
Capillary Hemangioma of Gingiva Mimicking as Pyogenic Granuloma

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Abstract

Capillary hemangioma is benign proliferation of blood vessels that primarily occurs during childhood. Pyogenic granuloma and capillary haemangioma are well known and commonly occurring benign vascular lesions of the oral cavity. Pyogenic ulcerative granuloma is known to show a striking predilection for the gingiva and capillary hemangioma frequently occurs in the lips, cheek, and tongue. The gingival occurrence of capillary hemangioma is considered relatively rare. The purpose of this article is to report an unusual case of benign tumor occurring on the gingiva which was clinically diagnosed as pyogenic granuloma and histopathologically proved to be a capillary hemangioma.

The clinical diagnosis of such an uncommon occurrence can be quite challenging as they sometimes may mimic benign as pyogenic granuloma. Otorhinolaryngologist should therefore be aware of these lesions when making a diagnosis and attempts at excision of apparently innocent lesions may result in serious bleeding.

Keywords: Capillary Hemangioma; Excisional Biopsy; Gingival Overgrowth; Pyogenic Granuloma.

Introduction

Pyogenic granuloma and capillary hemangioma are well-known commonly occurring benign vascular lesions of the oral cavity. Pyogenic granuloma is a relatively common, soft-tissue tumor of the oral cavity that is believed to be reactive and non neoplastic in nature.

The name pyogenic granuloma is a misnomer since the condition is not associated with pus and does not represent a granuloma histologically [1]. Some authors use the term lobular capillary hemangioma (LCH) or orofacial lesion [2].

Hemangiomas are benign tumors composed of blood vessels and are classified based on their histological appearance as capillary, mixed, cavernous, or a sclerosing variety that tends to undergo fibrosis [3]. It is the most common benign oral soft-tissue tumor in children. Although, it is

considered one of the common soft-tissue tumors of the head and neck, it is relatively rare in the oral cavity. Capillary hemangiomas are composed of many small capillaries lined with a single layer of endothelial cells supported in connective tissue stroma of varying density. Of all the patients who eventually develop capillary haemangioma 30% of them have evidence of their presence at birth, while 100% have manifest them by age 6 months. Both pyogenic granuloma and capillary hemangioma rarely occur on the palatal mucosa, occur in younger age group and histopathologically resemble each other.

Thus, the differentiation between a capillary hemangioma and pyogenic granuloma has to be made which sometimes becomes difficult. The aim of this report is to present a case with a lesion which was clinically diagnosed as pyogenic granuloma, but histologically resembled a capillary hemangioma.

Case Report

A 5-year-old girl presented with complaints of swelling in oral cavity for the past 1 month with sudden increase in size of the swelling over the past 1 week. Child had no complaints of bleeding or pain over the swelling. Other medical history were unremarkable. On clinical examination 2x1cm single, sessile, nodular, erythematous growth was seen over the floor of the oral cavity. On palpation the mass was firm in consistency and found to be arising from the gingiva adjacent to the left lower incisor and canine tooth. The mass did not bleed on touch. Based on the above findings provisional diagnosis of pyogenic granuloma was made. All baseline investigations were done and found to be normal. We planned for excision of mass under General anaesthesia.



Fig. 1: Showing mass in the floor of mouth

The mass was carefully excised in toto using bipolar cautery. 1mm of normal mucosa was removed with the lesion in order to ensure total removal of lesion and prevent recurrence. Haemostasis was secured. The excised mass was sent for histopathological examination.



Fig. 2: Immediate Post-op picture showing complete excision of mass

Histopathological examination revealed that tissue is lined by benign stratified squamous epithelium with foci of ulceration. Sub epithelial tissue showed dense infiltration by acute and chronic inflammatory cells. Also seen is a lobulated lesion composed of benign proliferation of several thin walled vascular channels. The overall features were suggestive of Ulcerated Capillary Haemangioma.



Fig. 3: Post-op Days 7 Picture shows complete healing of surgical site

Discussion

Capillary haemangioma is believed to be a hamartomatous proliferation of vascular endothelial cells. They are now thought to be of placental origin due to a unique microvascular phenotype shared by juvenile hemangioma and human placenta. Pathologically it is characterized by an increased number of endothelial and mast cells, the latter being a stimulus for vessel growth. Female:Male ratio 3:1. Capillary haemangioma also known as an Infantile haemangioma and strawberry nevus is the most common variant of haemangioma which appears as a raised red, lumpy area of flesh anywhere on the body though 83% occur in the head and neck. These marks occur in about 10% of all births, usually appear between one and four weeks after birth. Some are gone by the age of 2, about 60% by 5 years, 90-95% by 9 years.

Pyogenic granuloma is a vascular lesion that occurs on both mucosa and skin and appears as an overgrowth of tissue due to irritation, physical trauma, or hormonal factors. It is often found to involve the gums, the skin and nasal septum. Pyogenic granuloma are known as a eruptive

haemangioma, granulation tissue type hemangioma, granuloma gravidarum, pregnancy tumour, tumour of pregnancy. In the oral cavity pyogenic granulomas show a striking predilection for the gingiva with interdental papillae being the most common site in 70% of cases. It is of two types based on histological features. These are Lobular Capillary Haemangioma type and non-Lobular Capillary Haemangioma type. LCH pyogenic granuloma is characterized by proliferating blood vessels that are organized in lobular aggregates even though superficially the lesion shows no specific change of edema, capillary dilation or inflammatory reaction. Histologically, LCH pyogenic granuloma has an attenuated endothelial lining surrounded by somewhat uniform proliferation of plump to spindle cells, in contrast to the more prominent endothelial cells and an array of capillary size blood vessels with lobular architecture of a capillary hemangioma. Moreover, the capillaries in LCH pyogenic granuloma are frequently arranged perpendicular to the surface. The non-LCH pyogenic granuloma shows vascular proliferation that resembles granulation tissue. Foci of fibrous maturation are seen in 15% of non-LCH pyogenic granuloma but are totally absent in LCH type of pyogenic granuloma [5].

As in the present case, pyogenic granuloma ("Lobular Capillary Hemangioma") is a proliferative vascular lesion often clinically confused with hemangioma, unfortunately, both share the histologic designation "Capillary Hemangioma." A pyogenic granuloma appears suddenly. A history of trauma to the area is rarely elicited from the parents. Usually the patient is an older infant or young child, although the lesions also occur in adults. Cheek, eyelids, and extremities are the typical location for pyogenic granuloma. It also presents on the lips, oral mucosa, tongue, and nasal cavity. A curious and not infrequent occurrence is a pyogenic granuloma within a portwine vascular birthmark, either intra or extraorally. An early pyogenic granuloma, with its epidermis intact, bears more resemblance to a tiny hemangioma. The pyogenic lesion usually has a pedunculated shape with a tiny stalk. The pathologist often designates the lesion a "capillary hemangioma, granuloma type" or "lobular capillary hemangioma." It may be difficult to make a light microscopic differentiation between a true hemangioma of infancy and a pyogenic granuloma. However, pyogenic granuloma exhibits immunocytochemical and ultrastructural differences. It is predominantly perithelial, rather than an endothelial tumor.

The differential diagnosis of hemangiomas includes pyogenic granuloma, chronic inflammatory

gingival hyperplasia (epulis), epulis granulomatosa, and squamous cell carcinoma [6]. The present case has clinical but not the histopathological features of a pyogenic granuloma. Therefore, biopsy of tissue specimens is often necessary for Odefinitive Odiagnosis.

The range of treatment includes surgery [6], laser therapy [7], use of sclerosing agents [8], and embolization. Surgical excision is generally the treatment of choice. In the reported case, surgical excision was done based on the provisional diagnosis of pyogenic granuloma. Attempts to remove hemangiomas using surgical excision may lead to serious problems such as heavy bleeding. However, in this case no bleeding was encountered during excision. This might be due to the fact that the hemangioma might not be in an active proliferative phase and might not have penetrated the epithelium basement membrane interface. In addition, postoperative recurrence may occur [6]. The case described here demonstrate that there has been no subsequent hemorrhage or other evidence of recurrence. Still longer follow-up periods are required to provide conclusive statement.

Conclusion

Capillary hemangioma is a lesion that is diagnosed primarily on histological findings. Although, it is asymptomatic, its peculiar location may require immediate intervention. The case in the discussion was worthy of reporting because of its uncommon location on the anterior gingiva. Lesions in this area often lead to impaired nutrition and oral hygiene, increased accumulation of plaque and microorganisms and thereby increased susceptibility to oral infections. The clinical picture and location of the lesion in our case led to a provisional diagnosis of pyogenic granuloma, but histological findings were suggestive of capillary hemangioma. Early detection and biopsy of such lesions is necessary to institute appropriate management. In addition, the surgical management should be performed with caution anticipating profuse intraoperative and post operative bleeding.

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