

Pyogenic Granuloma: A case report

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Abstract:

It is a reactive inflammatory hyperplastic lesion that occurs due to various stimuli such as low grade local irritation, traumatic injury, certain drugs and hormones. It can occur on the lips, tongue, buccal mucosa, palate and floor of the mouth. It is usually elevated, pedunculated or sessile vascular mass with a smooth, lobulated or even a warty surface, usually with ulcers and has a tendency for hemorrhage either spontaneously or upon slight trauma. Histologically, the epithelium appears to be intact, or may show foci of ulcerations or hyperkeratosis. It overlies a mass of dense connective tissue composed of significant amounts of mature collagen. The present case report is based on the clinical findings, histological findings, diagnosis and management of the pyogenic granuloma of the gingiva.

Key words: *Pyogenic Granuloma, benign neoplasm, hyperplastic lesion*

Introduction

It is a reactive inflammatory hyperplastic lesion that occurs due to various stimuli such as low grade local irritation, traumatic injury, certain drugs and hormones^{1,2}. The term "Pyogenic granuloma" is a misnomer as it does not contain pus and not a true granuloma¹. It occurs in about 19.75-25% of all intraoral reactive lesions^{3,4}. 75% of pyogenic granuloma arises in gingiva⁵. Hullihen⁶ first described the case of pyogenic granuloma in English literature. Hartzell in 1904,⁷ coined the current term "pyogenic granuloma" or "granuloma pyogenicum".

Synonyms: Eruptive hemangioma, Granulation tissue-type hemangioma, Granuloma gravidarum, Lobular capillary hemangioma, Pregnancy tumor, Tumor of pregnancy.

It can occur on the lips, tongue, buccal mucosa, palate and floor of the mouth⁵. It is usually elevated, pedunculated or sessile vascular mass with a smooth, lobulated or even a warty surface, usually with ulcers and has a tendency for hemorrhage either spontaneously or upon slight trauma⁵. Seen more commonly on facial aspect of maxillary anterior region⁵. The color may vary from deep red or reddish purple which depends based upon its vascularity⁵. Sometimes hemorrhage may show brown cast⁵. It

develops rapidly to reach full size and remains static for indefinite period⁵.

Differential diagnosis includes: Parulis, Peripheral Ossifying Fibroma, Hemangioma, Peripheral Fibroma, Leiomyoma, Hemangioendothelioma, Hemangiopericytoma, Bacillary Angiomatosis, Metastatic Tumors, Kaposi's Sarcoma, Pregnancy Tumor, Postextraction Granuloma and Peripheral Giant Cell Granuloma⁸.

The final diagnosis can be made on histological basis after excisional biopsy⁸. Treatment includes complete surgical excision with curettage of adjacent tissue; if incompletely removed there are chances of recurrence as these are rarely encapsulated^{5,9}.

Case report

A 55 year old female patient reported to Rural Dental College, Loni. With a chief complaint of pain and swelling on gums in the lower right back region of jaw lasting from 2 months and which increased in size gradually. The patient was asymptomatic 2 months back where she initially observed a tiny, bright-red nodule that bled profusely. The lesion then increased to present size. Medical history was non-contributory. She occasionally used toothpicks for cleaning the interdental spaces of teeth. There was no extraoral swelling present in the right side of mandible. The patient was afebrile and without lymphadenopathy. On intraoral examination the lesion was present on the facial aspect of mandibular teeth spreading in the interdental area of size 1.5cm x 1cm between 44 and 45 also covering more than 2/3rd of facial aspect of 44 and 45. It showed clear signs of inflammation. The swelling was a smooth exophytic lesion manifested as a small erythematous papule on a pedunculated base (Image. 1). When palpated it was soft and compressible which bled easily. Patient had slight discomfort due to the growth but was painless and asymptomatic. There was grade III mobility associated with

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Fig. No. 1 Pre-operative

45 and Grade I mobility associated with 44. The oral hygiene status was fair. The presence of lesion made it difficult for the patient to carryout routine oral hygiene procedures leading to deterioration of the oral hygiene and thereby favoring the growth of the lesion. Intra-oral periapical radiograph revealed angular bone loss till the apical third of root and loss of lamina dura with 45 (Image.2) . Blood examination revealed normal values.



Fig. No. 2 : IOPA showing bone loss

Treatment

Oral prophylaxis was completed. Under local anesthesia excision of lesion was done upto the underlying mucoperiosteum using a scalpel and blade (Image.3) followed by extraction of 45 with extraction forceps and curettage was done (Image.4). Post-operative instructions and medications were prescribed and patient was recalled after 1 week for follow up (Image.7). The excised tissue was sent to the Department of Oral Pathology for examination (Image.5). one year recall showed complete healing and no recurrence.



Fig. No. 3 After excision



Fig. No. 4 : After extraction

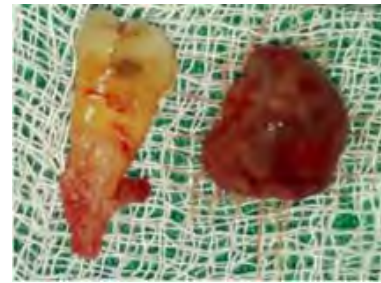


Fig. No. 5 : Extracted tooth and Excised tissue



Fig. No. 6 : Histopathologic slide

Histological findings (Image.6)

The epithelium showed ulceration and the connective tissue was loose and highly vascular with budding endothelial capillaries and dense chronic inflammatory cell infiltrate with proliferating fibroblasts and collagen fibers interposed. Lot of epithelial lined spaces within the connective tissue was seen and also patchy distribution of lymphocytes and plasma cells was seen. There was no evidence of atypia or malignancy. On the basis of clinical and histopathological findings it suggested to be a case of pyogenic granuloma.

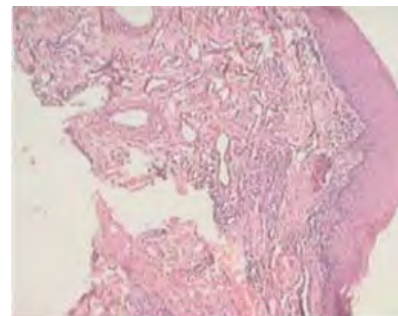


Fig. No. 7 : Post-operative

Discussion

The lesion is formed as a result of an exaggerated localized connective tissue reaction to minor injury or underlying irritation which is universally agreed¹⁰.The irritating factor can be either poor oral hygiene, calculus, nonspecific infection, over hanging restorations, cheek biting etc. This irritation can cause the underlying fibro-vascular connective tissue to be hyperplastic and proliferation of granulation tissue which leads to the formation of a pyogenic granuloma¹⁰.Because of vascular effects of female hormones it is mainly seen in second decade of life in young females¹¹.It usually does not recur when excised with its base and all causative factors are removed. The recurrence rate is about

16% of the treated lesions and if needed re-excision of such lesions might be necessary¹⁵. According to Vilmann et al, the majority of the pyogenic granulomas are found on the marginal gingiva with only 15% of the tumors on the alveolar part¹². It grows in size from a few millimeters to several centimeters in size but can rarely exceed more than 2.5cm. Many granulomas grow rapidly to attain a larger size¹³.

It may even cause significant bone loss¹⁴. In this case report bone loss can be clearly seen. Treatment mainly involves complete surgical excision¹⁵. Various other benign soft tissue lesions can be differentiated from pyogenic granuloma on clinical and histological features which will provide adequate treatment and a good prognosis. Histologically it can be classified as Lobular capillary Hemangioma (LCH) type and Non-Lobular capillary Hemangioma type^{15,16}. There are proliferating blood vessels organized in lobular aggregated with capillary dilation or inflammatory granulation seen in LCH type. The non-LCH type consists of a vascular core resembling granulation tissue with foci of fibrous tissue with a greater number of vessels and perivascular mesenchymal cells with non-reactive for alpha smooth muscle actin (SMA) detected in the central area as compared with the lobular area of the LCH type pyogenic granuloma. Various other treatment modalities such as use of Nd: YAG laser, carbon dioxide laser, flash lamp pulse dye laser, cryosurgery, electrodesiccation, sodium tetradecyl sulfate sclerotherapy¹⁵ and use of intra-lesion steroids have been used by various clinicians. It can be efficiently treated with the proper diagnosis and treatment planning to avoid recurrence.

Conclusion

From the present case report it is concluded that pyogenic granuloma can be adequately treated with the correct diagnosis and proper treatment planning. A careful management of the lesion also helps in preventing the recurrence of benign lesion.

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