

LINGUAL VASCULAR MALFORMATION: A CASE REPORT OF HEMANGIOMA OF THE
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ABSTRACT

Aim and Background: Hemangiomas are benign vascular anomalies resulting from abnormal proliferation of blood vessels. Although frequently observed in the head and neck region, their occurrence in the oral cavity, particularly on the tongue, is relatively uncommon. This case report documents the clinical presentation, diagnostic work-up, and successful management of a capillary hemangioma located on the dorsal surface of the tongue. **Case Description:** A 62-year-old female was presented with slowly enlarging, reddish-blue swelling on the tongue. The provisional diagnosis of capillary hemangioma was made based on clinical and radiological features. Surgical management of the swelling was done. Histopathological examination confirmed the diagnosis. **Conclusion:** The patient's postoperative recovery was uneventful, with no recurrence noted at a 6-month follow-up. This case emphasizes the importance of differentiating vascular lesions of the tongue from other reactive or neoplastic growths through careful clinical and radiological evaluation. MRI neck imaging serves as a valuable, non-invasive diagnostic tool. Complete surgical excision remains a safe and effective treatment for well-localized tongue hemangiomas. **Clinical Significance:** Early diagnosis and appropriate management are essential to prevent complications such as bleeding, interference with speech, mastication, or airway obstruction in larger lesions. This case adds to the existing literature and highlights the relevance of a multidisciplinary approach for optimal outcomes in oral vascular anomalies.

KEYWORDS: Tongue, Oral vascular malformation, MRI neck, Surgical excision, Vascular anomaly.**INTRODUCTION**

Vascular anomalies of the oral cavity encompass a diverse group of lesions, with hemangiomas being one of the most commonly encountered benign vascular tumors. Hemangiomas are characterized by an abnormal proliferation of endothelial cells and can be broadly classified as either infantile or congenital based on their clinical and histopathological characteristics features.^[1] While hemangiomas are frequently observed in the head and neck region, accounting for nearly 60% of cases, their occurrence within the oral cavity, particularly on the tongue, remains relatively uncommon.^[2]

The tongue, being a highly vascular and muscular organ, presents a unique site for hemangiomas. These lesions

can vary in size, location, and depth, leading to a wide spectrum of clinical presentations ranging from asymptomatic swellings to lesions that interfere with mastication, speech, or airway patency.^[3] Clinically, hemangiomas often appear as soft, compressible, reddish-blue nodules that blanch under pressure.^[4] Diagnostic modalities such as color Doppler ultrasonography and magnetic resonance imaging (MRI) are essential for assessing the vascular nature, extent, and flow characteristics of the lesion.^[5]

Management strategies for lingual hemangiomas depend on factors such as size, location, and symptoms. Many infantile hemangiomas undergo spontaneous involution, they are persistent or symptomatic lesions and may

require intervention. Treatment options include surgical excision, laser therapy, sclerotherapy, or pharmacological agents like propranolol in selected cases.^[6]

This article presents a rare case of a capillary hemangioma of the tongue in an adult, highlighting the clinical features, diagnostic work-up, surgical management, and histopathological findings, with a brief review of the literature.



FIGURE 1: Dome Shaped bluish swelling noted on the left lateral border of tongue.

Case description

A 62-year-old female reported to the Department of Oral Medicine and Radiology with a chief complaint of a swelling on the left lateral border of the tongue. The lesion had gradually increased in size over a period of two years. The patient described mild discomfort during mastication and occasional slurred speech. There was no history of pain, spontaneous bleeding, trauma, or any systemic illness. Both her medical and dental histories were non-contributory.

Inspectory Findings: Intraoral inspection revealed a solitary, sessile, dome-shaped swelling located on the left lateral border of the tongue. The lesion measured approximately 1 × 1 cm in size (Figure 1). It appeared bluish in color, with a smooth surface and ill-defined, diffuse margins. The lesion was non-ulcerated and showed no signs of secondary infection.

Palpatory Findings: On palpation, the lesion was soft in consistency and non-tender. Blanching was noted upon application of pressure, indicating a positive diascopy test (Figure 2), suggestive of a vascular lesion.

Radiographic Examination: Magnetic Resonance Imaging (MRI) of the neck was performed. It revealed a well-defined lesion on the left anterolateral aspect of the tongue, measuring approximately 1.3 × 1.2 × 1.1 cm

(anteroposterior × transverse × craniocaudal). The lesion appeared **T2- and STIR-hyperintense**, and **T1-isointense**, with **mild restricted diffusion**. Importantly, no radiologic evidence of infiltration into the extrinsic muscles of the tongue was observed (Figure 3).

Chairside Investigation: Given the typical clinical presentation and MRI findings, **biopsy and fine-needle aspiration cytology (FNAC)** were not recommended to avoid the risk of hemorrhage. Although not performed in this case, **Color Doppler ultrasonography** could have been employed to identify feeder vessels preoperatively. The planned surgical approach involved **ligation of the feeder vessel under general anesthesia**, followed by **complete surgical excision** of the lesion.

Histopathological Examination: The excised specimen was submitted for histopathological evaluation. Microscopic examination revealed underlying connective tissue stroma containing **numerous, variably sized blood vessels lined by a single layer of flattened endothelial cells**, consistent with the diagnosis of a **Oral hemangioma**.

Diagnosis: Based on the clinical presentation, positive diascopy test, radiographic imaging, and confirmed histopathological features, a definitive diagnosis of oral hemangioma of the tongue was established.



FIGURE 2: Positive Diascopy.

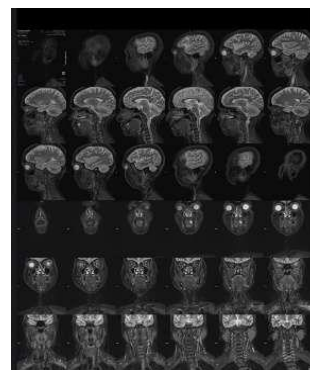


FIGURE 3: MRI Neck.

Treatment: Surgical excision followed by Electrocauterization (Figure 4)

1. Preparation & Positioning

- Patient placed in supine position.
- Standard sterile draping and oral cavity isolation.
- Throat pack placed to prevent aspiration.

2. Anesthesia

- General anesthesia with nasotracheal intubation for surgical access.
- Local infiltration with 2% lignocaine with 1:100,000 adrenaline for vasoconstriction and hemostasis.

3. Surgical Approach

- Visual inspection and palpation of lesion to delineate margins.
- Circumferential incision placed around the lesion ensuring adequate margin (~2-3 mm).
- Careful dissection through muscle fibers using blunt and sharp techniques.

4. Hemostasis

- Vascular control achieved via bipolar cautery, ligation, or suture ligation of feeding vessels.
- Electrocautery was used adjunctively.

5. Excision

- Complete en bloc excision of the hemangioma.
- Care taken to preserve surrounding vital structures and maintain tongue function.

6. Closure

- Layer-wise closure with absorbable sutures (e.g., 4-0 Vicryl).
- Hemostasis confirmed.
- Throat pack removed; suctioning done.

FOLLOW UP

- 1st follow up- After 8 days after suture removal (Figure 5a)
- 2nd follow up- After one month shows complete healing of the lesion (Figure 5b).



FIGURE 4: Surgical Management.



FIGURE 5a: 8 days follow up after suture removal.



FIGURE 5b: One month Follow up.

DISCUSSION

Hemangiomas of the tongue are rarely encountered in routine clinical practice, particularly among geriatric patients, as most oral hemangiomas are diagnosed during childhood or adolescence.^[1,9] Despite the head and neck being the most commonly affected region, intraoral involvement remains uncommon, with the tongue constituting a small proportion of reported cases.^[2,3] Clinically, these lesions may appear as smooth or lobulated masses that are sessile or pedunculated and demonstrate variable growth patterns.^[4]

Histologically, hemangiomas are classified into capillary, cavernous, and mixed variants. Capillary hemangiomas are composed of proliferating small-caliber vessels and usually present as localized lesions, whereas cavernous hemangiomas contain large, dilated vascular spaces and often show infiltrative behaviour.^[12] Accurate classification is essential, as it influences both treatment planning and prognosis.

Although clinical examination may suggest a vascular origin, advanced imaging techniques such as contrast-enhanced MRI or angiography are recommended for

evaluating lesion depth, vascular supply, and involvement of adjacent structures, particularly in larger or deeply situated hemangiomas.^[6,7] Numerous therapeutic modalities have been proposed, including electrocautery, laser therapy, sclerosing agents, corticosteroids, interferon therapy, radiofrequency ablation, and surgical excision.^[6,8-11] Surgical management remains the preferred approach for well-localized lesions, provided meticulous vascular control is achieved to minimize intraoperative hemorrhage.

CONCLUSION

Hemangiomas of the tongue can clinically mimic other reactive or neoplastic soft tissue lesions, making accurate diagnosis challenging.^[4,11] Comprehensive clinical evaluation supplemented by appropriate imaging and histopathological confirmation is essential for effective management. Early diagnosis and timely intervention are crucial to prevent functional impairment and hemorrhagic complications, thereby improving overall treatment outcomes.^[3,6]

Clinical significance

Hemangiomas are relatively rare in the oral cavity, and their occurrence on the tongue, particularly in elderly patients, is even more uncommon. This case report carries several important clinical implications.

1. Atypical Age of Presentation

- Hemangiomas are typically seen in infants and young children, with most cases undergoing spontaneous involution.
- This case, involving a 62-year-old female, highlights the need to consider vascular lesions even in older adults, where such diagnoses may be overlooked or misinterpreted.

2. Diagnostic Challenges

- The lesion mimicked other soft tissue entities both clinically and radiographically.
- It underscores the importance of a multimodal diagnostic approach, including clinical examination, MRI, and potentially Color Doppler ultrasonography, to distinguish hemangiomas from other vascular malformations or benign soft tissue tumors.

3. Risk of Complications

- Due to the tongue's high mobility and vascularity, lesions in this region are more prone to:
 - Repeated trauma
 - Bleeding
 - Interference with speech, mastication, and swallowing
- Early identification can prevent functional impairment and secondary complications.

4. Therapeutic Considerations in Elderly Patients

- Treatment must be tailored to minimize risk, particularly in older adults who may have systemic comorbidities.
- In this case, non-invasive imaging, surgical planning with feeder vessel ligation, and histopathologic confirmation allowed for safe and effective management.

5. Contribution to Limited Literature

- Reports of lingual hemangiomas in geriatric patients are scarce in the literature.
- This case contributes to the clinical documentation of such rare presentations, offering a reference point for future diagnosis and management strategies.

6. Emphasis on Conservative Surgical Planning

- The case highlights the role of preoperative vascular mapping and selective ligation to avoid hemorrhagic complications during excision—essential knowledge for surgeons managing similar cases.

Ethical Approval: Ethical approval was **exempted** as no clinical trial was performed on the patient. **Informed consent** was obtained from participant.

Data Availability Declaration: The datasets generated for the case study are not publicly available due to ethical and confidentiality restrictions but are available from the corresponding author upon reasonable request.

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Author's contributions

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5. Writing—original draft: Dr. Zainulabideen Patel
6. Writing—review & editing: Dr. Almas Patel
7. Visualization/Figures: Dr. Zainulabideen Patel
8. Supervision: Dr. Vinod Savalam, Dr. Almas Patel

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