

MANAGEMENT OF GINGIVAL GRANULOMA
PYOGENICUM: A CASE REPORT

ABSTRACT:

Pyogenic granuloma is one of the inflammatory hyperplasias seen in oral cavity. It is exaggerated as a response to any minor trauma, low-grade local irritation, poor oral hygiene and is commonly seen during pregnancy. Pyogenic granuloma of oral cavity is known to involve the gingiva commonly. Extralingually, it can occur on the lips, tongue, buccal mucosa and palate. It is frequently associated with difficulty in mastication and esthetic problems. Present case report describes the treatment of a 28-year old patient with Pyogenic granuloma. Treatment included Phase I therapy followed by electrosurgery and supportive periodontal therapy. Following electrosurgery, healing was uneventful with no recurrence post-operatively. Histopathological examination revealed pyogenic granuloma.

Key words: soft tissue enlargement, phase I therapy, excision, electrocautery, pyogenic granuloma.

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INTRODUCTION

Soft tissue enlargements of oral cavity often present a diagnostic challenge, as diverse groups of pathologic processes produce such lesions. Among these lesions is a group of reactive hyperplasias, which develop in response to a chronic, recurring tissue injury that stimulates an exuberant or excessive tissue repair response. Pyogenic granuloma being one of the most common entities causing soft tissue enlargements¹.

Pyogenic granuloma or granuloma pyogenicum is a relatively common benign non-neoplastic mucocutaneous lesion². It is also known as Eruptive hemangioma,

Granulation tissue-type hemangioma, Granuloma gravidarum, Lobular capillary hemangioma, Pregnancy tumor and Tumor of pregnancy. It was first reported in 1844 in English literature by Hüllihen.³ Pyogenic granuloma in human was first described in 1897 and was termed as botryomycosis hominis by Poncet and Dor.¹ Hartzell in 1904 was credited for giving the current term of "pyogenic granuloma" or "granuloma pyogenicum", but the term "pyogenic granuloma" is a misnomer because it is not a true granuloma. It is not associated with pus and histologically also it resembles angiomatous lesion rather than granulomatous lesion.⁴

Pyogenic granuloma may appear anywhere on the skin or

mucous membrane, but is especially common on gingiva (approximately 75%).⁵ Chronic low grade trauma, physical trauma, hormonal factors, poor oral hygiene, bacteria, viruses and certain drugs have been implicated as causative factors in the development of pyogenic granulomas⁴. Clinically it is a smooth or lobulated painless mass, size varying from few millimeters to several centimeters in diameter which tends to bleed easily because of its extreme vascularity. It is usually pedunculated, although some lesions are sessile. Its colour ranges from red to pink to purple, depending upon the age of lesion. Young pyogenic granulomas are highly vascular in appearance and older lesions tend to become more collagenized and pink.⁶ Treatment of this soft tissue lesion includes removal of causative irritating factor that may be present, followed by complete excision of the growth and microscopic study of the tissue.

We are hereby presenting a case of pyogenic granuloma on lingual aspect of mandibular anterior teeth and highlighting its clinical characteristics, histopathology, differential diagnosis with special emphasis on its diagnosis and treatment.

CASE REPORT

A 28 year old male patient reported to the department of Periodontology and Oral Implantology, Sri Guru Ram Das Institute Of Dental Sciences And Research, Sri Amritsar with a chief complaint of swelling in lower anterior teeth since 1 year. Since it was asymptomatic, patient neglected it. History revealed that initially the gingival growth was minimal in size but it gradually increased to reach up to the present size

interfering with mastication. Patient's past dental, medical and drug history were non-contributory.

Extra oral examination was non-significant.

Intraoral examination revealed a large pedunculated gingival overgrowth approximately 2.5x1.3cm in size, extending on lingual surface of 31,32,41,42,43,44. It was whitish pink in colour and was firm in consistency. Growth was non tender but caused discomfort to the patient while mastication. The surface was lobulated with no ulcerations. Although patient exhibited poor oral hygiene, mobility of teeth was not an associated feature.

Radiographic feature: There were no visible abnormalities and alveolar bone in the region of the growth appeared normal.

Treatment: The patient did not have any systemic history so the case was prepared for surgery on the basis of the clinical and radiographic evidence. Excision and biopsy of lesion was planned.

Treatment plan was explained to the patient and written consent was obtained. Scaling and root planing of adjacent teeth was completed to remove all the local irritants, which could have been the primary etiologic factors in the present case and the lesion was excised under aseptic conditions. Excision was performed under local anesthesia (2% lignocaine with 1:2,00,000 adrenaline) using an electrocautery, followed by curettage and thorough scaling of involved teeth. Periodontal dressing was placed and the patient was recalled after 1 week for removal of pack. Patient was prescribed antibiotics and analgesics. Oral hygiene instructions were given and chlorhexidine gluconate 0.12%



Fig:1 Pre-operative view- 1 week after scaling and root planing



Fig:2a,b: Excision performed with electrocautery



Fig:3 Post-operative view - 1 week after electosurgery

mouthwash was prescribed.

Histopathological examination: Excised tissue was sent for histological evaluation. It revealed parakeratinized stratified squamous epithelium. Section exhibited highly cellular connective tissue stroma composed of numerous proliferating endothelial cells, budding capillaries, blood vessels and fibroblasts. The stroma was densely infiltrated by chronic inflammatory cells. A final diagnosis of pyogenic granuloma was rendered.

DISCUSSION

Pyogenic granuloma is a common tumor-like lesion of the oral cavity. It is considered to be non-neoplastic and shows a highly vascular proliferation, sometimes organized in lobular aggregates.⁷ Oral pyogenic granuloma occurs over a wide range of 4.5 to 93 years with highest incidence in second and fifth decades, females being slightly more affected than males.¹ Due to its behavioral alterations such as rapid growth, multiple occurrence and frequent recurrence of pyogenic granuloma, some investigators regard it as a benign neoplasm but it is mostly considered to be a reactive tumor-like lesion as a response to various stimuli such as traumatic injury, hormonal factors or certain kinds of drugs.⁷

Management of pyogenic granuloma depends on the severity of symptoms.¹⁰ Many treatment techniques have been described for Pyogenic granuloma. But, before treating any case, the etiology must be clearly identified and eradicated. Before attempting surgical excision of the lesion, a thorough oral prophylaxis should be performed because local factors such as plaque and calculus are the most important etiologic factors for Pyogenic granuloma. If the lesion is small and painless, oral prophylaxis, removal of causative irritants (foreign materials, source of trauma) and follow-up are advised, whereas lesions of large size are treated by a thorough oral prophylaxis followed by surgical excision.³

Different treatment modalities such as scalpels, Nd: YAG laser, carbon dioxide laser, flash lamp pulse dye laser, cryosurgery, electrodesiccation, sodium tetradecyl sulfate sclerotherapy and use of intra lesional steroids can be used.⁴ In the present study electrosurgery is being used.

Advantages of use of electrosurgery:

1. A clear view of the surgical site is provided.
2. Tissue separation is clean with little or no bleeding.
3. The technique is pressureless and precise.
4. Planing of soft tissue is possible.
5. Access to difficult-to-reach areas is increased.
6. Chair time and operator fatigue are reduced.

7. Electrode cuts on its side as well as on its tip.
8. Hemostasis is immediate and consistent.
9. Healing discomfort and scar formation are minimal.
10. Wound is nearly painless and the tip is self disinfecting^{8,9}.

After excision, recurrence occurs in upto 16% of the lesions. Recurrence is believed to result from incomplete excision, failure to remove etiological factors or re-injury to the area. It should be emphasized that gingival cases show more recurrence rate than lesions from other oral mucosal sites.¹⁰

Differential diagnosis of Pyogenic Granuloma:

1. Peripheral giant cell granuloma
2. Pregnancy tumour
3. Peripheral ossifying granuloma
4. Metastasis of malignant tumors
5. Hemangioma
6. Inflammatory gingival hyperplasia
7. Angiosarcoma
8. Kaposi's sarcoma
9. Non-Hodgkin's lymphoma

Peripheral giant cell granuloma is an exophytic lesion that is seen exclusively on gingiva, is more likely to cause bone resorption, with appearance of multinucleated giant cells. Diagnosis of pregnancy tumor is valid clinically in describing a Pyogenic granuloma occurring in pregnancy, with no clinical or histological differences.² Ossifying fibroma or peripheral odontogenic fibroma occurs exclusively on the gingiva; however, it has a minimal vascular component unlike a pyogenic granuloma. Metastatic tumors of the oral cavity are rare and attached gingiva is commonly affected, clinically they resemble reactive or hyperplastic lesions such as pyogenic granuloma, but microscopically they usually resemble the tumor of origin, which usually is distant from the metastatic lesion seen in the oral cavity. Due to proliferating blood vessels differential diagnosis of pyogenic granuloma from a hemangioma is made histologically in which Hemangioma shows endothelial cell proliferation without acute inflammatory cell infiltrate, which is a common finding in pyogenic granuloma. Conventional hyperplastic gingival inflammation resembles pyogenic granuloma in histopathologic sections and it is impossible for the pathologist to reach a diagnosis and in such cases the surgeons description of the lesion is relied on.⁴ Angiosarcoma shows lobular growth pattern, well defined vessels, and cytologically bland endothelial cells. Kaposi's sarcoma of AIDS shows proliferation of dysplastic spindle cells, vascular clefts, extravasated erythrocytes and

intracellular hyaline globules, none of which are features of Pyogenic granuloma.²

This present case reveals that poor oral hygiene could have been the primary etiological factor of pyogenic granuloma, so oral prophylaxis followed by excision of the growth was the line of treatment. The procedure was simple, essential for final diagnosis and provided a rapid result. There was no scar formation and patient was satisfied with the treatment outcome.

CONCLUSION

Although pyogenic granuloma is a non-neoplastic growth in the oral cavity, proper diagnosis, prevention, management and treatment of the lesion are very important. In spite of various treatments, recurrence is quite frequent so in many cases re-excision may be necessary.

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