypical lipomatous tumor or well-differentiated liposarcoma.^[22]

Infiltrative lipomas are poorly circumscribed and show infiltration into adjacent tissue especially muscles and fascial planes. Liposarcoma lacks lobular arrangement, shows variable distribution of lipoblasts, atypical or pleomorphic lipoblasts, infiltrative pattern, nuclear pleomorphism, mitosis, increased cellularity, and fibrosis. Pain, tingling or numbness, rapid growth, ulceration, myxoid areas, plexiform vascular pattern, and fixity to adjacent tissue should alert further investigations.

Murine double minute-2 gene amplification confirms sarcoma. Lipomatosis is rare and shows diffuse, symmetrical hyperplasia of adipocytes not surrounded by pseudocapsule. This is common in children with congenital onset and mostly found on the extremities. Lipomatosis has a metabolic etiology such as alcohol abuse unlike lipoma.^[23] Lipoblastoma is well-circumscribed shows fetal adipose tissue and often seen pediatric age group of <10 years.

Treatment and prognosis

These lesions are usually excised due to unaesthetic reasons. Surgery is recommended. Recurrence is rare. Infiltrative lipoma has higher chances of recurrence as it is not well-encapsulated. Malignant transformation is rare.^[21] Electrocautery and lasers have also been tried. Medical management of lipomas include steroid injection that results in tumor size regression, usually done in cases of smaller lipomas with lesions that are <1 inch in diameter. 1:1 mixture of lidocaine and triamcinolone acetonide (1–3 ml) is injected monthly into the center of tumor for regression of the lesion. Liposuction is also advocated for medium and large lipomas.^[4]

CONCLUSION

Lipomas are rare in oral cavity. They may mimic many reactive lesions They should be included in differential diagnosis. Histopathology remains the standard diagnostic procedure for accurate diagnosis. Fibrolipoma has great proliferative potential compared to other histologic variants hence require follow-up.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands that name and initials will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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