CASE REPORT

Oral Pyogenic Granuloma and its Management – A Case Report

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Abstract

Pyogenic Granuloma are benign vascular lesions that occur most commonly on the acral skin and on the oral mucous membrane of children and young adults. The term pyogenic granuloma is a misnomer since it does not produce any purulent secretion, not related to any infection and does not even represent a granuloma histologically. Clinically it appears as pink to red coloured smooth or lobulated exophytic lesion on a pedunculated or sessile base which is usually hemorrhagic. Pyogenic granuloma is thought to occur in response to various stimuli such as low grade local irritation, traumatic injury or due to hormonal factors. Surgical excision with eradication of local irritants is the treatment of choice for it. Other protocol such as use of Nd:YAG laser, cryosurgery, intralesional injection of corticosteroids have been proposed. This article describes a case of pyogenic granuloma in a child 13 years of age.


Key words: Pyogenic granuloma, Gingiva, Inflammatory hyperplasia

Introduction

Soft tissue enlargements of the oral cavity often present a diagnostic challenge because of the diverse group of pathologic processes causing such lesion. Hullihan’s in 1844 first reported Pyogenic Granuloma in English literature but the term “Pyogenic Granuloma” or “Granuloma Pyogenicum” was introduced by Hartzell in 1904. Occurrence of pyogenic granuloma in man was first described in 1897 by Poncet and Dor. During that time it was termed as Botryomycosis Hominis. It is now referred to as Telangiectic Granuloma. Pyogenic Granuloma is believed to be non-neoplastic growth of the oral cavity occurring as a result of low grade local irritation, trauma or in response to hormonal changes. The growth most commonly occurs in teenagers and young adults with female predilection may be because of hormonal changes in women. It is also believed
that 75% cases commonly occur on maxillary gingiva and on the anterior region of jaws. Clinically it appears as pink to red coloured smooth or lobulated exophytic lesion on a pedunculated or sessile base which is usually hemorrhagic. Surgical excision with eradication of local irritants is the treatment of choice. Other protocol such as use of Nd:YAG laser, flash lamp pulsed dye laser, cryosurgery, intralesional injection of corticosteroids have been proposed. This article describes a case of pyogenic granuloma in a child 13 years of age.

Case report

A 13 year old female patient reported to outpatient department of Pedodontics & Preventive Dentistry, Career Post Graduate Dental College, Lucknow, U.P with the chief complain of swollen gum in the upper right anterior region of jaw since past two months. Patient gave no relevant medical history. The oral hygiene status was poor with moderate supra and subgingival calculus and moderate gingivitis (Fig: 1). On clinical examination a localized gingival painless swelling of 0.7 cm × 0.6 cm × 0.2 cm with sign of inflammation was present in relation 11 and 12 (Fig: 1).

The lesion was small erythematous papule on a pedunculated base. Overlying mucosa was ulcerated & reddish pink in colour. On palpation the growth was firm, resilient, non tender and bleeding on probing was evident. The hemogram of the patient was within normal limits.

The histological evaluation revealed keratinized stratified squamous surface epithelium in association with fibrovascular connective tissue. The epithelium exhibited short reteridges while at one area of focus the reteridges are broad and bulbous. It also showed inflammatory cell exocytosis and presence of dense infiltrate of chronic inflammatory cells, extravasated RBC’s and lobular arrangement of blood vessels confirming the clinical diagnosis of Pyogenic

Figure 1: Intraoral clinical presentation of the soft tissue growth

Figure 2: Excision of the soft tissue growth

Figure 3: Excised specimen

After complete scaling and curettage excisional biopsy was performed under local anaesthesia and was sent for histopathological evaluation (Fig. 2&3). After complete stoppage of bleeding the excised area was covered with periodontal pack and the patient was discharged (Fig. 4).

Figure 4: Post operative excised soft tissue growth

Figure 5: Photomicrograph
Granuloma (Fig: 5). The patient was recalled after one week for re-evaluation. (Fig: 6).

**Discussion**

Pyogenic granuloma or granuloma pyogenicum is a relatively common benign non-neoplastic tumour. The term “pyogenic” is a misnomer since this condition does not produce any purulent secretion, not related to any infection and does not even represent a granuloma histologically. It is also known as pregnancy granuloma or pregnancy gravidarum when occurring in pregnant women. The lesion commonly occurs on the maxillary gingiva with interdental papillae being the most common site and shows a striking predilection for females because of the hormonal changes that occur during puberty, pregnancy and menopause. A study conducted by Skinner RL et al revealed a ratio of 3:2 predilections for females over males. The growth can occur at any age, but most frequently affects the teenagers and young adults with the peak incidence in the third decade.

Pyogenic granuloma is a benign neoplasm which is usually considered as a reactive tumour like lesion extending from few millimetres to several centimetres and highly vascular as they are composed of hyperplastic granulation tissue with prominent capillaries and so even a minor trauma causes considerable bleeding, whereas in older patients it becomes more collagenised. Earlier it was known to be a botryomycotic infection but now it is believed to arise in response to various stimuli such as chronic low grade local irritation, trauma, hormonal factors, viral oncogens or certain kind of drugs. Clinically it appears as a painless smooth or lobulated exophytic lesion manifesting as small, red erythmatous papules on a pedunculated or sessile base which is usually haemorrhagic. A histological finding reveals a matrix of edematous connective tissue having numerous thin walled vascular channels arranged in lobular aggregates and mass of granulation tissue with chronic inflammatory cellular infiltration. Endothelial proliferation and formation of numerous vascular spaces are the prominent features. The surface epithelium is atrophic in some areas and hyperplastic in others. Surface ulceration and exudation are common features. Several authors preferred to term this entity as a lobular capillary hemangioma based on the histological appearance.

The differential diagnosis of Pyogenic Granuloma includes Peripheral giant cell granuloma, Pregnancy tumour, Peripheral ossifying granuloma, Hemangioma, Inflammatory gingival hyperplasia, Kaposi sarcoma and Metastasis of malignant tumours. Although pyogenic granuloma can be diagnosed clinically but radiograph and histological investigations aids in confirming the diagnosis. Radiographically, there is no evidence of bone involvement but are advised to rule out any bony destruction suggestive of malignancy. In some cases superficial bone erosion has been seen. Extensive bone loss and mobility of teeth have also been seen in 3% of cases, resembling a malignant tumor. All clinically suspected pyogenic granuloma must be biopsied to rule out any malignant condition. Treatment of pyogenic granuloma consists of conservative surgical excision along with elimination of irritating local factors. The lesion is excised down to the periosteum. The prognosis is good and the lesion does not recur unless inadequately removed. The reoccurrence rate is high (15%) after simple excision especially in during pregnancy. After excision of the lesion complete scaling of the adjacent teeth are done to remove any calculus and plaque which may be the source of continuing irritation. Other conventional surgical modalities for the treatment of pyogenic granuloma reported is cryosurgery in form of either liquid nitrogen spray or a cryoprobe which is an easy, safe and inexpensive technique. Lasers, Nd: YAG and CO₂ have also been used as a least invasive and painless procedure for the treatment of pyogenic granuloma.
Conclusion

Oral Pyogenic Granuloma is a non-specific growth in the oral cavity for which proper diagnosis and treatment of the lesion are very important. It is the most common gingival tumour showing a striking predilection for the females and accounting 75% of all cases on gingiva. This lesion occurs in response of various stimuli such as low grade local irritation, hormonal, traumatic injury and certain drugs. Treatment of pyogenic granuloma consists of conservative surgical excision which is usually curative. Consideration should be given to simpler and least invasive treatment while preserving the mucogingival complex.

References