



## INTRAMUSCULAR GINGIVAL LIPOMA: A RARE CASE REPORT

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### ABSTRACT

Lipomas are most commonly occurring mesenchymal benign tissue tumors in humans but their occurrence intraorally is exceedingly rare (0.5 to 5%). The etiology remains unclear but many theories have been proposed. They are classified according to their location and histological appearance. Gingival lipoma has the least rate of occurrence of all the Intraoral Lipomas (2.0%). Treatment of these lesions remains essentially same, i.e. complete excision of the tissue. Recurrence of the lesion is rare and it does not undergo malignant transformation. Herein we present a case report of an extremely rare subtype of Intraoral Lipoma occurring on gingiva and floor of mouth which was treated with soft tissue diode laser along with brief review of the literature. This paper is an attempt to further the knowledge of this rare disease, highlight their clinical appearance and histological variants while discussing different treatment modalities for the treatment of the same.

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### INTRODUCTION

Lipomas are most common benign connective tissue tumors that origin from mature adipocytes. Oral lipomas were first described by "Roux" in 1884 and he referred them as *yellow epulis* due to the yellowish tint on the lesion clinically [1]. These lesions are rare in oral cavity consisting only about 0.5 to 5% of all the benign tumors [2].

The exact etiology remains unknown but various theories have been proposed. The "Hypertrophic theory" suggests that obesity may contribute to the formation of lipoma. The theory was immediately discarded as it was unable to explain the occurrence of lesions lacking adipose tissue. The "Metaplastic theory" advocates that lipomas occur due to aberrant differentiation of adipocytes. Other factors like trauma, hormonal imbalance, and chromosomal abnormalities have also been proposed [3]. Classic lipomas show abnormalities with 12q13-15 or 6p or 13q whereas spindle cell and pleomorphic lipomas present with complete or partial loss of 13q and chromosome 16 [4].

These lesions are commonly encountered in 5<sup>th</sup> to 6<sup>th</sup> decade of life [5]. Existing literature suggests that intraoral lipomas have similar sex predilection to slight female predominance as

compared to lipomas in other parts of the body where the occurrence is more common in males [1,2]. Buccal mucosa is most common (38.6%) site followed by tongue (15.2%), lip (11.8%), floor of the mouth (10.3%), palate (4.5%), retromolar area (4.5%) and gingiva (2.0%) [6]. In the present case, lipoma occurred in gingiva and extended up to the floor of the mouth. The greater incidence of occurrence in the buccal region can be attributed to the increased fatty tissue in the area in the oral cavity as compared to any other tissue [1]. The average size of the tumor ranges from 0.6 cm to 2.6 cm [5]. The lesions are essentially painless and are slow growing [5]. The patient usually complains of painless palpable mass, rarely dysphasia and speech problems are seen with large sublingual lipomas [7]. The present case report highlights the clinicopathological features of rare clinical entity, Intramuscular Gingival lipoma along with different treatment modalities.

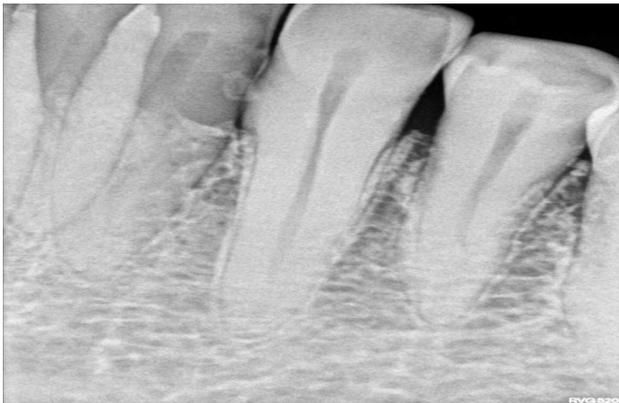
### Case Report

A 78 year old male patient reported to the Department of Periodontics with the chief complaint of an overgrowth in lower front region since 20 years. The patient complained that the growth had increased steadily with time. The patient was diabetic and was on medication for the same since 10 years, dental and family history was noncontributory. There was no history of pain, trauma, sinus opening or pus discharge. Intraoral examination revealed an overgrowth on mandibular

right anterior lingual attached gingiva extending up to floor of mouth (Figure-1). The overgrowth was about 1.5x2.5 cm in dimension. The growth was sessile and freely mobile, soft and fluctuant on palpation. The concerned teeth 41, 42, 43, 44, 45 responded normally to pulp vitality test. Cervical extension of the lesion was examined by bidigital and bimanual palpation of the submandibular region, the findings were non contributory. On radiographic examination, IOPA revealed no periapical or bony changes (Figure-2).



**Figure 1** Overgrowth associated with 41, 42, 43, 44, 45 on lingual aspect involving attached gingiva and extending upto floor of mouth



**Figure 2** IOPA reveals normal bony architecture eliminating the possibility of bony involvement of origin.

A differential diagnosis of Ranula, Mucocele, Pyogenic granuloma, irritational fibroma, and Lipoma was considered and excisional biopsy was carried out. Considering the age of the patient it was decided to manage the case conservatively, complete excision was carried out using a 980 nm soft tissue diode laser (Figure-3).



**Figure 3** Soft tissue diode laser being employed for surgical excision of the tissue.

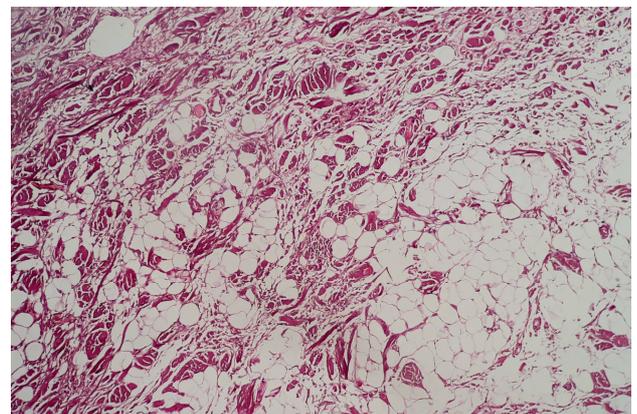
Excellent hemostasis was achieved with minimum charring of tissue (Figure-4). The excised tissue was seen with distinct tissue capsule (Figure-5). The excised tissue was floating when immersed in 10% formalin for histopathological investigation, which is characteristic of Lipoma. The excised specimen was sent for histopathology and was diagnosed as Intramuscular Lipoma. Proper oral hygiene maintenance instructions were given and Chlorhexidine mouthwash 0.2% was prescribed for oral prophylaxis. Six months follow up showed no recurrence.



**Figure 4** Note the excellent hemostasis, minimal charring with conservative excision of the tissue.



**Figure 5** Excised tissue specimen.



**Figure 6** Histopathological picture (10x) shows an encapsulated tissue containing adipocytes traversed by muscle fibers.

## Histopathological studies

Histology slides show tissue showing stratified squamous epithelium of variable thickness. The connective tissue showed encapsulated tissue consisting of mature adipocytes. The tumor cells were seen traversing muscle fibers. Focally thickening of blood vessels was noted (Figure-6)

## DISCUSSION

Lipomas usually occur as solitary tumors but are an infrequent finding in Cowden's syndrome which shows multiple lipomas occurring throughout the body due to mutations in the tensin homolog gene and phosphatase enzyme [8]. Multiple lipomas are also seen in Dercum's disease, Proteus syndrome, familial multiple lipomatosis, Pai syndrome [7]. The diagnosis is essentially made by correlating the clinical features with histopathological features. The differential diagnosis includes Fibroma, Lymphangioma, Rhabdomyoma, Neuroma, Dermoid Cyst, Mucocele, Benign tumor of salivary glands and Hemangioma. A distinctive pathognomic feature of lipoma is that it floats without sinking when stored in 10% formalin jar for histopathological diagnosis; a similar finding was seen in the present case [9]. Though some of them represent with distant clinical picture and behavioral characteristics; histopathological investigation remains the gold standard for the final diagnosis [3].

Histopathologically, lipomas are classified based on the histopathological features and growth patterns into various types: (a) Classic lipomas (49.56%) and Fibrolipomas (20.7%) are most common and have overlapping histopathological features. The diagnosis of Fibrolipoma is made when the mature adipose tissue is interspersed by fascicles of dense connective tissue in absence of capsule. (b) Intramuscular lipomas (2.0%) are found in the vicinity of muscle tissue; the muscle fibers are interspersed in between them and are most commonly found in tongue and buccal mucosa. (c) Spindle cell lipoma (1.66%) is a relatively uncommon variant which is usually seen on the lip. (d) Sialolipoma (1.5%) consist of intra glandular lipomas consisting of atrophic salivary acini and ducts, they are commonly seen on the hard palate. (e) Choroid lipoma (1.5%) can mimic Liposarcoma and Myxoid chondrosarcoma, they are confused with aforementioned lesions due to nests of lymphoblastic like tissue in the chondriod matrix. (f) Osseous lipoma (>1%) is rare and characterized by mature bony or cartilaginous tissue in the tissue [2, 6, 10].

Irrespective of the histopathological variant, the treatment essentially remains same, i.e. complete excision of the tissue. Recurrence is extremely rare [2, 3, 7]. Recurrence is more with intramuscular lipoma when compared with other variants due to their infiltrating nature [10,11]. There are no reports of malignant transformation of intraoral lipoma in existing literature [2, 7, 11]. Other options for management of lesion include local injection of lignocaine and triamcinolone actenoides 1:1 directly into the lesion. They cause fat atrophy and shrink the size of the tumor. They are best used in lipomas of 1x1 cm in size and have to be repeated monthly until desired results are obtained [7].

Soft tissue diode lasers have many advantages when compared to conventional surgical techniques. They offer shorter operation time, excellent hemostasis, no sutures, less requirement of anesthesia, minimal risk of infection, minimal post operative pain and help in quick healing of the tissue [12].

## CONCLUSION

Intraoral lipomas are infrequent clinical finding and its gingival counterpart is exceedingly rare. Clinicians should be able to differentiate them from other benign tumors owing to their distant clinical and behavioral characteristics. Complete surgical excision should be done to minimize recurrence. Soft tissue diode lasers have promising results when compared with conventional surgical techniques and must be routinely employed in clinical practice.

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