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CASE STUDY

PYOGENIC GRANULOMA IN ELDER MALE – A CASE REPORT

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ABSTRACT

Pyogenic granuloma is one of the inflammatory hyperplasia of the oral mucosa. The term is a misnomer as it is not related to any infection, does not contain pus and is not a true granuloma and in reality it occur in response to various stimuli such as chronic low grade trauma, physical trauma and hormonal factors. Clinically these lesions usually present as single nodule or sessile papule with smooth or lobulated surface and may be seen in any size from a few millimeters to several centimeters. As lesion matures the vascularity decreases and the clinical appearance are more collagenous and pink. The condition is frequently associated with recurrence. Due to its frequent occurrence in the oral cavity, especially in the gingiva, this article presents a case report of a large pyogenic granuloma of the gingiva and its management in a eldery male patient with an follow up period of 1 year without recurrence.

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INTRODUCTION

Pyogenic granuloma is a reactive inflammatory hyperplasia which appears in response to various stimuli such as low grade local irritation and traumatic injury. In 1844, Hullihen first noted the case of pyogenic granuloma (Hullihen, 1844). In1897, it was told as "botryomycosis hominis" (Bhaskar and Jacoway, 1966). Since 1904 the current term of "pyogenic granuloma" or "granuloma pyogenicum" was given by Hartzell (Hartzell, 1904). Histologically it was termed as "hemangiomatous granuloma" due to the presence of numerous blood vessels and the inflammatory nature of the lesion (Angelopoulos, 1971). In dermatologic literature it has been described as "granuloma telangiectacticum" due to the presence of numerous blood vessels seen in histological sections. The term is a misnomer as it is not related to any infection, does not contain pus and is not a true granuloma (Cawson *et al.,* 1998). According to different authors patients are mostly female in the age range 18 to 39 and it can also occure in males under 18 years of age (Pilch, 2001). It is also know as pregnancy tumor and granuloma gravidarum as it is seen in up to 5% of the pregnant females (Mubeen *et al.,* 2011). This is due to the increasing levels of estrogen and progesterone during pregnancy (Ramirez *et al.,* 2002; Nevile *et al.,* 2004). Epivatianos *et al* reported predominance in woman (M: F = 1:1.5) (Epivatianos *et al.,* 2005).

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Main causative factors in the development of pyogenic granuloma are chronic low grade trauma, (Neville *et al.,* 2002) physical trauma, (Regezi *et al.,* 2003) hormonal factors, (Mussalli *et al.,* 1976) bacteria, viruses (Janier, 1999) and certain drugs (Bachmeyer *et al.,* 1996). According to Gomes *et al* infection due to agents such as streptococci and staphylococci may also play a role. (Gomes *et al.,* 2013) Recently angiopoietin and ephrin B2 agents in other vascular tumors such as Bartonella hanselae, B.Quintana and human herpes virus 8 have shown to play a role in recurrent form (Janier, 1999). Viral oncogenes, hormonal Influences, microscopic arterivenous malformation along with inclusion bodies and gene depression in fibroblast have all been implicated (Davies *et al.,* 2000). According to Zafarjadeh H, there are two forms of pyogenic granulomas – (Jafaerzadeh *et al.,* 2006)

- Lobular capillary hemangioma (LCH)
- Non-lobular capillary hemangioma (non-LCH).

Clinically these lesions usually present as single nodule or sessile papule with smooth or lobulated surface and may be seen in different sizes. As lesion mature, the vascularity decreases and the clinical appearance are more collagenous and pink. It preferentially affects the gingiva, but may also occur on the lips, tongue, oral mucosa and palate (Ragezi *et al.,* 2003; Akyol *et al.,* 2001; Glorgi *et al.,* 2005). Surgical excision is the treatment of choice, followed by curettage of the underlying lesion.

Case Presentation

A male patient aged 48 years reported to the department of periodontics, Navodaya dental collage, Raichur, with a complaint of swelling of gum in the upper front teeth since 3years. According to the patient this Soft tissue swelling was small in size and was stable for 2 years, but it has started increasing in size slowly since past 1 year but was painless. The patient had not taken any treatment for the same and had no relevant medical history. The patient brushed his teeth once daily.

Clinical Examination

On Intraoral examination, a well defined swelling was noticed in the gingiva in relation to buccal surface of 11,12. The growth was 0.7 × 0.8 cms in size, oval in shape, reddish, pendunculated lobular mass and was associated with bleeding on probing. The growth covered approximately 2/3 of the crown. The oral hygiene status was fair. Teeth associated with it did not show any mobility. The overjet was decreased and overbite was increased (Fig. 1). Intra oral periapical radiograph revealed mild marginal bone loss. Routine hemogram was found to be normal .The patient was systemically healthy. A provisional diagnosis of pyogenic granuloma was made. The differential diagnosis included peripheral ossifying fibroma, peripheral giant cell granuloma, hemangioma and fibroma.

Figure 1. Pre-Operative View

Clinical Management

Initially scaling and root planning done and oral hygiene instructions was given to patient. The case was prepared for surgery on the basis of the clinical and radiographic evidence, and patient was recalled after 3 weeks. Surgical gingivectomy procedure was carried out. Excision of the growth till and including mucoperiosteum (Fig. 2) with #15 blade under local anesthesia was done followed by curettage and debridement.

Figure 2. After Excision

Periodontal dressing was placed and postoperative instructions were given to patient and was recalled after 1 week for the removal of pack and checkup. The excised tissue (Fig. 3) was sent to oral pathology department for histological report. No recurrence of enlargement has been reported after 1 year follow up (Fig. 4).

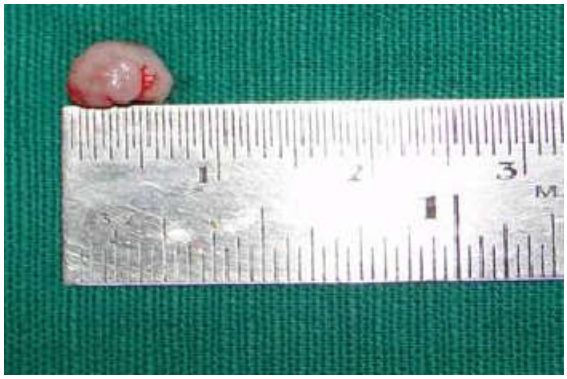

Figure 3. Excised

Figure 4:1 year Post Op View

Histological report (Fig. 5)

H & E stained sections showed stratified squamous epithelium with underlying connective tissue stroma. Epithelium was hyperplastic towards base of the lesion in few areas. The Connective tissue stroma comprised of numerous small and large proliferating dilated blood vessels with extravasated RBCs and thick bundles of collagen fibres with dense inflammatory infiltrate were also present, confirming histologically as pyogenic granuloma.

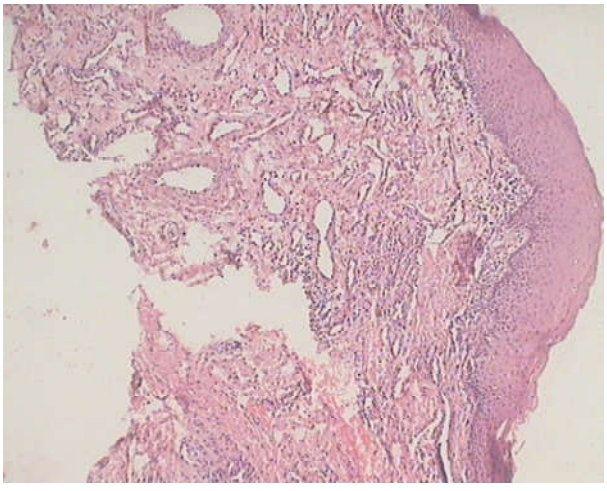

Figure 5. Histological picture of granuloma

DISCUSSION

Pyogenic granuloma is a relatively common benign mucocutaneous lesion which is also called as granuloma pyogenicum is a reactive inflammatory hyperplasia which appears in response to various stimuli such as low grade local irritation and traumatic injury. (Bhaskar and Jacoway, 1966) There are two kinds of pyogenic granuloma namely lobular capillary hemangioma (LCH type) and non LCH type, which differs in their histological features. Over the years various authors have suggested other names such as granuloma gravidarum, pregnancy tumor, crocker and hartzell's disease, vascular epulis, benign vascular tumor, hemangiomatosis granuloma, epulis teleangiectaticum granulomatosa, and lobular capillary hemangioma (Bhaskar and Jacoway, 1966). Ainamo *et al* 1971; Graham, 1996 and Regezi *et al.,* 2003 in there study they have suggested that routine tooth brushing habits can cause irritation to the gingiva and lead to the formation of these lesion, and even sometime known stimulant such as calculus or foreign material within the gingival crevice resulting in exuberant proliferation of connective tissue (Ainamo, 1971). According to different authors patients are mostly female in the age range 18 to 39, and male under 18 years of age, but are more frequently encountered in pregnant females in their second decade due to the increased levels of circulating hormones estrogen and progesterone. In present case, the patient was a 48 -year-old healthy male. From the numerous etiological factors (Bhaskar and Jacoway, 1966; Graham, 1996; Regezi *et al.,* 2003) mentioned above theprobable etiological factor applicable in the present case may be due to recurrent trauma occurring during tooth brushing or function with the release of various endogenous and angiogenic factors contributing to the increased vascularity of the lesion. These factors probably contributed to the development of this lesion as already described by Ainamo (Graham, 1996).

Although pyogenic granuloma can be diagnosed clinically with considerable accuracy, radiographic and histopathological investigations aid in confirming the diagnosis and treatment. Radiographs are advised to rule out bony destructions suggestive of malignancy or to identify a foreign body. Differential diagnosis of pyogenic granuloma includes peripheral giant cell granuloma, peripheral ossifying fibroma, metastic cancer, hemangioma, *basillary angiomatosis*, angiosarcoma and non Hodgkins lymphoma (Ainamo, 1971).
Bhaskar and Jacoway have shown that, comparied to unulcerated form of pyogenic granuloma, the presences of gram positive and gram negative bacilli in the superficial areas of the ulcerated form of pyogenic granuloma, and also have showed that there is an increase in the growth of capillary within granulomatous mass rather than the real pyogenic organisms and pus, so the term pyogenic granuloma is a misnomer and it is not a granuloma in the real sense (Bobby Kurian *et al.,* 2014). Usually when seen clinically the PG presents as a single nodule or sessile papule with smooth or lobulated surface .the size may vary from few millimeters to several centimeters. As lesion mature, the vascularity decreases and the lesion appears to be more collagenous and pink. It preferentially affects the gingiva, but may also occur on the lips, tongue, oral mucosa and palate (Ragezi *et al.,* 2003; Akyol *et al.,* 2001; Glorgi *et al.,* 2005). In the present case lesion was not ulcerated and the swelling was well defined which is about 0.7x0.8 cms size. The lesion was painless, reddish pedunculated lobular mass, oval in shape and was associated with bleeding on probing on the buccal surface of the gingival in relation to 11 and 12 and cover about 2/3rd of crown. The oral hygiene status was fair. Teeth associated with it did not show any mobility. Radiographic findings are usually absent, However, Angelopoulos concluded that in some cases long standing gingival pyogenic granulomas caused localized alveolar bone resorption. In the present case, there were no obvious radiographic findings. Due to the proliferating blood vessels differential diagnosis of pyogenic granuloma from a hemangioma is made histologically in which hemangioma shows endothelial cell proliferation without acute inflammatory cell infiltrate (Bhaskar and Jacoway, 1966). Excision and biopsy of the lesion is the recommended line of treatment unless it would produce a marked deformity and in such a case incisional biopsy is recommended (Tumini *et al.,* 1998). Other treatment modalities include laser surgery (Calonje *et al.,* 1997), electrodessication (Taira *et al.,* 1992). Injection of absolute ethanol (White *et al.,* 1998), sodium tetradecyl sulfate (sclerotherapy) and corticosteroids have also been tried with successful results in cases with recurrent lesions (Taira *et al.,* 1992). In the present case the lesion was surgically excised with the help of scalpel and was sent for histopathological examination and confirmed as PG.

Recurrence

According to Taira *et al.,* recurrence rate of excised lesions is approximately 16%. Due to higher recurrence rate of pyogenic ganuloma importance has been given for the need of follow up by vilmann *et al* in 1986 (Ainamo, 1971). The present case was followed up for a period of 1 year and no recurrence was observed (Fig. 4).

Conclusion

Oral pyogenic granulomas is a non-neoplastic growth and are fairly common lesions most frequently seen on the maxillary gingiva. Usually, PG seen more in pregnant subjects, but also have chances to occur in males and elder subjects; so proper diagnosis, prevention, management and treatment of the lesion is important. In spite of different treatment option, recurrence is not infrequent & in some case re-excision may be necessary. The adoption of preventive measures, such as good oral hygiene, use of soft tooth brush with proper brushing technique will reduce the risk of PG recurrence. Proper recall is important in preventing the recurrence of pyogenic granuloma.

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