

# Pyogenic Granuloma as a Posterior Maxillary Swelling in Edentulous Region: A Rare Case Report

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## ABSTRACT

**Introduction:** Pyogenic granuloma (PG) is described as a benign granulation tissue which is formed in response to various stimuli (inflammatory hyperplasia). The term itself is a misnomer as there is no frank infection. Various factors can lead to the formation of PG like low grade local irritation, traumatic injury or hormonal factors. PG is predominantly seen in second and third decade of life, mostly in young females. In the oral cavity they are commonly found in the anterior segment over the gingiva.

**Case Report:** We present a case of pyogenic granuloma in a 56 year old female patient with a large size (3 ×3 cm) in the edentulous posterior maxilla.

**Conclusion:** PG is a non specific growth that can be found in any part of the oral cavity. It can present with unusual clinical features. Surgical excision is treatment of choice along with long term follow up.

**Keywords:** pyogenic granuloma, alveolar mucosa, surgical excision, edentulous, extra gingival

## INTRODUCTION

The term pyogenic granuloma was coined by Hartzell and was first reported by Hüllihch in 1844. The term PG is a misnomer as it is not related to any infection and does not contain pus and is not a true granuloma.<sup>1,2</sup> It is basically a nodular overgrowth of granulation tissue which can arise from mucosa or skin surface. More than two third of lesions are found on gingiva followed by lips, buccal mucosa, palate, vestibule and very rarely on edentulous area.<sup>3</sup> Size of the lesion can range from 3mm to large sizes 5-6 cms. More than 70% of the lesions occur in females. Mostly it is a well-vascularized lesion which can bleed even after any minor form of injury or stimuli.<sup>4</sup> There are two kinds of pyogenic granuloma namely lobular capillary hemangioma (LCH) type and non LCH type which differ histologically. Pyogenic granuloma when occurs on rare location, there is a critical need for its proper diagnosis and, management. This article aims to present a rare case of extra gingival pyogenic granuloma at a rare site i.e alveolar mucosa of edentulous ridge in maxilla.

## CASE REPORT

A 56 year old female patient came with chief complaint of growth in upper left posterior alveolar ridge since 6-7 months. Patient revealed that growth started as a small nodule 7 months back and developed to attain its present size. Patient's medical history was unremarkable. Patient had lost her posterior teeth 2 years back and was not a denture wearer. Growth caused interference in mastication. On intraoral examination all left posterior teeth were missing along with premolars and canine. There was an exophytic, pedunculated growth measuring 3×3 cm arising from the alveolar mucosa in second premolar and first molar region (Figure-1). The lesion was firm, non tender and no bleeding was

seen on palpation. OPG (orthopantomogram) showed no bony involvement. Peripheral giant cell granuloma and peripheral soft fibroma were considered in the differential diagnosis. An excisional biopsy was carried out. Histopathological report showed multiple proliferations of blood capillaries in a dense connective tissue, diagnostic of pyogenic granuloma. At 8<sup>th</sup> month follow up there was no evidence of recurrence.

## DISCUSSION

Historically PG was considered as a botryomycotic infection, transmitted from horse to man. Later on it was thought that these lesions were caused due to pyogenic micro organisms like streptococci and staphylococci. However there was no infectious micro organism isolated so the term PG became a misnomer. Few have even regarded PG as a benign neoplasm earlier but now it has been established as a reactive hyperplastic lesion. It is the most common diagnosis for reactive lesions of the gingiva.<sup>5</sup> Synonyms of PG includes hemangiomas, granuloma telangiectaticum, human botryomycosis, and pregnancy tumor. Causative factors reported for PG are low grade infection, trauma, irritation, hormonal influences and certain drugs like cyclosporine.<sup>3</sup> More than one third of the PGs develop after trauma particularly lesions occurring on the extra gingival sites such as alveolar ridge and palate. Plaque, calculus, poor oral hygiene, improper restorations can also cause PG particularly those involving gingival tissue. In the case reported constant trauma inflicted by the alveolar tissue due to betel nut (patient had habit of betel nut chewing) may have led to proliferation of connective tissue leading to the formation of PG. PG is particularly common during second decade of life with female sex predilection, may be due to vascular effect of female hormones (estrogen and progesterone).<sup>3</sup> In the present paper PG was noted in a much older patient which is unusual and rare.

PG commonly occurs on gingiva i.e. interdental papilla in about 70% gingival cases, lip and buccal mucosa.<sup>6</sup> Other rare sites include alveolar mucosa, edentulous ridge, palate and lower lip.<sup>7</sup> Our case was seen on alveolar mucosa of edentulous maxilla. Clinically PG appears as sessile or pedunculated localized solitary mass. Surface may be lobulated or smooth, reddish or purplish in color. However older PGs have more fibrous appearance. Histologically PG shows presence of granulation tissue with

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**Figure-1:** Intra oral picture showing PG in the left posterior maxillary region

proliferation of endothelial cells. There is also infiltration of acute and chronic inflammatory cells. The two kinds of pyogenic granuloma namely lobular capillary hemangioma (LCH) type and non LCH type which are different histologically as well as clinically. LCH type occur more frequently as sessile, whereas non LCH type mostly occur as pedunculated. Immunohistochemistry of PG shows factors such as angiotensin II, ephrinB2, Tie2, angiotensin I and EphB4.<sup>4,8</sup> It has been reported that cells in PG have low apoptosis due to anti-apoptotic proteins like bcl-2.<sup>9</sup> Differential diagnosis of PG includes peripheral giant cell granuloma, peripheral odontogenic fibroma, ossifying fibromas, hemangiomas, Kaposi's sarcoma, squamous cell carcinoma, basal metastatic carcinoma. For treatment of PG the treatment of choice is excisional surgery followed by curettage of underlying tissue. Other treatment modalities include lasers Nd:YAG, CO<sub>2</sub>, flash lamp pulsed dye laser, cryosurgery, injection of absolute ethanol, sodium tetradecyl sulfate (STS) sclerotherapy, intralesional corticosteroid injections have also been reported. 15% recurrence rate has been reported, however recurrence after surgery of extralingival pyogenic granuloma is uncommon.<sup>10</sup>

## CONCLUSION

PG is a non-specific growth in the oral cavity. Final diagnosis can be done only with biopsy. Follow up of the patient is important to prevent recurrence.

## REFERENCES

1. Patil K, Mahima VG, Lahari K. Extra gingival pyogenic granuloma. *Indian J Dent Res.* 2006;17:199-202.
2. Regezi JA, Sciubba JJ, Jordan RCK. *Oral pathology: Clinical pathologic considerations.* 4th edition. W B Saunders, Philadelphia: 2003.
3. Jafarzadeh H, Sanatkhan M, Mohtasham N. Oral pyogenic granuloma: a review. *J Oral Science.* 2006;48:167-175.
4. Al-Khateeb T, Ababneh K. Oral Pyogenic Granuloma in Jordanians: A Retrospective Analysis of 108 Cases. *J Oral Maxillofac Surg.* 2003;61:85-1288.
5. Shamim T, Varghese VI, Shameena PM, Sudha S. A retrospective analysis of gingival biopsied lesions in south Indian population: 2001-2006. *Med Oral Pathol Oral Cir*

*Bucal.* 2008;13:414-418.

6. Amirchaghmaghi M, Falaki F, Mohtasham N and Mazafari PM. Extra gingival pyogenic granuloma: a case report. *Cases Journal.* 2008;1:371.
7. Ravi V, Jacob M, Sivakumar A, Sarvanan S, Priya K. Pyogenic granuloma of labial mucosa: A misnomer in an anomalous site. *J Pharm BioallSci.* 2012;4:194-196.
8. Shenoy SS, Dinakar AD. Pyogenic granuloma associated with bone loss in an eight year old child: A case report. *J Indian Soc Pedod Prev Dent.* 2006;24:201-203.
9. Nakamura T. Apoptosis and expression of Bax/Bcl-2 proteins in pyogenic granuloma: A comparative study with granulation tissue and capillary hemangioma. *J. Cutan. Pathol.* 2000;27:400-405.
10. Vilmann A, Vilmann H. Pyogenic granuloma: evaluation of oral conditions. *Br j Oral Maxillofac Surg.* 1986;24:376-382.

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