

## CASE REPORT

### Giant Cell Fibroma- A Case Report

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#### Abstract

*Giant cell fibroma is a non-neoplastic reactive lesion occurring in the oral cavity. It is predominantly found in the mandibular gingiva. It usually appears in young adults within first to third decades of life with slight female predilection. The lesion derives its name due to the presence of large multinucleated stellate shaped fibroblast. This case report describes giant cell fibroma in a young female patient, and also emphasize on the clinical features, histopathological features and management of the lesion.*

**Keywords:** Giant cell fibroma, reactive lesion, multinucleated, stellate fibroblast

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#### Introduction

The giant cell fibroma (GCF) was described for the first time by Weathers and Callihan, in the early 1974<sup>(1,2)</sup>, while conducting a study where 2000 samples of gingival hyperplastic changes were examined. The authors found 108 injuries with unique characteristics in the observed samples, which they termed as giant cell fibroma. The nomenclature according to them was used because the characteristic cells of the injury were large mono or multinucleated distributed in fibrous stroma<sup>(3)</sup>.

Before Weathers' and Callihan's distinction of giant cell fibroma, Eversole and Rovin compared and contrasted 279 fibrous hyperplastic gingival lesions, which fell into four categories: pyogenic granuloma, peripheral gingival fibroma, peripheral giant cell granuloma, and peripheral ossifying fibroma. Each has its own diagnostic histopathologic characteristics but exhibit overlap of clinical presentation<sup>(4,5)</sup>. Speculations from the study were that all four types of lesions are merely varied histologic responses to common etiologic factors, but similar to one another and to other fibrous hyperplasias<sup>(4)</sup>.

Giant cell fibroma is a fibrous tumour which represents about 2 to 5% of all oral fibrotic

proliferations<sup>(6,7)</sup>. Compared to traumatic fibroma, giant (traumatic fibroma or irritation fibroma) cell fibroma occurs at a younger age<sup>(8)</sup>. After distinguishing giant cell fibroma among fibrous hyperplasias, Weathers and Campbell further elucidated the structure of the lesion when they studied them under light microscopy. They concluded again that dominant cells in the giant cell fibroma were indeed unique, and that giant cell fibroma deserved its own classification<sup>(9)</sup>. In about 60% of the cases the lesion is diagnosed within the first three decades of life and is slightly more in women than in men<sup>(6)</sup>. Clinically, it presents itself as a sessile or pedunculated asymptomatic nodule, usually less than 1 cm of size, which often acquires a papillary surface that can be misdiagnosed as papilloma. They are located more commonly in the mandibular gingiva followed by maxillary gingiva, the tongue and the palate<sup>(10,11)</sup>. It normally appears as mucosal color unless traumatized during mastication or oral hygiene procedures.

The clinical differential diagnosis includes, squamous papilloma, irritation fibroma, pyogenic granuloma and peripheral giant cell granuloma.

The name 'Giant cell fibroma' was designated due to the presence of characteristic stellate

fibroblasts with multinucleated giant cells<sup>(12)</sup>. The giant cell fibroma is treated with conservative surgical excision, relapse in such cases is rare<sup>(13)</sup>.

### Case Report

A 27 year old female patient reported to the out-patient department of Periodontics in AB Shetty Memorial Institute of Dental Sciences, Mangalore with the complaint of growth in the right buccal mucosa since past one month. Intraoral examination revealed fair oral hygiene with moderate generalized plaque and calculus. An incidental finding during oral examination, a lesion which was firm, asymptomatic, non-tender, dome-shaped and of normal mucosal color on the buccal mucosa of mandibular gingiva in relation to 47 and 48 was found (fig 1). Radiographic examination did not show any evidence of a lesion in hard tissue. Hematological examinations were within the normal limits. Based upon the clinical presentation of the lesion, a differential diagnosis of irritation fibroma was made.

**Fig-1 Lesion on the right buccal mucosa adjacent to 47 and 48.**



**Fig-2 Site after excision**

Oral prophylaxis was completed. Informed consent was obtained. Considering the size and

location of the lesion, excisional biopsy was performed under local infiltration anaesthesia. Excision was carried out using scalpel and blade under aseptic conditions (fig-2). Bleeding was controlled and no sutures were necessary. The tissue was stored in formalin solution.

Post – operative instructions were given and the patient was recalled after 1 week for check up.

After one week on examination an uneventful healing was observed (fig-3). Patient was recalled after 1 month for routine follow-up to rule out any chances of recurrence. Patient will be kept under 3 months routine follow up to rule out any chances of recurrence. The excised specimen was sent for histopathological analysis.

**Fig-3. Post-operative after one week**



Histopathological examination of H&E stained section showed epithelium and connective tissue. Epithelium was stratified squamous parakeratinised with thinned out rete pegs. Connective tissue showed densely packed collagen fibers along with stellate shaped, prominent and large number of fibroblasts. Connective tissue also showed chronic inflammatory cell infiltrate comprising of lymphocytes mainly, blood capillaries and numerous extravasated red blood cells. Based on the above features a diagnosis of giant cell fibroma was made.

### Discussion

Giant cell fibroma is a clinically and histologically distinct entity from other reactive lesions of the oral cavity<sup>(10)</sup>. It is a particular entity due to presence of distinct clinical features, anatomical distribution and histopathology aspect. Giant cell fibroma constitutes total of 1% of all oral biopsies and 5% of all oral mucosal lesions<sup>(10,14)</sup>. Giant cell fibroma usually develops in the first three

decades of life. The lesions are usually <1 cm diameter and are found more frequently on the tongue and gingiva. Mandibular gingiva is affected twice as often as the maxillary gingiva. In our case the lesion found was on a 27 year old female patient on buccal mucosa of mandibular gingiva in relation to 47 and 48 and was of 8 mm in size.

Magnusson and Rasmussen reviewed 103 cases of GCF and reported that the mean age was 27.7 years<sup>(13,15)</sup>. Sabarinath et al. reviewed 21 oral GCF and concluded that it is an asymptomatic lesion with the color of normal mucosa and granular surface<sup>(4,13)</sup>. The most frequent site in the oral cavity is gingiva followed by the tongue and buccal mucosa and majority of them are less than 1 cm in diameter with the average size under 0.5 cm.

The clinical presentations of majority of lesions are similar in the oral cavity and differentiation depends on histopathology features. Based upon our clinical findings a differential diagnosis of irritational fibroma was given.

Histopathological examination showed stratified squamous parakeratinised epithelium with thinned out rete pegs. Connective tissue showed densely packed collagen fibers along with stellate shaped, prominent and large number of fibroblasts.

The diagnosis of giant cell fibroma was given on clinical and histological basis. The treatment for the lesion was surgical excision. Recurrence is very rare, but certain cases have been reported, which were controlled by local measures. Periodic follow ups are essential.

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<sup>(10)</sup>. Weathers and Callihan, however, feel that, along with its distinctive histology, the giant cell fibroma's characteristic location, age distribution, size, surface characteristics, and lack of remarkable sex predilection clearly separates it from the usual fibrous hyperplasias of the oral mucosa<sup>(2)</sup>. Though the mono or multinucleated cells are said to be atypical fibroblasts, further studies are necessary to comment on the functional and degenerative changes of giant cell fibroma.

## Conclusion

As per the histopathology, the diagnosis of giant cell fibroma was made in this case. Several fibrous hyperplastic lesions are similar both clinically and histologically, requiring biopsy for definitive diagnosis. Giant cell fibroma is a non-neoplastic lesion of the oral cavity with unique histopathological characteristics. Although the lesion is harmless and benign in nature, any change in size due to the presence of continuous source of irritation can be suspicious, hence biopsy will rule out the same in such circumstances.

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**Ethical Permission:** Obtained

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