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Diagnozing a recurrent oral granuloma pyogenicum - A Case Report

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Abstract
Oral granuloma pyogenicum or pyogenic granuloma is a relatively common mucocutaneous lesion seen in the oral cavity, as a response to some underlying irritating factor. Clinically oral pyogenic granuloma is seen as a smooth exophytic lesion with usually haemorrhagic base. It is not associated with pus as its name suggests and histologically it resembles an angiomatous lesion rather than a granulomatous lesion. It is known by a variety of names such as Crocker and Hartzell's disease, Granuloma pediculatumbenignum, benign vascular tumor and during pregnancy as granuloma gravidarum. This tumor like growth is considered to be non‑neoplastic in nature and it presents itself in the oral cavity in various clinical and histological forms. This paper presents a case of pyogenic granuloma managed by surgical intervention.

Keywords: Oral granuloma pyogenicum, pyogenic granuloma, non-neoplastic, oral cavity, treatment

Introduction

Pyogenic granuloma was first originally described in 1897 by two French surgeons, Poncet and Dor, who named this lesion botryomycosis hominis [1]. It was only in1904 that Hartzell first ever introduced the term pyogenic granuloma [2]. Pyogenic granuloma is an inflammatory hyperplasia seen as a response to underlying irritating factor. It is now agreed pyogenic granuloma arises as a result of some minor trauma to the tissues. Gingiva is the most common site affected followed by buccal mucosa, tongue and lips. It was also called a Crocker and Hartzell's disease. Angelopoulos histologically described it as hemangiomatous granuloma due to the presence of numerous blood vessels and the inflammatory nature of the lesion. Cawson *et al.* in dermatologic literature have described it as granuloma telangiectacticum due to the presence of numerous blood vessels seen in histological sections. They described two forms of pyogenic granulomas, the lobular capillary hemangioma (LCH) and the non-lobular capillary hemangioma (non-LCH). Pyogenic granulomas commonly occur on the skin or the oral cavity but seldom in the gastrointestinal tract [3].

The name for Pyogenic Granuloma is misleading because it is not a true granuloma. In actuality, it is a capillary hemangioma. According to Vilmann *et al.* majority of the pyogenic granulomas are found on the marginal gingiva with only 15 % of the tumors on the alveolar part. It is reported many times pyogenic granulomas cause significant bone loss [4].

Different investigators have suggested varied etiologic factors, which lead to the formation of pyogenic granuloma of the skin and oral cavity. Chronic low grade trauma, physical trauma, hormonal factors, bacteria, viruses and certain drugs have been implicated as causative factors in the development of pyogenic granulomas. Oral pyogenic granulomas show a predilection for the gingiva, accounting for 75% of the cases. Local irritants such as calculus, foreign material in the gingiva and poor oral hygiene are the precipitating factors.[5]

Females are far more susceptible than males because of the hormonal changes that occur in women during puberty, pregnancy, and menopause. In many cases, mastication on the lesion causes bleeding and pain and requires surgical intervention before parturition. Some pyogenic granulomas regress after child birth without surgical intervention. Treatment of pyogenic granuloma involves a complete surgical excision. Recurrence of pyogenic granuloma after excision is a known complication but can be prevented. Recurrence rate for pyogenic granuloma is said to be 16 % of the treated lesions and so re excision of such lesions might be necessary [6].

Being a non-neoplastic growth, excisional therapy is the treatment of choice but some alternative approaches such as cryosurgery, excision by Nd: YAG Laser, flash lamp pulsed dye Laser, injection of corticosteroid or ethanol, and sodium tetradecyl sulphate sclera therapy have been reported to be effective [7].

Case Report

A 38 years old female patient reported to the Department of Oral Medicine and Radiology with a chief complaint of swollen gums in the lower front region of the jaw since 2 years. Patient was apparently alright 2 years ago when she experienced swollen gums in the lower front region of the jaw. It gradually increased in size. She also gave a history of bleeding gums on brushing teeth. The patient had undergone surgery with relation to a similar swelling 3 years ago in the same region.

Patient was healthy with no history of any underlying systemic diseases. On extra-oral examination, there was no visible swelling on the face [Fig.1]. Intraoral examination revealed a well-defined, well circumscribed, pedunculated, lobulated gingival overgrowth in 33 region involving the attached gingiva approximately 2x2 cm in size.It was reddish pink in colour and the surface was smooth. It was soft to firm in consistency and non-tender on palpation [Fig. 2]. Bleeding was

seen on probing. Pseudo pocket of 4mm was present with 33.The periodontal status of the patient was good. Teeth associated with it did not show any mobility. Radiographically, there were no visible abnormalities and the alveolar bone in the region of the growth appeared normal. Routine haemogram was found to be normal. A provisional diagnosis of pyogenic granuloma was made. The differential diagnosis included peripheral ossifying fibroma, peripheral giant cell granuloma, hemangioma and fibroma.

The case was prepared for surgery on the basis of the clinical and radiographic evidence. Oral prophylaxis was completed and the lesion was excised under aseptic conditions. Excision of the lesion up to and including the mucoperiosteum was carried out under local anesthesia using a scalpel and blade, followed by curettage and thorough scaling of the involved teeth [Fig. 3, 4, 5, 6]. Periodontal dressing was placed and the patient was recalled after 1 week for removal of the pack and checkup [Fig. 7]. The excised tissue was sent to the Department of Oral Pathology for histopathological examination.

Histopathological report revealed parakeratinized epithelium and showed proliferation toward the base of the lesion. The underlying connective tissue stroma showed dilated and engorged blood vessels, extravasated red blood cells, angiogenesis, few inflammatory cells and bundles of collagen fibers [Fig. 8]. The diagnosis of pyogenic granuloma was confirmedhistologically.

Since this probably was a case of recurrence, the patient was recalled every 3rd month for maintenance and to check for possible recurrence.

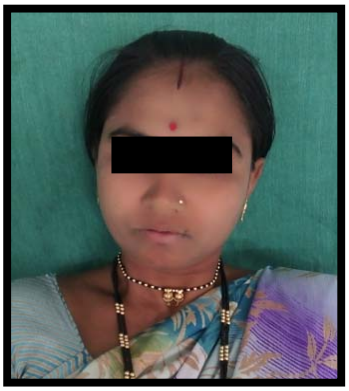
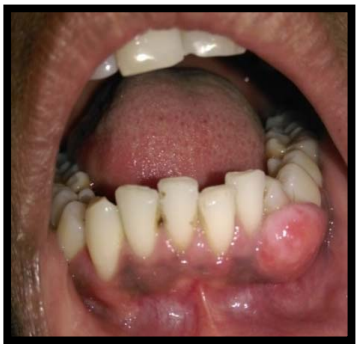


Fig 1



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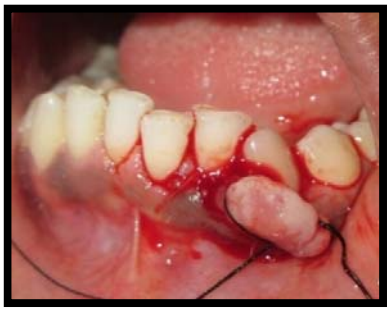

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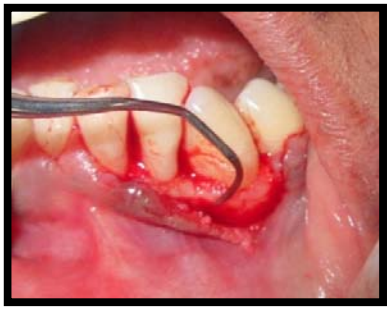

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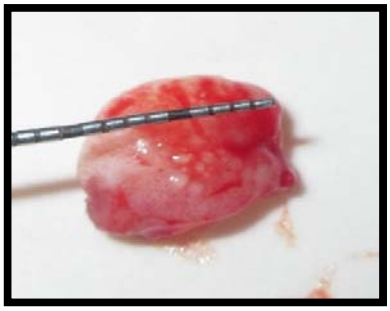
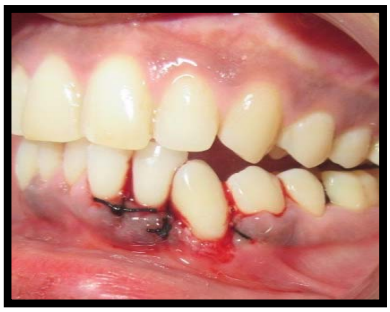


Fig 5



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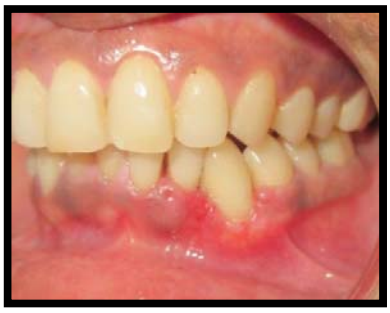

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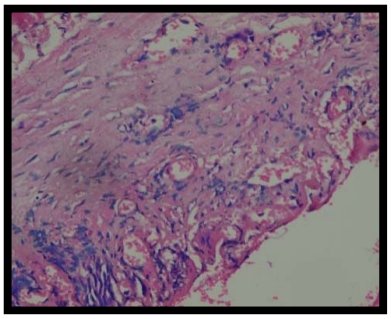

Fig 8

Discussion

It is now universally agreed that pyogenic granuloma is formed as a result of exaggerated localized connective tissue reaction to a minor injury or any underlying irritation.[7] This irritating factor can be calculus, poor oral hygiene, nonspecific infection, over hanging restorations, cheek biting etc. Because of this irritation, the underlying fibrovascular connective tissue becomes hyperplastic and there is proliferation of granulation tissue which leads to the formation of pyogenic granuloma. Pyogenic granuloma may occur in all ages but is predominantly seen in second decade of life in young adult females possibly because of vascular effects of female hormones [8, 9].

According to Vilmann *et al*, majority of the pyogenic granulomas are found on the marginal gingival with only 15 % of the tumors on the alveolar part [10]. Studies by Zaib RB *et al* in Singapore populations have also shown the greatest incidence of pyogenic granuloma in the second decade of life [11]. Clinically pyogenic granuloma is generally seen as a smooth or lobulated exophytic lesion with a pedunculated or a sessile base. Pyogenic granuloma grows in size from few mm to several cm in size but rarely exceed more than 2.5 cm size. Some of the pyogenic granuloma grow rapidly and attain large sizes [12]. In this case it's of 3cm X 3cm. It is reported many times pyogenic granulomas cause significant bone loss [13].

Treatment of pyogenic granuloma involves a complete surgical excision. Recurrence of pyogenic granuloma after excision is a known complication but can be prevented. Recurrence rate for pyogenic granuloma is said to be 16 % of the treated lesions and so re excision of such lesions might be necessary.[14]Various other benign soft tissue lesions need to be differentiated from pyogenic granuloma. Few to name include peripheral giant cell granuloma, pregnancy tumor; conventional granulation tissue etc. Differentiation is done on clinical and histological features which help in adequate treatment and good prognosis.

Conclusion

From the present case report it is concluded that oral granuloma pyogenicum is non-neoplastic in nature and usually do not attain unusually large size. Considering these characteristics, pyogenic granuloma can be adequately treated with correct diagnosis and proper treatment. A careful management of the lesion also helps prevent the recurrence of this benign lesion.

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