# Journal of Oral Medicine and Dental Research

Genesis-JOMDR-6(2)-99 Volume 6 | Issue 2 Open Access ISSN: 2583-4061

## Lobular Capillary Haemangioma of the Upper Lip: Case Report of a Rare Presentation

Anurag Negi, Kavita Chandrasekaran, Pranitha Vallala, Vijay Yadav, Immanuel Pradeep, Frijo Xavier, Shruti A Nayak, Cherukuvada Lakshmi Bhargavi and Shabaz Nabas Ahmed

Department of Dentistry, All India Institute of Medical Sciences (AIIMS), Bibinagar (Hyderabad), Telangana, India

\***Corresponding author:** Kavita Chandrasekaran, Department of Dentistry, All India Institute of Medical Sciences (AIIMS), Bibinagar (Hyderabad), Telangana, India

**Citation:** Negi A, Chandrasekaran K, Vallala P, Yadav V, Pardeep I, et al. Lobular Capillary Hemangioma of the Upper Lip: Case Report of a Rare Presentation. J Oral Med and Dent Res. 6(2):1-6.

Received: April 22, 2025 | Published: May 18, 2025

**Copyright**© 2025 genesis pub by Negi A, et al. CC BY-NC-ND 4.0 DEED. This is an open-access article distributed under the terms of the Creative Commons Attribution-Non Commercial-No Derivatives 4.0 International License. This allows others distribute, remix, tweak, and build upon the work, even commercially, as long as they credit the authors for the original creation.

#### Abstract

#### Aim and background

A benign proliferation of the blood vessels exhibiting swift growth is referred to as Lobular Capillary Hemangioma (LCH) and are routinely observed in the mucous membranes and skin. The most frequent presentation in the oral cavity is in the gingiva, while extra-gingival cases are less common. It typically happens in response to local irritation from things like calculus, broken teeth, small wounds, coarse dental restorations, and foreign objects.

#### **Case description**

The present case is about an LCH that was distinctly located outside the gingiva, presenting as a swelling on the upper lip, in a 43 years old male patient, for 10 days. The lesion was excised and the diagnosis was confirmed by the histopathological examination. A follow-up examination was carried out at 10 days and six months post-surgery.

#### Conclusion

Dental surgeons and practitioners should be knowledgeable about the wide range of clinical presentations of vascular pathologies in order to promptly manage them and take the necessary precautions to reduce any risks that may arise.

*Case Report.* Chandrasekaran K, et al. J Oral Med Dent Res. 2025, 6(2)-99 DOI: <u>https://doi.org/10.52793/JOMDR.2025.6(2)-99</u>

#### **Clinical significance**

A significant risk of complications from lip hemangiomas like scarring, ulceration, can have a negative impact on esthetics as well as function.

#### Keywords

Lobular capillary hemangioma; Vascular endothelium; neoplasm; biopsy; pyogenic granuloma.

## **Abbreviations**

- LCH Lobular Capillary Hemangioma
- NCI National Cancer Institute
- ISSVA International Society for the study of Vascular Anomalies
- TMJ Temporomandibular Joint
- B.P. Bard Parker
- RBCs Red Blood Cells
- β-FGF β-Fibroblast Growth Factor

## Introduction

National Cancer Institute (NCI) has defined Lobular Capillary Hemangiomas (LCHs) as benign proliferation of blood vessels that are routinely observed in the mucous membranes and skin [1]. In 2018, it was categorised under benign vascular tumours by the International Society for the study of Vascular Anomalies (ISSVA) [2-4]. The usual clinical presentation of LCH is that of a painless, compressible, solitary, raised, bright red to purple lesion with rapid rate of progression [1,5]. It was previously termed as 'pyogenic granuloma' or 'granuloma pyogenicum' by Hartzel in 1904, which is now considered to be a misnomer for this harmless condition as neither is it infectious nor is it granulomatous in nature [6]. They are usually considered to be reactive or hyperplastic growths that develop as a result of exposure to various stimuli like infection, local trauma or imbalance in the hormonal levels which ultimately leads to increased neo-angiogenesis [5,7,8]. It is commonly reported to manifest in the head and neck area, particularly in the oral cavity; the mandible is only rarely affected. [5,9]. The most common location in the oral cavity is gingiva, with extra-gingival cases being uncommon with prevalent contributing factor being local irritation by calculus, fractured tooth, minor trauma, coarse dental restorations, and foreign materials [10,11].

#### **Case description**

A 43 years old male patient presented to the Department of Dentistry with a chief complaint of discomfort and swelling in the upper lip for the past 10 days. The patient provided a detailed history of the lesion that began as a small pinpoint ulcer on the inner aspect of the upper lip and rapidly increased to the present size over the past 10 days. There was associated pain for the first few days which later subsided on its own. There was no associated pain or bleeding on the day of clinical examination but the patient reported a discomfort during speech and mastication. The patient also gave a history of Type II diabetes mellitus and was on anti-diabetic medications for the past 5 years. The patient gave negative history regarding any previous dental treatment. The patient also reported instances of frequent lip biting due to gnawing sensation and discomfort in speech and mastication at the site of the lesion. The examination of external body parts did not reveal any noteworthy discoveries. Upon extraoral examination, no asymmetry was observed. No abnormalities were noted with examination of Temporomandibular Joint (TMJ). On intraoral examination, a solitary, round, well-defined pedunculated lesion was present on the inner aspect of upper labial mucosa measuring about 0.8x0.6 cm. The surface of the lesion appeared uneven and shiny with mixed erythematous and whitish fibrotic regions as shown in Figure 1.



**Figure 1:** Pre-operative photograph of the lesion in the upper lip region.

Upon palpation, the inspectory findings - firm consistency, non-tender and pedunculated were verified. An absence of any bleeding upon gentle pressure at the neck of the lesion was also noted. The provisional diagnosis was given as traumatic fibroma of the upper lip. Differential diagnosis was given as pyogenic granuloma, fibroepitheilal polyp and epulis.

Subsequently, surgical removal of the lesion was planned through excisional biopsy which was then subjected to histopathological examination. The surgical procedure was performed under local anaesthesia through 2% Lignocaine with a concentration of 1:200000 epinephrine. The excision was performed using Bard Parker (B.P.) handle and no.15 surgical blade (Figure 2).



Figure 2: Surgically excised tissue.

Post excision, there was a pin point bleeding which was controlled through pressure pack as shown in Figure 3.



Figure 3: Immediate post-operatives.

The removed tissue was sent for histopathological analysis after being submerged in a 10% formalin solution. Hemostasis was achieved and the patient was notably comfortable post-surgery. Appropriate post operative instructions were given to the patient with a prescription of topical analgesic and mouthrinse. A follow-up examination was carried out for the patient at 10 days and six months post-

surgery. The site of excision displayed excellent healing with no post-surgery complications or reversion for a period of six months as shown in Figure 4.



Figure 4: 6months post-operative photograph.

The haematoxylin-eosin-stained slices of the excised tissue revealed a polypoidal tissue with stratified squamous epithelium lining on the surface. The underlying submucosa displayed lobular proliferation (Figure 5A) of thin-walled capillaries lined by endothelial cells and luminal red blood cells (RBCs) (Figure 5B). A central branching vessel was also noted (Figure 5A). No atypia was observed. A few bacterial colonies were also reported.



**Figure 5:** Microphotographs of the excised tissue. A. Low power view showing lobular proliferation of thin-walled capillaries (x40; H&E). B. Capillary walls lined by endothelial cells with RBC in lumen (x100; H&E).

#### Discussion

About one-third of all hemangiomas in humans are found in the head and neck area, making them quite common. They have histological resemblance to many other abnormalities, thus are quite often misdiagnosed [12]. Oral hemangiomas account for about 14% of all hemangiomas and are a common occurrence. It was initially described as bluish excrescence and erectile tissue in 1841. Although it rarely happens in adults, it is typically present at birth [13,14]. The LCH is an inflammatory hyperplasia of the vascular tissues commonly seen as a response to local irritation or trauma. In the present case, the predisposing factor was the constant localised trauma inflicted by the patient through lip biting upon the pin point ulcer. LCH has a predilection for occurrence in females usually in their second decade of lives [15]. However, it can also present in male patients and also in 5<sup>th</sup> decade of life as in the present case. The pathological development of LCH involves an increased expression of angiogenic growth factors, such as vascular endothelial growth factor and  $\beta$ -Fibroblast growth factor ( $\beta$ -FGF). These factors are seen to upsurge during pregnancy hence this clinical presentation is usually confused with the terms like pregnancy tumor, pyogenic granuloma and granuloma gravidarum [16]. Histopathologically, LCH is a profuse proliferation of vascular tissue that holds close resemblance to granulation tissue with infiltration of chronic inflammatory cells. [16] In a microscopical perspective, it is typically composed of various sized endothelium-lined capillaries that are swollen with red blood cells. This is frequently observed as a result of endothelial proliferation and the creation of numerous vascular spaces. These blood channels are organized into a lobular pattern, hence the name "lobular capillary hemangioma" [16,17]. In the present case too, the histopathological analysis had revealed a lobular pattern of proliferated capillaries lined by endothelial cells thereby confirming the diagnosis of LCH. A few bacterial colonies were reported in the

lesion which may have been engorged due to local trauma. The different treatment modalities available to manage LCH include surgical excision, laser surgery, sclerotherapy, electrodessication, curettage, ligation, or a combination of these. In most of the cases, it is a small lesion which is not life-threatening, usually without any bony involvement and not requiring any emergency management. Excision with linear closure renders LCH least likely to recur, simultaneously facilitating histological examination of a tissue sample [15,16]. In the present case, the lesion was small and thus was planned for a straightforward excision with all necessary precautions, not requiring any sutures post excision. There was no reported recurrence up to 6 months post-surgery which could be attributed to the minimal post excision tissue trauma and appropriate post operative instructions provided to the patient. However, longer follow-ups may be required to assess any recurrence.

## Conclusion

The abundant vascular supply and frequent traumatic injuries render the lips as common site for a range of vascular pathologies. A conclusive diagnosis is always challenging with such clinical presentations in the lips. To make a definitive diagnosis of vascular lip lesions, a thorough history along with clinical, radiographic, and histologic examination are essential. Surgical intervention followed by etiology removal is the main course of treatment, despite the fact that the overgrowth in the oral cavity is non-neoplastic and arises in response to different stimuli. Dental surgeons and practitioners should be knowledgeable about the wide range of clinical presentations of vascular pathologies in order to promptly manage them and take the necessary precautions to reduce any risks that may arise.

#### **Clinical significance**

A significant risk of complications from lip hemangiomas can have a negative impact on appearance as well as function. Some of the major surgical complications of the lip hemangiomas include scarring, ulcerations causing pain and bleeding, thus interfering with mastication and speech. Large hemangiomas may cause the complex lip architecture and contour to be distorted, which will interfere with the lips' aesthetic value in defining facial features. In some instances, surgical intervention becomes necessary when lesion regression fails to restore the symmetry and contour of the lips [18,19].

### References

- 1. National Cancer Institute. (2024, February 22). NCI Dictionary of Cancer Terms. Cancer.gov.
- 2. Kabagenyi F, Anena SP, Seguya A. (2023) 19 months toddler with a giant oral capillary hemangioma, a case report. Int Med Case Rep J. 16:287-91.
- 3. Elias G, McMillan K, Monaghan A. (2016) Vascular lesions of the head and oral cavity diagnosis and management. Dent Update. 43(9):895-60,862-4 866.
- 4. Gampper TJ, Morgan RF. (2020) Vascular anomalies: hemangiomas. Plast Reconstr Surg. 110(2): 572-85.
- 5. Chan C, Iv M, Fischbein N, Dahmoush H. (2018) Lobular capillary hemangioma of the mandible: a case report. Clin Imaging. 50:246-9.
- 6. Mohan M, Karikal A, Bhat S, Padmaja A. (2012) Aggressive pyogenic granuloma causing bone erosion: case report. Healtalk. 4(3):13-14.
- 7. Kumar V, Abbas AK, Fausto N. (2004) Pathological basis of disease. Kumar V, Abbas AK, Fausto N (ed): Elsevier, Philadelphia, PA.
- Sarwal P, Lapumnuaypol K. (2022) [Updated 2022 Oct 23]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024.

- 9. Srinivedha CV, Simre DS, Basnet A, Pandey S, Chug A, et al. (2023) Lobular capillary hemangioma masquerading as pyogenic granuloma of anterior mandible: a case report. Cureus. 15(7):e42157.
- 10. Varadhan K, Elangovan RJS, Nallathambi K, Soman D. (2024) Management of lobular capillary hemangioma using diode laser: a case report. Cureus. 16(5): e60068.
- 11. Nagaraj T, Gogula S, Santosh HN, Nigam H, Sumana CK, et al. (2017) Lobular capillary hemangioma: A case report. Int J Med Dent Case Rep. 4:1-3.
- 12. Açikgöz A, Sakallioglu U, Ozdamar S, Uysal A. (2000) Rare benign tumours of oral cavity capillary haemangioma of palatal mucosa: a case report. Int J Paediatr Dent. 10(2):161-5.
- 13. Okoje VN, Alonge TO, Olusanya AA. (2011) Intra-tumoral ligation and the injection of sclerosant in the treatment of lingual cavernous hemangioma. Niger J Med. 20(1): 172-5.
- Harris CA. (1841) A physiological and pathological inquiry concerning the physical characteristics of the human teeth and gums, the salivary calculus, the lips and the tongue, and the fluids of the mouth. Am J Dent Sci. 2(1)39-120.
- Havle AD, Shedge SA, Dalvi RG. (2019) Lobular capillary hemangioma of the palate- a case report. Iran J Otorhinolaryngol. 31(107):399-402.
- 16. Yuan K, Jin YT, Lin MT. (200) The detection and comparison of angiogenesis-associated factors in pyogenic granuloma by immuno histochemistry. J peridontol 71(5):701-9.
- 17. Trivedi S. (2016) Capillary hemangioma or pyogenic granuloma. J Indian Soc Periodontol. 20(1):5.
- 18. Hasan S, Khan A, Banerjee A. Ramalingam K. (2023) Infantile hemangioma of the upper lip: report of a rare case with a brief review of literature. Cureus 15(7):e42556.
- 19. Cawthorn TR, Fraulin FO, Harrop AR. (2019) Infantile hemangiomas of the lip: complications and need for surgical intervention. Plast Reconstr Surg Glob Open. 7(6):e2308.