

## Pyogenic Granuloma: An Unusual Presentation of Red Mass Lesion on Mandible with Systemic Review of Literature.

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### Abstract

**Background:** Pyogenic granuloma is a common, soft tissue tumor of oral cavity that is believed to be reactive and not neoplastic in nature. Commonly gets formed by local irritation, any traumatic injury, hormonal factors, or certain kinds of drugs interaction in response to local irritants.

**Material & Methods:** This case report presents the review and rare case of a lingual Pyogenic granuloma managed by surgical intervention by soft tissue diode laser in 42 years old female patient.

**Results & Conclusion:** The surgical intervention gave an uneventful healing without any complication. On intraoral examination the gingiva gave a normal, pink healthy appearance. The Pyogenic granuloma should be excised along with the base and its etiological factors should be with held. Although excisional surgery is the treatment of choice for it, still various other procedure like Nd:YAG laser, cryosurgery, intra lesional injections are well documented.

**Keywords:** Pyogenic granuloma, Neoplastic, Hormonal, Irritants.

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### I. Introduction

Pyogenic granuloma is one of the benign inflammatory vascular proliferation resulting from various stimuli or can have different etiology. Pyogenic granuloma also known as a “Granuloma gravidarum,” and “Pregnancy tumor”. It is now of no doubt that the most common site is gingiva followed by buccal mucosa, tongue and lips.<sup>1</sup>In 1844 Hüllihen description was the first documented literature on pyogenic granuloma.<sup>2</sup> It was only in 1904 that Hartzell first ever introduced the term pyogenic granuloma.<sup>3</sup> It can occur in both sex and at any age of life, still the incidence remain common among women in the second decade of life because of vascular effect of hormones<sup>4</sup> like estrogen and progesterone. With the difference in the histological features two types of Pyogenic granuloma are been documented namely lobular capillary hemangioma (LCH type) and non-LCH type.<sup>5</sup>

### II. Etiology

This lesion is formed as a result of exaggerated localized connective tissue reaction to any minor injury or any underlying irritation. Not only just limited to any injury the cause of the development of the growth can be the predisposing factor like calculus, poor oral hygiene, nonspecific infection, over hanging restorations, cheek biting etc. Majority of the Pyogenic granulomas are found on the marginal gingival with only 15 % of the tumors on the alveolar part.<sup>6</sup>

### III. Clinical Feature

The Pyogenic granuloma is usually presents a localized erythematous papules with a sessile or pedunculated base<sup>7</sup>, Which may later develop to dumb- bell- shape masses<sup>8</sup> and the vascularity decreases and the clinical appearance are more collagenous and pink. The duration of Pyogenic granuloma changes the texture from soft to firm and the size may be from few millimeters to several centimeters and are generally painless.

### IV. Histopathology

Microscopic examination of Pyogenic granuloma shows vascular proliferation that resembles granulation tissue. Various small and large vessels are formed with are incooperated with the red blood cells. The epithelium shows area of ulceration and inflammation can be seen in the connective tissue. The connective tissue shows proliferating fibroblasts and collagen fibres interposed in which lots of epithelial lined spaces can be seen with in the connective tissue and patchy distribution of lymphocytes and plasma cells can be observed.

## **V. Differential Diagnosis**

Pyogenic granuloma give a typical presentation, and can be rather confusing and can lead to erroneous diagnosis of other more lesions. When a mass is present in the oral cavity, it is of much important that the diagnosis should be correct and management should be according to the diagnosis. These include hyperplastic gingival enlargement, amelanotic melanoma, basal metastatic carcinoma and squamous cell carcinoma, Kaposi's sarcoma and hemangioma, angiosarcoma. Although Pyogenic granuloma can be diagnosed with clinical accuracy, radiographic and histopathological investigations aids are must for confirming the diagnosis and treatment.

## **VI. Treatment**

The treatment start with the phase I therapy of scaling and root planning followed by administration of antimicrobial therapy. Till date different therapeutic techniques have been suggested and the management of Pyogenic granuloma depends on the severity of symptoms and approach to the growth. Surgical excision is the most commonly preferred applicable treatment for pyogenic lesions. Various treatment modality such as cryosurgery, Nd:YAG, flash lamp pulsed dye laser surgery, soft tissue diode laser, sclerotherapy and electrodesiccation are also been well documented.<sup>9</sup> Lasers have been used because of less risk of bleeding and superior coagulation characteristics(Powell et al., 1994). Cryosurgery has been considered for the treatment of Pyogenic granuloma of oral mucosa because of its humidity and smoothness it makes an ideal site for this technique. It shows excellent aesthetic result(Ishida and Ramos-e-Silva, 1998). Pulsed dye lasers have also given good results (Meffert et al., 1998).

Treatment considerations during pregnancy are very important as these lesions are more common during pregnancy. To prevent the Pyogenic granuloma to re-occur the lesions must be excised down to the underlying periosteum and etiologic factors must be completely with held.<sup>10</sup> Recurrence is not common and can be due to incomplete excision, failure to remove predisposing factors, or re-injury to the region.

## **VII. Case Report**

A 42 years old female patient was referred by a general physician who prescribed her antibiotic & anti-inflammatory for the red mass near tongue. As the lesion was getting intolerable she turned up to the OPD of Department of Periodontology, Chandra Dental College & Hospital, Barabanki with a chief complaint of a red mass on lower jaw near tongue.

When the patient first noticed it the lesion was of pin head size(3 months ago), but had grown rapidly over the past 20 days to attain the present size of 1.4cm \* 1 cm.

Intra oral examination revealed an irregular, sessile exuberant growth in respect to lingual aspect i.r.t 41,42. On palpation, the growth was soft in consistency, tender and bleeds profusely on probing. The patient's medical history was unremarkable. Clinical examination revealed an exophytic, pedunculated lesion and on it's surface pseudo-membraneous layer with some areas of erythema was seen.

The lesion was firm in consistency and non tender with bleeding and probing present(fig 1). As the patient had poor oral hygiene so was been appointed for surgery followed by scaling and root planning and proper oral hygiene instruction was given with the assurance from the patient for her cooperation. IOPA radiograph of the involved region revealed localized alveolar bone loss(fig 2). After getting a normal hematological investigation the surgical removal of the mass was done with soft tissue diode laser. Soft tissue diode laser was the choice of the surgery because of patient demand for much ease and comfort(fig 3).

Due to the prominent size of the lesion(fig 4), an excisional biopsy along with histopathologic evaluation was performed. Surgical area was covered with non-eugenol based periodontal dressing "coe pack" (fig 5) and post operative instruction with amoxicillin 500 mg TDS, analgesic SOS, chlorhexidine mouth wash 10 ml twice a day for 10 days were prescribed to the patient for oral rinse. Patient was recalled after one week for follow up and removal of periodontal dressing(fig 6).

The histopathologic examination revealed granulation tissue with non neoplastic proliferation of endothelial cells with blood cells formation and infiltration of acute and chronic inflammatory cells in a few collagenous matrixes (fig 7). Surface of the lesion was consistent with hyperplastic parakeratinized stratified squamous epithelium with areas of atrophy and ulcer and fibrinoleukocytic membrane. These findings were consistent with a histopathological diagnosis of Pyogenic granuloma.

Healing was uneventful without any complication. On intraoral examination the gingiva gave a normal, pink healthy appearance. Patient was recalled after one month and postoperative photographs were taken (fig 8).

## **VIII. Conclusion**

Being an non-neoplastic growth in the oral cavity, proper diagnosis for Pyogenic granuloma should be made with both clinical and histopathological findings. Management and treatment of the lesion is also of the prime concern. Excision by Laser is a successful treatment option for this kind of lesion with uneventful healing

and with no recurrence. A careful management of the lesion also helps in preventing the recurrence of this benign lesion if proper care and instruction are been followed.

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### Acknowledgement

I acknowledge the Chandra dental college & hospital, Barabanki for providing all necessary facilities required for the surgical procedure and support.