MANAGEMENT OF PYOGENIC GRANULOMA: CASE REPORT

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ABSTRACT:

Pyogenic granuloma is a common benign mucocutaneous lesion occurring intra orally or extra orally. The exact etiopathogenesis is unknown , although contributory factors include trauma, inflammation and infectious agents. Intraoral lesions are sometimes associated with pregnancy. Typically, pyogenic granuloma presents as an exuberant, red painless mass that easily bleeds, ulcerates and grows rapidly and is frequently seen on the gingiva. Treatment is complete surgical excision of growth tissue. The condition is frequently associated with recurrence, and has more predilections towards females. Here by, presenting a case of pyogenic granuloma in a 45 years old female patient having swelling in anterior region .Surgical excision was done as treatment of choice.
Keywords- Pyogenic granuloma, pedunculated growth, surgical excision.

1. INTRODUCTION:

Pyogenic granuloma is a relatively common, soft tissue tumor of oral cavity that is non neoplastic in nature. The name pyogenic granuloma is a misnomer since the condition is not associated with pus and does not represent a granuloma histologically [1]. The term "inflammatory hyperplasia" is used to describe a large range of nodular growths of the oral mucosa that histologically represent inflamed fibrous and granulation tissue [2]. It includes

fibrous inflammatory hyperplasia (clinical fibroma, epulis fissuratum, and pulp polyp), palatal papillary hyperplasia, gaint cell granuloma, pregnancy epulis and pyogenic granuloma [3]. The first case was reported in 1844 by Hullihen and the term **pyogenic granuloma** was coined only in 1904 by Hartzell. In majority of cases, minor trauma or irritation are being responsible of pyogenic granuloma [4]. Infection may play a role with agents such as streptococci and staphylococci [5]. Angiopoietin and ephrin B2 agents in other vascular tumors such as Bartonella hanselae, B.Quintana and human herpes virus 8 have been postulated to play a part in recurrent form [6]. Viral oncogenes, hormonal Influences, microscopic arterivenous malformation along with inclusion bodies and gene depression in fibroblast have all been implicated [7,8]. Clinically these lesions usually present as Single nodule or Sessile Papule with Smooth or lobulated Surface and maybe Seen in any size from a few millimeters to Several Centimeters. It preferentially affects the gingiva, but may also occur on the lips, tongue, oral mucosa and palate [9,10,11]. The maxillary gingiva (especially in theanterior region) is involved more frequently than the mandibular gingiva; the facial gingiva is involved more than the lingual gingiva. Surgical excision is the treatment of choice, followed by curettage of the underlying lesion [12,13]

2. CASE REPORT

A 45 year old female reported to department of Periodontics with chief complaint of swelling in left upper region and difficulty in eating since 8-9 months.. The swelling was of pinpoint size when the patient first noticed it (8 months ago), but had gradually enlarged to attain the present size of around 1.5 cm in relation to 23, 24 and 25. The swelling was not painful but often bled while eating, rinsing and sometime spontaneously. Extra oral examination was significant with asymmetry on left side of face(fig1). Intra oral examination revealed an ovoid, pedunclated exuberant growth in respect to buccal aspect and interdental gingiva of 23, 24, and 25 measuring about 2×1.5 cms(fig 2). This discrete lobular, ulcerated growth was covering half to two-third of crown of 23 and 24. On palpation, the growth was soft in consistency and bleeds profusely on probing. The patient was in poor oral hygiene. Based on the clinical findings, the case was provisionally diagnosed as “pyogenic granuloma”(PG). Intra oral periapical radiograph was taken and no bony involvement was seen. Routine hematologic tests were seen within normal

range. Patient's had non significant medical history. Patient's oral prophylaxis(scaling and root planning) was

Fig.1

Fig.2

completed in 2-3 session .After obtaining informed consent, excisional biopsy was done along with removal of healthy tissue approximately 1mm around the overgrowth with the help of no 15 blade following removal of overgrowth. Full thickness mucoperiosteal flap was raised, scaling and root planning was done all over the exposed root surfaces and removal of complete tissue attached to underlying bone surface was done with help of gracey curette (fig 3). Flap thinning was done followed by placement of 3-0 silk suture (fig 4). A periodontal dressing was placed for 10 days(fig 5) and excised tissue was sent for histopathological examination.(fig 6)

Fig.3

fig.4

Fig.5

Fig.6

Fig.7

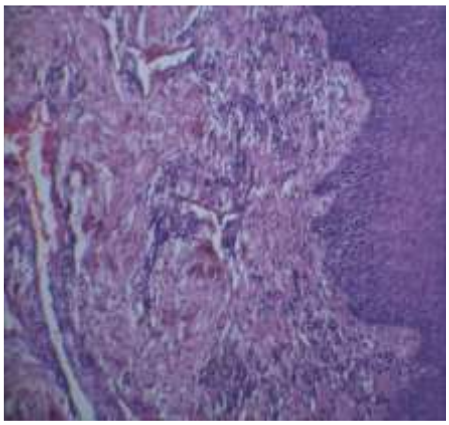

Fig.8

The patient was advised post-operative antibiotics, analgesic and oral hygiene instructions. The excised specimen showed hyperplastic stratified parakeratotic squamous epithelium with an underlying fibrovascular stroma. The stroma consisted of large number of budding and dilated capillaries, proliferating fibroblast, areas of extravasated blood and dense inflammatory cell infiltrates(neutrophils, plasma cells, lymphocytes). The above histopathologic findings were suggestive of pyogenic granuloma(fig.8).

3. DISCUSSION:

Pyogenic granuloma is a kind of inflammatory hyperplasia. The term inflammatory hyperplasia is used to describe a large range of nodular growths of the oral mucosa that histologically represents inflamed fibrous and granulation tissue [14,15]. There are two kinds of pyogenic granuloma namely lobular capillary hemangioma (LCH type) and non LCH type, which differs in their histological features. Poncet and Dor in 1897 first described pyogenic granuloma. Over the years various authors have suggested other names such as granuloma gravidarum, pregnancy tumor, vascular epulis, benign vascular tumor, hemangiomatosis granuloma, epulis teleangiectaticum granulomatosa and lobular capillary hemangioma [16,17].

Approximately one third of the lesions occur after trauma, so the history of trauma before development of this lesion is not usual [18]. Poor oral hygiene may be a precipitating factor in many of these patients [19, 20, 14]. Some factors such as inducible nitric oxide synthase, vascular endothelial factor, fibroblast growth factor, or connective tissue growth factor are known to be involved in angiogenesis and rapid growth of pyogenic granuloma. Pyogenic granuloma of the gingiva develops in upto 5% of pregnancies, hence the terms “pregnancy tumor” or “granuloma gravidarium” are often used [3]. Oestrogen enhances Vascular Endothelial Growth Factor (VEGF) production in macrophages, an effect that is antagonized by androgens and which may be related to the development of PG during pregnancy [21].

Differential diagnosis includes peripheral giant cell granuloma, peripheral ossifying fibroma, metastatic cancer, hemangioma, pregnancy tumor, hyperplastic gingival inflammation, Kaposi's sarcoma, bacillary angiomatosis, angiosarcoma, and non-Hodgkin's lymphoma. [22] Peripheral giant cell granuloma is clinically similar to PG, but bone resorption in radiograph and appearance of the multinucleated giant cell are differentiating features. [23] Also, fibroma can be distinguished by the consistency, texture, and the lighter color. [24] Metastatic tumors, even though clinically resembles PG, the microscopic appearance resemble as the tumor of origin. Hemangioma is a developmental disorder and is most commonly seen on the tongue. It can be multinodular, bluish red and can be diagnosed by a chairside procedure called diascopy [25]. Kaposi's sarcoma and bacillary angiomatosis can be differentiated histopathologically and are also AIDS related[26]. Pregnancy tumor occurs towards the end of pregnancy, and the tendency for this lesion to shrink after delivery indicates the definite role in etiology of lesions. Also, pregnancy tumor is usually confined to the interdental papilla[27]. PG can be distinguishable from angiosarcoma by its lobular growth pattern, well-formed vessels and cytologically bland endothelial cells.[28] Clinical appearance of gingival non-Hodgkin's lymphoma varies but is usually found to be an asymptomatic gingival enlargement or mass resembling a PG. [29]

Histopathologically, it can be classified as an LCH and non-LCH. LCH has proliferating blood vessels in lobular aggregates, no specific changes such as edema and capillary dilatation. Non-LCH type consists of vascular core resembling granulation tissue with foci of fibrous tissue. The lobular area of LCH type has a greater number of blood vessels. Oral PGs are mainly LCH type.

[30] The natural course of the lesion can be in three phases of development as cellular phase, vascular phase and phase of involution. [31

Treatment includes surgical excision of the lesion with the removal of irritants recommended for small painless lesions. Excision of gingival lesions up to periosteum with thorough scaling and root planning of adjacent teeth to remove all visible sources of irritation. [24] Various other treatment modalities include Nd: Yttrium-aluminum-garnet lasers, carbon dioxide lasers, flash lamp, pulse dye laser, cryosurgery, sodium tetradecyl sulphate sclerotherapy, [32] and use of intralesional steroids have been proposed by clinicians. Treatment of oral PG during pregnancy would depend on preventive measures such as careful oral hygiene, removal of dental plaque, and use of soft toothbrush. In some cases, shrinkage of the lesion after pregnancy may make surgical treatment unnecessary. [33]

Incomplete excisions, failure of removal of etiological factors contribute to the recurrence of these lesions.A recurrence rate of 16% and also a case of multiple deep satellite lesions surrounding the original excised lesion in a case of Warner Wilson James syndrome have been reported. [34]

4. CONCLUSION

Clinically pyogenic granuloma is a smooth or lobulated exophytic lesion manifesting as small, red erythematous papule on a pedunculated or sessile base, varying in diameter from few millimeters to centimeters. The surface is ulcerated and friable which may be covered by a yellow, fibrinous membrane and its color ranges from pink to purple depending upon the age of the lesion [6, 13]. The consistency of the tumor gets firmer both with aging of the lesion and elimination of its etiological factors. Its color ranges from pink to red to purple, depending on the age of the lesion. Young pyogenic granulomas are highly vascular in appearance because they are composed predominantly of hyperplastic granulation tissue in which capillaries are prominent [6]. Thus minor trauma to the lesion may cause considerable bleeding, due to its pronounced vascularity. Whereas older lesions tend to become more collagenized and pink [6, 13].the present case was followed up for 6 months. Patient was completely satisfied and regular

oral hygiene was maintained .patient is still on follow up period for examining any relapse after complete recovery.

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