Abstract

Hemangiomas are benign tumors of the blood vessel origin. They appear as raised or flat reddish-blue lesions and are generally solitary, affecting women in younger age groups. The tumor may be slowly progressive, involving extensive portions of the superficial and deep blood vessels, and affect function, depending on the location. They are mostly common in the head and neck region but rarely in the oral cavity. This case report presents a case of capillary hemangioma in the labial mucosa of a female patient, which was diagnosed by histopathology after laser excision.

Keywords: Benign tumors, capillary hemangioma, laser excision

Introduction

Hemangiomas are developmental vascular abnormalities and are rated by many as a benign origin closely resembling a normal cell belonging to an endothelial origin.[1,2] They are widely classified by the type of blood vessels being involved into capillary and cavernous.[3] The most common type is capillary hemangioma, mostly occurring as a small localized lesion, and has less aggressive clinical behavior. However, cavernous hemangioma is the most aggressive kind-generating infiltrated lesions.[3] The pathogenesis of hemangiomas is attributed mostly to genetic and cellular factors. Imbalance in the angiogenesis, which causes an uncontrolled proliferation of vascular elements, associated with substances, such as vascular endothelial growth factor, basic fibroblast growth factor, and indoleamine 2,3-dioxygenase, which are found in large amount during proliferative stages, is believed to be the cause.[4]

Hemangiomas account for about 60%–70% lesions in the head and neck region and are seen rarely in the oral cavity, having a predilection for women and children.[5] Clinically characterized as a soft, smooth, or lobulated mass, which are sessile or pedunculated, they may be seen in any size ranging from a few millimeters to several centimeters.[5] The color usually varies from pink to red purple which occurs either spontaneously or after minor trauma. They are usually self-limiting; however, in certain scenarios, they can become symptomatic and may need therapeutic intervention, which may include surgical excision, cryotherapy, embolization, laser therapy, and corticosteroids. No gold standard treatment has been approved, till date.

Case Report

A female patient aged 24 years reported to the Department of Periodontology, SRM Dental College, Ramapuram, Chennai, with a painless enlargement on the left labial mucosa in relation to canine–premolar region in the last 7 months. A comprehensive intraoral examination revealed soft tissue overgrowth [Figure 1] which was pink in color, soft in consistency, non-pulsatile on palpation, and sessile in origin arising from the labial mucosa in relation to 33–35
Accurate diagnosis of the type of vascular lesion is important as it may influence the treatment planning and outcome considerably. The classification system of Mulliken and Glowacki\(^7\) is based on cellular approach. It is simple and less confusing than older classification systems. Vascular lesions can be divided into those characterized by endothelial proliferation (hemangiomas) and those with normal endothelial turnover (vascular malformations). Although hemangioma is considered one of the most common soft tissue tumors of the head and neck, it is relatively rare in the oral cavity and uncommonly encountered by the clinicians.\(^8\) On the basis of history given by the patient and the clinical examination, a provisional diagnosis of fibroma was made. Multitude of other lesions in the oral cavity can be resembled as hemangiomas, with the differential diagnoses comprising pyogenic granuloma (PG), chronic inflammatory gingival hyperplasia, epulis granulomatosa, telangiectasia, angiosarcoma, squamous cell carcinoma, and other vascular appearing lesions of the face or oral cavity, such as Sturge–Weber syndrome.\(^9\) Therefore, microscopic evaluation is mandatory to come to a definitive diagnosis.

PG and hemangiomas can present a diagnostic dilemma to a clinician as they share common clinical findings with high incidence in females. Microscopically, PG is classified into two types, lobular capillary hemangioma (LCH) and non-LCH. LCH type consists of an attenuated endothelial lining surrounded by uniform proliferation of the plump to spindled cells, whereas capillary hemangioma consists of more prominent endothelial cells and an array of capillary-sized blood vessels with lobular architecture. In LCH type of PG, capillaries are frequently arranged perpendicular to the surface.\(^2,10\) In fibroma, dense connective tissue is more with less budding capillaries with respect to capillary hemangioma. Based on the histological findings and clinical examination, a confirmatory diagnosis of capillary hemangioma was made.

Hemangiomas are generally characterized by three stages, namely endothelial cell proliferation, rapid growth, and

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**Discussion**

Accurate diagnosis of the type of vascular lesion is important as it may influence the treatment planning and outcome considerably. The classification system of Mulliken and Glowacki\(^7\) is based on cellular approach. It is simple and less confusing than older classification systems. Vascular lesions can be divided into those characterized by endothelial proliferation (hemangiomas) and those with normal endothelial turnover (vascular malformations). Although hemangioma is considered one of the most common soft tissue tumors of the head and neck, it is relatively rare in the oral cavity and uncommonly encountered by the clinicians.\(^8\) On the basis of history given by the patient and the clinical examination, a provisional diagnosis of fibroma was made. Multitude of other lesions in the oral cavity can be resembled as hemangiomas, with the differential diagnoses comprising pyogenic granuloma (PG), chronic inflammatory gingival hyperplasia, epulis granulomatosa, telangiectasia, angiosarcoma, squamous cell carcinoma, and other vascular appearing lesions of the face or oral cavity, such as Sturge–Weber syndrome.\(^9\) Therefore, microscopic evaluation is mandatory to come to a definitive diagnosis.

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**Figure 1:** Preoperative intraoral view of the lesion

**Figure 2:** Photomicrograph showing lobulated cellular growth with intervening connective tissue stroma (H and E, ×10). (A) Lobular aggregates, (B) salivary gland-acini, (C) small- and large-sized blood vessels with engorged red blood cells, (D) epithelial cells, (E) extravasated red blood cells, (F) connective tissue septa
spontaneous involution. No details are available regarding their incidence in the Indian population.

The treatment of hemangiomas of the oral mucosa depends upon various factors, such as the age of the patient, the size of the lesion, extent of the lesion, the site of involvement, and the clinical features. The most common treatment modality of hemangioma is surgical excision of the lesion, with or without ligation of vessels and embolization.

Surgical management is to be carried out with caution as attempts to remove hemangiomas using surgical excision may lead to serious medical problems, such as heavy bleeding. In addition, postoperative recurrence may encounter. Recently developed treatment modalities include steroid therapy, electrosurgery, laser, cryosurgery, and sclerotherapy. Sclerotherapy is being used largely in recent times because of its ability and efficiency to preserve the surrounding tissue. Current management consists of spontaneous involution, steroid therapy, and chemotherapy.

In this report, treatment option chosen was excision using soft tissue diode laser based on clinical judgment. Diode laser (810–1064 nm) has become very popular in the general dentistry because of their small size, low cost, fiber optic delivery, and ease of use. Genovese et al. reviewed the use of surgical lasers in hemangioma treatment. It has been shown that the use of high-potency diode laser in the treatment of hemangioma reduces bleeding during surgery, with a consequent reduction in operating time, and promotes rapid postoperative hemostasis. It has been shown in previous reviews about its safety for use on large lesions, ease to manage with minimum postoperative problems, including potential scarring, and discomfort.

**Conclusion**

Hemangiomas are common benign vascular growth; however, since their occurrence is a rare entity, it becomes imperative for dental professionals to evaluate them clinically and undertake all necessary investigations. It is mandatory for the dental professionals to be well versed and aware of all the clinical and treatment modalities that are associated with hemangiomas, and all necessary precautions should be taken before attempting surgical excision as the tissues may bleed profusely and unexpectedly. Capillary hemangioma often mimics PG and hence requires appropriate clinical diagnosis and proper management. Attempts to remove them using a simple surgical excision may lead to bleeding, and hence, laser excision should be always considered as an option.

**Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

**Financial support and sponsorship**

Nil.

**Conflicts of interest**

There are no conflicts of interest.

**REFERENCES**


**Figure 3:** Photomicrograph showing blood vessels lined by endothelial cells and overlying epithelium is stratified squamous parakeratotic type (H and E, ×40). (A) Blood vessels, (B) densely arranged connective tissue, (C) extravastated red blood cells, (D) lining epithelium

**Figure 4:** Six months’ postoperative intraoral view


