

Case Report

Plasma Cell Granuloma of Gingiva: Unusual Case Report

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Abstract: The plasma cell granuloma (PCG) is a rare entity characterized by tumor lesions that may invade different tissues of the human body such as lungs, liver, spleen, orbits, pancreas and various mucous membranes. It's appearance in mouth is strange and there are few reported cases in lip and gum as single lesions mostly. The objective of this paper is to report a case of PCG on gingiva, with the particularity of being multiple lesions that invade nearly all the labial mucosa the palatal and lingual in minor proportion and also treatment outcome and histopathological exam confirmed a diagnosis of plasma cell granuloma; it happened in a male patient of 64 years old who consult for an asymptomatic gingival hyperplasia with chronic periodontal disease was presented. Clinical and radiological examination was performed and was taken as presumptive diagnosis of plasma cell granuloma, hygienic phase was performed, excisional biopsy and gingivoplasty was performed, and the histopathological examination confirmed the initial diagnosis. Healing occurred rapidly and normally with no recurrence to date. What is known about this lesion is very scarce, its etiology and pathogenesis are still a mystery, proposing many different theories, none of these validated until now, the differential diagnosis is established with lesions of malignant trend so it is important to review histologically any reactive tumor lesion of the oral cavity.

Keywords: plasma cell granuloma, plasma cell, gingiva.

INTRODUCTION

The plasma cell granuloma (PCG), also referred to in the literature as “inflammatory pseudotumor”, “myofibroblastic tumor”, “fibroxanthoma”, “pseudosarcomatous fibromyxoid tumor” or “inflammatory miofibrohistiocytic proliferation” [1]. corresponds to an entity of rare frequency, characterized by the appearance of tumors, either single or multiple, smooth edges or lobed well defined. Although the clinical presentation depends on the tissue affected, generating displacement, obstruction or encroachment [2].

It was initially described in the lung, then injuries where found in the region of head and neck, mainly located in orbit and sinuses [2]. Currently there are reported cases of laryngo-tracheal injury tract, salivary glands, middle ear, ganglionic, tonsillar, pterygomaxillary and parapharyngeal tissues, spinal meninges, digestive system, heart, soft tissues, bladder, liver, and spleen [3].

It's appearance in oral cavity is rare and the

few reported cases where located in the lips, tongue and other sites of the oral mucous but rarely in gingiva and in unilobular way [4].

The etiology of PCG is controversial and not yet defined. Initially it was proposed as a reactive trauma injury, but it should be considered the location and the patient's history to suggest its cause. Current theories suggest it as a secondary response to a chronic inflammatory process that produces abnormal plasma cell differentiation [5,12]. and for intraoral cases it is presumed an association to periradicular periodontitis, inflammation due to foreign body or idiopathic antigenic signal [6].

The histopathological lesion is characterized by predominant proliferation of plasma cells, lymphocytes and also other types of inflammatory cells on a fibrous tissue [7].

In the differential diagnosis should be excluded various chronic inflammatory diseases, benign tumor lesions localized in the labial mucosa; that's why it is

essential to take a biopsy containing sufficient tissue surface and depth. The treatment is surgical and rarely presents recurrence [8].

The following case report presents a rare case of plasma cell granuloma affecting the gums throughout their labial extension and also accompanied by chronic periodontal disease. The clinical and histological features and treatment itself are shared with other reported cases, however, its association with infection might suggest this as a trigger of injuries.

CASE DESCRIPTION

Male patient of 64 years old, with no relevant medical history, from the city of Cartagena, Colombia; which arrives to the Faculty of Dentistry of the Universidad de Cartagena due to a generalized inflammation of the gums with an evolution time of twelve months. Clinical examination shows lobular lesions of sessile base, erythematous- lilaceous color, firm consistence, asymptomatic, not only covering the whole free gum of the superior and inferior labial region, but also affecting similarly but fewer the palatal and lingual mucosa (Fig-1, 2, 3]. Signs of chronic periodontal disease such as periodontal pockets deeper than 8 mm and tooth mobility grades II and III as rated by Miller. It was evidenced acrylic crowns maladaptive in the postero-superior sector from canine to first molar and also metal-ceramic crowns of four superior incisors.

In the radiographic exam it wasn't appreciated infiltrate margins or any other signs of malignancy, which could show apparent normality.

A complete blood count (CBC) was requested, where the results showed normal limits. When

panoramic x-ray was done, it wasn't observed bone involvement in the lesions.

With previous authorization from the patients through the signing of the informed consent of the Faculty of Dentistry in Universidad de Cartagena; it proceeded to perform excisional biopsy and gingivoplasty under local anesthesia (Lidocaine 2%), only with electro surgical unit (BONART®. ART-E1, Intensity 5; Cutting/ coagulation mode) in order to effectively control bleeding. In the same operation it was performed scaling and root planning in open field to enhance periodontal status. The biopsy specimen obtained was sent for histopathological examination in the pathology service of Hospital Universitario del Caribe.

The histological evaluation with hematoxylin-eosin revealed squamous epithelium stratified coating parakeratinized hyperplastic and resting on a fibrovascular stroma with some lymphocytes and numerous plasma cells with typical hyperchromatic nucleus eccentrically located, whose chromatin shaped carriage wheel is a feature of this cells (Fig-4, 5,). The presumptive diagnosis suggests plasma cell granuloma of the gingiva, and its recommended immunohistochemical staining for kappa and lambda light chains to check the presence of non-neoplastic plasma cells; however, this study was not conducted.

Three months after the treatment was done, the patient went to a post-operative control where it was not only evidenced a stable healing process and improvements, but also a remarkably decrease of the gingival size without lesion recurrence observed which allowed to establish a favorable prognosis (Fig-6).



Fig-1: Clinical appearance of the lobulated lesions with sessile base in the labial gingiva of inferior teeth.



Fig-2: Clinical image of the lobulated lesions covering almost all the gingiva of both arcades.



Fig-3: It can be appreciated the erythematous-lilaceous color of the lesions, and the poor oral hygiene.

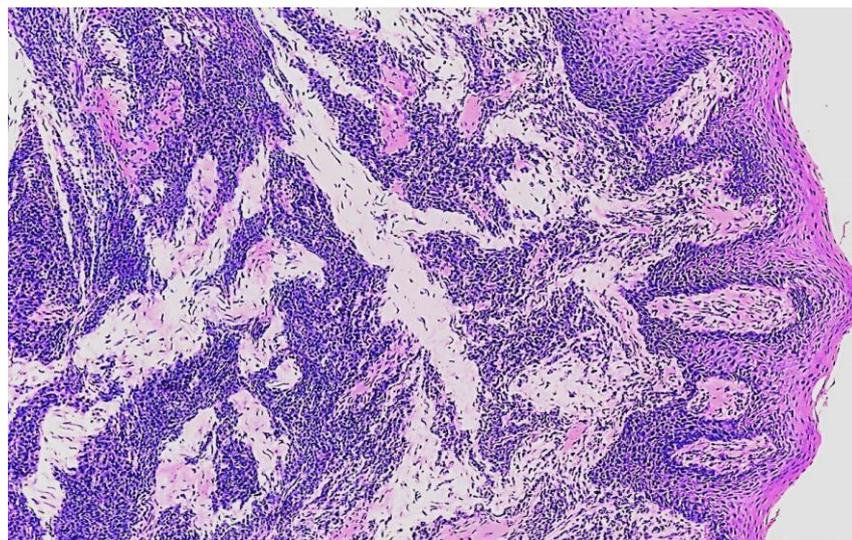


Fig-4: Histological image that reveals an hyperplastic squamous stratified epithelium resting on a fibrovascular stroma. (H-E, x100)

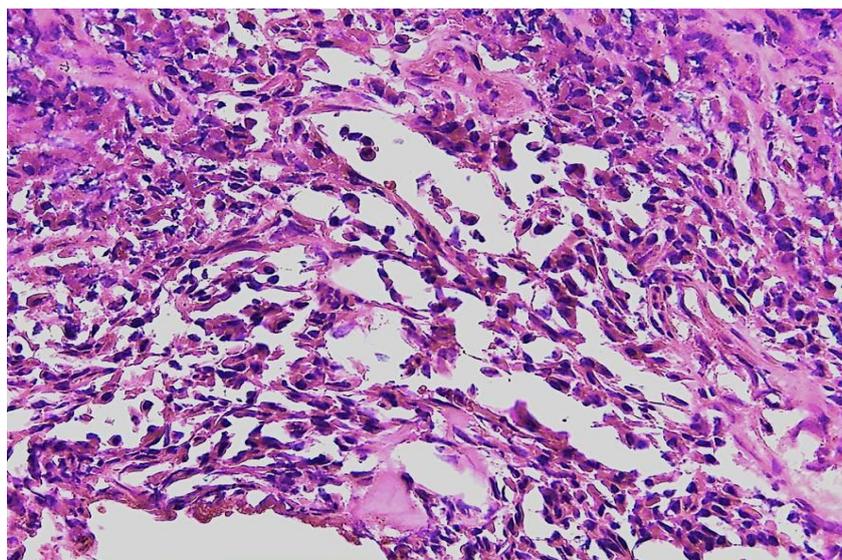


Fig-5: Histological image that shows some lymphocytes and abundant plasma cells with hyperchromatic nucleus eccentrically located. (H-E, x400)



Fig-6: Clinical photography that evidence the improvement in the appearance and color of the gingiva after treatment.

DISCUSSION

Bhaskar, Levin y Firch [9]. first reported this pathological entity in the gingival tissue and then only very few case reports have been documented since. Acevedo y Buchler [10]. Earl y Lowry [11]. Karthikeyan y Pradeep [12]. y Namboodiripad et al. [13]. reported the injury in the gums. These cases showed gingival growth with similar histological and clinical appearance, well circumscribed, and then it was taken as an asymptomatic reactive lesion treated through excisional biopsy, as in this case.

The PCG occurs in a wide range of age from 19 months to 63 years, but most cases of PCG in gingiva are observed between the fourth and fifth decade of life with a slight female predominance [7]. PCG clinically it's presented as a nodular polypoid mass with smooth surface. No significant systemic symptoms are produced. The routinely laboratory

examination is normal and the microbiological cultures results are negative.

The PCG are benign inflammatory lesions in which histopathological biopsies and immunological studies are needed to be performed in order to rule out dyscrassias and plasma cell malignancies, including multiple myeloma. It is important to differentiate PCG from extramedullary plasmacytoma and multiple myeloma, due to the bad prognosis of these tumors [14].

Furthermore, the PCG consist of unique lesions, clinically similar to extramedullary plasmaytoma injuries, but, this last one could be malignant or precursor to malignancy. On histopathological examination, plasmacytoma include a pure culture of plasma cells arranged in relatively large

blades on a reticular stroma; while, the plasma cell granuloma consists mainly of a capillary network [14].

The plasma cells of the PCG infiltrate through the tissues by invasion, while the plasmacytomas replace the tissue they are affecting. Moreover, inflammatory cells are scarce in the plasmacytoma, in contrast to the plasma cell granuloma [14].

A differential diagnosis that is presented is a plasma cell gingivitis, however, its discarded because its observed that although the cellular infiltration in the PCG its important, in this type of gingivitis, the cellular infiltration is greater due to the finding of epithelial spongiosis, exocytosis (inflammatory cells), apoptotic bodies and Russel bodies (homogeneous and voluminous acidophilic inclusions of protein bodies, which can be seen in the myeloma or in the reactive plasma cells that synthesize immunoglobulin, which are overloaded) , or even distension of endoplasmic reticulum, which produces more serious denoting, additionally . Also, the etiologic agent that is most associated to the plasma cell gingivitis is the allergic response to chemicals in toothpastes or any other product as bubble gum and candy [8]. while the major cause accepted for the PCG is trauma and idiopathic antigenic response.

The pathogenesis of this lesion remains unclear. It was postulated that the presence of a large number of plasma cells may represent and antigen-antibody reaction altered by the host or an alteration of the blood flow due to congestive vasodilation. A parasitic etiology has also been suggested for this type of lesion [8].

CONCLUSION

The plasma cell granuloma is a lesion of difficult diagnosis, where they must take into account the clinical and histological findings. Additionally, to be more specific and conclusive, one must resort to immunohistochemical studies, which unfortunately wasn't performed in this study due to lack of items and inputs. The etiology and pathogenesis of this entity it's yet not completely clear, but the most accepted theory is that which arises as a nonspecific inflammatory response to a foreign agent unknown.

The case reported in this paper confirms the existence of plasma cell granuloma of the gingiva and poses the need and importance of subjecting to microscopic study any excision of gingival tissue, independent of the presentation and clinical diagnosis, which will rule out potential malignancies.

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