ISSN No. 2456-4400
Int J Med Lab Res 2026, 11(3), 1-6

IJMLR International Journal of Medical Laboratory Research

CASE STUDY

LIPOBLASTOMA OF THE SUBLINGUAL REGION IN A 2-YEAR-OLD MALE CHILD: A RARE PEDIATRIC CASE REPORT

HK Srinidhi[1], Shubha H V[1], Venkatachalapathy [2], A Vamseedhar[2], Suguna B V[2], Vijaya C[2]

[1]Second year Postgraduate, Department of Pathology, Sapthagiri Institute of Medical Sciences and Research Centre, Bangalore, Karnataka, India-560090

[1]Associate professor, Department of Pathology, Sapthagiri Institute of Medical Sciences and Research Centre, Bangalore, Karnataka, India-560090*

[2]Professor and HOD, Department of Pediatric Surgery, Sapthagiri Institute of Medical Sciences and Research Centre, Bangalore, Karnataka, India-560090

[2]Professor, Department of Pathology, Sapthagiri Institute of Medical Sciences and Research Centre, Bangalore, Karnataka, India-560090

[2]Professor, Department of Pathology, Sapthagiri Institute of Medical Sciences and Research Centre, Bangalore, Karnataka, India-560090

[2] Professor and HOD, Department of Pathology, Sapthagiri Institute of Medical Sciences and Research Centre, Bangalore, Karnataka, India-560090

Received: 18 August, 2026 /Revision: 24 August, 2026 /Accepted: 05 September, 2026

ABSTRACT: Lipoblastoma is a rare benign tumor of embryonal fat that occurs mainly in infants and very young children. Involvement of the oral cavity is uncommon, and sublingual lesions are particularly rare, which can make clinical diagnosis challenging. We report a 2-year-old male child who presented with a sublingual swelling of 6 months' duration. The lesion was painless and not associated with feeding, speech difficulty, or other systemic symptoms. An excised grey-white soft tissue mass measuring 5.0x2.4x0.7 cm showed a congested external surface and homogeneous grey-white cut surface. Histologically, the tumor was encapsulated and well circumscribed, with a lobular architecture separated by fibrovascular septae. The lobules were composed of sheets of mature adipocytes admixed with primitive stellate to spindle-shaped cells in a myxoid stroma, along with a delicate chicken-wire capillary network and occasional uni- and multivacuolated lipoblasts. A clear zonal pattern was seen, with immature myxoid cells at the periphery near the septae and mature adipocytes at the center of the lobules. Immunohistochemistry showed positivity for S100 and CD34, supporting the diagnosis of lipoblastoma.This case illustrates a rare sublingual lipoblastoma in a very young child, with classic histomorphological features and supportive immunoprofile. Awareness of this entity in unusual oral sites is important to avoid misdiagnosis as lipoma, myxoid liposarcoma, or other myxoid lesions. Complete surgical excision and regular follow-up are recommended, as prognosis is excellent and recurrence is mainly related to incomplete removal rather than malignant behavior.

Key words: Benign, Histopathology, Immunohistochemistry, Lipoblastoma, Oral Cavity, Pediatrics, Sublingual

Corresponding Author:
Dr. Shubha HV,
Associate professor, Sapthagiri Institute of Medical Sciences and Research Centre, Bangalore, Karnataka, India-560090
Email: drshubhahv@gmail.com

www.ijmlr.com/IJMLR© All rights reserved

INTRODUCTION:

Lipoblastoma is a rare benign paediatric tumour arising from embryonal white adipose tissue, accounting for <1% of childhood neoplasms and occurring predominantly in children younger than 3 years [5,6]. It most commonly occurs in the trunk and extremities, although lesions have also been reported at deeper and less common sites, including the abdomen, mesentery, retroperitoneum, mediastinum, head and neck, perineum, and inguinoscrotal region [5,7,8,10,11]. Clinically, lipoblastoma may present as a superficial, well-circumscribed mass resembling a lipoma or vascular malformation [1,3].

In the oral cavity, lipoblastoma may present simply as a painless swelling, and its clinical appearance is nonspecific [3,4]. Imaging—especially ultrasonography and MRI—helps define the lesion and its relationship to surrounding structures [7,8,11]. Definitive diagnosis requires histopathological examination, which also helps differentiate lipoblastoma from lipoma, lipofibromatosis, vascular malformations, and myxoid liposarcoma [2,3,6].

We present a rare case of sublingual lipoblastoma in a 2-year-old child, describing the gross, microscopic, and immunohistochemical (IHC) findings and briefly reviewing the relevant literature.

CASE REPORT:

A 2-year-old male child presented with a swelling in the sublingual region of 6 months' duration. The swelling was not painful, and there was no history of feeding difficulty, speech problems, trauma, or systemic illness **(Figure 1).**

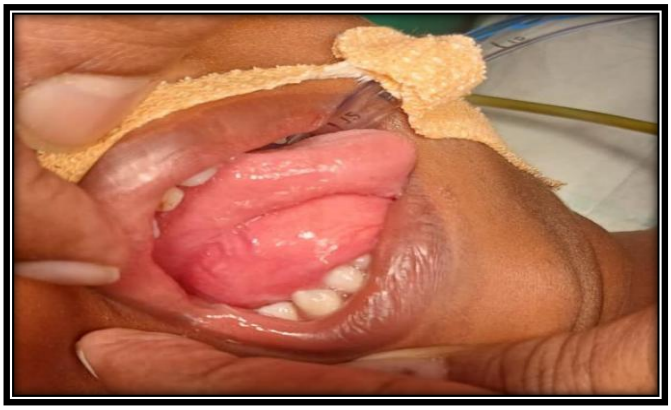

Figure 1: Clinical presentation of the lesion during surgery

Contrast Enhanced Computed Tomography (CECT) revealed an elongated tubular fat containing benign lesion with the differentials of dermoid cyst and ranula. An excisional biopsy was performed. The specimen consisted of a grey-white soft tissue piece measuring 5.0x2.4x0.7 cm. The external surface appeared congested. On cut section, the lesion showed homogeneous, grey-white areas without obvious hemorrhage or necrosis **(Figure 2).**

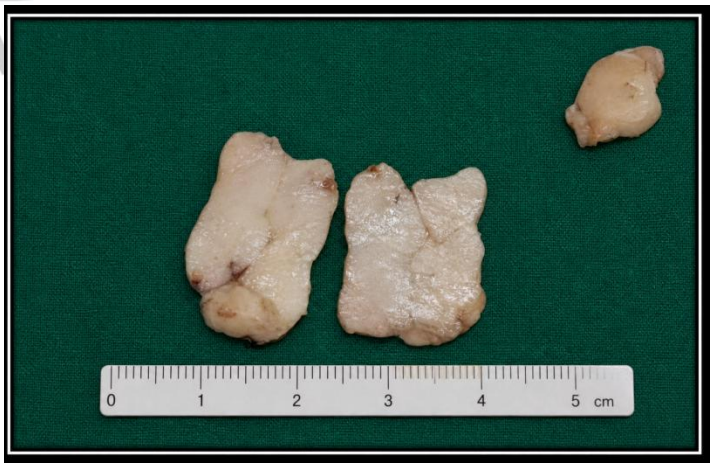

Figure 2: Gross image of the mass showing homogenous, grey-white areas

Microscopic examination revealed an encapsulated and well-circumscribed lesion with a lobular architecture. Multiple

lobules were separated by intersecting fibrovascular septae. The lobules were composed predominantly of mature adipocytes admixed with varying numbers of primitive stellate to spindle-shaped mesenchymal cells set in a myxoid stroma. A fine, branching "chicken-wire" vascular network was prominent throughout the lesion. Occasional uni- and multivacuolated lipoblasts were identified **(Figure 3a & 3b).** A zonal pattern was noted within the lobules: immature myxoid cells with primitive adipocytic features were more concentrated at the periphery near the fibrous septae, while more mature adipocytes occupied the central part of the lobules.

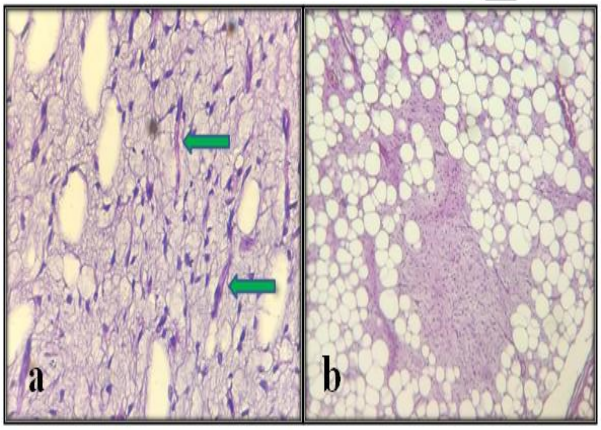

Figure 3a & 3b: Microscopic features showing matured adipocytes admixed with varying proportion of mesenchymal tissue [3b:H & E,100x] with occasional uni- and multivacuolated lipoblasts and chicken-wire capillaries (green arrow) [3a: H &E, 400X]

Immunohistochemistry showed positivity for S100 in adipocytic cells, indicating adipocytic differentiation. CD34 positivity was also observed in the mesenchymal component. These findings, in combination with the characteristic histopathology, supported a diagnosis of Lipoblastoma **(Figure 4a & 4b).**

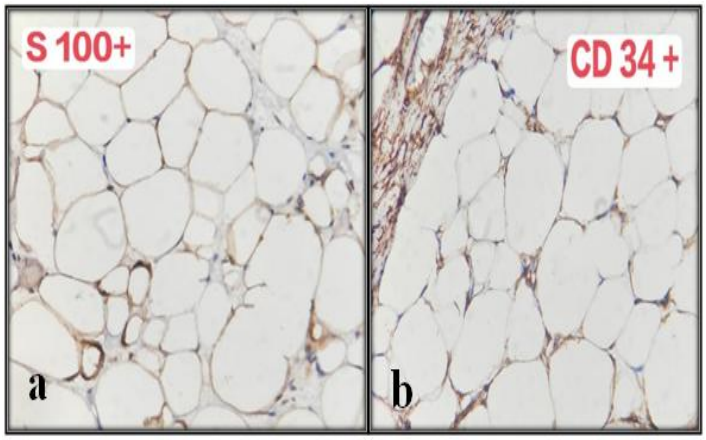

Figure 4a & 4b: IHC marker positive for S100 and CD 34 respectively [400x]

Molecular/cytogenetic evaluation was not performed in the present case, and the diagnosis was based on the characteristic morphology and immunohistochemical findings. The child was followed up clinically after surgery for a period of 6 months. During the follow-up period, there was no evidence of local recurrence and the child remained clinically well.

DISCUSSION:

Lipoblastoma is a benign neoplasm of embryonal adipose tissue that predominantly affects infants and young children [5,6,9], consistent with the age of the patient in the present case. Involvement of the oral cavity is uncommon, and sublingual lipoblastoma has only rarely been reported [2–4]; consequently, it may not be included in the initial differential diagnosis. The previously reported oral cavity cases include an 8-month-old male with oral cavity lipoblastoma [3], a neonate with congenital buccal lipoblastoma[2], and a 10-year-old male with lipoblastoma on the lip [1] **[Table 1]**.

Table 1: Summary of previously reported cases of lipoblastoma of the oral cavity

SL. NO.	STUDY	YEAR OF PUBLICATI	AGE	SEX	LOCATION
1.	**Present case**	-	2-year-old	Male	Sublingual
2.	**Matous AL et al. [3]**	2021	8-month-old	Male	Oral cavity
3.	**Chawla V et al. [2]**	2024	Neonate	Female	Buccal cavity
4.	**Cota J et al. [1]**	2025	10-year-old	Male	Lip

It usually manifests as a painless, gradually enlarging soft-tissue swelling [5,6]. In the oral or sublingual region, a large lesion can interfere with feeding, speech, or breathing [4]. However, some patients may have few symptoms other than a visible or palpable swelling, as observed in the present case [2,3].

The characteristic morphology in this case is highly supportive of lipoblastoma. Typical features include a well-circumscribed or encapsulated lobulated mass composed of adipocytes and lipoblasts at different stages of maturation, separated by fibrovascular septae, with a myxoid background and a delicate plexiform (chicken-wire) vascular network [1–3,6]. Zonation, with more immature myxoid cells at the lobular periphery and more mature adipocytes centrally, is another helpful finding [1,3]. All of these features were present in our specimen.

The differential diagnosis of a paediatric sublingual mass containing adipose tissue includes lipoma, lipofibromatosis, post-traumatic fat necrosis, vascular lesions, and myxoid liposarcoma [2,3,6]. Lipomas generally lack lipoblasts and do not demonstrate the characteristic zonal maturation pattern. In contrast, lipofibromatosis is often poorly circumscribed and contains a more prominent fibroblastic component. Although myxoid liposarcoma can exhibit myxoid stroma and a delicate "chicken-wire" vascular network, it is rare in very young children and is more likely to show infiltrative margins and cytological atypia [2,3,6]. In the present case, the patient's young age, well-encapsulated lesion, lobulated architecture, orderly maturation of adipocytic cells, and absence of cytological atypia supported a diagnosis of lipoblastoma.

Immunohistochemistry plays a supportive role. S100 positivity is expected in adipocytic tumors [1,3]. CD34 expression has been reported in some lipoblastomas and may reflect a primitive mesenchymal or stem-cell component, as discussed in recent literature [3]. Molecular studies demonstrating *PLAG1* rearrangements can provide strong confirmation in diagnostically challenging cases; however, characteristic morphology with a supportive immunoprofile may be sufficient in typical cases [3,10,12].

Complete surgical excision is the preferred treatment for lipoblastoma [5,6,9]. In oral and head-and-neck lesions, the surgical approach should ensure adequate removal while preserving important functions such as speech, swallowing, and airway integrity [4,6]. Local recurrence is mainly associated with incomplete removal or an infiltrative growth pattern, particularly in lipoblastomatosis[6,9]. Metastasis and malignant transformation have not been reported as significant concerns [5,9]. In the present case, the lesion was well-

circumscribed and encapsulated, supporting a diagnosis of lipoblastoma and indicating an excellent prognosis following complete excision [2,3,9].

CONCLUSION:

Although uncommon, lipoblastoma should be considered in the differential diagnosis of sublingual swellings in infants and young children. Diagnosis is primarily based on characteristic histopathological findings, including a lobulated pattern, zonal adipocytic maturation, myxoid stroma, delicate "chicken-wire" vasculature, and the presence of lipoblasts. Immunohistochemical positivity for S100 and CD34 may provide additional diagnostic support.

This case is noteworthy because of the rare sublingual site and the presence of classical histological features of lipoblastoma. Complete surgical excision, followed by regular clinical follow-up, is recommended. The overall prognosis is excellent, and local recurrence is generally associated with incomplete excision rather than malignant potential.

REFERENCES:

[1]. Cota J, Borkar RR, Savalkar JJ, Chalakkal P, Spadigam A. Lipoblastoma of the lip. Indian J Pathol Microbiol. 2025;68(1):204-207.

[2]. Chawla V, Avulakunta I, Dorrity JA, Stallings-Archer KA, Johnson A, Perez SM, et al. A Rare Case of Congenital Buccal Lipoblastoma in a Term Neonate. Cureus. 2024;16(12): e75461.

[3]. Matous AL, Baker ML, Khan R, Pastel DA, Chen EY. Diagnosis and management of oral cavity lipoblastoma and lipoblastomatosis in an 8-month-old boy. Clin Case Rep. 2021;9(9): e04567.

[4]. Sreedharan S, Shanmuhasuntharam P. The challenges of treating lipoblastoma in the sublingual space – a case report. Ann Dent Univ Malaya. 2021; 28:47-51.

[5]. Tyra J, Mierzwińska-Dolny P, Fishman AJ, Mierzwiński J. Head and neck lipoblastoma in children: a case report and systematic review. Int J Pediatr Otorhinolaryngol. 2023; 173:111699.

[6]. Pham NS, Poirier B, Fuller SC, Dublin AB, Tollefson TT. Pediatric lipoblastoma in the head and neck: a systematic review of 48 reported cases. Int J Pediatr Otorhinolaryngol. 2010;74(7):723-728.

[7]. Bruyeer E, Lemmerling M, Vander Poorten V, Sciot R, Hermans R. Paediatric lipoblastoma in the head and neck: three cases and review of literature. Cancer Imaging. 2012;12(3):484-487.

[8]. Lomoro P, Simonetti I, Nanni AL, Corsani G, Togni G, Fichera V, et al. Imaging of head and neck lipoblastoma: case report and systematic review. J Ultrasound. 2021;24(3):231-239.

[9]. Dao D, Najor AJ, Sun PY, Farrokhyar F, Moir CR, Ishitani MB. Follow-up outcomes of pediatric patients who underwent surgical resection for lipoblastomas or lipoblastomatosis: a single-institution experience with a systematic review and meta-analysis. Pediatr Surg Int. 2020;36(3):341-355.

[10]. Brodsky JR, Irwin C, Hatten K, et al. Cervical lipoblastoma: case report, review of the literature, and genetic analysis. Head Neck. 2007;29(11):1055-1060.

[11]. Lin YH, Chen PCH, Chou YH, Chang CY. Submandibular lipoblastoma. J Med Ultrasound. 2015;23(4):193-195.

[12]. Hibbard MK, Kozakewich HP, Dal Cin P, Sciot R, Mankin HJ, Debiec-Rychter M, et al. PLAG1 fusion oncogenes in lipoblastoma. Cancer Res. 2000;60(17):4869-4872.

ISSN No. 2456-4400
Int J Med Lab Res 2026, 11(3): 1-6

IJMLR International Journal of Medical Laboratory Research

Cite of article: Srinidhi HK, Shubha H V, Venkatachalapathy, Vamseedhar A, Suguna B V, Vijaya C. Lipoblastoma of the Sublingual Region in A 2-Year-Old Male Child: A Rare Pediatric Case Report. Int. J. Med. Lab. Res. 2026; 11(3): 1-6.
http://doi.org/10.35503/IJMLR.2026.11301

CONFLICT OF INTEREST: Authors declared no conflict of interest
SOURCE OF FINANCIAL SUPPORT: Nil
International Journal of Medical Laboratory Research (IJMLR) - Open Access Policy
Authors/Contributors are responsible for originality of contents, true references, and ethical issues.
IJMLR publishes all articles under Creative Commons Attribution- Non-Commercial 4.0 International License (CC BY-NC). https://creativecommons.org/licenses/by-