"GUMMY TOOTH": AN UNUSUAL PRESENTATION OF PYOGENIC GRANULOMA

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Abstract

Pyogenic granuloma (PG) is a type of inflammatory hyperplasia and is a common tumor like growth of the oral cavity or skin that is considered to be non-neoplastic in nature. The name "pyogenic granuloma" is somewhat a misnomer in that the lesion does not contain pus, as the word "pyogenic" suggests, and is not strictly speaking a granuloma. A 55 year old female reported to our OPD with a complaint of gummy tooth in the front upper region. On clinical examination, it was seen that there was a soft, exophytic tooth like growth extending from attached gingiva to just above the incisal edge of adjacent tooth, placed in edentulous area between the right central and left lateral incisor. The oral hygiene of the female was poor. Excisional biopsy was done and the provisional diagnosis of pyogenic granuloma was confirmed.

Key Words: - Gingival Hyperplasia, Pyogenic Granuloma, Neoplasm

Introduction

Soft tissue enlargements of the oral cavity often present a diagnostic challenge because a diverse group of pathologic processes can produce such lesions. Such enlargements can be due to variation of normal anatomic structures, inflammation, cysts, neoplasms, hyperplasias, developmental anomalies.[1] Pyogenic granuloma, better known in dermatologic literature as lobular capillary hemangioma,[2] is one such lesion among the group of reactive hyperplasias which can be related to a number of etiologic factors, can be present at various sites, take numerous forms and be treated in a number of ways depending on the type of lesion. The present case depicts an unusual presentation of the common lesion along with revision of important diagnostic and histopathologic features of the same.

Case Report

A 55 year old female reported to the OPD with a chief complaint of gum like tooth emerging in her upper front teeth region since last 4 months (Figure 1). On clinical examination an exophytic, firm and fibrous gingival overgrowth, which was reddish pink in color, pedunculated, (Figure 2) extending from the attached gingiva of the edentulous area between the upper right central and left lateral incisor was observed.

Figure 1: - Figure showing tooth like form of the lesion

The lesion initiated as a small asymptomatic exophytic growth which gradually extended to the present condition. Interestingly, the lesion was exactly tooth like in its shape (Figure 1) Inflammation in the palatal rugae area was evident on the left side (Figure 2). The patient had poor oral hygiene suggestive of chronic periodontitis (Figure 1). Considering the clinical features, a provisional diagnosis of pyogenic granuloma was made.

Excisional biopsy was performed on the lesion followed by histopathogical analysis of the tissue showed endothelial cells lining blood capillaries which were plump and cuboidal and dense mixed inflammatory cell infiltrate showed presence of eosinophils, neutrophils and lymphocytes (Figure 3).

Figure 2: - Figure showing pedunculated lesion

Pyogenic granuloma, more recently known as telangiectatic granuloma, exhibits varied features in various individuals when present. Therefore, it is important to distinguish it from other similar lesions like peripheral giant cell granuloma, traumatic fibroma, peripheral ossifying fibroma, conventional granulation tissue, hemangioma and pregnancy tumor.

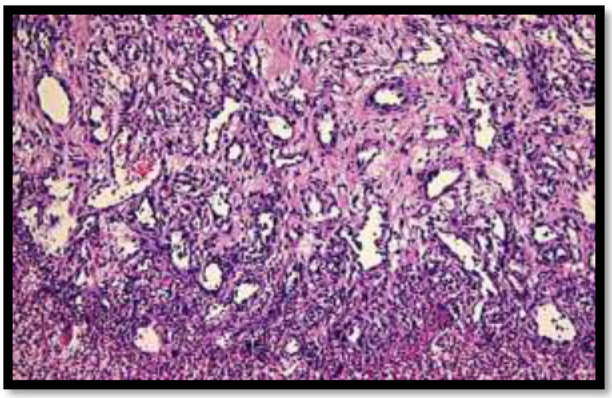

Figure 3: - Histopathological view of the lesion

Complete oral prophylaxis was done on the first visit followed by subgingival scaling on the next visit and excisional biopsy of the lesion under local anesthesia. Periodontal dressing (COE-PAK) was placed. Oral hygiene instructions were given to the patient along with antibiotic and anti-inflammatory medication. Chlorhexidine mouth rinse was advised for maintenance of oral hygiene. Complete healing of the excised area was observed with no signs of inflammation. Patient was advised follow up every 6 months to prevent recurrence of the lesion.

Discussion:

The first case of pyogenic granuloma was reported in 1844 by Hullihcn and the term "pyogenic granuloma" or "granuloma pyogenicum" was coined only in 1904 by Hartzcll. The term however is a misnomer as it is not related to any infection, does not contain pus and is not a true granuloma [2]. The main etiological factors for the lesion are:- [3]

a. Chronic irritation. (Presence of calculus or overhanging margins of restorations).
b. Chronic trauma (approx. 1/3rd cases are reported after trauma)
c. Vascular effects of female steroid hormones
d. Use of oral contraceptive pills
e. Use of certain kind of drugs such as immunosuppressants (cyclosporine)
f. Iatrogenic factors

Recently at the molecular level Kuo Yuon *et al* reported that an imbalance between the angiogenesis enhancers and inhibitors, i.e. over expression of vascular endothelial growth factor (VEGF) and basic fibroblast growth factor (bFGF), which are the angiogenesis enhancers and decreased amount of angiostatin which is an angiogenesis inhibitor plays a role the pathogenesis of pyogenic granuloma.[4]

PG has a striking affection for the gingiva accounting for almost 75% of the cases possibly caused by the presence of calculus and foreign material in the gingival crevice. It may be found in the lips, gingival mucosa, tongue and hard palate. They are more commonly seen on the anterior attached gingiva of the maxilla more on the labial than the lingual gingiva. Pyogenic granulomas are limited to the gingival and rarely involve the alveolar bone.[2] Although PG may occur in all ages, it is predominant in 2nd decade of life in young adult females. Some authors believe that patients are mostly males less than 18 years of age, females in the age range of 18 to 39 and older patients with an equal gender distribution. It has a striking affection for the gingiva accounting for almost 75% of the cases possibly caused by the presence of calculus and foreign material in the gingival crevice. It may be found in the lips, gingival mucosa, tongue and hard palate.[5] They are more commonly seen on the anterior attached gingiva of the maxilla more on the labial than the lingual gingiva.[6] PGs are limited to the gingival and rarely involve the alveolar bone (15%). [7]

Two histological variants of oral pyogenic granuloma have been described in literature:

Lobular capillary hemangioma (LCH): It is is characterized by proliferating blood vessels organized in lobular aggregates. The lobular area contains a greater number of blood vessels with small luminal diameter.

Non-lobular capillary hemangioma: This type consists of highly vascular proliferation that resembles granulation tissue. In the central area, a significantly greater number of vessels with perivasular mesenchymal cells non-reactive for α – smooth muscle actin and muscle specific actin is present than in the lobular area of LCH PG.[5]

Various treatment modalities have been proposed for pyogenic granuloma. Excisional biopsy is the routine procedure of treatment except when the procedure would produce marked deformity. In such cases, incisional biopsy should be performed.[7] Thus the management depends on severity of the lesion. When it is small, painless and free of bleeding, removal of causative irritants should be done along with surgical excision. The excision should extend thoroughly down till the periosteum and adjacent teeth cleaned. Other treatment options like use of Nd: YAG laser,[8] cryosurgery,[9] injection of absolute ethanol,[10] sodium tetradecyl sulfate sclerotherapy[11] and intralesional corticosteroids[12] have also been cited in literature. Recurrence rate of PG is up to 16%, especially when it is on the gingiva. It may occur due to incomplete excision, incomplete removal of causative factors or re-injury of the area. In such cases, re excision becomes necessary. [5]

It can be concluded that PG can be adequately treated with correct diagnosis and proper treatment planning. A careful management of the lesion can also help in preventing the recurrence of this benign lesion.

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