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RECURRENT CASE OF PYOGENIC GRANULOMA ASSOCIATED WITH BONE LOSS- A RARE CASE REPORT

Dentistry

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ABSTRACT

Pyogenic granuloma is one of the inflammatory hyperplasia seen in the oral cavity. This term is a misnomer because the lesion is unrelated to infection and in reality arises in response to various stimuli such as low-grade local irritation, traumatic injury or hormonal factors. Predominately ocuurs in second decade of life in young females, possibly because of vascular effect of female hormones. Clinically, oral pyogenic granuloma is a smooth or lobulated exophytic lesion manifesting as small, red erythematous papules on a pedunculated or sometimes sessile base, which is usually hemorrhagic. The surface ranges from pink to red to purple, depending on the age of the lesion. Although excisional surgery is the treatment of choice for it, some other treatment protocols are also proposed. This report is presenting a case of 28 years old male showing recurrent Pyogenic granuloma which was excised twice within a duration of one month.

KEYWORDS

Pyogenic granuloma, Recurrence, Excision

INTRODUCTION:

Pyogenic granuloma (PG) 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 represent inflamed fibrous and granulation tissues [1]. It includes fibrous inflammatory hyperplasia (clinical fibroma, epulis fissuratum, and pulp polyp), palatal papillary hyperplasia, giant cell granuloma, pregnancy epulis and Pyogenic granuloma [2].

Pyogenic granuloma was first described in 1897 by two French surgeons, Poncet and Dor, who named this lesion otyomycosis hominis [3]. 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 [4]. It is also not truly "pyogenic," as the origin is traumatic and not infectious.

Pyogenic Granuloma is a common tumor-like growth of the oral cavity or skin that is considered to be non-neoplastic in nature [5]. While some investigators [6] regard pyogenic granuloma as a benign neoplasm, it is usually considered to be a reactive tumor-like lesion which arises in response to various stimuli such as a chronic low-grade local irritation [5],traumatic injury [7], hormonal factors [8] or certain kinds of drugs [9].

Although it was originally thought to be caused by Pyogenic organisms, it is now believed to be unrelated to infection [2]. So the term pyogenic granuloma is a misnomer because the lesion does not contain pus and is not strictly speaking a granuloma [5]. It should be emphasized that as infective organisms such as *Bartonella henselaea* (peliosis hepatis), *B. henselae* and *B. quintana* (bacillary angiomatosis), and human herpes virus type 8 (Kaposi_sarcoma and angiolymphoid hyperplasia) have been identified in other vascular tumors, some authors have postulated that infective agents may play a part in recurrent pyogenic granuloma. However, there is no evidence confirming the presence of infectious organisms in larger groups of pyogenic granulomas [10].

This report presents a case of 28 years old male with recurrent pyogenic granuloma which was excised twice within a duration of one month.

Case report:

A 28 years old male patient was referred to us with a chief complaint of a recurrent swelling of gum in the left upper back tooth region. **(Fig. 1)**

Dental history:

Patient first noticed bleeding in the area 2 months back for which he visited a private practitioner and he was prescribed metronidazole and steroids.

After 15 days, patient noticed a swelling which gradually increased in size. He visited another dentist and the lesion was excised and sent for histopathological examination. It was diagnosed a case of Pyogenic granuloma.

But to patient's surprise, the lesion recurred after 20 days and patient was referred to our department.

Clinical examination:

Clinical examination revealed an exophytic, pedunculated lesion measuring 2 cm × 3 cm in diameter, in the interdental papillary region of the maxillary left premolars. It manifested as smooth, erythematous papule, roughly oval in shape, having a pedenuculated base. It was non tender, soft in consisitency and had tendency for bleeding. The concerned teeth were sensitive to heat and cold. Oral prophylaxis was performed and the patient was recalled after 1 week, but to the surprise the size of the lesion increased to two-fold. **(Fig 2)**

Investigations:

Intraoral periapical radiograph did not revealed any bone loss **(Fig 3)** and blood examination revealed normal value. Due to the relatively small size of the lesion, an excisional biopsy, along with histopathologic evaluation was recommended as the diagnostic approach.

Histopathological examination of the growth revealed stratified squamous orthokeratinized epithelium covering cellular connective tissue with non neoplastic proliferation of endothelial cells with blood cells formation and infiltration of acute and chronic inflammatory cells in a few collagenous matrix. The connective tissue shows proliferating fibroblasts and collagen fibres.

{Fig 4(a), (b)} The clinical and histopathological findings confirmed it to be a case of pyogenic granuloma.

Treatment:

Although many treatment techniques have been described for Pyogenic granuloma, when it is large or occurs in a surgically difficult area, choosing an appropriate treatment modality can be difficult [11]. Excisional biopsy is indicated for treatment of Pyogenic granuloma, except when the procedure would produce marked deformity, in such a case, incisional biopsy is mandatory [2]. So, management of Pyogenic Granuloma depends on the severity of symptoms. If the lesion is small, painless and free of bleeding, clinical observation and follow up are advised [11].

Although conservative surgical excision and removal of causative irritants (plaque, calculus, foreign materials, source of trauma) are the usual treatments [12, 13] for gingival lesions, the excision should extend down to the periosteum and the adjacent teeth should be thoroughly scaled to remove the source of continuing irritation [5].

Since the present case is case of recurrence so along with the excision of the lesion the flap was raised to remove the irritating factors. Thorough debridement was done to remove plaque and calculus. The lesion was excised **(Fig 5)** and also the flap was reflected. **(Fig 6).** After flap reflection a bone defect of 5mm was noticed at the buccal cortical plate in the interdental region **(Fig 7)**. The defect was thoroughly debrided and regenerative surgery with the bone graft was performed. **(Fig 8)** Flaps were surtured back and patient was kept on postoperative medications **(Fig 9)**.

When patient came back for suture removal after one week the lesion with red hue again started developing, which was an issue of concern **(Fig 10)**. Again the excision was planned after one week. This time the excision was done along with the complete removal of the underlying epithelium along with the surrounding healthy epithelium **(Fig 11). I**t was again sent for histopathological examnation which confirmed the diagnosis of Pyogenic granuloma. The case was follwed up to six months and it did not show recurrence (**Fig 12).**

DISCUSSION:

In the oral cavity pyogenic granulomas show a striking predilection for the gingiva, with interdental papillae being the most common site in 70% of the cases. They are more common in the maxillary anterior area than any other area in the mouth. Gingival irritation and inflammation that result from poor oral hygiene, dental plaque and calculus or over-hanging restorations may be precipitating factors in many cases [2, 5].

The present case is showing an example of the recurrent case of Pyogenic Granuloma showing recurrence because of the failure to remove the constantly irritating factors plaque and calculus.

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 destruction suggestive of malignancy or to identify a foreign body. All clinically suspected pyogenic granulomas must be biopsied to rule out more serious conditions.

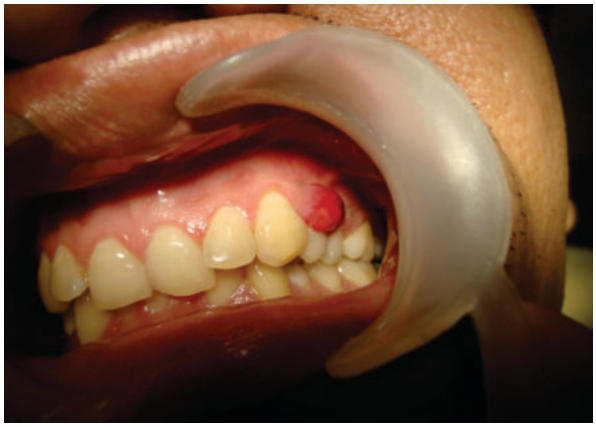

Figure 1: Recurrent swelling of inter-papillary region (preoperative)

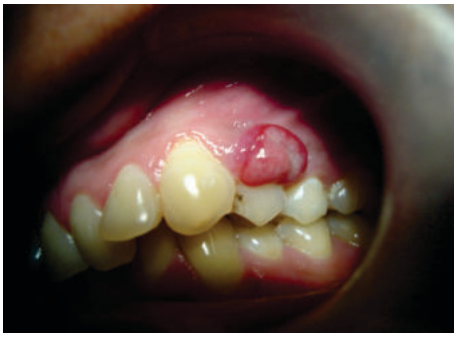

Figure 2 – Increased swelling at 2nd visit

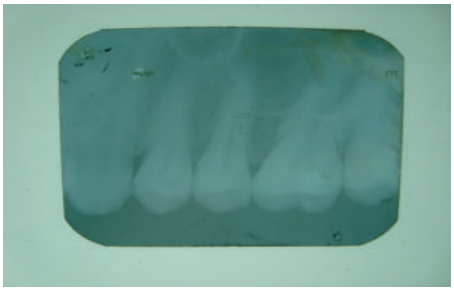

Figure 3 – Intraoral periapical radiograph

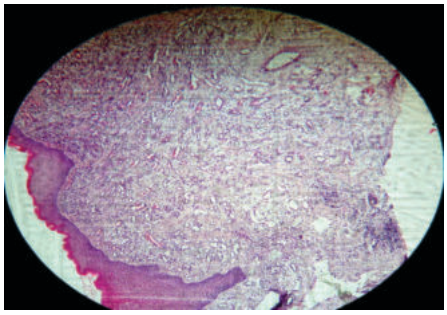

Figure 4 (a)– Histohpatholgical slide showing stratified squamous epithelium and collagen fibres

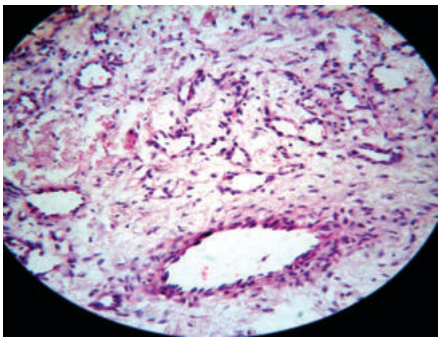

Figure 4(b) –Histopathological slide showing numerous blood vessels lined with endothelial cells

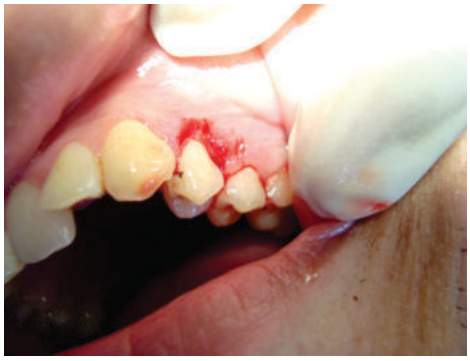

Figure 5 – Excision of lesion

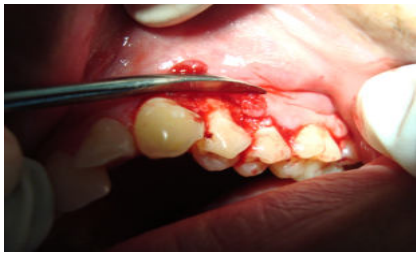

Figure 6 – Flap reflection

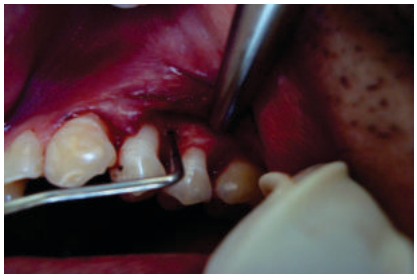

Figure 7 – Bone defect evidenced by penetration of probe

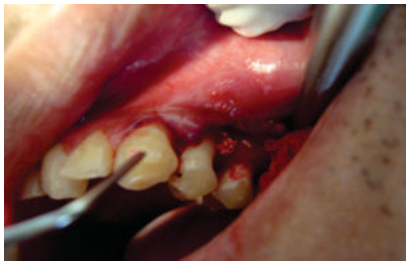

Figure 8 – Debridement and placement of bone graft

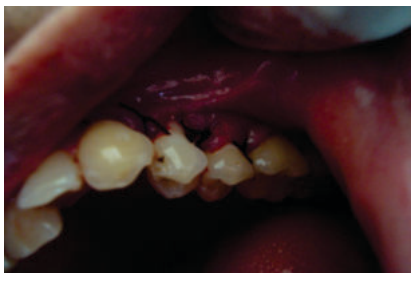

Figure 9 –Placement of suture (postoperative)

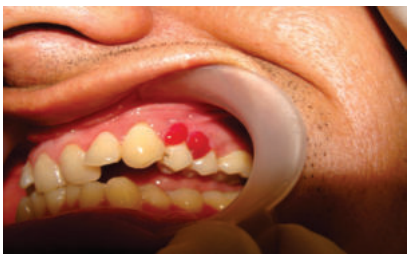

Figure 10 – Reoccurrence after one week

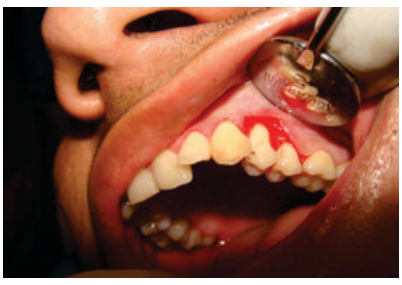

Figure 11 – Excision along with surrounding healthy epithelium

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