

Reactive Plasmacytosis in a Relatively Rare Oral Subsite: A Case Report

Dr.GiriSankar M¹, Dr.Shekhar², Dr.JaesonMohananPainatt³, Dr.Ravi V⁴,
Dr.Shyamsunder⁵

¹Assitant Professor Department of Oral and Maxillofacial Surgery Amrita School of Dentistry

²Consultant Oral and Maxillofacial Surgeon KIMS Hospital Trivandrum

³Reader Department of Oral and Maxillofacial Surgery Amrita School of Dentistry

⁴Professor and Head Department of Oral and Maxillofacial Surgery Amrita School of Dentistry

⁵Professor Department of Oral and Maxillofacial Surgery Amrita School of Dentistry

Corresponding Author: Dr.GiriSankar M

Abstract: Reactive Plasmacytosis is a benign, immunologic inflammatory disease whose etiology largely remains speculative and is a diagnosis of exclusion. In this paper, we report a rare case of reactive plasmacytosis diagnosed in a 69-year-old male who reported with the complaint of swelling post dental extraction. Episodes of pain was also experienced and even though radiographs proved futile, diagnosis was reached based on clinical and histopathological examinations. The diagnostic dilemma confronted has been described in this report.

Date of Submission: 05-03-2020

Date of Acceptance: 19-03-2020

I. Case Report

A 69-year-old male patient reported with the complaint of swelling and pain in the right lower dental extraction site. He noticed a peanut sized growth following the extraction of canine and 1st premolar of the same side. Growth was associated with dull aching pain and gradually attained the present size in 1 month. No other relevant medical history or any drug or food allergies were noted.

On clinical examination, an approximately 2x2 cm swelling was noted in the mental region. The skin over the swelling was normal and no signs of any infection or discharge were noted. Orally, vestibule was obliterated and mucosa appeared normal. Swelling was firm in consistency, with palpable borders and was fixed to the underlying tissues with mild tenderness on palpation. The mucosa and skin however, were not attached to the mass lesion.

An IOPAR revealed healing extraction sockets with normal bone architecture. In order to further rule out any pathology, OPG was also taken revealing normal bone architecture. Aspiration with an 18-gauge needle was suggestive of a solid lesion. Excisional biopsy was performed under local anesthesia. Lower right buccal vestibular incision was placed extending from the anterior region to the 2nd premolar region. On blunt dissection, the lesion was found to be above the periosteum and encapsulated. Near the mental foramen, an accessory branch of the mental nerve was passing through the lesion. Blunt dissection was carried out to separate the lesion from the adjoining tissues and was removed in toto along with the accessory branch of the mental nerve attached to it (Fig 1&2). After achieving hemostasis, the incision was closed with absorbable sutures. Based on clinical and radiological findings, differential diagnosis of Schwannoma and Peripheral giant cell granuloma were considered. The specimen was sent for histopathological examination. Microscopically, sheets of inflammatory cells, predominantly plasma cells along with other cells were noted. Plasma cells were seen as large round cells with eccentrically placed hyperchromatic nuclei, and binucleate with open faced vesicular nuclei exhibiting pleomorphism, which was suggestive of Plasmacytosis. In order to rule out neoplastic changes, Immunohistochemical staining of the tissue was performed revealing focal positivity for lambda and diffuse positivity for kappa light chains in the ratio of 1:4. This indicated polyclonal proliferation, which was suggestive of reactive cell lesion.

The pain and swelling subsided within a week although mild paresthesia was reported on the right side.



Fig1



Fig 2

II. Discussion

Reactive Plasmacytosis is a benign, immunologic inflammatory disease whose etiology largely remains speculative. It may manifest as reactions to known (sub clinical infection, friction, poor hygiene, trauma, etc.) or unknown stimuli, where there is a large abnormal proportion of plasma cells in the tissues, exudates, or blood. (1)

Plasma cells are common in chronically inflamed sites, including periodontal lesions. It is promoted by chronic inflammation, activators of microbial origin, and specific antigen. Studies with gingival crevicular fluids show that local specific humoral responses may be mounted against antigens from certain periodontitis-associated bacteria. In addition to bacterium specific antigens, these bacteria are known to contain potent polyclonal B-cell activators. The mechanisms are unknown, but either antigen or nonspecific activators of microbial origin may markedly increase the total plasmacell population in chronically inflamed sites. (2)

The etiology for reactive plasmacytosis in our case could probably be the chronic irritation, which might have triggered the proliferation of plasma cells beneath the buccal mucosa.

Zoon reported the phenomenon of plasma-cell infiltrate in 1952, when he was describing balanitis plasma cellularis. Following then, plasma-cell infiltrates have also been found on the buccal mucosa, palate, vulva, nasal aperture, gingiva, larynx, lips, tongue, and other orofacial surfaces.(3) In the late 1960s and early 1970s, there have been reports of cases with plasma-cell infiltrates of the lips; gums and tongue were described under the names, idiopathic gingivostomatitis, atypical gingivostomatitis, and allergic gingivostomatitis.(4)(5)(6)(7)

Sherman and Luders simplified the nomenclature by grouping the infiltrates by anatomy under the titles, "plasmacytosiscircumoralis" and "plasmacytosismucosae"(8)(9)

On clinical evaluation, in reactive plasma cell proliferation, there can be seen, a heterogeneous spectrum of mucocutaneous disorders with intensive hyperemia, erosions or lobulated warty lesions affecting mostly mucosal/orificialareas.(1)

Microscopically it can be characterized by intensive subepithelialplasmacyte infiltrate, capillary formation, edema and necrosisof the epithelium.(10)

Plasmacytosis of the lips and gums, clinically present as soft, slightly elevated well-circumscribed, edematous mass with red and glistening surface. Plasmacytosis is more common in the elderly age group where other co-existing systemic conditions like diabetes, hypertension, hyperacidity and osteoporosis can further complicate the management with long term systemic corticosteroids.(11)

White et al in 1986 gave the name "plasma-cell orificialmucositis", grouping all plasma-cell infiltrates of the aero digestive tract as the clinical and histological findings were indistinguishable from one another in all the cases reported.(10)

The benign / neoplastic nature of the plasma cell infiltrateis an important factor to investigate, as the management and prognosis of plasma cell neoplasms are very different from benign conditions. When immunohistochemistry are inconclusive, gene rearrangement studies can be done. (1)

Plasma cell tumors or the neoplastic proliferation of B cells may appear in disseminated form (multiplemyeloma), or solitary bone lesions.(solitary boneplasmacytoma) or in soft tissues (extramedullaryplasmacytoma).(11) They can also present as painful tumor masses in the oral cavity involving the alveolus causingdiscomfort and loosening of teeth. (12)

Wei et al had conducted an immunohistological study, according to which, the ratio of cytoplasmic κ to λ light chains inplasma cells was found to be 0.4–3.5 in reactive plasmacytosis, 0.2-0.3 in monoclonal gammopathyand ≤ 0.2 or ≥ 11.1 in multiple myeloma.(13)

Management of plasmacytosis is mostly symptomatic and underlying cause should be treated.

Corticosteroids (topical, intralesional, systemic) have been tried with some success. Other topical immunosuppressants like tacrolimus and cyclosporine and oral antibiotics are alternative therapeutic options.(11)

Usually intraoral plasmacytosis are most commonly seen in the gingiva as per the review of literature.(11) However in our case it was presented as a tumor mass underneath the buccal mucosa, which was very unusual, and can mimic certain benign (schwannoma, neuroma) and even malignant conditions.

III. Conclusion

Plasmacytosis is an entity, the diagnosis of which can be inconclusive based on clinical and radiographic examinations alone. Histologically proven plasmacytosis should be investigated further to rule out any malignant variants.

The presence of plasma cells, plasmacytoid lymphocytes and immunoblasts in the peripheral blood smear is usually suggestive of a reactive process. These include bacterial or viral infections. Reactive plasmacytosis is a diagnosis of exclusion, to be differentiated from other autoimmune, allergic and neoplastic disorders with plasma cell infiltrates in addition to psoriasiform epithelial changes, after conditions such as infection and plasmacytoma have been eliminated. Long-term follow-up and new treatment strategies may be required for the same.

Reference:

- [1]. Pamerla H, Kv PR, K S, regula, Vennam LP. Reactive plasmacytosis associated with chronic generalized periodontitis – a case report. *Ann Essences Dent.* 2015;7(1):11–6.
- [2]. Mucous membrane plasmacytosis. 2011;14.
- [3]. Zoon JJ. Balanoposthite chronique circonscrite benign a plasmocytes (contra erythroplasie de Queyrat). *Dermatologica.* 1952;1–7.
- [4]. Owings JR Jr. An atypical gingivostomatitis: a report of four cases. *J Periodontol* 1969; 40: 538-542.1969;(40):538–42.
- [5]. Perry HO, Deffner NF, Sheridan PJ. Atypical Gingivostomatitis: Nineteen Cases. *Arch Dermatol.* 1973 Jun 1;107(6):872–8.
- [6]. pubmeddev, al KD et. Idiopathic gingivostomatitis. Cheilitis, glossitis, gingivitis syndrome; atypical gingivostomatitis, plasma-cell gingivitis, plasmacytosis of gingiva. - PubMed - NCBI [Internet]. [cited 2019 Sep 5]. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/5285187>
- [7]. pubmeddev, al KD et. Allergic gingivostomatitis (due to gum chewing). - PubMed - NCBI [Internet]. [cited 2019 Sep 5]. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/5288565>
- [8]. Schuermann H. Plasmacytosis circumorificialis. *Dtsch Zahnarztl.* 1960;(15):601–10.
- [9]. Luders G. Plasmacytosis mucosae: Ein oft verkanntes neues Krankheitsbild. 1972;(114):8–12.
- [10]. Plasmacytosis of the gingiva - British Journal of Oral and Maxillofacial Surgery [Internet]. [cited 2019 Apr 16]. Available from: [https://www.bjoms.com/article/S0007-117X\(67\)80061-1/abstract](https://www.bjoms.com/article/S0007-117X(67)80061-1/abstract)
- [11]. Idiopathic plasmacytosis of the oral and supraglottic mucosa | The Journal of Laryngology & Otology | Cambridge Core [Internet]. [cited 2019 Apr 16]. Available from: <https://www.cambridge.org/core/journals/journal-of-laryngology-and-otology/article/idiopathic-plasmacytosis-of-the-oral-and-supraglottic-mucosa/7C8855C6FD0989372983FC4ABB3DCF22>
- [12]. Jago G, Robillard N, Puthier D, Amiot M, Accard F, Pineau D, et al. Reactive Plasmacytoses Are Expansions of Plasmablasts Retaining the Capacity to Differentiate Into Plasma Cells. *Blood.* 1999 Jul 15;94(2):701–12.
- [13]. Madhavarajan S, Tighe J. Orofacial plasmacytosis: a management conundrum. *Br J Oral Maxillofac Surg.* 2015 Apr;53(4):399–402.

Dr. Giri Sankar M, et al. "Reactive Plasmacytosis in a Relatively Rare Oral Subsite: A Case Report." *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 19(3), 2020, pp. 59-61.