Pyogenic Granuloma Mimicking Fibroma: A Case Report

J Sangeetha1, P Balaji2, C Poornima3, Poornima Govindraju4, T S Mahesh Kumar5

1Post-graduate Student, Department of Oral Medicine & Radiology, Rajarajeswari Dental College & Hospital, Bengaluru, Karnataka, India,
2Professor and Head, Department of Oral Medicine & Radiology, Rajarajeswari Dental College & Hospital, Bengaluru, Karnataka, India,
3Reader, Department of Oral Medicine & Radiology, Rajarajeswari Dental College & Hospital, Bengaluru, Karnataka, India,
4Reader, Department of Oral Medicine & Radiology, Rajarajeswari Dental College & Hospital, Bengaluru, Karnataka, India,
5Senior Lecturer, Department of Oral Medicine & Radiology, Rajarajeswari Dental College & Hospital, Bengaluru, Karnataka, India

Soft tissue swellings of the oral cavity frequently present a diagnostic challenge because a diverse group of pathologic processes can produce such lesions. Among these lesions are a group of reactive hyperplasia, which develop in response to a chronic, recurring tissue injury that stimulates an exuberant or excessive tissue repair response, and pyogenic granuloma is one of them. It is a reactionary response to constant minor trauma or may be related to hormonal changes. It preferentially affects the gingiva followed by lips, tongue, buccal mucosa, and palate. It is commonly seen in young adults. The treatment is excision of the lesion. This case report describes the clinical and histopathological features of a pyogenic granuloma, in a 20-year-old male patient.

Keywords: Granuloma, Reactive hyperplasia, Trauma

INTRODUCTION

Pyogenic granuloma was first described by Hullihen in 1844.1 In 1897, pyogenic granuloma was described by two French surgeons, Poncet and Dor, who had named the lesion as “botryomycosis hominis.”2 It is also known as “eruptive hemangioma,” “granulation tissue type hemangioma,” “granuloma gravidarum,” “lobular capillary hemangioma (LCH),” “pregnancy tumor,” “Crocker and Hartzell’s disease,” “vascular epulis,” “Benign vascular tumor,” “hemangiomatosis granuloma,” and “epulis teleangiectatium granulomatosa.”3 It was given its present name by Crocker in 1903. The name pyogenic granuloma is a misnomer as it is neither associated with pus nor a true granuloma.1 In actuality, it is a capillary hemangioma of lobular subtype, hence prone for bleeding.4 The incidence is 26.8-32% of all reactive lesions. It is seen mostly in the second or third decade of life and commonly seen in women. The most frequently involved site is the maxillary gingiva; other sites are lip, tongue, buccal mucosa, and palate.5

CASE REPORT

A male patient aged about 20 years reported to the Department of Oral Medicine and Radiology with a chief complaint of swelling over the lower lip which lasted since 6 months. It began as a tiny growth which was painless and gradually increased in size to the present state over a period of 6-month. There was no history of trauma, bleeding, pus discharge, and any other associated symptoms.

Patient’s medical, surgical, and family history were non-contributory. His personal history revealed that he has the habit of smoking 4-5 cigarettes a day since 2 years. He also had the habit of lip biting due to stress since 2-3 years. General physical examination revealed that the patient has normal gait, moderately built, and nourished.

On intraoral soft tissue examination, a sessile exophytic growth was present over the lower labial mucosa below the vermilion border of lip (Figure 2) measuring about 0.5 cm × 1 cm, irregular in shape. The surface of the swelling revealed no surface changes. On palpation, all the inspectory findings were confirmed. The growth was non-tender and firm in consistency. Other findings included decreased overjet and the presence of deep bite.

Based on the history and clinical findings, a provisional diagnosis of fibroma due to trauma was given. The
differential diagnosis of mucocoele undergoing fibrosis and pyogenic granuloma undergoing fibrosis were considered.

The patient was subjected to hematological investigations wherein all values were within the normal ranges. Excisional biopsy of the lesion was carried out after obtaining the patient’s consent performed (Figures 3 and 4).

H and E stained section under microscopic examination shows stratified squamous epithelium overlying a fibrovascular stroma. Stroma shows increased fibrovascularity with numerous dilated blood vessels, and budding capillaries with endothelial cell proliferation. Mixed inflammatory infiltrates comprised neutrophils, plasma cells, and lymphocytes are also evident. The above features are suggestive of pyogenic granuloma (Figure 5).

**DISCUSSION**

Oral pyogenic granulomas occur in all age groups, children to older adult, but are more frequently encountered in females in their second decade due to the increased levels of circulating hormones estrogen and progesterone. In our case, it was present in a young male patient. Pyogenic granulomas usually occur in the gingiva (keratinized mucosa), often in the anterior segment of the maxillary jaw. According to Vilmann et al., the majority of the pyogenic granulomas are found on the marginal gingiva with only 15% of the tumors on the alveolar part. Other sites occurring extragingivally in which the lesion tends to occur as a result of trauma include the buccal mucosa, the alveolar mucosa of edentulous ridge, the palate, and the lower lip, which are very rare. It does not occur on the floor of the mouth as the tongue provides protection against any traumatic injuries and also due to lack of sufficient connective tissue in the mucosa of this region. In our case, the lesion was present over the lower labial mucosa. Studies have shown that
Pyogenic granulomas may occur as a result of an exaggerated localized connective tissue reaction to a minor injury or any underlying irritation. The irritating factor can be poor oral hygiene, nonspecific infection, overhanging restorations, cheek biting, etc. Because of this irritation, the underlying fibrovascular connective tissue becomes hyperplastic, and there is a proliferation of granulation tissue which leads to the formation of a pyogenic granuloma. In the present case, patient had the habit of lip biting.

Pyogenic granulomas typically present as smooth or lobulated red-to-purple masses that can be either pedunculated or sessile. As lesions mature, the vascularity decreases and the clinical appearance are more collagenous and pink. If left untreated, a number of pyogenic granulomas undergo fibrous maturation as in the present case. Pyogenic granulomas vary in size from a few millimeters to several centimeters and are painless. These tumors are soft to palpation. A history of trauma is common in extra gingival sites, whereas most lesions of the gingiva are a response to irritation.

Histologically, pyogenic granulomas are categorized as the LCH type and the non-LCH type. The LCH type has proliferating blood vessels organized in lobular aggregates, no specific changes such as edema, capillary dilation or inflammatory granulation are noted. The non-LCH type consists of a vascular core resembling granulation tissue with foci of fibrous tissue. The lobular area of the LCH type has a greater number of blood vessels with small luminal diameter than that in a non-LCH type of pyogenic granuloma.

The treatment of choice is conservative surgical excision. Pyogenic granuloma occasionally recurs, and a re-excision is necessary. The recurrence rate for pyogenic granuloma is said to be 16% of the treated lesions and so re-excision of such lesions might be necessary. The recurrence rate is higher for pyogenic granulomas excised during pregnancy.

The pyogenic granuloma may be often confused with other benign and malignant conditions because of its appearance and progression of growth; hence, histopathological examination is essential in establishing diagnosis.

CONCLUSION

This case report highlights that the diagnosis of oral lesions is intricate and lead us to think through distinct lesions with different diagnostic methods. We call attention to the uncommon labial location of pyogenic granuloma in a male patient.

REFERENCES