

Case Report

Giant Cell Fibroma: A Histologic Case Report

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ABSTRACT:

Giant cell fibroma is an asymptomatic sessile or pedunculated nodule. It is a reactive localized proliferation of fibrous tissue. The appearance is similar to irritational fibroma. It is usually small but in some cases it can be large.

A female patient aged 45 years presented with a overgrowth on maxillary gingival in on 12, 13 region. The lesion was asymptomatic, firm and fibrous in consistency with rough surface. Excisional biopsy was done and sent for histological examination. Histologically the section showed epithelium and connective tissue stroma with large stellate shaped fibroblast. Based on these features, the lesion was diagnosed as giant cell fibroma.

KEY WORDS: Giant Cell, Stellate Fibroblast, Fibrous Hyperplasia

INTRODUCTION

Fibrous hyperplastic lesions of oral cavity occur in various locations and are very common in gingiva. Different forms of fibrous hyperplasia are fibroepithelial polyp, irritational fibroma, giant cell fibroma and pyogenic granuloma.^[1] Most of the fibrous hyperplastic lesions occur due to chronic irritation and are reactive in nature. Giant cell fibroma first described in 1974 by Weathers and Callihan as a distinct entity is one such lesion that has different clinical and histological presentation.^[2]

Most common site for occurrence of giant cell fibroma is gingiva followed by tongue, buccal mucosa, palate, lip and floor of mouth. Mandibular gingiva is affected more than maxillary gingiva. Most cases are diagnosed in persons aged 10 to 30 years. Slight female predilection is seen.^[2,3]

The lesion is slowly growing pedunculated or sessile usually 1 to 2 cm in size. Lesion is painless and often has lobules or nodules on the surface. No bleeding is seen on touching the lesion. The most characteristic feature of giant cell fibroma is presence of large, plump spindle and stellate shaped mononuclear cells and multinucleated cells.^[2]

These cells occur in a variety of lesions, such as the fibrous papule of the nose, ungual fibroma, acral fibrokeratoma, acral angiofibroma and desmoplastic fibroblastoma. The nature of these stellate shaped mononuclear or multinuclear cells is not clear. The origin of this lesion is still confusing.^[4]

This report illustrates a case of giant cell fibroma of the gingival with its clinical characteristics, histological features and routine Haematoxylin & Eosin staining and immunohistochemistry with review of literature.

CASE REPORT (Figures 1-6)

A 45 year old female patient came to D. J. College of Dental Sciences and Research with a complaint of over growth on right anterior maxillary gingival since 6 month. Patient has noticed the growth 6 month back but did not have any medical consultation. Past medical history was non contributory. The lesion was slowly growing and attained the current size. The lesion was asymptomatic.

Intraoral examination revealed a single, sessile lesion in relation to 12, 13 on labial surface measuring 1 x 0.5 cm in diameter, mildly lobulated and firm in consistency attached to marginal and attached gingival and colour of overlying mucosa is normal. The clinical diagnosis of irritational fibroma was given.

The treatment procedure was explained to the patient and informed consent was obtained. The patient was advised for

routine blood investigation and excisional biopsy. The haematological investigation reports were within normal limit. The lesion was excised under local anaesthesia. No sutures were placed. The sample was sent for histopathological examination.

On macroscopic examination, the gross specimen was creamy white in colour, with surface lobulation and firm in consistency. The tissue was routinely fixed, processed and stained with Haematoxylin & Eosin. Histopathological examination revealed lobulated growth consisting of dense collagenous fibrous connective tissue covered by hyperparakeratinized stratified squamous epithelium with long and thin rete ridges. The connective tissue contains numerous large, plump, spindle shaped and stellate fibroblast which were mononucleated and multinucleated. They were mostly present subepithelially and in interpapillary region. Clear spaces were seen surrounding this giant fibroblast. Blood vessels were seen in connective tissue stroma. Inflammatory infiltrate was minimal. The histopathological diagnosis of Giant Cell Fibroma was given.

To study the nature of multinucleated fibroblast, special stain Masson Trichrome and Periodic Acid Schiff (PAS) was used. Vacuolated cells in epithelium and clear spaces surrounding the fibroblast were negative for glycogen with PAS stain. Epithelial cells cytoplasm shows melanin pigments with Masson Trichrome.

Immunohistochemistry with Vimentin and Alpha Smooth Muscle Actin was done. Cells were negative for Alpha Smooth Muscle Actin ruling out muscle origin. They show positivity for Vimentin confirming fibroblastic origin.



FIGURE 1: Lobulated growth on maxillary right gingival in relation to 12,13

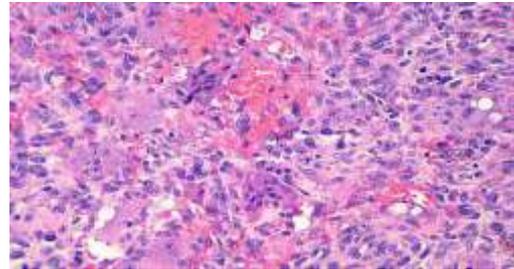


FIGURE 2: Histological appearance (H & E Stain)



FIGURE 3: Masson Fontana stain: fibroblasts showing melanin pigments

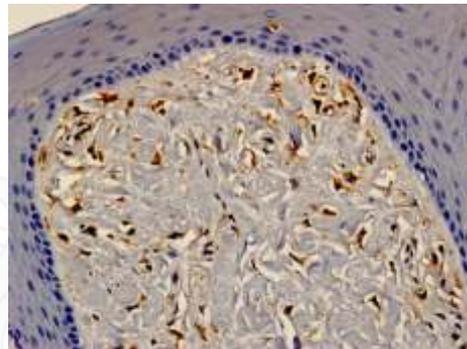


FIGURE 4: Vimentin positive giant cells



FIGURE 5: Immediate post operative view



FIGURE 6: One week post operative view

DISCUSSION:

Giant cell fibroma is a benign neoplasm that is clinically and microscopically distinct from fibroma. In 1974 Weathers and Callihan^[1] introduced the term giant cell fibroma to describe a benign fibrous oral mucosal tumour that has been diagnosed previously as fibroma, fibrous hyperplasia or fibroepithelial polyp. They mentioned that there were sufficient unusual and distinctive clinical and histologic features to warrant separation and reclassification as a separate entity. Giant cell fibroma makes up about 1% of oral lesions and 5% of all oral mucosal fibrous lesions. Giant cell fibroma occurs in the first 3 decades of life with peak incidence in the second decade. Slight females predilection is seen and have a marked preponderance for Caucasians.^[7] The lesion is most often described as asymptomatic, small raised, pedunculated and papillary growth, often misdiagnosed as papilloma. The vast majority of the lesions are less than 1 cm in diameter with an average size more frequently under 0.5cm. the lesion attains a maximum size of 2 cm . These lesions are most commonly seen on the mandibular gingiva, followed in descending order by the maxillary gingiva, tongue, palate, buccal mucosa, lips and floor of the mouth.^[2] The lesion is commonly misdiagnosed as papilloma because of their small size, irregular surface and pedunculated base. The clinical features of the lesion in our case is correlating with the classical clinical features.^[1]

Histological features:

Microscopic features show fibrous connective tissue that is loosely arranged with a prominent vascular element, especially in the subepithelial zone. Inflammation is rarely seen. The most characteristic feature is the presence of large spindle shaped or more often stellate shaped cells.^[3] These cells are more often mononuclear, but multinucleated cells may also be present. These cells are more prominent just beneath the epithelium and are less common or absent in the central portion.^[7] The microscopic features of the lesion in our case also showed loosely arranged connective tissue with

numerous endothelial lined blood vessels and characteristic large stellate shaped giant fibroblasts with very few inflammatory cells, thus suggestive of giant cell fibroma under light microscope. The origin and nature of these cells has been a subject of much debate. It has been suggested that the mononuclear and multinucleated cells of giant cell fibroma might be melanocytes and Langerhans' cells. However, the negative staining for S-100 excludes this hypothesis. The possibility that these cells are derived from macrophage-monocyte lineage is not supported and mast cell origin is incompatible with a negative reaction for tryptase^[8]. Erica Campos^[7] and Weathers and Campbell^[6] suggested that the stellate and multinucleate cells of giant cell fibroma have a fibroblast phenotype and are large atypical fibroblasts. A variety of cutaneous lesions such as the fibrous papule of the nose, ungual fibroma, acral fibrokeratoma and acral angiofibroma containing similar stellate mono and multinuclear giant cells have been described in humans. The difference between these lesions and giant cell fibroma is the presence of stellate shaped mononucleated or multinucleated giant fibroblast in giant cell fibroma.^[5]

Treatment:

Treatment of choice of this lesion is conservative surgical excision. Recurrences are considered rare. The recurrence of these cases are reported in few incidences and found to be due to incomplete removal of the lesion.

CONCLUSION:

Not all authorities believe that the giant cell fibroma should be classified as a separate entity, since they feel that the histology is not sufficiently characteristic or unusual to warrant separation from other focal fibrous hyperplasias.

REFERENCES:

1. Weathers DR, Callihan MD: Giant cell fibroma. Oral Surg Oral Med Oral Pathol 1974; 37: 374-84
2. Neville BW, Damm DD, Allen CM. Oral and maxillofacial pathology, 3rd edition. W B Saunders, Philadelphia 2008: 156-9.

3. Regezi JA, Zarbo RJ, Tomich CE, Lloyd RV, Coutney RM, Crissman JD. Immunoprofile of benign and malignant fibro-histiocytic tumors. *J Oral Pathol.* 1987;16:260-65.
4. Robert Marx E, Diane Stern. *Oral and maxillofacial pathology : A rationale for diagnosis and treatment* , 1st edition, Quintessence Publishing co, Chicago, 2003; 396-7
5. Odell E, Lock C, Lombardi T. Phenotypic characterization of stellate and giant cells in giant cell fibroma by immunocytochemistry. *J Oral Pathol Med* 1994; 23: 284-87.
6. Swan RH. Giant cell fibroma. A case presentation and review. *J Periodontol* 1988; 59: 338-40.
7. Campos E, Gomez RS. Immunocytochemical Study of Giant Cell Fibroma. *Braz Dent J* 1999; 10: 89-92,
8. Campos M S, Nunes FD. Giant cell fibroma of maxillary gingival of children: case report. *J Dent Child* 2010; 77: 174-6
9. Lukes SM, Sherry M. Identification of giant cell fibroma. *J Dent Hygiene* 2005; 79: 9-15.
10. Takeda, Y., Kaneko, R., Suzuki, A., and Niitsu, J. Giant cell fibroma of the oral mucosa—report of a case with ultrastructural study. *Acta Pathol Jpn* 1986; 36: 1571-78.
11. Braga MM, carvalho ALG, Braz Silva. Giant cell Fibroma: a case report ; *J Clin Pedia Dentistry* 2006; 30 :261-4
12. Sivapathasundharam B. Giant cell fibroma-report of four cases and review of literature. *J Ind Dent Assoc* 2007; 72:19–21.
13. Kuo RC, Wang YP, Chen HM, Sun A, Liu BY, Kuo YS. Clinicopathological study of oral giant cell fibromas. *J Formos Med Assoc* 2009; 108: 725–9.
14. Okamura K, Ohno J, Iwahashi T, Enoki Netal. Giant cell fibroma of tongue: A report of case showing unique S-100 protein and HLA-DR immunolocalization with literature review. *Oral Med Pathol* 2009; 13: 75–9.

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