

## Giant cell fibroma - A Case Report

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### ABSTRACT

The Giant cell fibroma (GCF) is a lesion of fibrous connective tissue origin. The giant cell fibroma is a fibrous tumour with distinct clinicopathologic features which sets it apart from the conventional fibroma. The most common site for occurrence of giant cell fibroma is gingiva followed by tongue, buccal mucosa, palate, lip and floor of mouth. It is most commonly seen in the Caucasian population. It represents approximately 2% to 5% of all oral fibrous proliferations submitted for biopsy. GCF usually affects patients in the 2nd and 3rd decades of life with approximately 60% of cases found in the first three decades of life. We hereby present a case of a giant cell fibroma in the left buccal mucosa in a 38 year old female.

**KEY WORDS:** Giant; Fibroma; Tumor; Buccal; Mucosa.

### INTRODUCTION

Giant cell fibroma (GCF) was first described by Weathers and Callihan in 1974 as a distinct entity as it has a different clinical and histological presentation [1]. It was named for its characteristically large, stellate-shaped, mononuclear and multinucleated giant cells [2]. They examined more than 2,000 specimens in a group of fibrous hyperplasias, and 108 met their criteria for this new lesion which they called GCF [3]. Giant cell fibroma is an asymptomatic, and presents as a sessile or pedunculated nodule less than 1 cm or more in size commonly seen in the mandibular gingiva followed by tongue, buccal mucosa, palate, lip and floor of mouth [4]. It represents approximately 2 - 5% of all fibrous lesions submitted for biopsy and 0.4 - 1% of total biopsies and is found predominantly in Caucasians and rarely in other races [2]. Giant Cell Fibroma is a relatively rare fibrous hyperplastic lesion that is diagnosed only on histopathological examination [5]. Here we present a case of giant cell fibroma of the buccal mucosa.

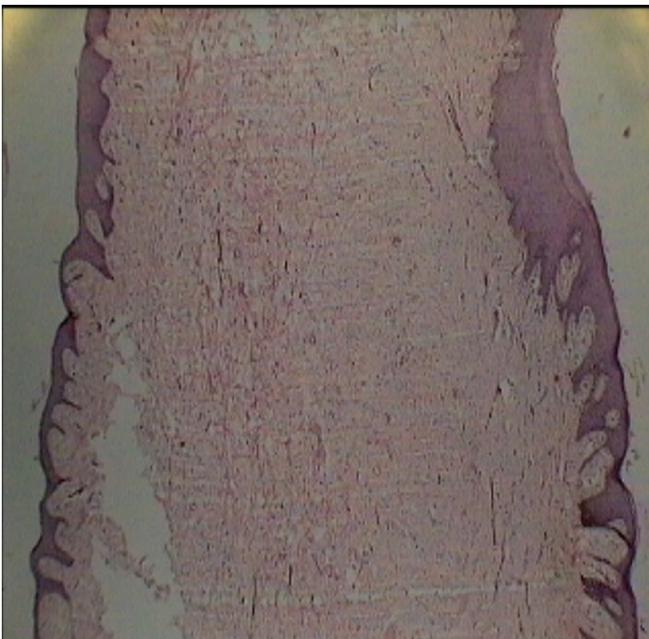
### CASE REPORT

A 38 year old female patient reported to the Department of Oral Medicine And Radiology with the complaint of growth in the left back region of the cheek since 9 months. The growth initially was asymptomatic and smaller in size and had slowly progressed to the present size. On general examination the patient was well oriented to time place and person. On extra oral examination, no abnormalities were detected. On intra oral examination, a well defined sessile growth was noticed on the left buccal mucosa measuring approximately 1x1 cm in size. The mucosa over the swelling was pale pink in colour. The surface of the growth appeared to be smooth. On palpation, the growth was soft in consistency and non tender [Figure 1]. The patient also had multiple decayed teeth and missing teeth. Based on the history and clinical findings a provisional diagnosis of fibroma of the left buccal mucosa was made. The differential diagnosis considered was lipoma. The lesion was excised under local

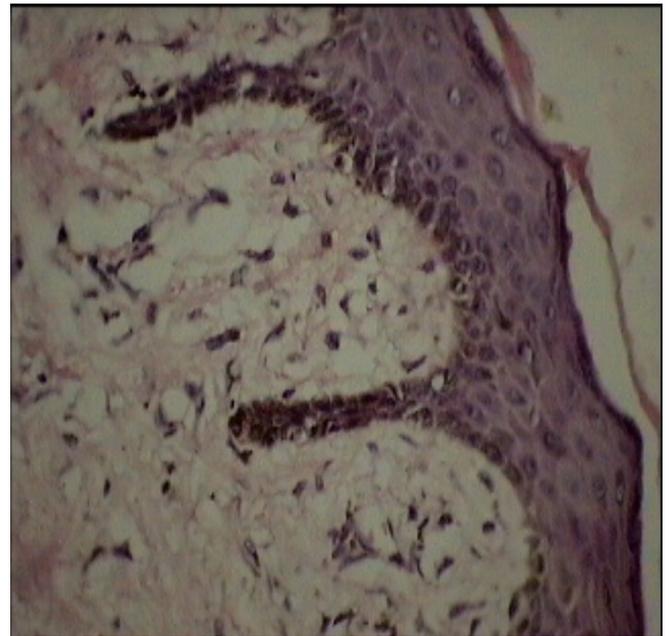
anaesthesia and sent for histopathological examination. The histopathological examination of excised specimen showed stratified squamous parakeratinized type epithelium with long and thin rete ridges and a underlying fibro cellular connective tissue mass [Figure 2]. Superficial connective tissue consisted of short and coarse collagen bundles along with numerous giant and stellate shaped fibroblasts, were as deeper fibrous tissue consisted of spindle shaped fibroblasts [Figure 3]. The lesion was histopathologically confirmed as giant cell fibroma.



**Figure 1.** Clinical photograph of the lesion



**Figure 2.** Photomicrograph showing a fibrous mass with overlying stratified squamous epithelium with elongated rete ridges. (Hematoxylin and Eosin, original magnification 4x)



**Figure 3.** Photomicrograph showing stellate shape giant fibroblasts (Hematoxylin and Eosin, original magnification 40x)

## DISCUSSION

Giant cell fibroma was first described by Weathers and Callihan in 1974 [2]. Weathers and Callihan reviewed more than 2000 specimens at Emory University of which 108 specimens met the criteria for reclassification of Giant cell fibroma [6]. Before Weathers' and Callihans' distinction of GCF, Eversole and Rovin compared and contrasted 279 fibrous hyperplastic gingival lesions, which fell into four categories namely pyogenic granuloma, peripheral gingival fibroma, peripheral giant cell granuloma, and peripheral ossifying fibroma [2]. After distinguishing GCF among fibrous hyperplasias, Weathers and Campbell further explained the structure of the lesion when the lesion was studied under light microscopy and they concluded that the dominant cells in the GCF were truly unique, and that GCF deserved its own classification [3, 7]. The aetiology considered for giant cell fibroma is chronic injury or irritation. GCF was at one time hypothesized to be virus induced but that claim was never confirmed and therefore it is believed to arise as a result of a stimulus [2]. The giant cell fibroma is a localized reactive proliferation of fibrous tissue like the irritation fibroma. It is usually asymptomatic and small measuring 1 cm or more in size and may have a broad base or be on a thick stalk, the case reported here too was asymptomatic and measured around 1 cm in size. It often has lobules or nodules on its surface. The case reported here had a smooth surface. The most characteristic histological feature is the presence of large spindle-shaped and stellate-shaped mononuclear cells and multinucleated cells [2]. In literature, very few case reports are reported regarding this tumour and controversy regarding the origin of this lesion

continues [8]. It usually has a female preponderance and most commonly seen in Caucasian population [9]. The incidence is higher in the second decade of life but can be seen in the first three decades [2]. The case reported here was of a female patient of 38 year old. The lesion is most often described as asymptomatic, small raised, pedunculated and papillary growth, which is most of the time misdiagnosed as papilloma. The majority of the lesions are less than 1 cm in diameter. Giant cell fibromas 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 [10]. It is typically of normal mucosal color unless traumatized during mastication or oral hygiene procedures [2]. In this case report, the giant cell fibroma was present in the buccal mucosa. Histologically the GCF is characterized by a diffuse, immature and rather avascular collagenic stroma with small bipolar and slightly stellate fibroblasts scattered throughout in moderate numbers. Occasionally the fibroblasts will be quite large and angular, and may have more than one nucleus. GCF is characterized by the presence of numerous large stellate and multinucleated giant cells in a loose collagenous stroma. These pathognomonic cells are never hyperchromatic and they often have a smudged appearance [2]. The ultrastructural examination has suggested that the stellate and multinucleated giant cells are the unusual fibroblasts [2]. The electron microscopic and immunohistochemical study revealed that this giant fibroblast are identified as atypical fibroblasts and formed by fusion of mononuclear cells [2]. In immunohistochemical studies there was positive staining only for vimentin and prolyl-4 – hydrolase which suggests that the stellate and multinucleate cells of GCF have a fibroblast phenotype [5]. The choice of treatment for GCF is surgical excision in adults whereas in children electrosurgery or laser excision is preferred and the recurrences are very rare [2]. The recurrence of giant cell fibroma is reported in few incidences and was found to be due to incomplete removal of the lesion [6].

## CONCLUSION

Giant cell fibroma is diagnosed mainly on histopathological grounds. The lesion is mostly found on the maxillary and mandibular gingivae but the case reported here was present in the buccal mucosa which is an uncommon location when compared to gingival area.

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