

# Chondroid Lipoma: A Rare Variant of Lipoma

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## ABSTRACT

Lipoma is a benign, growing tumour of mesenchymal origin composed of mature fat cells and adipocytes. They can occur in the subcutaneous layer or at intramuscular or intermuscular sites. Oral lipoma, a benign tumour of mesenchymal origin composed of mature adipocytes and usually surrounded by a thin fibrous connective tissue capsule, is rare and mostly found on the buccal mucosa and tongue. Hereby, the authors present a case of Chondroid Lipoma (CL), a very rare subtype of lipoma involving the ventral surface of the tongue in a 50-year-old female patient. The Chondroid Lipoma, a variant of lipoma, is extremely rare in the oral and maxillofacial region containing both embryonal fat and cartilage.

**Keywords:** Adipocytes, Chondroid matrix, Fibrous tissue, Mesenchymal tissue

## CASE REPORT

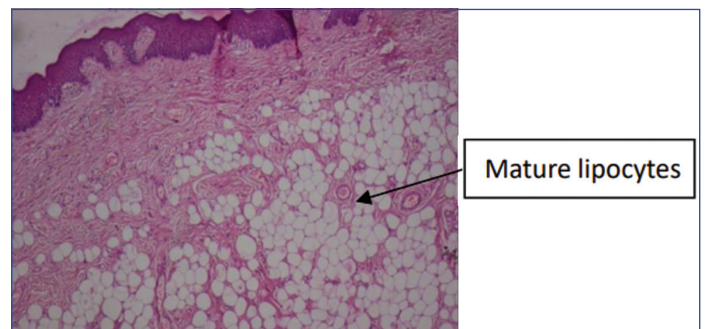
A 50-year-old female patient visited the Department of Oral Medicine and Radiology with a chief complaint of swelling under her tongue for 20 days. The patient first noticed the growth 20 days ago; before that, she did not notice any growth below her tongue. There was no history of pus discharge, bleeding, or trauma associated with the growth. The growth is not associated with pain or any kind of discomfort. The patient's past medical, dental, and family histories were non-contributory. On general physical examination, the patient was moderately built and nourished with pallor present. Intraoral examination revealed a well-defined sessile growth measuring about 1.5x1.5 cm present on the ventral surface of the tongue which was in close approximation with the root stumps 32, 31, 41, 42 [According to FDI system] [Table/Fig-1,2]. On palpation, the growth was soft in consistency, mobile, and non tender with a negative diascopy test. On hard tissue examination, root stumps were present 31, 32, 41, 42, 43, 44, 46, 48. Based on the clinical findings, a provisional diagnosis of mucocele involving the ventral surface of the tongue was made. Traumatic fibroma and lipoma were considered under the differential diagnosis. Routine blood examination results were found to be within normal limits. The lesion was excised under local anaesthesia. Microscopic examination revealed focal areas of mature cartilage with surrounding lobules of adipocytes suggestive of CL [Table/Fig-3,4]. Based on these, authors confirmed the diagnosis of CL. The patient was followed up for four months, and no recurrence was noted.



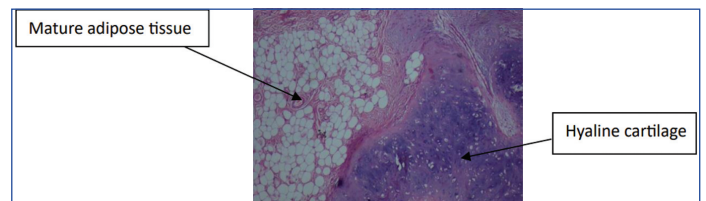
**[Table/Fig-1]:** A soft sessile swelling measuring about 1.5x1.5 cm is present on the ventral aspect of tongue. **[Table/Fig-2]:** No abnormality present on the floor of the mouth. (Images from left to right)

## DISCUSSION

Lipoma, being the most common benign tumour of the body, earns the title of the "universal tumour" or "ubiquitous tumour" [1]. It occurs in all parts of the body where there is the presence of adipose tissue



**[Table/Fig-3]:** Circumscribed mass of mature lipocytes with thin fibrous capsule (H&E, 10x).



**[Table/Fig-4]:** Circumscribed, encapsulated lobular mass of mature adipose tissue separated by fibrous septae. Focal areas of metaplastic hyaline cartilage were evident (H&E, 20x).

[2]. Oral lipoma is a relatively rare entity, comprising 2.2% of all lipomas and 1%-4% of all benign tumours of the oral cavity [3]. Oral lipomas can be sessile or pedunculated with soft, smooth-surfaced nodular masses, which are asymptomatic and mostly an incidental finding, but large lipomas can cause functional difficulties [2]. The findings of a few case reports published in the literature has been depicted in Table/Fig-5 [4-9]. Oral lipoma was first demarcated by Roux in 1848 and referred to as the "yellow epulis" [10]. It usually occurs in adult patients within an age range of 40-60 years without any gender predilection, and sites include the tongue, floor of the mouth, buccal mucosa, gingiva, mucobuccal or labial folds, palate, and major salivary glands [10]. Morphologically, oral lipoma can be classified as diffuse, superficial, and encapsulated forms [10]. Oral lipoma is usually asymptomatic with a thin epithelium giving a yellow discoloration, but if it is in deeper tissues, it may appear pink. It is soft in consistency when palpated, and usually, the size does not exceed 3 cm at the time of diagnosis, but it can increase upto 5-6 cm over a period of years [11].

According to Takizawa A et al., [5] lipomas can be classified as:

- Classic lipoma; lipoma variants, such as:

Author	Age/ Gender	Duration at the time of diagnosis	Size of the lesion	Chief complaint	Clinical features	Investigation done	Treatment	Recurrence
Dorrego MV et al., [4]	66 Y/F	Not mentioned	Not mentioned	A painless soft-tissue swelling on the left tongue	There was no ulceration, and the working diagnosis was of a fibroepithelial polyp of traumatic origin	---	Excisional biopsy	Not mentioned
	43 Y/M	Not mentioned	Not mentioned	Presented with two lesions on his tongue, one on the tip and the other on the right lateral border	Assumed to be fibroepithelial polyps of traumatic aetiology	---	Excisional biopsy	Not mentioned
Takizawa A et al., [5]	73 Y/F	Five days	6-7 mm	Presented with the complaint of painless swelling of the tongue	The patient exhibited a hard swelling in the tongue. On examination, a painless swelling, measured 6-7 mm in diameter, was observed on the dorsal surface of tongue about 1 cm to the right of the midline. It had normal-coloured mucosa with a smooth surface. On palpation, the patient reported neither tenderness nor contact pain.	---	Excisional biopsy	Not mentioned
Lakshmiiah SR et al., [6]	44 Y/M	Two years	2 to 3 cm in diameter	Presented with a two-year history of a swelling at the left angle of the jaw. The painless swelling had started as a peanut-sized lump and had enlarged gradually.	It was round, lobulated and extended from the angle to the anterior border of the mass. The skin over the swelling was normal. On palpation, the mass was neither tender nor warm and was slightly firm in consistency. The mass was mobile in all directions and gave the impression of being superficial to the masseter muscle. On intra-oral examination, the soft tissues were normal but there were decayed upper and lower molars on the affected side	Fine Needle Aspiration Cytology (FNAC)  Computed axial tomography with contrast	Excisional biopsy followed by Immunocytochemistry	No recurrence within a follow-up of six months
Fujimoto Y et al., [7]	51 Y/M	Not properly mentioned	30x25 mm	Complains of a mass on the left side of the tongue	Intraoral examination showed a relatively clear, elastic, hard mass, 30x25 mm in size. The lesion was painless and the overlying epithelium remained intact	Magnetic Resonance Imaging (MRI)	Excisional biopsy	No recurrence followed for 14 months
Darling MR and Daley TD [8]	35 Y/M	Two years	40 mm	Presented with a firm, pink, sessile, submucosal mass in his lower lip.	The patient first noticed a tiny nodule 2 years previously. The nodule grew slowly but steadily, with an increase in growth rate noted in the final year. The lesion was always painless	---	Excisional biopsy followed by immunohistochemistry	No recurrence followed for one year
Gomez- Ortega JM et al., [9]	22 Y/M	One year	2 cm	A painless lump in his submandibular region for approximately a year.	The tumour was situated within the digastric muscle, and the patient was aware of an increase in its size in the two months before presentation	---	Excisional biopsy followed by immunohistochemistry	No recurrence followed for 6 mnth

**[Table/Fig-5]:** Findings of few published case reports on CL of head and neck region [4-9].

- 1) Angiolipoma;
- 2) Chondroid Lipoma (CL);
- 3) Myolipoma; and
- 4) Spindle cell/pleomorphic lipoma.

- Hamartomatous lesions;
- Diffuse lipomatous proliferations; and
- Hibernoma.

According to the World Health Organisation (WHO) 2002, CL is defined as "a unique and recently recognised benign adipose tissue tumour containing lipoblasts, mature fat cells, and chondroid matrix" [11]. CL, a variant of lipoma, is extremely rare in the oral and maxillofacial region containing both embryonal fat and cartilage. It was first described by Meis and Enzinger in 1993, who reported 20 cases, out of which only two were located in the head and neck region [12]. It usually presents in the third or fourth decade of life, occurring rarely in children less than 10 years old. It presents as a slow-growing, painless mass, most commonly in limb girdles and proximal extremities, and rarely in the head and neck region (particularly intraorally). It behaves benignly and has no reported cases of recurrence and metastasis, but sometimes it might

show rapid growth, which can be misinterpreted as malignant transportation [12].

There are two hypotheses regarding the origin of the cartilaginous component of this tumour:

- Due to mechanical stress, it leads to a metaplastic change in an ordinary lipoma; and
- Under the influence of growth factor in this lesion, it might arise from the multipotential stem cells [11].

According to Shafer's, lipoma can be histologically classified as classic lipomas and its variants, namely fibrolipoma, intramuscular lipoma, spindle cell or pleomorphic lipoma, myxoid lipoma, angiolipoma, salivary gland lipoma or sialo lipoma, CL, myolipoma, osteolipoma, and atypical lipoma. Amongst these histological variants, classic lipoma and fibrolipoma are the most common, representing about 80% of all reported cases. Rarely, lipoma may be composed of chondroid metaplasia called CL [10].

The CL histologically contains nests, sheets of cytoplasmic vacuolation or eosinophilic granular cytoplasm, and cords of rounded cells within prominent myxoid to hyalinised chondroid stroma with mature fat present in variable amounts [12]. In present case, the section when stained with Haematoxylin and Eosin (H&E) showed

stratified squamous epithelium surrounding lobules of adipocytes along with focal areas of mature cartilage suggestive of CL.

On the other hand, chondrolipoma, which also commonly occurs in the head and neck, is a whole different entity that can be misinterpreted as CL [6]. It contains mature cartilaginous areas, and the adipose component is entirely composed of mature tissue with a lack of any lipoblastic cells, whereas CL is composed of mature adipocytes admixed with multivacuolated lipoblast-like cells in a myxohyaline and chondroid matrix, giving a pseudosarcomatous appearance [9,13]. CL has previously been misdiagnosed as sarcomas, either chondrosarcoma or liposarcoma, particularly extraskelatal myxoid chondrosarcoma [11]. Extraskelatal chondrosarcoma can be excluded because it does not contain adipocytes or lipoblast-like cells as seen in CL [9].

In present case, surgical excision was performed without any recurrence in the periodic follow-up. Diagnostic aids such as ultrasonography, computed tomography, and magnetic resonance imaging may be performed to determine the location, extent, and margins of the mass in case of infiltrating lipoma, but otherwise conservative treatment is the desired protocol without causing much discomfort.

## CONCLUSION(S)

The CL is an extremely rare variant of oral lipoma. The characteristics of this oral lesion tend to show few deviations from the classical oral lipoma, chiefly being the marked predilection for involvement of the ventral aspect of the tongue. Being the rarest, the present case

report will help in considering it as a marked differential diagnosis in the future.

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