



Oral Pyogenic Granuloma-A Case Report and Review of Literature

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ABSTRACT

The purpose of study is to evaluate the treatment and pursuit process of the pyogenic granuloma. Pyogenic granuloma is reactive, non-neoplastic and benign vascular tumor of skin and mucous membrane. As pyogenic granuloma mimics the vascular lesion, dental surgeon and maxillofacial surgeon should be familiar with it. This article presents the case of 64-year-old female pt having pyogenic granuloma in right lower anterior gingival region with comprehensive review.

Key Word: Inflammatory hyperplasia, Lobular capillary hemangioma, Oral fibrous pyogenic granuloma (OFPG).

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INTRODUCTION

Pyogenic granuloma is benign vascular tumor according to The International Society for the Study of Vascular Anomalies (ISSVA) classification 2018. Pyogenic granuloma is a reactive tumor-like lesion that mostly affects the oral cavity.[1] It is divided into two types based on histopathology: Lobular capillary hemangioma and non-Lobular capillary hemangioma.[2] The development of pyogenic granulomas has been linked to chronic low-grade trauma, physical trauma, hormonal variables, bacteria, viruses, and some medicines. It appears as an elevated, smooth or exophytic, sessile or pedunculated growth covered with red hemorrhagic and compressible erythematous papules, The color varies from red, reddish purple to pink depending on the vascularity of the growth. [4,5] Due to its similarity to vascular tumor and profuse bleeding management should be done carefully. Here, we present the case of a 64-year-old female patient having pyogenic granuloma of mandibular anterior gingival region which was managed by surgical excision.

CASE REPORT

A 64-year-old female reported to the Department of oral and maxillofacial surgery with chief complain of a swelling in the lower right anterior tooth region since 8 to 10 months. Initially swelling was small in size which gradually increased over the period of time. Patient had no significant systemic history. On extraoral examination, no significant finding was noticed. Intraoral examination revealed that the swelling was located in lower right anterior region extending anteroposteriorly from mesial surface of mandibular right central incisor to distal surface of mandibular right canine and superoinferiorly from marginal gingival to buccal vestibule. The swelling was reddish in color with smooth surface and 6x16 mm in size. On palpation, swelling was non tender, firm in consistency, non pulsatile and bleeds on manipulation. Calculus was also noticed in lower anterior teeth. Orthopantomogram (OPG) was carried out which revealed no significant abnormality to underlying bone. Other vascular lesion was ruled out and we made provisional diagnosis for this case was pyogenic granuloma as it had local etiological factor, non pulsatile and no significant bleeding was noticed on manipulation. All routine blood investigations had done which was normal. Oral prophylaxis was carried out followed by surgical excision of lesion under regional anesthesia. The excised tissue was sent to the Department of Oral Pathology for histopathologic examination. The histopathologic examination revealed granulation tissue with non neoplastic

proliferation of endothelial cells with blood cells formation and the immunohistochemical reaction for α -smooth muscle actin revealed oral fibrous pyogenic granuloma (OFPG).



Fig 1: Preoperative photograph



Fig.2: Surgical Specimen



Fig 3: Postoperative photograph

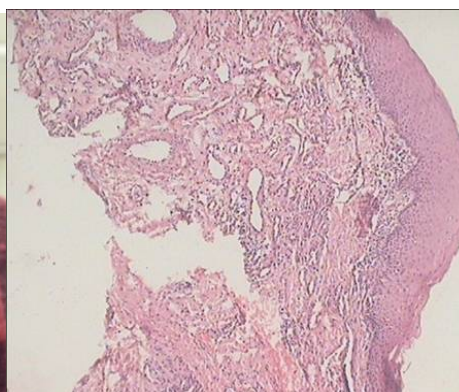


Fig. 4 Histological Examination

HISTOPATHOLOGICAL FEATURE

Parakeratotic or non-keratinized stratified squamous epithelium partially or totally covers pyogenic granuloma microscopically. Exuberant proliferation of highly vascular components mimicking granulation tissue can be seen in this lesion. Erythrocytes are engorged in endothelial-lined vascular channels. The vascular channels are made up of capillary-sized vessels that are grouped in lobules, and this distinguishes pyogenic granuloma as "Lobular capillary hemangioma" (LCH).

Collagen is generally scarce in the connective tissue of pyogenic granulomas. The surface can be ulcerated, and oedema is a common symptom, with plasma cells, lymphocytes, and neutrophils infiltrating the lesion. Within the lesion, the mitotic figures are normal [5].

DISCUSSION

Pyogenic granuloma of the oral cavity appears as an elevated, smooth or exophytic, sessile or pedunculated growth covered with red hemorrhagic and compressible erythematous papules [4, 5]. The color varies from red, reddish purple to pink depending on the vascularity of the growth [6]. The case present here exhibited a big reddish pink growth on the buccal surfaces of the lower right anterior tooth region. The lesion present since 8 to 10th months which was gradually increase in size over the period of time which bleed intermittently. The marginal and the attached gingiva were both affected by the growth. A known stimulant or damage, such as calculus or foreign material within the gingival fissure, causes pyogenic granuloma, [7]. Other triggering causes for pyogenic granulomas include trauma to deciduous teeth, abnormal tooth growth, occlusal interferences, immunosuppressive medicines like as cyclosporine, and incorrect healing cap selection for implants[7]. Oral pyogenic granulomas affect people of all ages, from children to the elderly, but they are more common in women in their second decade due to higher levels of the hormones oestrogen and progesterone in the bloodstream [7]. Gingival enlargements grew during pregnancy and atrophied after menopause. Hosseini *et al* and Yuan *et al* found that morphogenetic factors were higher in pyogenic granulomas than in normal gingiva [8, 9] the pyogenic granuloma present during pregnancy it also known as granuloma gravidarum or pregnancy tumour [10]. Treatment of Pyogenic Granuloma is depends on size and location of the lesion. Excisional biopsy is the treatment

option in majority of cases but other treatment modality can be consider. Larger lesions are treated with incisional biopsy in order to prevent deformity. Neodymium: Yttrium Aluminum: Garnet (Nd: YAG) laser surgery can be used in excision of the lesion due to its superior coagulative ability and its ability to cause less intraoperative bleeding. Other alternative treatment modality can be use such as cryotherapy, electrocauterization, pulsed dye laser and chemical agents. [12,13]

Meffert *et al.* used the flash lamp pulse dye laser on a mass of granulation tissue which did not respond to the usual treatment. Insidaand Ramos-e-silva suggested that the cryosurgery is a very useful techniqueesthetically.Ichimiya at al attempted a different approach using an injection of absolute ethanol in patient with recurrence due to inadequate cryosurgery and concluded that this therapy was less invasive than surgical excision. Moon et alsuggestedthat sodium tetradacaylsulfate sclero therapy successfully cleared the lesions on the surface. this technique offers a better alternative than excision because of simplicity and lack of scaring. Paris at al used a series of intralesional corticosteroid in pyogenic granuloma cases. Treatment considerations during pregnancy are very important. During this period, careful oral hygiene, removal of dental plaque and use of soft toothbrush are important to avoid occurrence of pregnancy tumor. Steelman and Holemessuggested that maintenance of oral hygiene and regular follow up appointment should be recommend while pregnant. Surgical and periodontal treatment should be completed, when possible, during second trimester. Because of being an encapsulated lesion, the pyogenic granuloma can reoccur if they are not completely removed. the pyogenic granuloma dose not reaccuse. The lesion up to 43.5% dose not recur when is excised surgically involving in the floor of the lesion and it excised superficially with the help of electrocauterization [15] and the recurrence rate is 9% while using pulse dye laser. Paglia and Kohen reported no recurrence in 128 cases which was managed by electrocauterization following excision.Leeet.al. 2 unsuccessful cases when used CO2 laser [17] and Krisnapillai *et al* was reported recurrence in 14.88% of 215 cases [16]. During postoperative period patient follow-up should be performed precisely and possibility of recurrence should be tried to be decreased by removal of periosteum and bone in the localized area and educating the patient about oral hygiene. Incomplete excision, failure to remove etiologic factors or repeated trauma contributes to recurrence of these lesions. Vilmannet *al.*, emphasized the need of follow-up, especially in pyogenic granuloma of the gingiva due to its much higher recurrence rate.

CONCLUSION

Pyogenic granuloma is a common lesion of the skin and oral cavity, especially the gingiva. This case report presents a case of a gingival pyogenic granuloma in a female patient giving an insight into its myriad etiologies, clinical features, histological presentations, treatment modalities and recurrence rates and describes how the diagnosis and treatment of one such case was completed and followed up for a period of 3 month.

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