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ATYPICAL PRESENTATION OF CAPILLARY HEMANGIOMA ON THE GINGIVA- A DIAGNOSTIC CONUNDRUM

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Abstract
Hemangiomas and pyogenic granulomas of oral cavity are well-known benign lesions. Pyogenic granuloma is known to show a striking predilection for the gingiva and capillary haemangioma frequently occurs in the lips, cheek, and tongue. The present case report is an atypical presentation of capillary haemangioma on gingiva which is considered to be extremely rare. The clinical presentation of the lesion in our case mimicked a pyogenic granuloma however, histopathologically was diagnosed as capillary haemangioma. These lesions present as a diagnostic dilemma to the clinician and can lead to serious complications if not carefully managed.

Introduction

Haemangiomas are common benign vascular tumours of the head and neck region which account for 7% of all benign tumours of infancy and childhood with a female predilection.[1] Incidence of intraoral capillary haemangioma is rare and varies from 0.5 to 1.0% of all intraoral neoplasms, and usually occur in lips, cheeks, and tongue, its topographical presentation on the gingiva marks extreme rarity. [2,3]

Vasoformative tumours are broadly classified into haemangioma and vascular malformation.[4] Haemangiomas are broadly classified into capillary, cavernous, and mixed.[5] Capillary haemangioma are composed of small thin walled vessels of capillary size that are lined by a single layer of flattened or plump endothelial cells and surrounded by a discontinuous layer of pericytes and reticular fibres. Cavernous haemangiomas consist of deep, irregular, dermal blood-filled channels. They are composed of tangles of thin-walled cavernous vessels or sinusoids that are separated by a scanty connective tissue stroma. Mixed haemangiomas contain both components and are more common than the pure cavernous lesions.[1]

Clinically haemangiomas are characterized as a soft mass, smooth or lobulated, sessile or pedunculated and may be seen in any size from a few millimetres to several centimetres. The colour of the lesion ranges from pink to red purple and tumour blanches on the application of pressure, and haemorrhage may occur either spontaneously or after minor trauma. They are generally painless.[1]

Clinically, radiographically, and sometimes microscopically, they may resemble other lesions making the diagnosis difficult. Pyogenic granuloma is a common, non-neoplastic soft tissue tumour of the oral cavity.[6] Pyogenic granuloma and capillary haemangiomas usually present a clinical dilemma and challenge to the clinician in diagnosing it and hence careful clinical evaluation and histopathologic evaluation is mandatory to make a definitive diagnosis

Case Report

A 14 year old boy reported with complaint of gingival swelling on the upper and lower right side of the jaw of 10 days duration. The swelling initially was small and rapidly increased in size. There was no history of trauma or toothache associated the swelling. The growth was painless with a history of frequent bleeding and difficulty in chewing and brushing. The patient gives no history of similar episodes in the past. His medical, dental and family history was non-contributory.

Intraoral examination revealed bluish red gingival swelling involving free, marginal and attached gingiva on the buccal and palatal/lingual surface of the entire right maxillary and mandibular quadrant. The overlying mucosa was intact with areas of ulceration at the occlusal surfaces. The swelling was non tender, soft to firm in consistency with a nodular surface, non-reducible, and non-compressible. Blanching was noted on the application of pressure with bleeding on provocation, and no pulsations were palpable (Figure1,2). Mouth opening was adequate and heavy deposits of supragingival and subgingival calculus, plaque present. Deep dental caries wrt 46 was present. A clinical impression of pyogenic granuloma was made with the differential diagnosis of peripheral giant cell granuloma and capillary haemangioma.

Radiographic investigations revealed vertical interdental alveolar bone loss wrt 45,46,47 with the presence of subgingival calculus deposits. Deep dental caries involving

enamel and dentine with no significant periapical changes was seen wrt 46. (Figure 3) The complete haemogram was within normal limits. Incisional biopsy, along with histopathologic evaluation, was recommended as the diagnostic approach. Histopathological features revealed granulation tissue with lobular pattern of vascular proliferation of small vessels. Numerous ectatic, irregular, dilated and congested vascular channels noted lined by single layer of flat benign endothelial cells were seen suggestive of capillary haemangioma (Figure 4,5).

Deep hand scaling and curettage was performed. 3% hydrogen peroxide and normal saline irrigation with curettage was carried out on every visit for the next 5 days. Patient was advised warm saline rinses and to maintain oral hygiene. 46 was restored with indirect pulp capping. There was a complete resolution of the maxillary and mandibular gingival swelling within two weeks and the patient was asymptomatic. (Figure 6,7) The patient is under regular follow up.

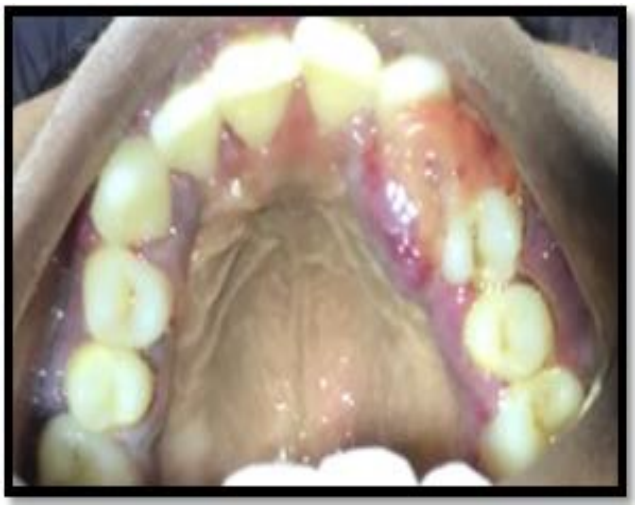

Figure 1: Maxillary Gingival Swelling

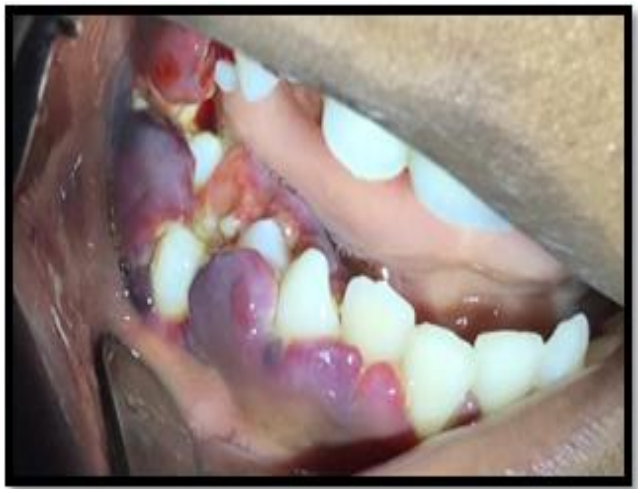

Figure 2: Mandibular Gingival Swelling

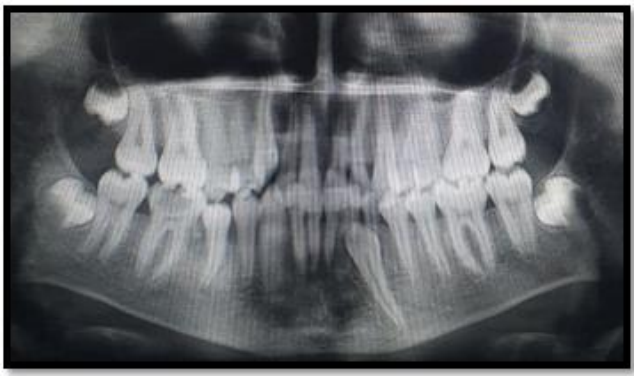

Figure 3: Orthopantomogram shows interdental alveolar bone loss and subgignval calculus wrt 45,46.

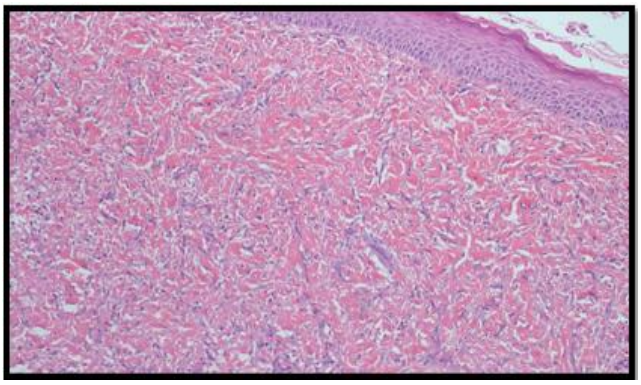

Figure 4: Histopathological specimen (×100 magnification, HE staining).

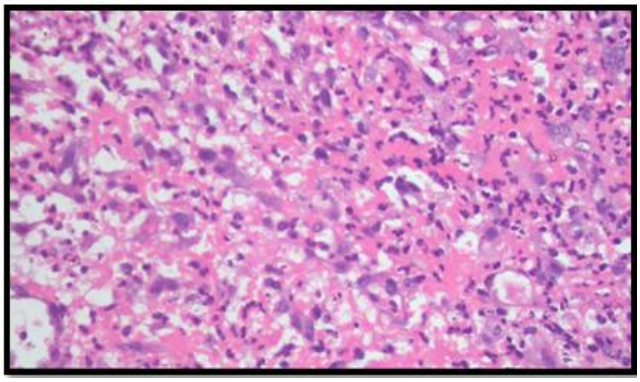

Figure 5: Histopathological specimen (×400 magnification, HE staining)

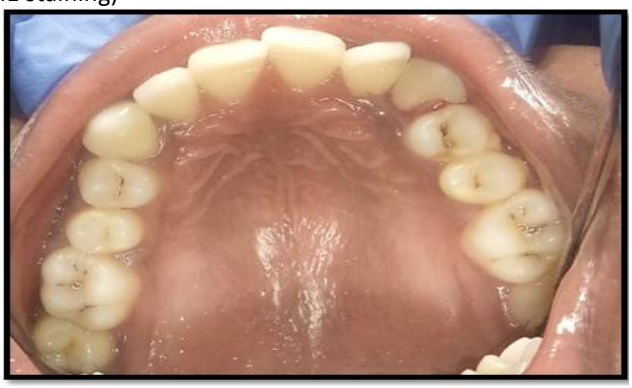

Figure 6: Maxillary gingiva two weeks post treatment

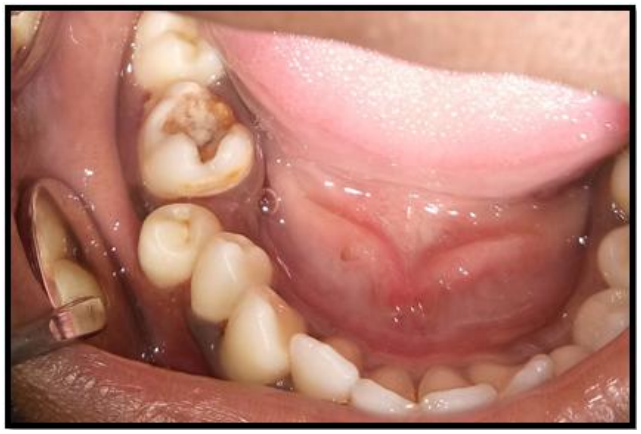

Figure 7: Mandibular gingiva two weeks post treatment

Discussion

Although haemangiomas of the head and neck region is relatively common, representing at least a third of all haemangiomas in humans, it is relatively rare in the oral cavity especially in oral soft tissues and uncommonly encountered.[7]

Haemangiomas are developmental and encountered more frequently in females whereas vascular malformations are present at birth and occur in equal incidence among females and males.[8] They manifest within the first month of life, characterized by three stages, namely, endothelial cell proliferation, rapid growth, and spontaneous involution.[5] They are mostly seen in Caucasians, less commonly seen in dark-skinned individuals. No details are available regarding their incidence in Indian population. Haemangiomas may be cutaneous, mucosal, intramuscular, and intraosseous.[9] In the oral cavity, they are extremely rare on the palatal mucosa and gingiva.[3] Vascular malformations result from anomalous development of vascular plexuses, are more stable and fail to regress. The hall mark of vascular malformations is proportionate growth throughout the life of the individual.[5]

Capillary haemangiomas can be sessile or pedunculated, soft, smooth or irregular, bulbous in outline, and painless unless traumatised. They vary in colour from deep red to purple and blanch on application of pressure.[10] Whenever a swelling is found in the oral cavity, it is imperative to formulate a differential diagnosis as this would facilitate further evaluation of the condition and management of the patient. Haemangiomas may mimic other lesions clinically, radiographically and histopathologically. The differential diagnosis includes pyogenic granuloma, chronic inflammatory gingival hyperplasia, epulis granulomatosa, angiosarcoma, talengectasia, and even squamous cell carcinoma.[11]

The most common vascular proliferation of the oral mucosa is the pyogenic granuloma. It represents an exuberant reactive or reparative connective tissue proliferation to a known stimulus or injury. These stimuli may be calculus or foreign material within the gingival crevice. Clinically, may present as a soft, painless, pedunculated or sessile, deep red to reddish purple, haemorrhagic and compressible mass and occurs over a wide age range of 4.5–93 years with a slight female preponderance.[12] It commonly affects gingiva, followed by lips, tongue, buccal mucosa and hard palate.[13]

There are two histological types of pyogenic granuloma of the oral cavity: the lobular capillary haemangioma (LCH) and non- lobular capillary haemangioma (non- LCH) type. LCH is characterized by proliferating blood vessels that are organized in lobular aggregates although superficially the lesion frequently undergoes no specific change, including edema, capillary dilation or inflammatory granulation tissue reaction, whereas the second type consists of highly vascular proliferation that resembles granulation tissue.[14] It was reported by Epivatianos *et al*. that the two types of PG were clinically different. They found that the LCH PG occurred more frequently (66%) as sessile lesion, whereas non-LCH PG mostly occurred as pedunculated (77%).[15]

Histopathologically, the capillary haemangioma exhibits a progression from a densely cellular proliferation of endothelial cells in the early stages to a lobular mass of well-formed capillaries in the mature phase, often resembling the pyogenic granuloma without the inflammatory features.[16] It is important to be able to differentiate PG from oral haemangioma. Diascopy is a technique used in confirming if a lesion is vascular. When pressure is applied to a suspected case of haemangioma, an evacuation of the coloration is visualised, and this supports the impression that patent blood-filled spaces constitute the lesion.

Management of capillary haemangiomas is based on several factors, such as age of the patient, size, extent and clinical characteristics of the lesion. Most small capillary haemangiomas reported in the literature have been treated with excision or curettage.[17] Surgical excision is generally the treatment of choice for capillary haemangioma. Local complications, such as bleeding or postoperative ulcerations, tend to occur. For those lesions not amenable to surgery, other therapy such as intralesional injection of fibrosing agents, interferon alpha-2b, radiation, electrocoagulation, cryosurgery, laser therapy, embolization may be used. [18,19,20]

Conclusion

Capillary haemangiomas are infrequently seen on gingiva and may easily be confused with different lesions. Attempts to remove them using simple excision may lead

to serious medical and unwarranted complications. Such situation when a clinician is in dilemma, not cognizant with the possibility of this lesion in its unusual site, can be solved by histopathological assessment which remains the most accurate and satisfactory tool. This necessitates biopsy of such lesions for establishing a definite diagnosis and proper management and prevention of various complications.

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