CASE REPORT

Idiopathic huge pyogenic granuloma in young and old: An unusually large lesion in two cases

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ABSTRACT
Pyogenic granuloma (PG) is a reactive hyperplasia of connective tissue in response to local irritants, chronic irritation and hormonal changes. It is a tumor-like growth of the oral cavity frequently located in the region surrounding the anterior teeth or skin. It usually arises in response to various stimuli, such as low-grade local irritation, traumatic injury, hormonal factors or certain kinds of drugs. Clinically, the lesion appears as a smooth, lobulated, exophytic mass, exhibiting pink to reddish-purple color which can bleed on slight manipulation. PG has no malignant potential, but recurrence is common after surgical excision. Histologically, the surface epithelium may be intact and may show foci of ulcerations or exhibit hyperkeratosis. Gingiva is the most common site affected followed by buccal mucosa, tongue and lips. The size of lesion varies from millimeters to several centimeters; rarely exceeding 2-2.5 cm. PG larger than 2.5 cm are seldom reported. Estrogen has been considered as a major contributing factor in most of the cases. Thus, occurrence of PG is mostly seen in premenopausal age due to high levels of estrogen. In this article, two unusually large oral PG have been reported. In the first case, a 25-year-old young male patient and in the second case, 70-year-old female patient have been described. In both the cases, the size of lesion was more than 5 cm which has been rarely reported before. Also one of the cases describe here is of a postmenopausal female, which questions role of estrogen as an etiological factor.

Key words: Large pyogenic granuloma, marginal resection, surgical excision

INTRODUCTION

Localized hyperplastic lesion of the gingiva or ‘epulide’ is a well-recognized entity. The word ‘epulis’ was derived from a Greek word ‘epi’ and ‘elon’, which means ‘on the gingiva’. Pyogenic granuloma (PG) is one of the inflammatory hyperplasias, seen in the oral cavity as a tissue response to irritation, trauma or hormonal imbalances. It is a common benign growth seen in the skin and oral cavity. The first case was reported in 1844 by Hullihen and the term ‘pyogenic granuloma’ or ‘granuloma pyogenicum’ was coined in 1904 by Hartzell.[1]

The term ‘pyogenic granuloma’ is a misnomer, since the lesion does not contain any pus and is not strictly speaking a granuloma. Approximately, one-third of the lesions occur due to trauma and poor oral hygiene.[2] PG often presents as a painless, pedunculated or sessile mass of gingiva.

Fibroma represents as a reactive focal fibrous hyperplasia due to trauma or local irritation.[3] At present, there are two different histological types of PG namely lobular capillary hemangioma (LCH) type and non-LCH type.[4,5]

PG is a hyperactive benign inflammatory lesion that occurs on the mucosa and mostly in females, due to high levels of steroid hormones. Also it may arise in response to various stimuli such as low-grade local irritation, traumatic injury, hormonal factors,[6] or certain kinds of drug.[7]

Aim of this paper is to report the unusualness of this lesion in terms of size larger than 5 cm and presentation in the opposite sexes in two different age groups. This is important to avoid eliminating PG as a differential diagnosis for the large-sized
intraoral lesions just in accordance to size. It will also enlighten readers in order not to confuse PG with malignant tumors in extremes of age merely because of its giant size.

**CASE REPORTS**

**Case 1**

A 25-year-old male patient reported with a chief complaint of a mass on the gums in lower right posterior region of the jaw since 10 months. The lesion was painless and asymptomatic, except for the slight discomfort to the patient during mastication. The mass was gradually increasing in size. The patient had undergone surgical excision of the lesion 12 months back at a private clinic. No history of extraction was recalled by the patient and no history of any other systemic disease was present. On clinical examination, a localized, exophytic mass with pedunculated base measuring about 5 × 5 cm size was seen on buccal gingiva in relation to 46, 47 and 48 [Figure 1]. The surface of the lesion was smooth and the mass seemed to be originating from the interdental region. There was spontaneous bleeding on probing. General examination revealed no other abnormalities or cervical lymphadenopathy. No abnormality was detected on hard tissue examination. Teeth in relation to lesion were not mobile and were all vital. Preoperatively an orthopantomogram was taken [Figure 2].

**Case 2**

A 70-year-old female patient reported with a chief complaint of mass in the gums of lower left posterior region of the jaw since 36 months. The lesion was painless, but presented a significant discomfort in mastication due to its size. The mass was gradually increasing in size. No history of any other systemic disease was present. On clinical examination, localized exophytic mass with pedunculated base was observed on lingual gingiva measuring about 7 × 4 cm in size, extending from 34 to 38 region [Figure 3]. The surface was smooth. Physical examination revealed no other abnormalities or cervical lymphadenopathy. Teeth in relation to the lesion were mobile. Oral hygiene was poor and severe halitosis was noticed.

Orthopantomogram was taken preoperatively [Figure 4].

Surgical excision was planned for both the cases under general anesthesia, due to their extensive nature. After placement of Ryle’s tube and nasal intubation, lignocaine 2% with 1:200,000 adrenaline was infiltrated at margins of the lesion. Pedunculated stalk was excised with help of a 15 no. B.P.

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**Figure 1: Case 1 - Localized gingival swelling of 5 × 5 cm size in relation to 46, 47 and 48**

**Figure 2: Case 1 - Preoperative orthopantomogram**

**Figure 3: Case 2 - Localized gingival swelling of 5 × 4 cm size in left mandibular jaw**

**Figure 4: Case 2 - Preoperative orthopantomogram**
blade and electrocautery. The mass, in both the cases, were extending interdentally. Thus, in order to avoid leaving any remnants of the lesion interdentally, the teeth involved were extracted and alveolar process trimmed. Hemostasis was achieved using electrocautery and Surgical. Primary closure was achieved. Antibiotics and analgesics were prescribed for 1 week. The excised tissue was sent for histological examination [Figures 5 and 6]. Patient was instructed to feed through Ryle’s tube for 4 days. Wound healed without any complications. Patient was followed-up for 6 months, no recurrence was observed till date.

**HISTOPATHOLOGICAL REPORTS**

**Case 1**

Sections taken from 5 cm × 5 cm whitish black in color, firm in consistency soft tissue specimen showed stratified squamous epithelium with areas of ulceration. Underlying connective tissue revealed granulation tissue with numerous sized blood vessels and endothelial proliferation. Based on a histological report it was finally diagnosed as a PG [Figure 7].

**Case 2**

Sections taken from 7 × 4 cm whitish black in color, firm in consistency soft tissue specimen showed stratified squamous epithelium with ulceration. The underlying connective tissue showed numerous varied sized blood vessels and endothelial proliferation. Based on a histological report it was finally diagnosed as a PG [Figure 8].

**DISCUSSION**

PG is an inflammatory hyperplasia affecting the oral tissues. Hullihen’s description in 1844 was most likely the first PG reported in the English literature. It was only in 1904 that Hartzell first ever introduced the term PG.[1,5,8,9] Almost 75% of the cases are possibly caused by the presence
of calculus and foreign material in the gingival crevice. It may be found on 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. PGs are limited to the gingiva and rarely involve the alveolar bone.[1]

In this case, none of the etiological factors like local irritants and hormonal influence were present. Periodontal health of teeth involved was good in the first case. The lesion has been regarded as a non-neoplastic soft tissue lesion, but recurrence after treatment has been observed in some cases.[5,9-12]

The size usually varies from a few millimeters to several centimeters and rarely does PG exceed larger than 2 cm in size.[5,9-11] In both of these cases, PG is actually extending from premolar to well beyond retromolar region, almost around 5 cm in length and width. This ‘giant’ size PG is not reported in literature.

The majority of the PGs are found on the marginal gingiva with only 15% of the tumors on the alveolar part.[12] Studies in Singapore populations have also shown the greatest incidence of PG in the 2nd decade of life.[12]

Clinically, PG is generally seen as a smooth or lobulated exophytic lesion with a pedunculated or a sessile base.[13]

It has been reported many times, that PGs may cause significant bone loss.[14] Treatment of PG involves a complete surgical excision.[14] Recurrence of PG after excision is a known complication, but can be prevented. The recurrence rate for PG 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 PG. A few of these include peripheral giant cell granuloma, pregnancy tumor; and conventional granulation tissue.[14] Differentiation is done based on clinical and histological features which help in providing adequate treatment and thereby a good prognosis.

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

CONCLUSION

With the presentation of this paper, it can be concluded that PG can attain a huge size beyond 2.5-4 cm. Treatment may be delayed due to painless nature, as nerves do not proliferate within the reactive hyperplastic tissue, contributing to its unhindered growth. Thus, in diagnosing huge intraoral lesions, PG should be taken into consideration. We also advocate marginal excision of alveolar ridge following excision in order to minimize the recurrence.

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