

Pyogenic granuloma- A Case series

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Abstract

Pyogenic granuloma is a common tumor-like growth of the oral cavity, considered to be of non-neoplastic nature. It is predominantly seen in females in their second decade mostly involving the maxillary anterior labial region leading to discomfort and also hampering the esthetics.

In this paper, we present case series of pyogenic granuloma present at different locations in the oral cavity. After proper clinico-pathologic diagnosis, pyogenic granuloma was confirmed. Complete surgical excision of all the lesion was carried out along with the removal of the causative factors. All aspects of diagnosis and treatment of the cases are presented with follow up showing no recurrence.

Keywords: Epulis, mandible, Pyogenic granuloma, surgical excision

Introduction

Soft tissue enlargements/growth in the oral cavity often present a diagnostic challenge because of the diverse group

of pathologic processes and the clinical similarity of such lesions¹. Pyogenic granuloma is one amongst the most common entities causing soft tissue growth in oral cavity. Pyogenic granuloma is a soft tissue enlargement that is considered to be a non-neoplastic reactive lesion. It has got a high predilection for females and occurs mostly in the second or third decade². Various contributing factors for its etiopathogenesis include hormonal factors, local irritation, traumatic injury and/or certain drugs. The response to these chronic irritants manifests itself as fibrovascular connective tissue hyperplasia which leads to the formation of pyogenic granuloma².

In this paper, we present to you, three cases of Pyogenic granuloma occurring at different locations in the oral cavity. All the diagnostic and treatment aspects along with histopathologic information and follow up status has been put forth.

Case Series

Case 1: A 29-year-old female patient visited our department with the chief complaint of swelling in the mandibular left posterior region of the jaw since the past 6 months. The lesion started as a painless and small gingival overgrowth which gradually kept on increasing. On clinical examination, multilobulated, pinkish red firm overgrowth was seen extending from 33-35 on both buccal as well as the lingual side. The lesion was approximately 2x2cm in size. The dome shaped lesion, on palpation was non tender and non-compressible. No mobility was appreciated, and no bone loss was associated around the involved teeth. The lesion had a stalk and had a buccal as well as the lingual side.

Case 2: A 32-year-old female patient reported to the Department of Periodontics with the chief complaint of soft tissue growth on the lingual aspect of mandibular anterior teeth. On clinical examination, a large pedunculated, ovoid shaped bilobulated reddish pink gingival overgrowth was seen on the lingual mucosa extending from 43 to 35 measuring about 4x2 cm. On palpation, the surface was smooth with radiating white patches and no ulcerations were appreciated. Mild extension of the growth was seen on the labial surface with respect to 31, 32. Teeth associated with the lesion did not show any signs of mobility. Oral hygiene condition was poor.

Case 3: A 25-year-old female patient reported to the Department of Periodontics with the chief complaint of recurring soft tissue growth on the labial aspect of right mandibular anterior teeth. On clinical examination, a small pedunculated, ovoid overgrowth of 1x1cm was seen extending on the labial aspect between 43 and 44. On palpation, the surface was smooth, non-tender and firm. Similar lesion had occurred around 8 months ago at the same location. The patient had visited a private dentist and

had got it excised. The current lesion had recurred 5 months post excision of the first episode of overgrowth.

Investigations

For all the cases, following investigations were carried out before the excision. Pulp vitality test was carried out for all the teeth associated with the overgrowth. An IOPA was taken of the involved teeth. Also, routine blood investigations were carried out. On the basis of clinical examination and investigations, a provisional diagnosis of Pyogenic granuloma was established.

Surgical Procedure

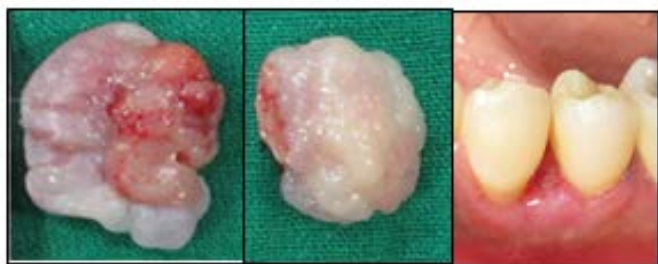
Post completion of oral prophylaxis, the lesion was excised while following proper aseptic protocol. After administering local anesthesia, the lesion was excised with the help of a 15-number blade mounted on Bard parker handle. In case 1, the lesion was strangulated with a silk suture before excision. While excision, it was ensured that, the lesion was completely excised by trimming up the remnants of the soft tissue adjacent to the lesion to prevent recurrence. The excised tissue was sent to the Department of Oral Pathology for histopathological diagnosis. Histopathological diagnosis confirmed the diagnosis of pyogenic granuloma. All the relevant post-operative instructions were given and the patient was recalled after 1 week and subsequently every month till 6 months post surgically to evaluate healing and recurrence.



Pre-operative

Intra operative

Post operative



Excised Tissue Follow Up after 6 months

Case 2



Pre-operative



Excised tissue

Case 3



Pre-operative



Excised Tissue

Discussion

Pyogenic granuloma is a hyperplastic response secondary to inflammation¹. The first case of pyogenic granuloma was reported in 1844 by Hüllihen and the term “pyogenic granuloma” or “granuloma pyogenicum” was coined by Hartzell in 1904³. However, this term is a misnomer as it is not related to any infection, does not contain pus and is not a true granuloma⁴.

Over the years, authors have suggested other names such as granuloma gravidarum/ pregnancy tumors, Rocker & Hartzell’s disease, vascular epulis, benign vascular tumors, epulis telangiectium granulomatosa, & lobular capillary hemangioma.

The etiological factors for the lesion are: -

a. Chronic irritation. (Presence of calculus or overhanging 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. Immunosuppressants (cyclosporine)
- f. Iatrogenic factors⁵.

Pyogenic granuloma (PG) mostly manifests on the gingiva accounting for almost 75% of the cases. It may also be found on the lips, gingival mucosa, tongue and hard palate¹. They are more commonly seen on the anterior attached gingiva of the maxilla. PG are limited to the gingival and rarely involve the alveolar bone. Although PG may occur in all ages, it is predominant in 2nd decade of life⁶. Most studies demonstrate a definite female predilection with female to male ratio of 2:1⁷. The reason being the vascular effect of female hormones that occur in women during puberty, pregnancy & menopause. Such lesions tend to occur more often during the second and third trimester of pregnancy & such lesions are referred to as pregnancy tumors⁸.

The typical clinical presentation of PG is a small, deep red to reddish purple lesion occurring on the gingiva, which is either sessile or pedunculated. The surface may be smooth, lobulated or warty which is commonly ulcerated & shows a high tendency for hemorrhage either spontaneously or upon slightest trauma. The lesion is usually non-tender & soft in consistency. Although older lesions tend to become more collagenized and firm. The size of the lesion usually ranges between 0.5 cm to 2 cm⁴. According to histopathological reports, two histological variants of oral pyogenic granuloma have been described in literature³:

Lobular capillary hemangioma (LCH): Characterized by proliferating blood vessels which are organized in lobular aggregates. The lobular area contains numerous 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 act in is present than in the lobular area of LCH PG.

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 granuloma⁹.

A plethora of treatment modalities have been proposed for pyogenic granuloma. Excisional biopsy is the routine and the most common procedure of treatment except when the procedure would produce marked deformity. In such cases, incisional biopsy should be performed. Thus, the management depends on severity of the lesion¹⁰. 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. Various other treatment options like use of Nd: YAG laser, cryosurgery, injection of absolute ethanol, sodium tetradecyl sulfate sclerotherapy and intralesional corticosteroids have also been cited in literature.

The recurrence rate of PG is up to 16%, especially when it is on the gingiva. Reasons for recurrence may be due to incomplete excision, incomplete removal of causative factors or re-injury of the area. In such cases, re excision becomes necessary⁴.

Conclusion

Proper management of PG is dependent upon variety of factors such as correct diagnosis and treatment, proper maintenance and regular follow up. Considering all the above stated etiological factors and clinical presentation, it

is clear that PG is not a very dangerous lesion, but it certainly alerts the patient to seek expert opinion and proper and timely treatment.

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