

Capillary Hemangioma of Gingiva simulating as Pyogenic Granuloma: A Case Report

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ABSTRACT

Capillary hemangiomas are the hamartomatous lesions of vascular tissues that commonly occur in infancy and adolescence. They are characterized microscopically by the proliferation of blood vessels. Such lesions may clinically simulate pyogenic granuloma in appearance and location. They can only be differentiated histologically. The present paper reported a successful management of a case of capillary hemangioma of gingiva in a 17-year-old female.

Keywords: Hamartoma, hemangioma, pyogenic granuloma, tumor

INTRODUCTION

Pyogenic granuloma and capillary hemangioma are well known and commonly occurring benign vascular lesions of the oral cavity.¹ Pyogenic granuloma is a common soft tissue tumor of the oral cavity that is considered to be reactive and non-neoplastic in nature.² The term pyogenic granuloma is a misnomer as the condition is not associated with pus and does not represent a granuloma histologically as well.³

Hemangiomas are common tumors characterized microscopically by the proliferation of blood vessels. These are the lesions that are not natal in origin. They usually manifest within the first month of life, undergo a rapid proliferative phase and may slowly involute spontaneously without any treatment.² The proliferating mass of vessels



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does not undergo malignant transformation. Although, these are the most common benign tumors of head and neck in children, they are relatively rare in the oral cavity.⁴ They are further sub-classified based on their histological appearance as (1) capillary lesions (2) cavernous lesions and (3) mixed lesions.⁵ Another variety that undergoes spontaneous fibrosis known as 'sclerosing type' also exists.⁶ Capillary hemangiomas are composed of many small capillaries lined with the single layer of endothelial cells supported by connective tissue stroma of varying density.⁷ It bears considerable resemblance to new granulation tissue and is nearly identical to some cases of pyogenic granuloma.² Both capillary hemangioma and pyogenic granuloma occur in the younger age group. The present paper intended to report a case of successful management of a capillary hemangioma of gingiva which was clinically simulating as the pyogenic granuloma.

CASE REPORT

A female patient aged 17 years reported to the Department of Periodontology, Govt. Dental College and Hospital, Patiala, with the chief complaint of swelling in her left posterior maxillary palatal mucosa since 5-6 years. She also complained of localised bleeding on brushing in that area. However, there was no pain but a slight discomfort while eating because of which she left using that side. The lesion was initially small in size, gradually increased to the present size in about a year. The medical history of the patient was non-contributory.

Clinical evaluation revealed a localised gingival growth between left maxillary second premolar (25) and first molar (26) on the palatal aspect (Fig. 1). The lesion arose from interdental papilla and was pedunculated. It was firm, bright red in colour and measured about 1.5 cm x 1 cm. The tooth involved was carious, and the lesion totally filled the carious cavity. It was provisionally diagnosed as the pyogenic granuloma keeping capillary hemangioma as the differential

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Figure 1: Preoperative photograph showing the lesion.

diagnosis. Treatment planning included surgical excision of the mass. Pre-surgical laboratory investigations were within normal limits. Radiographically, the tooth was carious, and there was bone loss present in relation to 25 and 26 (Fig. 2).

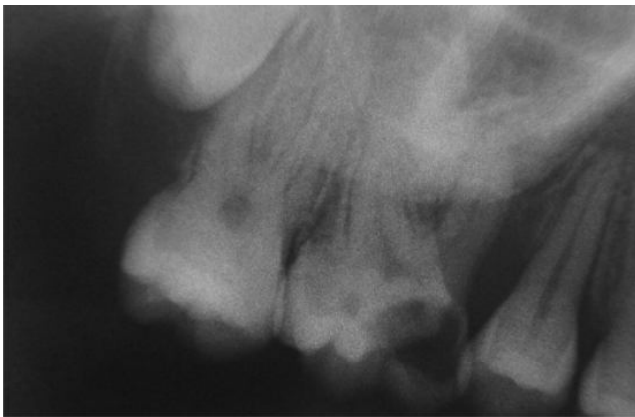


Figure 2: Preoperative IOPA of the region.

Thorough scaling and root planing was done. The patient was put on maintenance phase. Since the lesion was small in size, it was decided to excise the mass in toto with all the necessary emergency equipment kept ready. After one week, surgical excision of the lesion was done under local anaesthesia as a part of excisional biopsy and the excised lesion was sent for histopathological examination. The periodontal dressing was placed on the operated area, and the patient was given postoperative instructions; after one week, the dressing was removed. The lesion had completely healed at one-month follow-up (Fig. 3 and 4). The patient was referred to Department of Conservative Dentistry and Endodontics for the management of 26.

Histopathological examination showed stratified squamous epithelium revealing hypertrophy, hyperplasia with keratosis. Beneath the epithelium, there were many small to large thin-walled capillary channels were seen. The



Figure 3: Post-operative buccal view



Figure 4: Post-operative 1-month follow up

connective tissue stroma of varying density supported the capillaries that were lined by a single layer of endothelial cells (Fig. 5). Patient's medical history, clinical examination, and histopathological report were suggestive of capillary hemangioma.

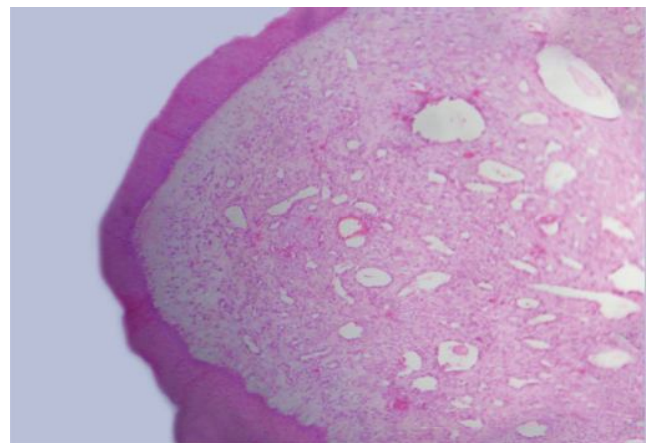


Figure 5: Histological appearance of the lesion showing stratified squamous epithelium covering the connective tissue stroma involving small and large capillaries lined by a single layer of endothelial cells

DISCUSSION

Pyogenic granuloma of oral cavity arises most frequently in the gingiva accounting around 75% of all cases. It may also occur on lips, tongue, buccal mucosa and occasionally in other areas. It is more common in the maxillary anterior

region than posterior region. Clinically, the lesion appears as the smooth or lobulated mass that is usually pedunculated or sessile. The surface is characteristically ulcerated and colour ranges from pink to red to purple, depending on the age of the lesion.²

Hemangiomas are the one of the most commonly occurring benign tumors of head and neck in children, but their occurrence in the oral cavity is relatively rare. Hemangiomas occur as single lesions in about 80% of the cases and have the female predilection with 3:1 female to male ratio.⁸ They have a childhood onset and 85% of the cases regress spontaneously after puberty. The etiology behind them is not clear. However, these are not believed to be true lesions, but rather a developmental anomaly or hamartoma. It is hypothesized that various growth factors like basic fibroblast growth factor (bFGF) and vascular endothelial growth factor when present in excess are known to stimulate angiogenesis and may lead to the development of hamartoma.⁹ Clinically hemangiomas can be either sessile or pedunculated. They are soft in consistency and may be smooth or irregularly bulbous in outline. The tumor blanches on the application of pressure, and the colour varies from deep red to purple.¹⁰ The clinical findings correlated with our present case.

The differential diagnosis of such isolated gingival growths includes pyogenic granuloma, chronic inflammatory gingival hyperplasia (epulis), epulis granulomatosa and squamous cell carcinoma.¹¹ Pyogenic granuloma and hemangioma could be differentiated based on histological examination. Histologically, pyogenic granuloma has vast numbers of endothelium-lined vascular spaces and the extreme proliferation of fibroblasts and budding endothelial cells, in contrast to the more prominent endothelial cells and an array of capillary size blood vessels with lobular architecture of a capillary hemangioma.¹²

Regarding management, all clinically suspected pyogenic granulomas and capillary hemangiomas need to be biopsied to rule out more serious condition. There are different therapeutic procedures including microembolization, radiation, cryotherapy, sclerosing agents, corticosteroids and, recently laser therapy that have been reported, however, if possible, complete surgical excision of these lesions offers the best chance of cure.²

CONCLUSION

The diagnosis of capillary hemangioma is made primarily on histologic findings. Early diagnosis and biopsy are necessary to determine the clinical behavior of the tumor and to institute appropriate management. Also, the surgical management should be performed with caution because the tissues may bleed profusely intraoperatively and post-operatively.

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