



CASE STUDY

PYOGENIC GRANULOMA

***Dr. Deepmala Maurya and Dr. Priyanka Aggerwal**

Associate Professor, Department of Periodontics and Oral Implantology Santosh Dental College and Hospital, Ghaziabad, India

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ABSTRACT

Pyogenic granuloma is non neoplastic proliferation of gingival connective tissue, commonly occur in females in their second decade of life due to hormonal imbalance. Extra gingival sites are buccal mucosa, palate and tongue. It can also occur in males in response to minor trauma, chronic irritants which provides the pathway to non specific microorganism but histopathologically it does not show any microorganism, so its etiology is still not clear. Clinically it is a non tender swelling which sometimes look like a hemangioma or a vascular malformation which bleed profusely on provocation. In this case series we are reporting two case reports of pyogenic granuloma in two females of different age groups with different sites and discussing the clinical, histological features along with its various treatment modalities.

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INTRODUCTION

Pyogenic granuloma is a nonspecific conditioned enlargement of the gingiva. Basically it is the hyperplasia of connective tissue in response to chronic irritation, physical trauma and hormonal imbalance. Earlier "Epulis" was the term given to all such kind of tumor or tumor like masses of gingiva. (Verma *et al.*, 2012) Later on various other term were given by different people like "Hurtzel "in 1904 gave the term "pyogenic granuloma or granuloma pyogenicum, "Eruptive hemangioma", "Granuloma gravidarium", "Pregnancy Tumour" and " Tumour of pregnancy" (Dr Chavda *et al.*, 2014). Pyogenic granuloma develops in up to 5% of pregnancies therefore termed as pregnancy tumor. Presence of hormonal imbalance in pregnancy heightens the organisms response to irritation, but plaque and gingival inflammation are necessary for subclinical hormonal alteration leading to gingivitis. (Rachappa and Trveni, 2010) Most common site of pyogenic granuloma is gingiva although it can also occur on buccal mucosa, tongue and lip (Kejriwal *et al.*, 2014). It can present with wide array of clinical presentations ranging from a sessile lesion to an elevated mass granulomas, generally are soft nontender, deep red to purple in color. (Jafarzadeh *et al.*, 2006) However in this case series both the cases has different clinical features, and the age of onset in both the female are also different for pyogenic granuloma.

Case 1: A 55 year old female patient reported in Department of periodontics and Oral Implantology in Santosh dental college and hospital Ghaziabad, with the chief complaint of growth on the gums of her right upper front tooth from last 2-3 months. Patient complaint of bleeding while brushing as a result of which she discontinued brushing. Patient was Otherwise healthy clinically and medical history was noncontributory. The swelling initially started as small nodule and occur finally to attain its present size. On extra oral examination face was bilaterally symmetrical, lymph nodes were non- palpable. Intra-oral examination revealed exophytic growth of (.5x.5cm) on facial aspect of right lateral incisor with calculus and plaque in abundance on that site. The growth was bluish red in color, soft to firm in consistency, smooth, non-ulcerated, non-tender with a sessile base. There was no pus discharge from the growth. Oral hygiene was poor and bleeding was also positive on provocation.

Oral prophylaxis was done on subsequent visits and re-evaluated after a week. There was a little reduction in size of the growth. After that the biopsy was done. Procedure was explain to the patient and consent was taken. Under local anesthesia gingival growth was excised and sent for the histopathological examination. Periodontal dressing was applied on the excision site and analgesic, antibiotics were given to the patient for three days. Patient was motivated to maintain oral hygiene and to brush twice a day along with oral rinse. Patient was recalled after one day post operative for check up. Patient was comfortable and no complain was reported by her, Patient was again recalled after one month to

*Corresponding author: Dr. Deepmala Maurya,
Associate Professor, Department of Periodontics and Oral Implantology
Santosh Dental College and Hospital, Ghaziabad, India.

see any sign of recurrence but there were no signs of inflammation and oral hygiene was also well maintained by her. Patient was quite happy and satisfied.



Pre-operative



Excised tissue



Post-operative

Case 2

A 35 Year female patient reported in department of Periodontics and oral Implantology of Santosh Dental College and Hospital of Ghaziabad with a chief complaint of swelling on the gums of lower jaw in left lower anterior region since 3 to 4 months. Patient was unable to chew food from that side as

the swelling was quite large and also unable to brush her teeth. On extraoral examination there was no asymmetry of face, submandibular lymphnodes were palpable on left side. Intra oral examination revealed exophytic growth of (3x3cm) in size on the lingual gingiva of lower 32,33 region which extended to the labial aspect involving the marginal gingiva and interdental papilla. On palpation the growth was firm, non-tender, non-ulcerated, pale pink in color with sessile base. Oral hygiene was not good as there was lots of plaque and calculus. So in first visit patient was motivated and oral hygiene instructions were given to the patient. Then oral prophylaxis was done on subsequent visits and recalled for the surgery. Excisional biopsy was done under local anesthesia with patient consent and entire tissue was sent for histo-pathological examination. Periodontal pack was applied to reduce patient discomfort and analgesic, antibiotics were given to the patient for three days. Post-operative instructions were given and recalled after one day. Patient was comfortable and no complaint was reported by her. After one month again patient was recalled to check for any recurrence. On examination it was found was that the gingiva of the patient was healthy.



Pre-operative



Excision of tissue



Excised tissue



Post operative

Radiographic Features- In case one IOPA x-ray shows no bone loss with respect to lateral incisor whereas in case two occlusal x-ray of mandible shows generalized crestal bone loss. **Differential Diagnosis-**Includes Peripheral ossifying fibroma, Peripheral giant cell granuloma, Hemangioma, Metastatic tumour, Conventional granulation tissue, Hyperplastic gingival inflammation, Kaposi sarcoma, Bacillary angiomatosis, Angiosarcoma. (Kamal *et al.*, 2012)

Histopathology

Microscopic examination shows a highly vascular proliferation that resemble granulation tissue, numerous small and large channels engorged with red blood vessel. The epithelium shows areas of ulceration, connective tissue was loose and highly vascular with budding capillaries and dense chronic inflammatory infiltrate. The connective tissue showed proliferating fibroblast and collagen fibers interposed in which can be seen lot of foci of epithelial lined spaces within the connective tissue can be seen patchy distribution of lymphocytes and plasma. No evidence of atypia was seen. Clinical and histopathological features confirmed the diagnosis of pyogenic granuloma.

DISCUSSION

Pyogenic granuloma is a benign neoplasm of the oral cavity. Although its name is a misnomer because it does not contain any pus or contain granuloma histologically. (Ravi *et al.*, 2012) It is usually considered to be tumor like lesion which arises in response to various stimuli such as chronic low grade irritation, traumatic injury, certain drugs. (Gomes *et al.*, 2013) Based on histological features there are two variants of pyogenic granuloma i.e lobular capillary hemangioma type (LCH) or non lobular capillary hemangioma (NLCH). LCH has proliferating blood vessel organized lobules with no edema, capillary dilation or granulation tissue, whereas non LCH which consist of vascular core similar to granulation tissue with foci of fibrous tissue. In central of non LCH shows greater number of blood vessel with perivascular mesenchymal tissue non reactive for alpha smooth actin (SMA) is detected, compared with the lobular area of the LCH type of pyogenic granuloma (Dahiya and Kathuria, 2014). Oral pyogenic granuloma, most common tumor shows 75% prediction for gingiva then the other site. Maxilla is more common than mandible, also these lesion are more seen on facial aspect as compared to lingual aspect (Nevile *et al.*, 2002). Clinically it appear as smooth or

lobulated, exophytic with pedunculated or sessile base and it can grow in size from few millimeter to several centimeter in size. (Parisi *et al.*, 2006) These lesion are delicate and on minor trauma may cause bleeding. Initially these lesions are covered by yellow, fibrous membrane or by epithelium of variable thickness. These pyogenic granuloma shows rapid growth initially followed by stabilization and occasionally regression). Treatment of pyogenic granuloma include surgical excision along with removal of irritants. Excision should be done to the depth of the periosteum with 2mm margins at its clinical periphery. And the adjacent teeth should be thoroughly scaled and curettage should be done to prevent any recurrence (Saikhedkar *et al.*, 2011). Recurrence rate for pyogenic granuloma said to be 16% of the treated lesion. Recurrence is because of incomplete removal of the etiologic factors, or re injury of the area. Gingival lesions shows much higher recurrence as compared to other oral mucosal sites. So re excision of such lesion might be necessary. Recent Laser has been used for the treatment of the pyogenic granuloma, this leads to less bleeding. And also laser treatment is well tolerated by patients with no adverse effect.

Conclusion

Although pyogenic granuloma is a benign lesion but still it can affect the routine activity of the patients because of its size. These case series discuss the various etiologies, different presentation, types of pyogenic granuloma, treatment modalities and the reasons of recurrence. So on the basis of this pyogenic granuloma can be properly diagnosed, adequate treated with proper treatment planning to prevent its recurrence and patient discomfort.

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