CASE REPORT

Diffuse Gingival Plasma Cell Granuloma Mimicking A Double Lip – A Case Report

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ABSTRACT

Plasma cell granuloma, also known as inflammatory pseudotumor, is a tumor like lesion that manifests primarily in the lungs. However, it may occur in various other anatomic locations such as orbit, head and neck, liver, and rarely in the oral cavity. The present case report presents a 28-year-old female with aggressive periodontitis and the lesion was treated by Phase I therapy (scaling and root planing) and excisional biopsy. Histological examination revealed inflammatory cell infiltrate containing sheets of plasma cells. This case highlights the need to biopsy for unusual lesions to rule out potential neoplasms.

Key words: Inflammatory pseudotumor, plasma cells, polyclonal plasma cell granuloma

INTRODUCTION

Gingival plasma cell granulomas are non-neoplastic and tumor-like lesions of unknown etiology and are composed predominantly of polyclonal plasma cells. In 1968, Bhaskar, Levin and Firch first reported the cases of gingival plasma cell granuloma.[1] Although plasma cell granuloma (PCG) occurs most commonly in lungs, other organs may be involved. In head and neck, the areas most commonly involved are the orbit and paranasal sinuses, but they have been also described in the larynx, pterygomaxillary space, tonsils, ears, tongue, lip, oral mucosa, periodontal tissues, and gingiva.[2]

PCG is very rare in the oral cavity and more so, on the gingiva. These lesions have no sex predilection and may occur at any age.[3] PCG has been known by different terms, for example, inflammatory pseudotumor, inflammatory myofibroblastic tumor, inflammatory myofibrohistiocytic proliferation, and xanthomatous pseudotumor.[4]

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The exact incidence of plasma cell granuloma is unclear. The lesion's etiopathogenesis, biological behavior, and appropriate treatments are unclear, and little is known about the prognosis. It may arise due to periodontitis, periradicular inflammation due to the presence of a foreign body or may be due to an idiopathic antigenic cue. The most commonly considered treatment for plasma cell granuloma is a complete resection; however, in some cases, total surgical excision is not possible.[3] In some cases, inflammatory pseudotumor is thought to result from inflammation following minor trauma or surgery, or to be associated with other malignancy.[5]

An autoimmune mechanism has also been implicated. In one case, inflammatory pseudotumor was associated with vasculitis and inferior vena caval thrombosis, with anti-C3 and anti-fibrinogen deposits found in the vessel wall.[6] The present case report presents a 28-year-old female with aggressive periodontitis and the lesion was treated by Phase I therapy (scaling and root planing) and excisional biopsy.

CASE REPORT

A 28-year-old female patient reported to our private dental clinic with an enlarging, painless mass in the oral cavity. The mass was present since 1 year and was slowly increasing in size. There was no history of trauma or surgery to the oral cavity. She had no systemic symptoms. The

patient was asymptomatic and complained of the enlargement interfering with the oral hygiene procedures and was bleeding on brushing. The patient presented no other relevant medical history. On intraoral examination, lesion was on both the jaws [Figures 1-5].

A provisional diagnosis of allergic stomatitis was made initially. A complete hemogram was done, which showed all blood parameters to be within normal limits. Urine examination was normal. Investigations oriented to viral infection were not conducted due to absence of prodromal symptoms. Due to inflamed appearance of the lesions, an incisional type of biopsy was planned and carried out after the routine preliminary investigations had been done.

Histopathologic examination showed proliferative parakeratinized stratified squamous epithelium. Connective tissue showed inflammatory cell infiltrate with the predominance of plasma cells and haphazardly arranged collagen fibers.

Healing was eventful and the patient is presently under follow-up since 8 months. There has been no evidence of recurrence [Figure 6].

DISCUSSION

During the late 1960s and early 1970s, cases of plasma cell infiltrates of the lips, gums, and tongue were described primarily in the dental literature under the names atypical gingivostomatitis,[7,8] idiopathic gingivostomatitis,[8] and allergic gingivostomatitis.[9]

Mark and Steven,[4] and Baltaciaglu *et al.*[10] have reported this lesion on the gingiva. These cases reported a similar gingival growth with histological and clinical appearance of a well-circumscribed, asymptomatic reactive lesion treated by excisional biopsy, as in the present case.

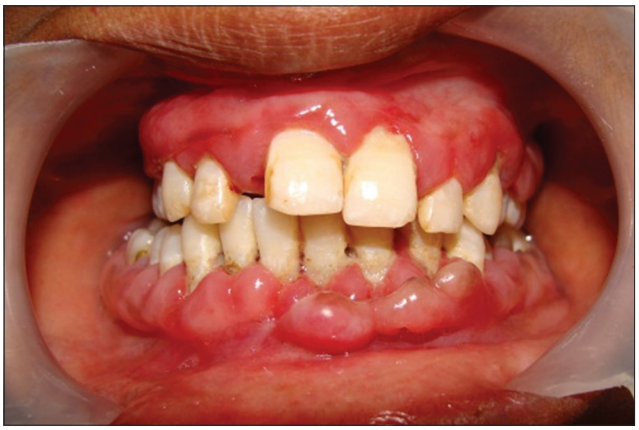

Figure 1: Pre-operative clinical picture showing lesion on both the jaws

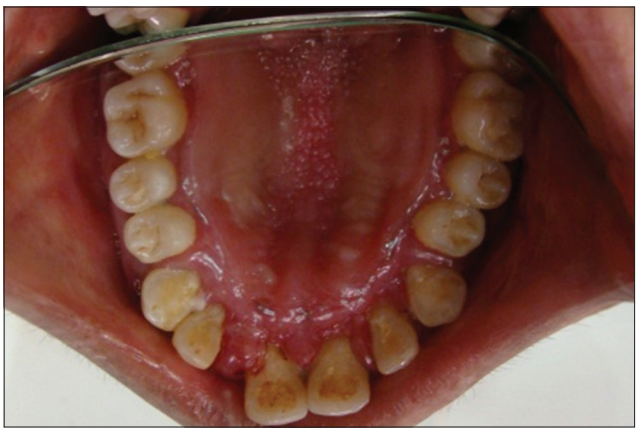

Figure 2: Pre-operative clinical picture showing palatal view of the lesion

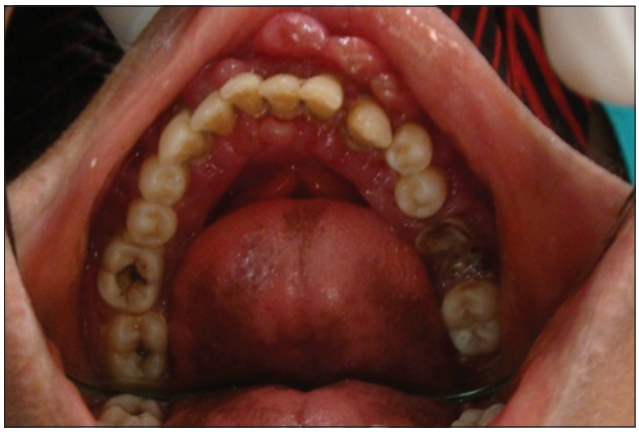

Figure 3: Pre-operative clinical picture showing lingual view of the lesion

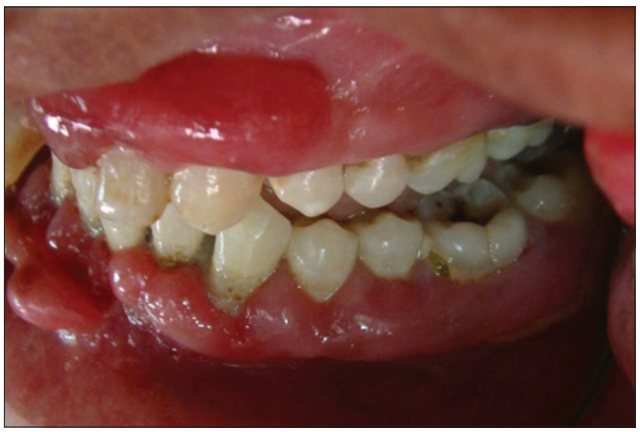

Figure 4: Pre-operative clinical picture showing left lateral view of the lesion

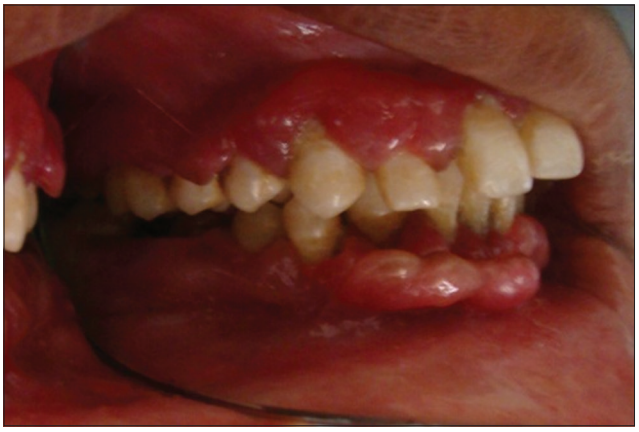

Figure 5: Pre-operative clinical picture showing right lateral view of the lesion

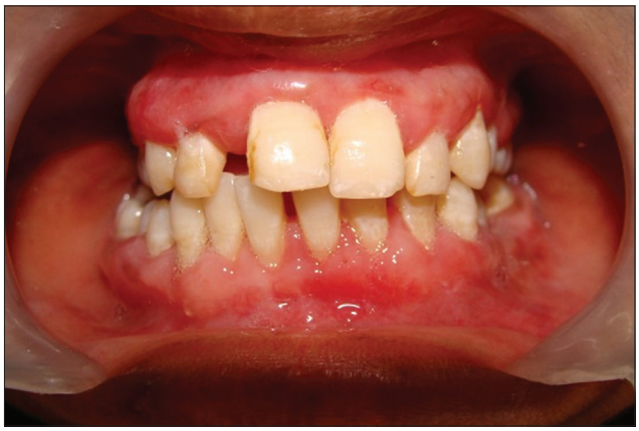

Figure 6: Post-operative clinical picture showing eventful healing without any recurrence

PCG is benign inflammatory lesions to which biopsy and histopathologic/immunologic studies must be performed to rule out potential plasma cell dyscrasias and neoplasms, including multiple myeloma. There are also variations of myeloma that may mimic PCG. Multiple myeloma is a relatively uncommon malignancy of plasma cell origin that appears to have a multicentric origin within the bone. The patients show signs of anemia, hypocalcemia or renal failure. Histopathologic examination shows diffuse sheets of neoplastic, variably differentiated, plasmacytoid cells that invade and replace the normal tissue. Mitotic activity may be seen with some frequency and amyloid deposition may be present.[11]

Plasmacytoma are most likely to be confused with PCG and are two types. Solitary plasmacytoma is seen as a mass in bone and the extramedullary plasmacytoma as a soft-tissue plasma cell mass outside of the bone.[12]

On histopathologic examination, plasmacytoma is composed of a pure culture of plasma cells arranged in relatively broad sheets on a delicate reticular stroma, whereas the PCG consists primarily of a capillary network. The plasmacytomas replace the tissue, whereas, in the PCG, plasma cell infiltrate on is by its deposition through the tissues. The inflammatory cells are very scarce, with absence of Russell bodies in the plasmacytoma in contrast to the PCG.[11]

The origin of development of PCG is unknown although some speculate an alteration of antigen-antibody reaction[12] or an alteration of blood flow imposing congestive vasodilation (angioplasmocellular hyperplasia).[13]

Plasma cell granulomas tend to locate in the oral cavity, primarily on the periodontal tissue and exact incidence of these cases which have not been reported in the literature.[14,15] This lesion probably represents the oral counterpart of the cutaneous angioplasmocellular hyperplasia.[13]

Kim *et al.* reported gingival PCG in patients with cyclosporine-induced gingival overgrowth. They suggested that interleukin-6 (IL-6) and phospholipase C-γ1 may induce heavy plasma cell infiltration in cyclosporine-induced gingival overgrowth.[16]

The treatment modality and follow-up of the soft-tissue PCG lesions varies. PCG is usually treated by simple excision and removal of underlying inciting agent, whereas neoplasms may require surgical excision, followed by chemotherapy and/or radiotherapy.

PCG, in the oral cavity, is usually benign and simple excision of the lesion is curative. In our case, the patient was followed up for 8 months after the surgery. During this period, the patient had no recurrence of the lesion.

Although plasma cell granuloma in the oral cavity is rare, it is important to recognize this as a benign inflammatory lesion.

CONCLUSION

Plasma cell granuloma might be misinterpreted as a malignant neoplasm due to its aggressive clinical appearance. This lesion is diagnosed primarily based on histological findings. The etiology remains unclear, but it is thought to arise due to a non-specific

inflammatory response to an unknown exogenous agent. It is also important to recognize this entity as a benign inflammatory lesion to avoid unnecessarily extensive and potentially destructive surgery.

This case report reinforces the existence of plasma cell granuloma on the gingiva and the need for submitting all the excised gingival tissue for microscopic examination, irrespective of the clinical features, and clinical diagnosis.

REFERENCES

1. Phadnaik MB, Attar N. Gingival plasma cell granuloma. Indian J Dent Res 2010;21:460-2.
2. Pandav AB, Gosavi AV, Lanjewar DN, Jagadale RV. Gingival plasma cell granuloma. Dent Res J (Isfahan) 2012;9:816-20.
3. Namboodripad PC, Jaganath M, Sunitha B, Sumathi A. Plasma cell granuloma in the oral cavity. Oral Surg 2008;1:206-12.
4. Mark PE, Steven HD, John HW, Robert HW, Scott MA, Donald SK, *et al.* Gingival plasma cell granulomas. J Periodontol 2001;72:1287-90.
5. Dehner LP. The enigmatic inflammatory pseudotumours: The current state of our understanding, or misunderstanding. J Pathol 2000;192:277-9.
6. Karthikeyan BV, Pradeep AR. Plasma cell granuloma of gingiva. Indian J Dent Res 2004;15:114-6.
7. Peacock ME, Hokett SD, Hellstein JW, Herold RW, Matzenbacher SA, Scales DK, *et al.* Gingival plasma cell granuloma. J Periodontol 2001;72:1287-90.
8. Zoon JJ. Balanoposthite chronique circonscrite benign a plasmocytes (contra erythroplasie de Queyrat). Dermatologica 1952;105:1-7.
9. Buccoliero AM, Caldarella A, Santucci M, Ammannati F, Mennonna P, Taddei A *et al.* Plasma cell granuloma--an enigmatic lesion: Description of an extensive intracranial case and review of the literature. Arch Pathol Lab Med 2003;127:e220-3.
10. Baltacioglu E, Akalin FA, Cobanoglu U, Sukuroglue E. Plasma cell granuloma in gingiva. Hacettepe Dis Hekimilgi Fak Derg 2007;31:39-43.
11. Betram S, Don K. Lymphoreticular disorders. In: Batsakis JG, editor. Tumors of the Head, Clinical and Pathologic Considerations. 2nd ed. London: Williams and Wilkins; 1980. p. 472-3.
12. Bhaskar SN, Levin MP, Frisch J. Plasma cell granuloma of periodontal tissues. Report of 45 cases. Periodontics 1968;6:272-6.
13. Ide F, Shimoyama T, Horie N. Plasma cell granuloma of the oral mucosa with angiokeratomatous features: A possible analogue of cutaneous angioplasmocellular hyperplasia. Oral Surg Oral Med Oral pathol Oral Radiol Endod 2000;89:204-7.
14. Araki M, Hashimoto K, Shinoda K, Komiyama K. Plasma cell granuloma with severe cortical bone destruction of the mandible appearing as a malignant lesion-a case report. Oral Radiol 2002;18:45-51.
15. Ballesteros E, Osborne BM, Matsushima AY. Plasma cell granuloma of the oral cavity: A report of two cases and review of the literature. Mod Pathol 1998;11:60-4.
16. Kim SS, Eom D, Huh J, Sung IY, Choi I, Ryu SH, *et al.* Plasma cell granuloma in cyclosporine-induced gingival overgrowth: A report of two cases with immunohistochemical positivity of interleukin-6 and phospholipase C-gamma1. J Korean Med Sci 2002;17:704-7.