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*Case Report*

# Gingival Giant Cell Fibroma: Case Report

**Ait El Madi S*, Hamza G, Lahjaouej M, Loudghiri M, Bijou W, Oukessou Y, Rouadi S, Abada R, Roubal M and Mahtar M**

Otorhinolaryngology and Head and Neck Surgery Department, IBN ROCHD University Hospital, Faculty of Medicine and Pharmacy, Hassan II University, Casablanca, Morocco

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***Corresponding author:** Ait El Madi Soukaina, Otorhinolaryngology and Head and Neck Surgery Department, IBN ROCHD University Hospital, Faculty of Medicine and Pharmacy, Hassan II University, Casablanca, Morocco



## ABSTRACT

Giant cell fibroma (GCF) has rare occurrences and it manifests as a form of a fibrous tumor affecting the oral mucosa. Clinically it is presented as a painless, sessile or pedunculated growth which is usually confused with other fibrous lesions like irritation. It is distinguished by its unique histopathological features. Due to the lack of data and rarity of similar cases, we present a case where a seventy-five-years-old male patient reported with a nodular growth in relation to the lower mandibular gum. Considering the size and location of the lesion, excisional biopsy was performed and sent for histopathological analysis which confirmed the lesion as giant cell fibroma.

**Keywords:** Giant cell fibroma; Fibrous tumor; Pedunculated growth; Sessile; Lesion

## Introduction

Giant cell fibroma is a unique and rare fibromucosal mass[1].

It was First described by Weathers and Callihan in 1974[2], the designation was due to its nature compromised of stellate fibroblasts with mononucleated or multinucleated giant cells. Generally, it occurs close proximity to the overlying epithelium. Microscopically a giant cell fibroma is an encapsulated mass of loose fibrous connective tissue that contains numerous characteristic large, plump, spindle shaped and stellate fibroblasts, some of which are multinucleated. These cells are easily observed in the peripheral areas of the lesion[3]. The most accepted hypothesis for origin of GCF is as a response to trauma or to a recurrent chronic inflammation[4], characterized by functional changes in fibroblastic cells, while other cells would take over for collagen synthesis[4-6].

GCF is a rare occurrence that picks the interest of doctors. In the following chapter we present a case of an abnormally large GCF and provide an analysis of this oral tumor.

## Case Report

A 75 years old male patient chronic smoker and alcoholic addict with a medical history of diabetes type 2 for 10 years receiving insulin shots, high blood pressure under treatment in addition to a surgical history; the patient had a prostate operation under general anesthesia without incidents.

The patient was admitted to our ENT department for a lower gingival swelling the onset of symptomatology goes back to 10 years with the appearance of a progressive lower gingival swelling.

The whole evolving in a context of apyrexia and conservation of the general state the oral examination, we noticed the presence of regular mass, firm and mobile on the lower mandibular gum measuring 3 cm **(Figure1)**.

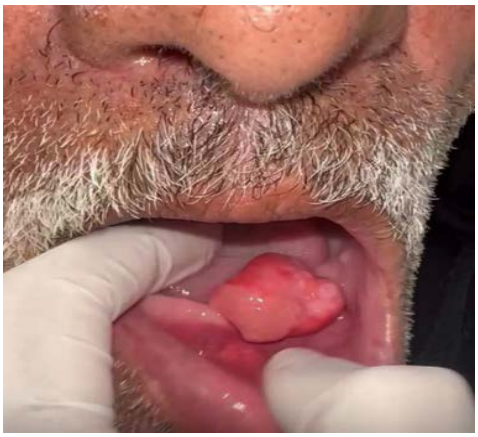

**Figure 1:** Preoperative image of the patient showing a giant cell fbroma.

The facial CT scan had revealed the presence of an oval mass well limited with regular borders on the lower gum without any bone lesions, with multiple calcifications measuring 22* 15 mm extended on 12 mm **(Figure 2)**.

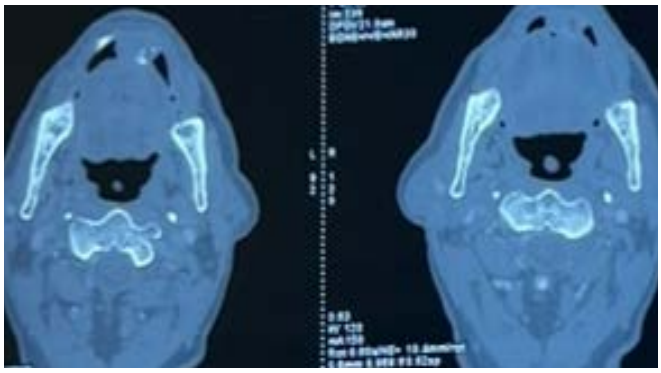

**Figure 2:** Sagital CT scan images showing the tissular mass with presence of calcifications.

An excisional biopsy was performed under local anesthesia and specimen sent for histopathological examination.5 fragments were examined in the biopsy and came out as polypoid. The surface coating was identified as regular sprickle type, without atypia and covered by a slight parakeratosis.

The chorion is edematous with a mononuclear inflammatory infiltrate and the presence of giant cells. No signs of malignity were identified.

The histopathological examination had revealed a giant cell fibroma without any signs of malignancies Complete surgical excision of the lesion was performed under local anesthesia and strict aseptic protocol and the specimen was submitted for histopathologic analysis.

Tissue examination under optical microscopy revealed a lesion composed of mature and compact fibrous connective tissue with numerous large spindle- and stellate-shaped mononuclear cells and some multinucleated cells covered by a stratified squamous epithelium with thin, papillary projections.

The stellate-shaped giant cells had hyperchromatic nuclei, while the cytoplasm was well-demarcated and the cells frequently had a dendritic-like process. Areas of inflammation were rarely noted.

No complications or recurrence of the lesion have been noted after 3 months of follow-up.

## Discussion

GCF is a rare oral cavity lesion with unique clinicopathology, which could be diagnosed only on histopathological examination. Its name is attributed to its histologic presentation, where there is presence of large multinucleated fibroblasts that tend to occur in close proximity to the overlying epithelium.

The proliferation and abnormal growth are likely to be a reaction to the chronic irritation[7], inflammation or trauma that induced the functional changes in the fibrous characteristic of the cells[8]. Another proposed cause is to be virus induced, which remains also a possibility[7].

Clinically giant cell fibroma is asymptomatic presented as pedunculated or sessile nodule, varying between 0.5 to 1 cm in size. The surface often appears to be papillary and ulcerated. In about 60% of cases, the lesion is diagnosed during the first 3 decades of life and has slight female predilection. It is found more frequently on gingiva followed by tongue and buccal mucosa. Mandibular gingiva is affected twice as often as the maxillary gingiva[9].

According to previous studies the GCF doesn't appear at a specific age however the mean age reported in the studies is late 30s **(Table 1)**. This difference may be linked to its asymptomatic nature or delayed reporting or due to genetic and racial differences.

Also, no significant gender predilection has been determined. It is more frequent on the gingiva, followed by the tongue and the buccal mucosa[10].

Histologically GCF is characterized by the presence of numerous large stellate and multinucleated giant cells in a loose dense collagenous fiber which is responsible for the clinical appearance of firm fibroma like mass **(Figure 3)**. The presence of numerous stellate giant cells is what differentiates GCF from other similar lesions[11-13].

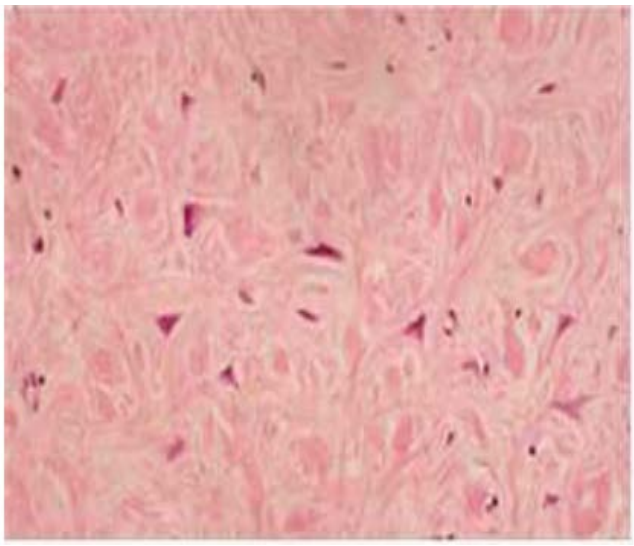

**Figure 3:** Stellate-shaped giant cells with hyperchromatic nuclei and well-demarcated cytoplasm (H/E original magnification x 200).

Three main mechanisms responsible for the fusion into giant cells[14] are:

- Huge Lymphokines amounts produced in immune favorable environment causing the formation of multinucleated giant cells[14].

- Either the fusion between old and younger cells[14]
- Or macrophages ingesting same particles resulting in the appearance of multinucleated giant cells[14].

The treatment of the CGF consists of surgical excision because the excessive collagenous tissue blocks the tumor regression. Early recognition and complete excision are necessary to minimize repeated surgical intervention.

## Conclusion

Giant-cell fibroma is a rare tumor, distinguished by its peculiar histopathology and its abnormal growth in the oral and its fibroblastic characteristic that are responsible for the giant nature of the cells.

Doctors should be familiar with the different types of fibrous they may encounter during patient treatment and should note such lesions for further evaluation by Oral and Maxillofacial Pathologist.

As demonstrated in this case study, GCFs may continue to proliferate until completely removed. GCFs can be treated by curative surgical excision without subsequent recurrence if fully excised.

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