Pedunculated Hemangioma of Hard Palate treated by Feeder Vessel Ligation

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CASE REPORT

ABSTRACT

Intraoral hemangiomas are benign proliferations of blood vessels in the mucosal region, which can cause extensive bleeding during excision by conventional surgical methods. Intraoral hemangiomas are uncommon, usually seen on the lips, buccal mucosa and lateral borders of the tongue. Treatment modalities that are advocated for treating hemangiomas include sclerotherapy, embolization, laser and cryosurgery. In this case report, we present a case of pedunculated hemangioma of the hard palate in a 28-year-old female patient treated by ligation of the feeder vessel.

Keywords: Hemangioma, Pedunculated hemangioma, Feeder vessel ligation, Palatal mucosa.

INTRODUCTION

Hemangiomas are benign tumors of vascular tissue which are most commonly seen in the head and neck region. They are often present at birth or appear soon after, and grow rapidly by endothelial proliferation. Most of these lesions are considered to be hamartomas because of their indolent biological behavior. Vast majority of hemangiomas are known to be regressive.1,2 Hemangiomas must be distinguished from the arteriovenous malformation which grows by dilation of the abnormal vessels and at the same rate as the child.

The cause of hemangioma is exactly not known, however, several studies have suggested the importance of estrogen signaling in hemangioma proliferation.3 Kleinman et al4 reported that localized soft tissue hypoxia coupled with increased circulating estrogen after birth may be the stimulus. Another hypothesis that is proposed is that the maternal placenta embolizes to the fetal dermis during gestation resulting in hemangioma genesis.4,5 However, Pittman et al6 contradicted this hypothesis through genetic analysis of single-nucleotide polymorphism in hemangioma tissue compared to the mother’s DNA.

Majority of hemangiomas are seen in the head and neck region, however, oral hemangiomas are quite rarely reported when compared to their counterparts in head and neck region. Several studies have shown a female predilection for their occurrence when compared to the males. Retrospective studies of pediatric patients have shown that hemangiomas were the most common benign soft tissue tumor that is seen in children. Hemangiomas occur rarely in adults when compared to newborns and infants.7 They are most likely to be the result of local trauma and are therefore considered to be reactive. This might be the reason behind the occurrence of these lesions in the areas of local trauma in the oral cavity, such as the lips, lateral borders of tongue and palate.8

Clinically, intraoral hemangiomas present as flat or exophytic, smooth-surfaced or lobular and localized or diffuse lesions. Intraoral hemangiomas are usually single and localized, but multiple lesions can also be seen. Oral hemangiomas are usually seen on the gingiva and less frequently at the lateral borders of the tongue, lips and hard palate. These lesions often arise from the interdental gingival papilla and appear to spread laterally to involve adjacent teeth. They may be seen in any size from a few millimeters to several centimeters.9 The color of the lesion ranges from pink to red purple and typically blanches on application of pressure. They are generally painless and may bleed either spontaneously or after minor trauma.

Hemangiomas are classified based on their histological appearance into two main categories, capillary and cavernous hemangiomas.7,9 Capillary hemangiomas are composed of many small capillaries lined by a single layer of endothelial cells supported in a connective tissue stroma of varying density. Cavernous hemangiomas are formed by large, thin-walled vessels or sinusoids lined with a single layer of endothelium...
which are separated by thin septa of connective tissues. Mixed hemangiomas, consisting of both components, may also occur.\footnote{7}

Hemangiomas may mimic other lesions clinically, radiographically and histopathologically. The differential diagnosis of hemangiomas includes pyogenic granuloma, chronic inflammatory gingival hyperplasia (epulis), epulis granulomatosa, telangiectasis and even squamous cell carcinoma.\footnote{7} Various treatment methods that have been advocated for the management of hemangiomas include, oral corticosteroids, intralesional injection of fibrosing agents, interferon $\alpha-2\beta$, radiation, electrocoagulation, cryosurgery, laser therapy, embolization and surgical excision.\footnote{7,8} Recurrence has been reported.\footnote{1,7} This article reports a case of pedunculated hemangioma that occurred on the palate of a 28-year-old female patient. This case is successfully treated by ligating the feeder vessel supplying the lesion.

**CASE REPORT**

A 28-year-old female patient came to the department of oral medicine and radiology with a chief complaint of growth in the oral cavity causing difficulty while speaking and eating food. On history, the patient revealed that the lesion started as a small growth on left side of the palate about a year back. The lesion slowly increased in size and attained the present size (Fig. 1). On intraoral examination, a pedunculated lesion measuring approximately $3 \times 2$ cm in size was noticed adjacent to the maxillary left premolar teeth. The lesion was lobulated in appearance and the mucosa covering the lesion was erythematous and showed areas of ulceration and hemorrhage. On palpation, the lesion was soft to firm in consistency and moderately tender. On application of pressure the lesion reduces in size and once the pressure is released the growth is filled with blood and regains its size. Characteristically, the lesion was pulsatile on palpation and the pulse was in synchronization with the carotid pulse.

An occlusal radiograph was taken to observe for any bone loss adjacent to the lesion. The radiograph revealed superficial erosion of the hard palate adjacent to the premolars (Fig. 2). A diagnosis of hemangioma was made based on clinical and radiographic features. As the lesion is large and pedunculated, treatment by ligating the feeder blood vessel at the base of the lesion was planned. The lesion had gradually shrunk and became necrotic after 1 week (Fig. 3). By the end of second week, the lesion became pale and exfoliated by itself (Fig. 4).

**DISCUSSION**

Hemangiomas are generally managed conservatively because of their tendency to involute and regress spontaneously.\footnote{7-9} Intervention is indicated only when the lesion starts to bleed, ulcerate or interfere with function.\footnote{10} Treatment modalities suggested for these lesions include surgical excision, cryosurgery, injection of corticosteroids or sclerosant (sodium tetradecyl), radiotherapy, embolization with steel coil, gel foam, silicone beads or cyanoacrylate.\footnote{10}

Until recently, the mainstay of treatment was oral corticosteroid therapy, but there are now alternative treatments. Other treatments that have been used include interferon,
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mucosal edges for suturing may be difficult to achieve after excision till the base of the stalk. Although ligation of feeder vessel is a very well-known technique for treating hemangiomas, there are no published reports regarding the usage of this technique. Our case appears to be the first to be reported in literature. To conclude, this technique appears to be easy, simple and safe to manage the pedunculated forms of hemangiomas.

REFERENCES


Fig. 4: Two weeks after ligation showing the lesion becoming pale and ready to exfoliate by itself.

vincristine, β-blockers, most specifically propranolol. They may be considered if first-line therapy fails since they have their own positive and negative effects.

Surgical excision is usually indicated for smaller and superficial lesions. Surgery is contraindicated for larger and deeper lesions owing to their complications during surgical removal. The complications of surgical management can range from minor bleeding and swelling to life-threatening hemorrhage and airway obstruction. The choice of treatment depends on their size, location, behavior and age of the patient.

In this case report, we present a case of pedunculated hemangioma that was treated by ligation of feeder vessel. This technique was preferred for the present case because of the following reasons:

1. It is a pedunculated lesion and ligation can easily be done at the base of the stalk.
2. The lesion is supplied by a large blood vessel as it is noticed through pulsations on palpation.
3. The lesion is seen over the palatal mucosa which is tightly bound to the underlying periosteum. Approximation of 