

Case Report

Plasma Cell Gingivitis: a clinical enigma

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ABSTRACT:

Plasma cell gingivitis is a rare condition which presents as diffuse reddening and edematous swelling of the gingiva with a sharp demarcation along the mucogingival border. It is characterized by diffuse and massive infiltration of plasma cells into the subepithelial connective tissue and may be associated with similar involvement of rest of the oral mucosa. Plasma cell mucositis may clinically mimic acute leukemia and histologically imitate multiple myeloma and extramedullary plasmacytoma. Periodontal signs such as the loss of attachment are usually absent. However, architectural changes such as the loss of stippling are commonly observed. Hence; we have presented case reports of Plasma cell gingivitis.

Key words: Gingivitis, Plasma cell

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INTRODUCTION

Plasma cell gingivitis is a rare benign inflammatory condition of gingiva which is named due to presence of abundant plasma cell infiltrate within the connective tissue. It is also known as allergic gingivostomatitis, atypical gingivostomatitis, idiopathic gingivostomatitis and plasmacytosis.[1,2] [3]. In 1952, Dr. Zoon described a dermatological condition which he termed as "plasma cell infiltrate" which had unique characteristic, presented histologically as a dense infiltration of plasma cells in the subepithelial connective tissue.[4,5,6]. It was first described in late 1960s. Gingiva is a rare site for its presentation, making it a clinical dilemma. Plasma Cell Gingivitis can be classified on the basis of its etiology into three categories: Plasma Cell Gingivitis due to allergens, due to neoplastic origin, and due to unknown cause.[7] The most common causative agents are the allergens known to cause hypersensitivity reaction in the tissue. Many such allergens are cinnamon, cinnamaldehyde, red pepper, chewing gums, mint, certain components of toothpaste,[8] and khat leaves.[5] It is more prevalent in young women. Clinically, the condition mostly presents as a diffuse enlargement with oedematous swelling of the gingiva in the maxillary and

mandibular anterior segments. [6]. This case report discusses plasma cell gingivitis presentation in a localized and a more generalized form.

CASE REPORT 1

A 35 years old female patient reported to the department of periodontics, Government dental hospital, Patiala, Punjab with a chief complaint of swelling and bleeding in gums since 8 months. On clinical examination there was diffuse gingival enlargement involving marginal and attached gingiva on the labial aspect of maxillary and mandibular teeth. The enlargement was painless, bright fiery red, highly inflamed, erythematous with granular appearance, soft consistency and rolled out gingival margins. Pseudopockets with probing depth of about 6-7 mm were present. Generalized bleeding on slight or gentle probing was noted. Minimal plaque deposition was noticed around affected teeth in maxillary and mandibular segments. Orthopantomograph examination revealed minimal to no bone loss. The medical history was noncontributory and blood estradiol and progesterone levels were within normal limits (luteal phase). General physical examination

did not show any signs or symptoms suggestive of any systemic illness.

Based on history and clinical findings, the patient was provisionally diagnosed as a case of inflammatory gingival enlargement. Patient consent form was obtained and then was planned for biopsy. An incisional biopsy was taken with scalpel from the affected attached gingiva with respect to 15 region. The tissue sample was transported in 10% formalin for histopathological examination. The patient was recalled after 1 week and healing of biopsy site was checked.

Phase 1 therapy was carried out after ensuring healing of biopsy region. Patient was then instructed to maintain good oral hygiene and to rinse with 0.2% chlorhexidine twice daily.

Microscopic examination revealed squamous hyperplasia with focal ulceration and diffuse subepithelial plasmacytic infiltrate consistent with Plasma cell gingivitis. Plasma cells were seen without cellular atypia.

CASE REPORT 2

A 43 years old female patient reported to the department of periodontics Government dental hospital, Patiala, Punjab with a chief complaint of painful, bleeding swollen growth in upper front region of mouth. Patient noticed this swelling 4 months ago which was slowly increasing in size. On clinical examination there was erythematous tumor like growth in the maxillary central and lateral incisor region involving marginal and attached gingiva measuring 10mm x 8mm. Probing depth ranged from 4 mm to 6 mm. Patient had a poor oral hygiene. There was bleeding on slight or gentle probing. There was no relevant medical history and patient did not report a positive drug history. No history of any familial diseases was reported. Clinically no extra oral anomaly detected. Provisional diagnosis of chronic generalized gingivitis with localized gingival enlargement was made. After obtaining consent from the patient, excisional biopsy of the growth was done with scalpel. The tissue sample was transported in 10% formalin for histopathological examination. The patient was recalled after 1 week and healing of biopsy site was checked. Phase 1 therapy was carried out after ensuring healing of biopsy region. Patient was then instructed to maintain good oral hygiene and to rinse with 0.2% chlorhexidine twice daily.



Figure 1: Preoperative



Figure 2: Intraoperative

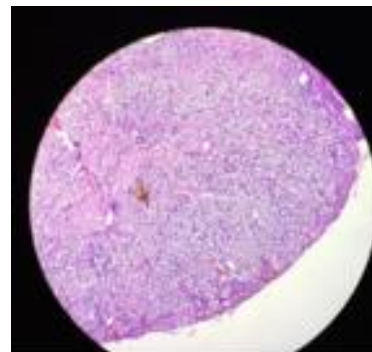


Figure 3: Histopathology

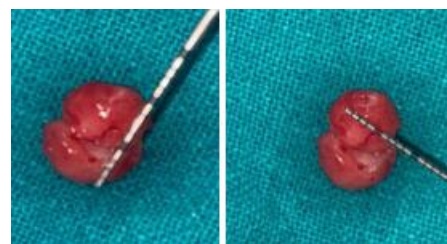


Figure 4: Excised tissue



Figure 5: Preoperative image showing generalized gingival enlargement



Figure 6: Preoperative image showing generalized gingival enlargement



Figure 7: Excised tissue in formalin

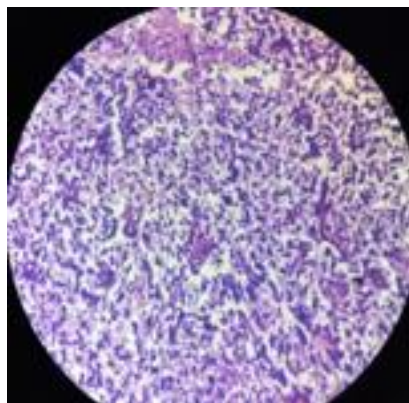


Figure 8: Histopathology

Histopathologic examination revealed stratified squamous epithelium with focal hyperplasia, elongation of rete ridges and focal ulceration. Subepithelial tissue showed fibrocollagenous and fibromyxoid stroma and infiltration of plasma cells which are increased in number in subepithelial layer. There is also increased proliferation of capillaries which are dilated and congested..

The cases which we depicted here are of unknown etiology. The differential diagnosis of the condition is very important. Most cutaneous disorders were eliminated from consideration by the lack of skin lesions and a negative Nikolsky sign. The histopathological examination after biopsy revealed replacement of underlying connective tissue by a population of cells predominantly made up of plasma cells, indicating the definitive diagnosis of plasma cell gingivitis.

DISCUSSION

Plasma cell gingivitis manifests as a mild marginal gingival enlargement that extends to the attached gingiva. The gingiva appears red, friable, and sometimes granular, and bleeds easily; usually, gingivitis does not cause the loss of attachment. The lesion is located on the oral aspect of the attached gingiva and is different from plaque-induced gingivitis. Histopathologically, it appears dense and massive plasma cell infiltration into subepithelial connective tissue and it also mimics like life threatening entities such as squamous cell carcinoma, autoimmune mucocutaneous bullous disease and lymphoproliferative disorders. It is also associated

with some infectious disease such as syphilis, castleman's disease, primary infectious disease of lymphnodes, and recently covid19.[4]

The aetiology of plasma cell gingivitis is unclear, but due to the obvious presence of the plasma cells, many authors are of the opinion that it is an immunological reaction to allergens which may be present in toothpaste, chewing gum, mint pastels, certain foods and oral care products. [7]

Gingival lesions solely plaque related regress after periodontal therapy, unlike what occurs in plasma cell gingivitis. The exact role of plaque in the onset of plasma cell gingivitis is still unclear, moreover, since plasma cell gingivitis affects the full width of gingival epithelium it differs from plaque induced gingivitis that affects mainly marginal epithelium.[8,9]

The topography of the lesions, combined with the absence of necrotizing ulcerative lesions with rapidly evolving and the absence of decapitated papillae allows for a differential diagnosis with the acute necrotizing ulcerative gingivite in case of plasma cell gingivitis with ulcerative phenotype.[10]

CONCLUSION

Early diagnosis is essential as PCG has similar pathologic changes seen clinically as in leukemia, HIV infection, discoid lupus erythematosus, atrophic lichen planus, desquamative gingivitis, or cicatricial pemphigoid that must be differentiated through hematologic and serologic testing. [3]

DECLARATION OF PATIENT CONSENT

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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