

# Granuloma Pyogenicum -A Case Report

Dr. Christy George, Dr. Anju K.S  
Post Graduate

Department of Periodontology and Implantology  
A J Institute of dental sciences, Mangalore, India-575004

Dr. Nandini Manjunath  
Head of Department

Department of Periodontology and Implantology  
A J Institute of dental sciences, Mangalore, India-575004

**Abstract:** - Pyogenic granuloma is a common inflammatory hyperplastic lesion of the skin and oral mucosa. As the name implies, it is not associated with pus, and histologically, it resembles an angiomatous rather than granulomatous disease.

This non-neoplastic tumor-like development can manifest in the mouth in a range of clinical and pathological manifestations. A case report of a pyogenic granuloma of the gingiva and its treatment is presented in this article.

## I. INTRODUCTION

Diagnosing soft tissue enlargements in the oral cavity can be difficult due to the vast range of pathologic diseases that can cause them. Enlargement can be due to a wide variety of factors, including anatomic features, inflammation, cysts, developmental problems, and neoplasia. These lesions generate a category of reactive hyperplasias as a result of repetitive tissue damage that causes an exuberant or exaggerated tissue healing response. Pyogenic granuloma is one of the most common causes of soft tissue enlargements.

The first example of the lesion in the English literature was published by Hullihen<sup>[1]</sup> in 1844. "Botryomycosis hominis" was the name given to pyogenic granuloma in humans in 1897. <sup>[2]</sup> Hartzell<sup>[3]</sup> is credited for coining the phrase "pyogenic granuloma" or "granuloma pyogenicum" in 1904. Crocker and Hartzell's illness was another name for it. Angelopoulos <sup>[4]</sup> histologically labelled the tumour "hemangiomas granuloma" due to the presence of numerous blood vessels and the inflammatory character of the tumour.

Chronic oral irritants, such as overhanging restorations and calculus, are the most typical causes. Poor dental hygiene, a history of trauma, delirious behaviours, hormonal changes, and medicines are among the other factors. The labial attached gingiva of the maxillary anteriors is the most common site of occurrence of the lesion. It is also found on the lips, tongue, and buccal mucosa. Due to hormonal changes during puberty, pregnancy, and menopause, females are more vulnerable than males.

The term "pyogenic granuloma" is a misnomer because the lesion does not contain any pus and is technically not a granuloma. About one-third of the lesions are caused by trauma, and poor dental hygiene <sup>[2]</sup>. A painless, pedunculated, or sessile gingival tumour is the most common symptom.

A case report of pyogenic granuloma in a 54-year-old female patient who presented with a localised tumor-like growth is described in this article.

## II. CASE REPORT

A 54-year-old female patient presented to the Outpatient Department of Periodontics and Implantology, AJ Institute of Dental Sciences, Mangalore with a chief complaint of pain and swelling on gums in the upper front region of the jaw that had been present for 5 months and which had gradually increased in size. Patient gave history of being in menopause for 2 years, she also gave a history of betel nut chewing since 2 years and had quit the habit 2 months back.

Clinical examination revealed a localized gingival swelling of 15 X 14 mm size present in relation to 22,23,24. (Fig 1, Fig 2) It was a well-defined pedunculated, lobular growth which was firm in consistency and avascular. (Fig 3)



Fig. 1: Vertical extent of the lesion



Fig. 2: Horizontal extent of the lesion

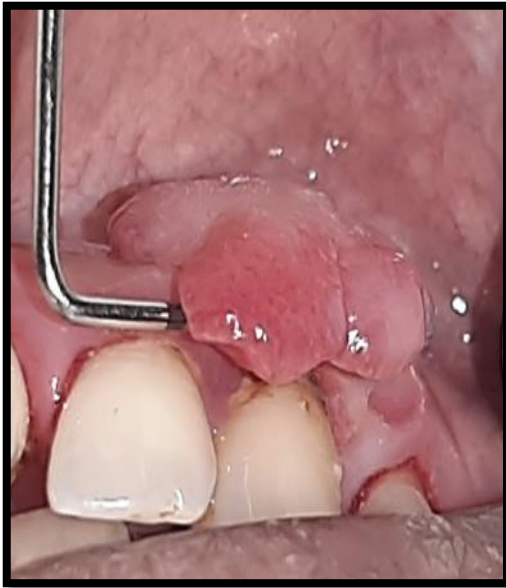


Fig. 3: Pedunculated Growth

Radiographically no bony changes or abnormalities was noted in the region of growth. Only horizontal bone loss was seen. (Fig 4) Based on clinical and radiographic data, the growth was diagnosed as pyogenic granuloma, and an excisional biopsy was planned.



Fig. 4: IOPA View

Scaling and root planing were performed as part of a non-surgical treatment strategy. The patient was advised to brush and use 0.2 percent chlorhexidine mouth rinse twice a day to maintain good oral hygiene. After a two-week period of observation, the lesion was treated surgically. The lesion was excised using a no.15 B.P. blade till the base of the lesion after local anaesthetic administration (Fig 5) The remnants of the soft tissue close to the tooth were trimmed guaranteeing that the lesion was entirely removed, preventing recurrence of the lesion. Periodontal dressing was

put after the excision to protect the site from damage and to aid recovery. Painkillers were prescribed for 1 week.

Excised tissue was sent for histological examination. (Fig 6)



Fig. 5: Excision of the lesion

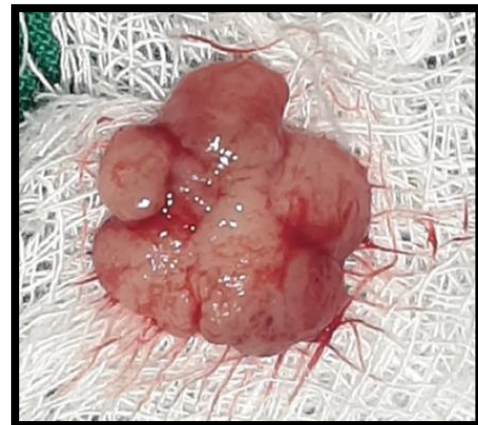


Fig. 6: Excised lesion

Histopathology showed stratified squamous parakeratinized epithelium which is discontinuous. Some of the rete ridges are elongated. The underlying connective tissue stroma shows presence of abundant chronic inflammatory cell infiltrate, histocytes, budding capillaries, fibroblasts and collagen fibres. (Fig 7) Based on a histological report a final diagnosis of pyogenic granuloma was given.

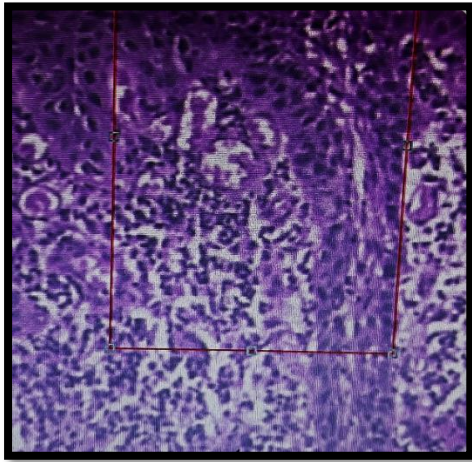


Fig. 7: Histopathological examination

The patient was recalled every 3 months to monitor recurrence, but no recurrence has been observed. (Fig 8)



Fig. 8: 3 month re evaluation

### III. DISCUSSION

The term pyogenic granuloma is a misnomer, because it is not a granuloma in the real sense, because oral pyogenic granulomas show significant capillary proliferation within a granulomatous mass rather than true pyogenic organisms and pus.<sup>[5]</sup> Pyogenic granuloma is caused by a recognised trauma to the gingival fissure, such as calculus or foreign particles, leading in excessive connective tissue proliferation, according to Regezi et al.,<sup>[6]</sup> In this case, we found that pyogenic granuloma was caused by local irritation from eating betel nuts and hormonal changes caused by menopause.

Peripheral giant cell granuloma, peripheral ossifying fibroma, metastatic malignancy, hemangioma<sup>[7]</sup> pregnancy tumor<sup>[8]</sup> conventional granulation tissue hyperplasia, Kaposi's sarcoma, bacillary angiomatosis<sup>[9]</sup>, were among the differential diagnoses.<sup>[10]</sup>

Hemangioma displays endothelial cell proliferation without any acute inflammatory cell infiltrate, which is a commonly seen in pyogenic granuloma.

Unless the lesion can result in a substantial deformity, excision and biopsy are advised, in which case incisional

biopsy is recommended. [11] Conservative surgical excision of the lesion along with removal of irritants like plaque, calculus, and foreign particles is appropriate for small painless nonbleeding lesions. To eradicate any evident sources of discomfort, excision of the lesions upto the periosteum, and scaling and root planing of adjacent teeth, is recommended.

The lesion was surgically excised and was sent for histopathologic examination. The adjacent teeth were scaled and root planned to eliminate any local irritants, which might have been the primary etiologic cause in this case.

Doctors have used Nd: YAG laser, CO<sub>2</sub> laser, flash lamp pulse dye laser, cryosurgery, sodium tetradecyl sulphate sclerotherapy<sup>[12]</sup>, and intralesional steroids, among other alternative treatment techniques.<sup>[13]</sup>

Recurrence of these lesions is caused by incomplete excision, failure to eliminate causative factors, or repeated trauma. Vilmann et al.,<sup>[14]</sup> stressed upon the importance of follow-up, particularly in cases of pyogenic granuloma of the gingiva, which has a substantially higher recurrence rate.

If the diagnosis and treatment strategy are correct, pyogenic granuloma can be effectively treated. With proper treatment of the lesion, it is possible to prevent recurrence of the benign lesion. When a pyogenic granuloma is excised together with its base and all of the causal elements are eliminated, it does not recur.

### IV. CONCLUSION

Pyogenic granuloma, is a common oral lesion. The cause of oral pyogenic granuloma, on the other hand, is unknown.

For preventing lesion recurrence, surgical excision is an effective treatment strategy. Hence, precise diagnosis and treatment planning must be considered.

### REFERENCES

- [1.] Hullihen SP. Case of aneurism by anastomosis of the superior maxillae. *Am J Dent Sci* 1844;4:160-2.
- [2.] Bhaskar SN, Jacoway JR. Pyogenic granuloma – Clinical features, incidence, histology, and result of treatment: Report of 242 cases. *J Oral Surg* 1966;24:391-8.
- [3.] Hartzell MB. Granuloma pyogenicum. *J Cutan Dis Syph* 1904;22:520-5.
- [4.] Angelopoulos AP. Pyogenic granuloma of the oral cavity: Statistical analysis of its clinical features. *J Oral Surg* 1971;29:840-7.
- [5.] Neville BW, Damm DD, Allen CM, Bouquot JE. *Oral and Maxillofacial Surgery*. 2nd ed. Philadelphia: Saunders; 2002. p. 447-9.
- [6.] Regezi JA, Sciubba JJ, Jordan RC. *Oral Pathology: Clinical Pathological Considerations*. 4th ed. Philadelphia: WB Saunders; 2003. p. 115-6.
- [7.] Eversole LR. *Clinical Outline of Oral Pathology: Diagnosis and Treatment*. 3rd ed. Hamilton: BC Decker; 2002. p. 113-4.

- [8.] Tumini V, Di Placido G, D'Archivio D, Del Giglio Matarazzo A. Hyperplastic gingival lesions in pregnancy. I. Epidemiology, pathology and clinical aspects. *Minerva Stomatol* 1998;47:159-67.
- [9.] Calonje E, Wilson-Jones E. Vascular tumors: Tumors and tumor like conditions of blood vessels and lymphatics. In: Elder D, Elenitsas R, Jaworsky C, Johnson B Jr, editors. *Lever's Histopathology of the Skin*. 8th ed. Philadelphia: Lippicott-Raven;1997. p. 895.
- [10.] Raut A, Huryn J, Pollack A, Zlotolow I. Unusual gingival presentation of post-transplantation lymphoproliferative disorder: A case report and review of the literature. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2000;90:436-41
- [11.] Taira JW, Hill TL, Everett MA. Lobular capillary hemangioma (pyogenic granuloma) with satellitosis. *J Am Acad Dermatol* 1992;27:297-300.
- [12.] Jafarzadeh H, Sanatkhan M, Mohtasham N. Oral pyogenic granuloma: A review. *J Oral Sci* 2006;48:167-75.
- [13.] Parisi E, Glick PH, Glick M. Recurrent intraoral pyogenic granuloma with satellitosis treated with corticosteroids. *Oral Dis* 2006;12:70-2.
- [14.] Vilmann A, Vilmann P, Vilmann H. Pyogenic granuloma: Evaluation of oral conditions. *Br J Oral Maxillofac Surg* 1986;24:37