

Pyogenic Granuloma- A Series of Case Report

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ABSTRACT:

Pyogenic granuloma (also known as a "Granuloma gravidarum and "Pregnancy tumor" is a primarily oral disease which appears in the mouth as an overgrowth of tissue to due irritation, physical trauma or hormonal factors.

Pyogenic granuloma was first originally described in 1897 by two French surgeons, Poncet and Dor, who named this lesion *otryomycosis hominis*. The name for pyogenic granuloma is misleading because it is not a true granuloma. In actuality, it is a capillary hemangioma of lobular subtype which is the reason they are often quite prone to bleeding. The growth is typically seen in young adults, it may occur in any age, especially in individuals with poor oral hygiene. Females are far more susceptible than males because of the hormonal changes that occur in women during puberty, pregnancy, and menopause. The purpose of this article is to describe a case of pyogenic granuloma at different age group .

Keywords: Gingiva, Pyogenic granuloma, Trauma.

INTRODUCTION:

Pyogenic granuloma is a reactive hyperplasia of the oral mucosa. It is not associated with pus as its name suggests and histologically resembles an angiomatous lesions rather than agranulomatous lesion. It is non neoplastic tumor like growth of oral cavity. Hullihen(1844) described the first case of Pyogenic granuloma in English literature.¹ Pyogenic granuloma in man was described as *botryomycosis hominis* by Poncet and Dor in 1897. Hartzell in 1904 introduced the current term of Pyogenic granuloma or Granuloma pyogenicum.² Gingival growth are common because unique anatomy of gingival attachment and its constant exposure to irritational factor

such as defective restoration, dental plaque calculus, trauma and iatrogenic factor.³ Common gingival overgrowth lesions can be classified under the following categories 1) pyogenic granuloma (including pregnancy tumor) 2) peripheral ossifying fibroma 3) peripheral fibroma 4) peripheral giant cell granuloma. Pyogenic granuloma is a non neoplastic tumor like growth of oral cavity.⁴ It is categorized as vascular tumors under the classification scheme of the international society for the study of vascular anomalies.⁵ It occurs predominately in second and fifth decades and female are slightly more affected than males vascular effect of female hormone. It is a most common gingival tumor accounting for 75% of all cases lip tongue

buccal mucosa are common site. Lesion is more common in maxillary gingiva than mandibular gingival anterior aspect than posterior aspect facial aspect of gingiva than lingual aspect. It is smooth or lobulated, color range from pink to red to purple with pedunculated and sessile base typically it is a painless mass which bleeds easily because of its extreme vascularity.

CASE REPORTS

Case -1

A 25 year old male patient reported to department of periodontics at K.D. dental collage Mathura with chief complain of gradually increasing painless gingival swelling in left lower back teeth region . Intraoral examination revealed 1.5 ×2.5 cm asymptomatic mass on the buccal gingiva in relation to mandibular left canine and premolar region. The mass was dome shaped and overlying mucosa was normal in appearance. On palpation the mass was firm, sessile not fixed to underlying bone. Radiographically finding was not significant.

Case -2

A 25 year old female patient reported with chief complain of gradually increasing painless gingival swelling in upper front teeth region. The patient had undergone surgical excision of gingival overgrowth 1 year back, but growth had recurred. Intraoral examination revealed 1×2 cm asymptomatic mass on the buccal gingiva in relation to maxillary right central incisor region. The mass was oval shaped and overlying mucosa was normal in appearance. On palpation the mass was firm, sessile not fixed to underlying bone. Radiographically finding was not significant.



Preoperative



Postoperative

Case -3

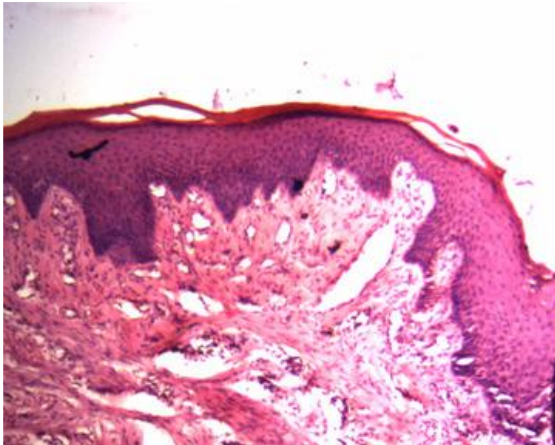
A 55 year old female patient reported with chief complain of gradually increasing painless gingival swelling in right upper front teeth region. Intraoral examination revealed 2.5×3.5 cm asymptomatic mass on the buccal gingiva in relation to maxillary right lateral incisor region. The mass was oval shaped and overlying mucosa was normal in appearance. On palpation the mass was firm, sessile not fixed to underlying bone. Radiographically finding was not significant.



Preoperative



Postoperative



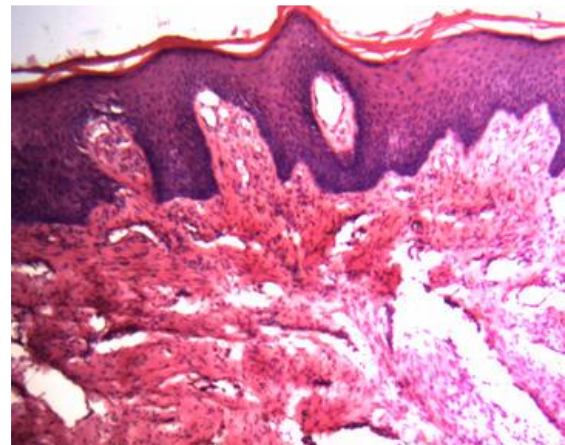
H/P report of the lesion



Postoperative



After 1 month



H/P report of the lesion

Case-4

A 10 year old boy patient reported with chief complain of gradually increasing painless gingival swelling in left upper front teeth region. Intraoral examination revealed 2.5×3.5 cm asymptomatic mass on the buccal gingiva in relation to maxillary right & left lateral incisor region. The mass was oval shaped and overlying mucosa was normal in appearance. On palpation the mass was firm, sessile not fixed to underlying bone. Radiographically finding was not significant.



Preoperative

Case-5

A 18 year boy reported with chief complain of gingival swelling & dirty teeth. Intraoral examination revealed 1.5x2 cm asymptomatic mass on buccal gingiva in relation to maxillary right side region with no radiographic finding



Preoperative



Postoperative

TREATMENT

Scaling and root planing was performed to remove local irritational factor such as plaque and calculus. Complete blood examination was done before surgical treatment of lesion. Excisional biopsy was performed under local anesthesia, gingival curettage was done to avoid recurrence of lesion. Patient was motivated and educated to maintain oral hygiene. Patient recalled after 15 days for follow up healing was uneventful. The tissue was submitted to oral pathology department for further histopathological evaluation.

HISTOPATHOLOGICAL FEATURE

H& E stained section showed hyperplastic stratified squamous epithelium overlying mass of connective tissue stroma underlying stroma is sparse with multiple proliferating endothelial lined vascular channels, proliferating fibroblast and diffuse chronic inflammatory cell infiltrate.

DISCUSSION

Pyogenic granuloma is non-neoplastic reactive gingival lesion. It is nonspecific gingival enlargement and presents exuberant tissue response to local irritant such as dental plaque, calculus, defective restoration, trauma and iatrogenic factor. The term pregnancy tumour or gravidarum is oftenly used for Pyogenic granuloma if

it develops in pregnant women term epulis granulomatosa describe hyperplastic gingival tissue growth in healing extraction socket. Janier M (1999)⁶ reported the presense of some infective organism such as bartonella henselae , b. quintata, human herpes virus -8 that are not only result in recurrence of Pyogenic granuloma but also associated with other vascular tumour. One third lesion of pyogenic granuloma develops after trauma mainly in extragingival region. Murata et al (1997)⁷ observed that after any trauma, there is migration and proliferation of inflammatory cells, vascular extracellular matrix and cytokines. Kuo , Ying & Ming stated The presence of 2 angiogenesis enhancer i.e. VEGF(vascular endothelial growth factor) bFGF(basic fibroblast growth factor) and two angiogenesis inhibitor TSP-1 angiostatin in mechanism of angiogenesis. Other factor such as vascular morphogenic factor, Tie-2, angiopoietin -1,angiopoietin -2 and ephrin -B2 , ephrin-B4 are found in higher concentration in Pyogenic granuloma compared to healthy gingiva.⁸ Microscopically pyogenic granuloma appear as a mass of granulation tissue with chronic infiltration. Surface epithelium can be atrophic or hyperplastic. There is lobular arrangement of numerous large and small endothelial lined channels, so that it is also known as lobular capillary heamangioma. Connective tissue repair may be seen as scarring of lesion. Secondary nonspecific changes include stromal edema, capillary dilatation granulation tissue reaction. Angelopoulo² observed, long standing pyogenic granuloma result in localized alveolar bone resorption, but in present case report radiographic finding were absent. Treatment chosen was excisional biopsy of

lesion by scalpel and blade. Excisional biopsy involves removal of periosteum and periodontal ligament to avoid recurrence of lesion. Excision can also be done with laser, cryosurgery and electrodesiccation. Nd:YAG and CO₂ laser excision have less bleeding during surgery compared to other techniques. Cryosurgery presents good esthetic result in oral mucosa because of its humidity and smoothness. Differential diagnosis of lesion includes peripheral giant cell granuloma, peripheral ossifying fibroma, metastatic cancer, hemangioma, pregnancy tumor, non hodgkins lymphoma. Pyogenic granuloma presents a high recurrence rate, may be because of incomplete excision, failure to remove etiological factor, reinjury to area. In this case report case 2 has recurrence after 1 year of excision. According to Taira JW et al (1992)⁹ recurrence rate is 16%, Bhaskar and Jacoway (1966)¹⁰ it is 15.8%, Vilmann et al (1986)¹¹ observed that gingival case shows a much higher recurrence rate than lesion from other mucosal site.

CONCLUSION

Pyogenic granuloma is most common and most mysterious oral lesion. However its pathogenesis is still debatable. This lesion can be cured with proper diagnosis, prevention and treatment planning.

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