Case Report

Localised plasma cell gingivitis: a case report

Dr. Seema Patil*, Dr. Sushma Mehkri*, Dr. Asha R. Iyengar **, Dr. K.S.Nagesh*, Dr. Kshitija Kale ******

** Lecturer, **Professor, *** HOD and Principal, ****Post Graduate Student*
Department of Oral Medicine and Radiology, D.A.P.M.R.V.Dental College and Hospital, Bangalore.

Address for Correspondence:

Dr. Seema Patil M.D.S.
Lecturer
Department of Oral Medicine and Radiology
DAPM R.V. Dental College and Hospital, Bangalore
Address: DAPM R.V. Dental College and Hospital
CA-37, 24th main, 1st phase J.P. Nagar,
Bangalore -560078
India
E-mail address: seemapatil75@yahoo.com
Telephone: +91- 96202 66353
Fax: +91- 26658411

ABSTRACT:

The differential diagnosis of localized swellings on the gingiva pose a diagnostic challenge to the clinician as there are a number of lesions which mimic what is called as a localized gingival enlargement. Asymptomatic gingival swellings like Pyogenic granuloma, Peripheral giant cell granuloma, Peripheral ossifying fibroma and Plasma cell gingivitis may all present with similar clinical findings, therefore diagnosis and management is based solely on the histopathology.

A case of localized gingival swelling in relation to the anterior maxillary teeth in a 29 yr old male patient of 15 days duration is reported. The swelling was asymptomatic and surgically excised and subjected to histopathology which revealed a predominant plasma cell infiltrate admixed with few neutrophils, lymphocytes and eosinophils suggestive of Plasma cell gingivitis. An attempt was to made to elicit the possible allergen from the history, but no relevant information was obtained. The patient has been kept on follow-up and there has been no recurrence of the lesion till date.

INTRODUCTION:

Plasma Cell gingivitis (PCG) is an uncommon condition thought to represent a hypersensitivity response affecting the gingival tissues[1]. Plasma cell gingivitis is so named because of the presence of an abundant plasma cell infiltrate within the connective tissues[1]. PCG is known by a variety of other names such as atypical gingivostomatitis, idiopathic gingivostomatitis, and allergic gingivostomatitis[2]. The etiology is difficult to elicit as it may be related to specific allergens present in certain substances like the chewing gum, food, toothpastes etc or it may be of unknown origin[1]. The classic presentation of Plasma Cell gingivitis is an asymptomatic diffuse, erythematous and edematous appearance of gingivae in the anterior maxilla with bleeding on minimal manipulation[1]. On occasion, a similar gingival and vestibular obliteration can occur from topical placement of material that elicits a similar plasmacytic inflammatory reaction[4]. This case reported is an unusual case of Plasma Cell Gingivitis presenting as a localized and gingival swelling in the anterior maxilla in a 29 year old male patient.

CASE REPORT:

A 29 year old male patient reported with a complaint of swelling on the labial gingiva in the region of maxillary anterior teeth of 15 days duration. Initially when the patient noticed the swelling it was smaller in size and has gradually increased to the present size of about one centimeter in diameter. It was associated with bleeding and dull pain during chewing and brushing of teeth. Medical, Dental and Personal history were non contributory.

On examination a solitary oval swelling measuring 8 mm by 6 mm was seen in relation to labial aspect of 21 involving the marginal and attached gingiva extending partly on to the cervical 3rd of coronal portion of the tooth [Fig-1]. The surface was erythematous, with no evidence of spontaneous discharge or bleeding. The swelling was mildly tender, soft, movable and sessile, with bleeding on slight manipulation. A periodontal pocket was present with respect to mesial aspect of 21 measuring 4 mm with evidence of subgingival calculus.

The Intraoral periapical radiograph revealed horizontal bone loss with respect to 11 and 21 [Fig-2]. Routine haematological investigations revealed no specific abnormality. The swelling was surgically excised [Fig-3] and subjected to routine histopathology which revealed stratified squamous epithelium showing hyperplasia and exocytosis of neutrophils into the epithelium. The underlying connective tissue showed superficial edema, a predominant plasma cell

Fig-1: Localised gingival swelling on the facial aspect of 21

Fig-2: IOPA Radiograph revealing horizontal bone loss with respect to 11 and 21

infiltrate admixed with few neutrophils, lymphocytes and eosinophils. Numerous blood vessels of varying sizes were noted, of which some were dialated [Fig-4]. Based on history, clinical findings and histopathology the diagnosis of localised plasma cell gingivitis was made.

There was uneventful healing of the excision wound [Fig-5]. The patient is on a regular follow-up after the excision there has been no evidence of recurrence.

DISCUSSION:

Plasma cell gingivitis is a rare benign condition of the gingiva characterized by sharply demarcated edematous and erythematous gingivitis often extending to the mucogingival junction[2, 7]. The etiology of PCG is not clear[8], but due to the obvious presence of plasma cells, many authors are of the opinion that it is an immunological reaction to allergens; which may occur in toothpaste, chewing gum, mint pastels, certain foods and oral care products[3]. Mint present in toothpastes and chewing gum is a putative allergen[1]. Cinnamonaldehyde, which is usually added to dentifrices to mask the unpleasant taste of pyrophosphate, has also been associated with the development of PCG[2]. Cases related to the use of herbal toothpaste have been reported[2]. It has been suggested that strong spices and some herbs such as chilli,

Fig-3: Pictures depicting excision of the lesion and the excised specimen

pepper and cardamom may be important factors[2,7]. However, it is likely that more than one aetiological factor is involved in the pathogenesis. In previously reported cases, patients have also suffered concomitantly with psoriasis. Further, there have been reports of occurence of PCG due to the chewing of khat leaves, which is popular in many African countries[1].

Three categories of plasma cell gingivitis have been proposed based upon the aetiology of the condition[1]

1. Lesions caused by an allergen.
2. Neoplastic lesions.
3. Lesions of unknown cause.

Clinically, there may be an asymptomatic diffuse, erythematous enlargement in relation to the free and attached gingiva in the anterior maxilla, although mandibular gingival involvement has also been reported[1,3,5]. Usually, a sharp demarcation along the mucogingival border is evident[1,3]. Sometimes, the lesion may also have a granular or papillary

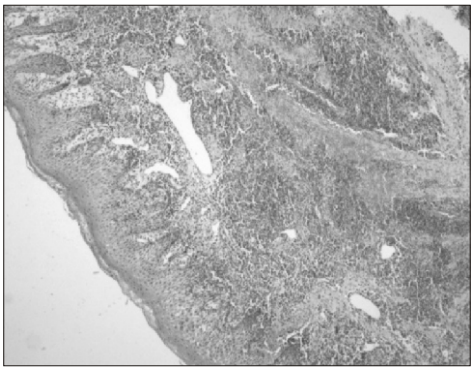

Fig-4: Histopathological specimen showing predominant plasma cell infiltrate in connective tissue

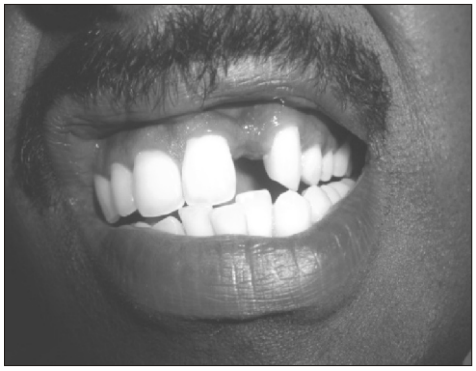

Fig-5: Normal appearing gingiva in the region of 21 one month after the excision

appearance[3,4]. The lesion does not induce a loss of attachment, but there is absence of normal stippling[4]. Gingival ulceration is rare[3]. The lesion is friable and frequently bleeds with minimal trauma[1,4]. Apart from the gingiva, tongue and lip involvement has also been reported particularly associated with the use of chewing gum. Involvement of the lip results in dryness, atrophy, fissuring and angular chelitis. Involvement of tongue results in erythematous enlargement with furrows, mild crenation and loss of typical dorsal coating[5]. Extraoral involvement is also possible and a case that was associated with a similar histological lesion affecting the genital mucosa has been reported[5] .The supraglottic region may also be involved[5].

The histopathological appearance of the classic plasma cell gingivitis of the 1970s demonstrated psoriasiform hyperplasia and spongiosis of the surface epithelium, with intense exocytosis and neutrophilic microabscesses. The underlying lamina propria contained numerous dialated vascular channels and an extremely dense chronic inflammatory infiltrate that is composed predominantly of plasma cells. The more recent cases are similar but often demonstrate less involvement of the surface epithelium and a less dense underlying plasmacytic infiltrate[5].

Histopathological changes mimic those of other more serious conditions such as multiple myeloma, solitary plasmacytoma, and Walden-ströms macroglobulinaemia[1]. Immunohistologic analyses of the phenotype of plasma cell infiltrate may be necessary to rule out the possibility of a monoclonal plasma cell neoplasm[6]. Allergic and idiopathic cases of plasma cell gingivitis demonstrate a polyclonal mixture of plasma cells and a normal profile on plasma electrophoresis[5]. T-cell marker analysis of biopsy specimens have been carried out in order to establish whether the condition is of neoplastic or reactive/inflammatory origin, using direct immunofluorescence. These have shown the condition to be of a reactive/inflammatory nature[1].

In our patient, the changes were confined to the facial gingiva of right maxillary central incisor, this could have been due to the direct contact of an allergen restricted to that particular region. Localized plasma cell gingivitis clinically resembles other commoner lesions like pyogenic granuloma, peripheral giant cell granuloma etc. and the differential diagnoses of these lesions is briefly discussed below.

Localised Plasma cell gingivitis presents as soft, erythematous gingival swelling which has to be differentiated from the reddish-purple appearing pyogenic granuloma which is more commonly encountered in the oral cavity. Both the lesions are asymptomatic, commonly seen in the facial aspect of anterior maxilla and bleed on slight manipulation.

The lesions of pyogenic granuloma are usually pedunculated and the surface of the lesion shows ulceration which may not be a feature in plasma cell gingivitis. Both the above lesions can be seen in any age group and gender, but the lesions of pyogenic granuloma are more common in children, young adults and in a definite female predilection has been demonstrated possibly because of the vascular effects of female hormones[5].

The lesions of peripheral giant cell granuloma are seen in the 5th- 6th decade of life and are common on the mandibular gingiva involving both the anterior and the posterior region. They present as a reddish blue nodular mass and radiographically sometimes exhibit “Cupping” resorption of the underlying alveolar bone which helps in differentiating from localised plasma cell gingivitis which shows no radiographic features as seen in the case reported[5].

Peripheral ossifying fibroma is also common in the maxillary anterior gingiva; however these lesions emanate from the interdental papilla as a reddish-pink nodular mass which frequently ulcerate causing migration and loosening of teeth in the affected area and are predominant in adult females[5].

All the three lesions described above are thought represent an exuberant tissue response to local irritation or trauma,where as these factors do not play any etiologic role in Plasma Cell gingivitis[5].

Peripheral odontogenic fibromas are relatively uncommon and present as a firm, sessile, slowly growing mass covered with a normal appearing mucosa on the mandibular facial gingivae. Radiographically,some cases demonstrate areas of calcification[5]. These features provide some clue in differentiating it from plasma cell gingivitis.

Therefore the diagnosis of localized PCG is based on a detailed history and clinical examination, with an extensive probe on the possible allergen. Histopathology is the key for the diagnosis as it helps in differentiating other lesions that mimic localized plasma cell gingivitis.

Management has traditionally been symptomatic[1.] plaque control and conventional therapies alone will not cure the disease[7]. The patients should be instructed to keep a complete dietary history, with records of everything taken into the mouth [e. g, foods, dentifrice, mouthwash, tobacco, alcohol, chewing gum, candy, medications]. Possible allergens should be eliminated in an attempt to discover the underlying cause. If no answer is apparent, then extensive allergy testing and elimination diet can be undertaken[5].

Many patients in whom no underlying cause could be discovered have been treated with topical or systemic immunosuppressive medications, with variable results. Betamethasone rinses, fluocinonide gel (0.05%), topical triamcinolone (0.1%) and topical fusidic acid (2%) are several of the reported choices. In spite of all evaluations and therapeutic interventions, some patients do not respond totreatment and no cause for the disease can be identified.

In differential diagnosis of the localized swellings of the gingiva, localized plasma cell gingivitis should be included though it is a rare entity, and an extensive search of the possible allergens should be made[5].

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