



Pyogenic Granuloma of the Gingiva: A Case Report

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Date of Submission: 10-08-2023

Date of Acceptance: 20-08-2023

ABSTRACT: Pyogenic granuloma is a common benign vascular tumor found to occur in all ages. Both skin and mucous membranes can be affected. Its most common etiology is trauma. The tumor consists of capillary proliferations, venules, and fibromyxoid stroma. The development of a lesion occurs in three stages, in which bleeding is a common symptom. The tumor can also mimic other vascular lesions, solid tumors, and soft tissue infections. This case report is about a pyogenic granuloma managed by surgical intervention.

KEYWORDS: Gingival lesion, Hyperplastic lesion, Pyogenic granuloma.

I. INTRODUCTION

Pyogenic granuloma (PG) is a benign lesion of vascular origin.¹ PG is also known as: eruptive haemangioma, granulation tissue-type haemangioma, granuloma gravidarum, lobular capillary haemangioma, pregnancy tumor, or tumor of pregnancy.^{1,4} The term "pyogenic granuloma" is considered unsuitable because the tumor is not associated with pus and does not histologically resemble a granuloma.^{2,3,4} This pathology can be found at any age but is more common in the second and third decades of life.^{1,4} It is located on the skin and mucous membranes, especially on the lips, gums, cheeks, and tongue. Often singular but sometimes multiple, PG develops most frequently from an ulceration, trauma, small wound, chronic irritation, or rough patches following dental care.^{1,4} The development of a gingival PG may also be related to hormonal changes (puberty,

menstruation, or pregnancy). The treatment of choice for these lesions is wide surgical resection to reduce the risk of recurrence, preferably with a diode laser to ensure a reliable anatomopathological examination.⁵

II. CASE REPORT

A 16-year-old female patient reported to the Department of Oral Medicine and Radiology, MCDRC, Chhattisgarh, India, with a chief complaint of difficulty in mastication due to growth over the gingiva, bleeding from gums during meals, and tooth-brushing on the left side for 1 month. History of trauma 1 month before and growth were symptom-free, initially a tiny, bright-red nodule was present that bled profusely, which increased to the present size. Dental and medical histories were non-contributory. There was no rise in temperature and no regional lymphadenopathy. An intraoral examination revealed pedunculated growth from the interdental papilla of the maxillary left posterior region of the jaw in the 26-27 region, covering the entire crown of the teeth. The oval-shaped mass was 3.0 cm x 2.0 cm in size, pink in colour, and smooth (Figure 1). Bleeding on manipulation was noted by bidigital palpation. Oral hygiene procedures get difficult due to the presence of overgrowth. An intra-oral periapical radiograph shows the absence of bone lysis (Figure 2). Pre-operative blood examinations revealed normal values.



Figure-1: Intra-oral view of initial state

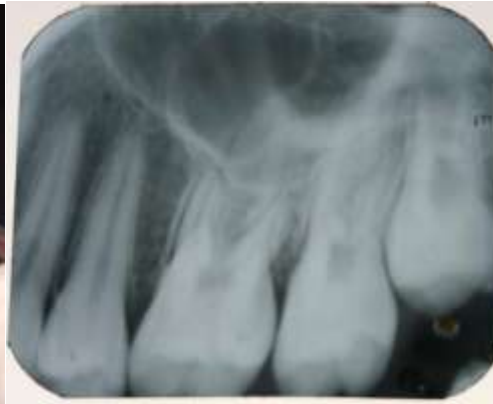


Figure-2: Preoperative radiography

III.TREATMENT

Thorough scaling and polishing were done, and the lesion was excised. Excision was done under local anesthesia using a diode laser, followed by curettage and thorough scaling of the involved and adjacent teeth. Antibiotics and

analgesics were prescribed for one week. The excised tissue was then sent in formalin for histopathological examination (Figure3). The patient was recalled after 7 days for follow-up, and the dressing was removed (Figure4). No recurrence was noted during the maintenance sessions.

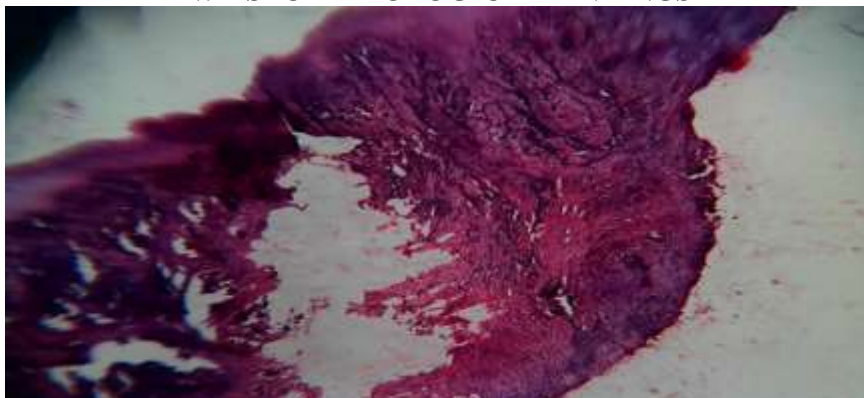


Figure-3: Specimen



Figure-4: Follow-up after surgery

IV.HISTOPATHOLOGICAL FINDINGS





H and E-stained sections show focal areas of parakeratinized stratified squamous epithelium with elongated rete pegs. Spongiosis of the spinous cell layer is seen. Underlying connective tissue is fibrocellular, showing numerous chronic inflammatory cells scattered throughout the stroma. Numerous budding capillaries are seen, and collagen fibers with fibroblasts are also seen.

V. DISCUSSION

Pyogenic granuloma is an inflammatory response that follows chronic irritation (poor oral hygiene, calculus or plaque, excessive restorations, etc.), trauma, or a hormonal change in pregnant women.^{1,6} Certain medications, such as cyclosporine, may also be involved in the genesis of PG.^{1,2} It is rarely located on the hard palate. The gingival location represents more than 75% of reported cases, with a predilection toward the interdental papilla region.^{1,2,4} This pathology is more common in the second and third decades of life.^{1,3,4} It affects more women than men, with an average age of 52 years old.⁴ The prevalence of PG in pregnant women varies between 5% and 8%. It is most commonly seen after the first trimester of pregnancy, and is considered a hormone-dependent lesion. Indeed, the high level of sexual hormones (oestrogen and progesterone) stimulates the expression of angiogenic factors in inflammatory tissues. These factors, which play an important role in vascular morphogenesis, are found in large quantities in pyogenic granulomas during pregnancy and in small amounts after delivery.^{2,5} This would explain the improvement in tumefaction after delivery, as is the case in the second observation. Clinically, PG often presents as a painless, pedunculated, or sessile asymptomatic mass with a smooth or lobulated surface, soft in consistency, red to purple in colour, that bleeds at the slightest touch. The lesion may ulcerate and be covered with a fibrinopurulent layer. The size varies from a few millimeters to a few centimeters. The growth of the PG is slow, but it can have episodes of rapid growth.^{1,6,7} Histologically, PG appears in two forms: lobular and non-lobular. The lobular form is characterized by the presence of a larger number of proliferating blood vessels with little or no specific changes. The non-lobular form is characterized by the presence of dilated capillary channels and aligns with the endothelial cells.⁴ The connective tissue is fibrous and often edematous. Inflammatory cells are present and may include polymorphonuclear neutrophils, lymphocytes, and plasma cells. There may be an underlying epithelial cuff.^{1,8-10} The histological appearance of PG is variable because of its inflammatory nature. It can

become more mature, less vascularized, and rich in collagen, gradually converting to a fibrous epulis.^{1,4} Histologically, the tumor is more like a granulomatous lesion than a pyogenic lesion. However, this term is universally accepted and used, and any attempt to change it may lead to confusion.^{2,3,8-10} With regard to the differential diagnosis, mention should be made of peripheral giant cell granuloma, peripheral ossifying fibroma, peripheral fibroma, and haemangioma.^{1,7-10} It can also resemble a primary or metastatic malignant lesion (squamous cell carcinoma, fibrosarcoma, angiosarcoma, leukemia, or non-Hodgkin's lymphoma).¹ Thus, there is a need for a precise medical examination and an in-depth clinical examination, including, among other things, the examination of ganglionic areas. The treatment of choice for these lesions is wide surgical resection with margins of 2 mm from their periphery. Aetiological factors are eliminated in order to reduce the risk of recurrence.^{1,5,7} Most pyogenic granulomas occurring during pregnancy will decrease after delivery.^{1,7} When the lesion is large and/or associated with bleeding episodes, treatment during pregnancy is recommended in the second trimester, with ongoing checks after delivery.³ Several other treatments may be considered: nitrogen cryosurgery, intralesional injection of corticosteroids, or sclerosing agents.¹⁻³

VI. CONCLUSION

PG is a benign lesion of the skin and mucous membranes. This work reviews the clinical and histological characteristics and therapeutic modalities of pyogenic granuloma of the gingiva. The article also points out that even if the term pyogenic granuloma is frequently used, it is unsuitable. The lesion is not associated with pus, and histologically, the lesion is angiomatous rather than granulomatous.

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