

Non Specific Conditioned Enlargement (Pyogenic granuloma): A Case Series



Medical Science

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ABSTRACT

Pyogenic granuloma is one of the inflammatory hyperplasias seen in the oral cavity. This term is misnomer because the lesion is unrelated to infection and in reality arises in response to various stimuli such as low grade local irritation, traumatic injury or hormonal factors is also known as Non Specific Conditioned Enlargement. It predominantly occurs in the second decade of life in young females, possibly because of the vascular effects of female hormones. It also develops in up to 5% of pregnancies due to hormonal influence. Clinically, oral pyogenic granuloma is a smooth or lobulated exophytic lesion manifesting as small, red erythematous papules on a pedunculated or sometimes sessile base, which is usually hemorrhagic. The surface ranges from pink to red to purple, depending on the age of the lesion. Although excisional biopsy is the treatment of choice for it, other treatment modalities such as the use of lasers, flash lamp, pulsed dye laser, cryosurgery, intralesional injection of ethanol have been proposed. We report here a case series involving three of Pyogenic Granuloma attributed to gingival irritation and inflammation, their clinical features, investigations carried out and the treatment provided.

I. INTRODUCTION

Pyogenic granuloma (PG) is a kind of inflammatory hyperplasia. The term "inflammatory hyperplasia" is used to describe large range of nodular growths of the oral mucosa that histologically represent inflamed fibrous and granulation tissues^(1,2). It includes fibrous inflammatory hyperplasia (clinical fibroma, epulis fissuratum and pulp polyp), palatal hyperplasia, giant cell granuloma, pregnancy epulis and Pyogenic Granuloma⁽²⁾

Pyogenic Granuloma is a common tumor- like growth of the oral cavity or skin that is considered to be non- neoplastic in nature^(3,4). Hullihen's description⁽⁵⁾ in 1844 was most likely the first Pyogenic Granuloma reported in English Literature, but the term "pyogenic granuloma" or granuloma pyogenicum" was introduced by Hartzell⁽⁶⁾ in 1904. Pyogenic Granuloma has been associated with aberrant tooth development⁽⁷⁾ and also as a result of injury to primary tooth⁽⁸⁾. Here we present three cases of Pyogenic Granuloma attributed to gingival irritation and inflammation discussed individually with their investigations and treatment modalities provided discussed together.

II. CASE REPORTS

CASE I (Figure 1)

A Female patient aged 16 reported to our institution with complaint of bleeding gums since 3 months. Patient experienced bleeding while brushing and during mastication. The patient also complained of presence of growth in upper right front region since one and half months. The growth was 6mm by 5mm in dimensions. It was red erythematous with sessile base and was more of an esthetic concern for the patient. On examination patient also revealed poor oral hygiene and presence of calculus and sub- gingival deposits. Patient was otherwise systemically healthy, reported no prolonged drug intake, hospitalization or drug allergy. Patient had no relevant family history.

CASE II (Figure 2)

A female patient aged 27 reported to our institution with the chief complaint of presence of small mass in the upper front region of the jaw since twenty days. She also complained of bleeding from the mass while brushing or by any accidental touch. Patient was esthetically concerned by the presence of the pedunculated, red papule in the anterior tooth region. The patient reported no systemic illness and her family history was also non-contributory.

CASE III (Figure 3)

A 32 years old female patient reported with the chief complaint of Pain and swelling over gums in upper left front region since two months. The Size of the swelling had increased since 15 days. The growth was 1.5cm by 1cm in dimensions. Patient gave a history of tooth extraction of over retained deciduous teeth (upper left E) 9 yrs ago. She also gave a history of trauma while

eating sugarcane four months back. She also complained of food lodgment and bleeding from the same site. There was no history of any underlying systemic disease.

On clinical examination, hard tissue examination revealed presence of periodontal pocket, 5mm on the buccal aspect and 6 mm on the distal aspect with upper left first premolar along with Grade I mobility. Radiographic examination revealed Horizontal Bone loss. Patient had Poor oral hygiene and Halitosis was also present.

III. INVESTIGATIONS

For all the three patients Complete Blood Hemogram was carried out which included Red Blood Cell Count, White Blood Cell Count, Hemoglobin level, Blood Sugar Levels (fasting and post prandial) along with bleeding time and clotting time. Values of these investigations were within the normal limits for all the three patients. After excision the lesion samples were sent to the Department of Oral Pathology, Bharati Vidyapeeth Dental College and Hospital for Biopsy

IV. HISTOPATHOLOGICAL FINDINGS

Microscopic examination of Pyogenic Granuloma showed a highly vascular proliferation that resembled granulation tissue⁽³⁾. Numerous small and large channels were formed which were engorged with red blood cells^(1,3) and lined by basal flat or plump endothelial cells that might be mitotically active.

Lower power magnification (Figure 4) showed an exophytic mass of granulation like tissue with an ulcerated surface whereas higher power magnification (Figure 5) showed capillary blood vessels and Scattered Inflammation.

Polymorphs, as well as chronic inflammatory cells, are consistently present throughout the edematous stroma, with microabscess formation⁽²⁾. The fibroblasts are typically plump and mitotic activity may be noted in the stromal cells. Older lesions demonstrate fewer and more mature cells, which are fibrocytes.

V. DIFFERENTIAL DIAGNOSIS:

When a mass is found in the oral cavity, it is important to formulate a differential diagnosis since this would help further evaluation of the condition and management of the patient⁽⁹⁾. Biopsy findings have an important role and are definitive in establishing the diagnosis.⁽¹⁰⁾

Differential diagnosis of Pyogenic Granuloma includes peripheral giant cell granuloma, peripheral ossifying fibroma, metastatic cancer^(1,10), hemangioma^(1,10), and pregnancy tumor, conventional granulation tissue, hyperplastic gingival inflammation⁽¹¹⁾, Kaposi's sarcoma, bacillary angiomatosis⁽¹¹⁾, angiosarcoma, and Non- Hodgkin's lymphoma⁽¹²⁾

VI. TREATMENT

Treatment part consisted of reassuring the patients that growth was non – neoplastic in nature and it could be easily removed. First and foremost treatment consisted of Scaling and Root (Figure 6) planing by which elimination of irritating local factors was done which was followed by strict instructions regarding maintenance of Oral hygiene by use of soft brush and by using 0.2% Chlorhexidine Gluconate mouth rinses in 1:1 dilution with water. Once the inflammation subsided, growths were excised extending down to the periosteum with the help of scalpel using a 15 no. bard parker blade. (Figure 7)

VII. DISCUSSION

The benign tumors and tumor like proliferations of the oral soft tissue lesion constitutes about 20% of all oral lesions biopsied by the dentist. Statically, 7 out of 15 most frequently observed lesions of the oral cavity (except caries & periodontal disease) are benign tumors or tumor like soft tissue growths. While some investigators⁽¹³⁾ regard Pyogenic Granuloma as a benign neoplasm, it is usually considered to be a reactive tumor –like lesion which arises in response to various stimuli such as chronic low-grade local irritation^(3,10), traumatic injury, hormonal factors or certain kinds of drugs⁽¹⁴⁾.

Approximately one third of the lesions occur after trauma, so the history of trauma before development of the lesion is not unusual, especially for extragingival Pyogenic Granulomas. Poor oral hygiene can also be a precipitating factor in such patients^(1, 3,10). Oral Pyogenic Granuloma, which in reality is the most common gingival tumor, shows a striking predilection for the gingiva accounting for 75% of all cases, where they are presumably caused by calculus or foreign material within the gingival crevice. The lips, tongue, and buccal mucosa are the next common sites^(1, 3, 10). Lesions are much more common on the maxillary gingiva than mandibular gingiva; anterior areas are more frequently affected than posterior areas. Also lesions are much more common on the facial aspect of the gingiva than the lingual aspect; some extend between the teeth and involve both the facial and lingual gingival⁽³⁾. Clinically, Pyogenic Granuloma is smooth or lobulated exophytic lesion with pedunculated or sessile base. The size varies in diameters from few millimeters to several centimeters. The surface is ulcerated and fragile⁽²⁾ and the color range from pink to red to purple, depending on the age of the lesion.

Excisional biopsy is an indicated treatment of Pyogenic Granuloma. Although conservative surgical excision and removal of causative irritants (plaque, calculus, foreign materials, source of trauma) are the usual treatments^(1, 3, 10) for gingival lesions, the excision should extend down to the periosteum and the adjacent teeth should be thoroughly scaled to remove the source of continuing irritation.



FIGURE 3

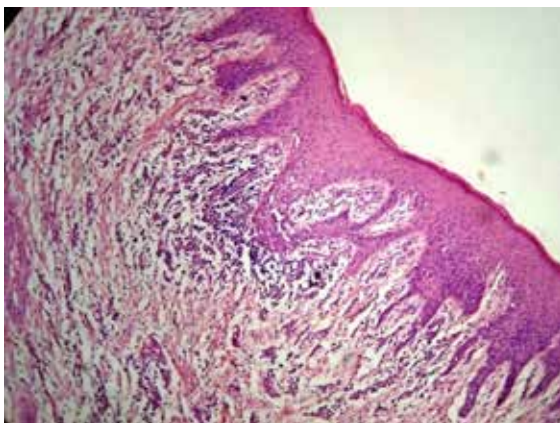


FIGURE 4

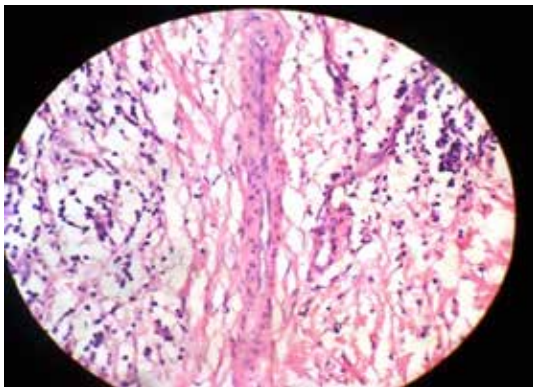


FIGURE 5



FIGURE 1



FIGURE 2



FIGURE 6



FIGURE 7

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