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Plasma Cell Granuloma – A Rare Case Report

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Abstract **Case Report**

Plasma cell granuloma (PCG), also known as an inflammatory pseudotumor which is an uncommon benign inflammatory lesion. Plasma cell granuloma is very rare in the oral cavity. Commonly it occurs in lungs, but it may be involved all other organs, including the head and neck region. The incidence of PCG is unclear. Here, we present a case of swelling at sublingual region in a female patient with clinical diagnosis of ranula which was excised and on histopathological examination revealed plasma cell granuloma.

Keywords: Plasma cell granuloma, Plasma cell, Inflammatory pseudotumor, Plasmacytoma.

INTRODUCTION

Plasma cell granuloma (PCG) is a rare inflammatory tumor such as proliferation mainly comprised of plasma cells proliferation. Clinically and histopathologically, it may be misinterpreted as various pathological conditions thus the complete clinical examination and proper histopathological and immunohistochemical examination of the tissue are required to rule out other lesions. PCG may occur in any group and equally in both sex. PCG is also known by different terminologies such as: Inflammatory pseudotumor, Inflammatory myofibroblastic tumor, Xanthomatous pseudotumor and Inflammatory myofibrohistiocytic proliferation [1].

Although it is a rare lesion, it is commonly seen in the lungs [2] and some other locations like kidney [3], brain [4], heart [5], stomach[6], and so on. In the head and neck region it has been seen in the oral mucosa [7], tongue [8], tonsil [9], sub-mandibular region [10], paranasal sinuses [11] and the gingiva [12-14].

The incidence, etiopathogenesis, biological behavior and appropriate treatment of PCG are unclear, and very few facts are known about the prognosis. It may be cause due to periodontitis, foreign body periradicular inflammation [14]. Complete resection is the most commonly considered treatment for plasma cell granuloma.

CASE REPORT

A 6 year female presented with cystic swelling at right sublingual region since 1year, which was 2.5×2 cm in size and bluish in colour. She gave history of bursting of cyst from which clear fluid came out which was followed by formation of cyst again. After clinical examination, She was diagnosed clinically as ranula and treated by marsupialization.

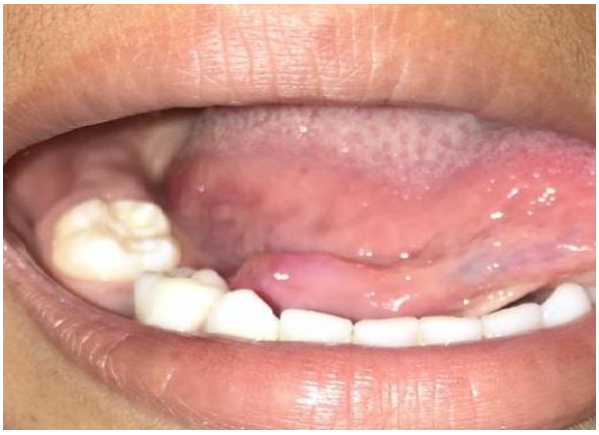

Fig-1: Right side sublingual swelling

Sections were taken from specimen which was sent to laboratory for investigation and then block were prepared after tissue processing. Blocks were cut by microtome and slides were stained using H&E stain which were then examined under light microscope.

H&E stained section shows stratified squamous epithelial lining. Below which there was proliferation of fibroblastic cells, myofibroblastic cells, inflammatory infiltrate mainly plasma cells, lymphocytes and eosinophils. Few areas were showing collection of multinucleated giant cells around dilated ducts. Stroma shows variable distribution of vessels. Overall finding are suggestive of "PLASMA CELL GRANULOMA".

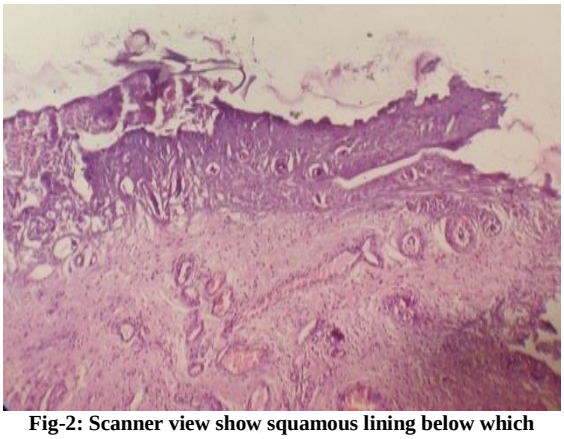

Fig-2: Scanner view show squamous lining below which myofibroblast

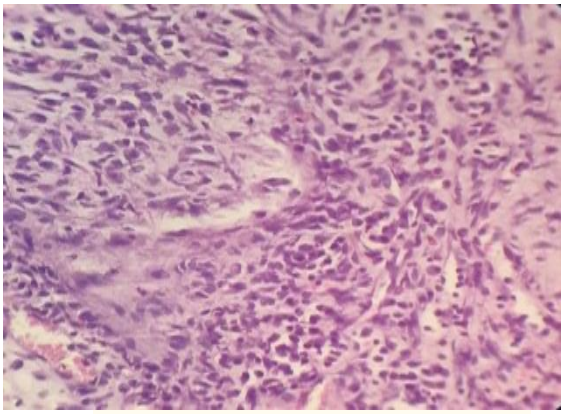

Fig-3: Low power view showing abundant plasma cells

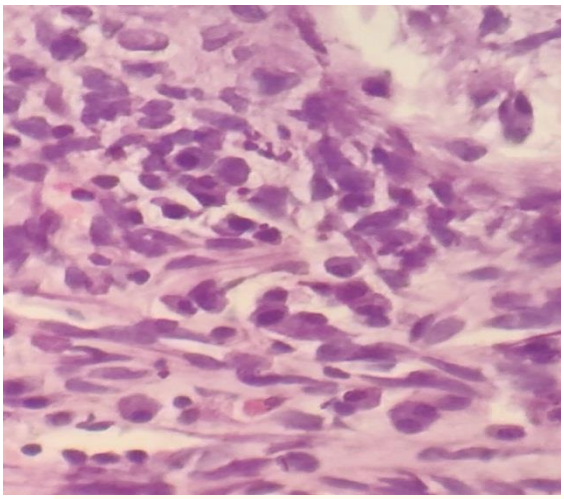

Fig-4: High power view showing plasma cells with eccentrically placed nucleus

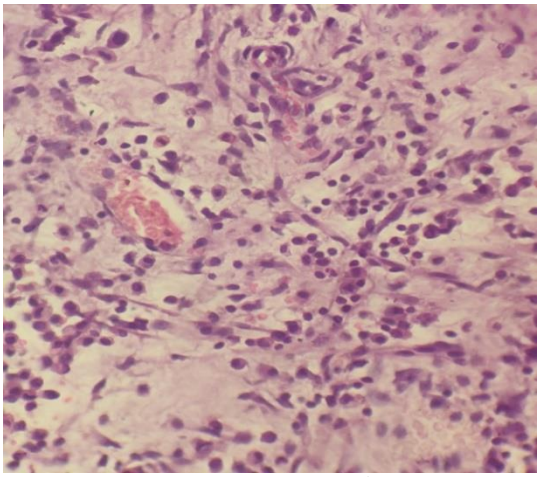

Fig-5: Microscopic picture showing inflammatory cells- lymphocytes and eosinophils

DISCUSSION

Plasma cell granuloma is rare inflammatory lesions, usually occur in lung and rarely occur in oral cavity. WHO describes PCG as an intermediate fibroblastic/ myofibroblastic tumor composed of myofibroblastic spindle cells accompanied by an inflammatory infiltrate of plasma cells, eosinophils and lymphocytes [15].

The origin of PCG is unclear, were thought to be a result of a reaction to chewing gum, dentrifices, and other foreign substances, although extensive allergy testing had been inconclusive.

Tumors that are mainly composed of plasma cells may be solitary myeloma, multiple myeloma, soft tissue myeloma (extramedullary plasmacytoma), or plasma cell granuloma. Solitary myeloma and multiple myeloma are tumors of the bone, whereas, extramedullary plasmacytoma and plasma cell granuloma are soft tissue tumors. Differentiating the type of soft tissue tumor is mandatory, as plasma cell granuloma may be benign, but plasmacytoma may show early stages of multiple myeloma [14].

Extramedullary plasmacytoma is locally destructive lesion, most frequently located on the mucosa of the oropharyngeal region, which may be singular like plasma cell granuloma. On microscopic examination the plasmacytoma is frequently very vascular with minimal stromal component and consists of sheets of plasma cells of varying degrees of differentiation (typical and atypical plasma cells), unlike plasma cell granuloma, which consists of normal plasma cells and small lymphocytes that are surrounded by connective tissue septa [16].

PCG may be also misinterpreted with fibroblastic/myofibroblastic tumor like fibromatosis, nodular fasciitis, fibrosarcoma. Fibromatosis of oral cavity characterised histologically by broad interlacing fascicles of mature fibroblasts with a variable degree of

collagenisation. An inflammatory component is absent. Nodular fasciitis rarely occurs in oral cavity and it is characterised histologically by the presence of loose myxoid matrix containing short linear curved fascicles of spindle cells [17].

The immunohistochemistry determines the clonality of the lesion, where, in a reactive lesion, the kappa to lambda light chain ratio is 2:1, and in the case of malignancy or in plasmacytoma the ratio may be greater than 10:1 or 1:10.

CONCLUSION

Plasma cell granuloma in oral cavity is a rare benign lesion that is diagnosed primarily based on histological findings. The etiology remains unclear, but it is thought to aries due to a non-specific inflammatory response to an unknown exogenous agent.

This case report corroborate the existence of plasma cell granuloma in oral cavity and the need for submitting all the excised tissue for microscopic examination, irrespective of the clinical features and clinical diagnosis.

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