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Case Report

Giant-Cell Fibroma of Oral Cavity- A Case Report

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ABSTRACT

Giant-cell fibroma is a benign fibrotic soft tissue lesion with several unique features, separating it from other oral fibrous hyperplasias. Giant cell fibromas are most commonly seen in younger adults. It is often mistaken with fibroma because of due to its clinical resemblance. Its peculiar histopathological features help to distinguish giant-cell fibroma from them. The presence of stellate fibroblasts and multi-nucleated giant cells makes this lesion a different pathological entity. This article presents a case report of giant-cell fibroma in a 65-year-old female patient, this late manifestation of the lesion makes the case unusual.

Keywords: Giant-cell fibroma, Oral fibrous hyperplasias, Stellate fibroblasts, Multinucleated giant cells, Fibrotic soft tissue.

INTRODUCTION

Giant-cell fibroma (GCF) is a fibrous hyperplastic lesion of the oral cavity with distinctive clinic pathology unlike traumatic fibroma. It represents approximately 2% to 5% of all oral fibrous proliferations. The exact aetiology of GCF is unknown, but some authors suggested that the aetiology is mainly because of due to trauma or chronic irritation and functional changes in the fibroblastic cells [1]. GCF is usually seen in the young adults with some studies showing female preponderance. The most common site is the mandibular gingiva, followed by the maxillary gingiva, tongue, and the palate. This article presents a case report of a solitary fibrotic lesion of the mandibular lingual gingiva with the involvement of frenum.

CASE REPORT

A 65-year-old female patient reported to the department of oral and maxillofacial surgery with the chief complaint of swelling in relation to lower front teeth region for since 2 years. The swelling was insidious in onset, with gradual growth attaining present size (1.5 ×1 ×1 cm). The patient is known to be hypertensive for since 5 years.

Extra oral findings were normal. On intraoral examination, the surface of the swelling was smooth, and the colour of the lesion was pale pink. The lesion was present at the lingual side of the mandibular gingival involving 31, 32 and 33 along with the involvement of frenum (Figure 1). The lesion was pedunculated, circumscribed and well demarcated from the surrounding region. Oral hygiene was very poor with calculus deposits and extrinsic stains. Provisionally a diagnosis of fibroma was made. A differential diagnosis of irritation fibroma, pyogenic granuloma and peripheral giant-cell granuloma were considered. Surgical excision was performed. Gross examination of the excised specimen revealed a white oval shaped lesion with well- defined borders (Figure 2). The lesion on microscopic examination with H&E staining showed parakeratinizsed stratified squamous epithelium along with fibrous connective tissue. Atrophic epithelium with narrow rete ridges wasere evident. Multiple stellate-shaped

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fibroblasts, along with multi-nucleated giant fibroblasts, were seen within the superficial connective tissue (Figures 3 and 4).

Inclusion criteria GCF Giant cell fibroma is a benign tumour first described in 1974 by Weathers and Callihan. Initially it was named as fibrous hyperplastic soft tissue lesion [1,2]. Later, due to the presence of large, stellate shaped, mononuclear and multi-nucleated giant cells, it is named as GCF giant cell fibroma. It is a fibrous tumour with distinctive clinicopathological features unlike traumatic fibroma. It represents approximately 2% to 5% of all oral fibrous proliferations [2]. The exact aetiology of GCF is unknown, but some authors suggested that the aetiology is mainly because of due to trauma or chronic irritation and functional changes in the fibroblastic cells. Virus -induced proliferative aetiology was also proposed, but remains unclear [3].

It appears as an asymptomatic sessile or pedunculated nodule usually less than 1 cm in diameter [4]. The surface of the mass often appears papillary, so it can be mistaken as squamous papilloma. GCF can occur at any age, but most cases are diagnosed at the age of 10-30 years [5]. The present case showed GCF in a 65-year - old patient, this late manifestation of the lesion makes the case unsual. This lesion usually has no gender predilection. Some studies have suggested a slight female predilection. The most common site is the mandibular gingiva, followed by the maxillary gingiva, tongue and the palate [6,4]. On intraoral examination, the present case showed swelling at mandibular gingiva. The lesion was present at the lingual side of the mandible involving 31, 32 and 33 along with the involvement of frenum. The lesion was pale pink in color with pebbly surface, pedunculated and circumscribed with poor oral hygiene.

Microscopic examination of the GCF giant cell fibroma reveals a mass of vascular fibrous connective tissue, which is usually loosely arranged. The hallmark is the presence of numerous large, spindle-shaped stellate fibroblasts, some of which are multi-nucleated.

These cells are easily observed in the peripheral areas of the lesion, whereas the more central areas contain typical fusiform fibroblasts. The surface epithelium often is thin and atrophic, although the rete ridges may appear narrow and elongated [7]. In the present case, stellate - shaped multi-nucleated giant fibroblasts were evident (Figure 5). Several electron microscopic and immune histochemical studies have been performed to determine the origin of these giant cells. Electron microscopic study findings revealed that the giant fibroblast are identified as atypical fibroblasts and formed by fusion of mononuclear cells. In addition Additionally, the cells showed numerous intracellular microfibrils [8,3].

Histopathologic examination of the lesion in this case correlates, with the findings of earlier reported cases. Immunohistochemical studies revealed that Ggiant fibroblasts showed negative reactivity for cytokeratin, neurofilament, HHF, CD 68, HLA DR, leukcocyte common antigen, Ttryptase and S-100 protein. The results showed positivity only for vimentin and prolyl-4-hydroxylase.

This suggests that the stellate and multi-nucleated cells of GCF have a fibroblast phenotype. The negative reactivity of giant cells for desmin eliminates the possibility of a myofibroblastic phenotype [9]. GCF Giant cell fibroma multi-nucleated cells are positive for proliferating cell nuclear antigen (PCNA) but negative for Ki-67, indicating that these multinucleated cells are not formed by cell division but possibly by fusion of mononuclear fibroblasts [10]. In the present case, immunohistochemistry was not done.

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not formed by cell division but possibly by fusion of mononuclear fibroblasts [10]. In the present case, immunohistochemistry was not done. The GCF giant cell fibroma is treated byconservative surgical excision. Recurrence is rare. Recurrence was noted in two cases, reported by Houston [11]. In the present case, surgical excision was performed.

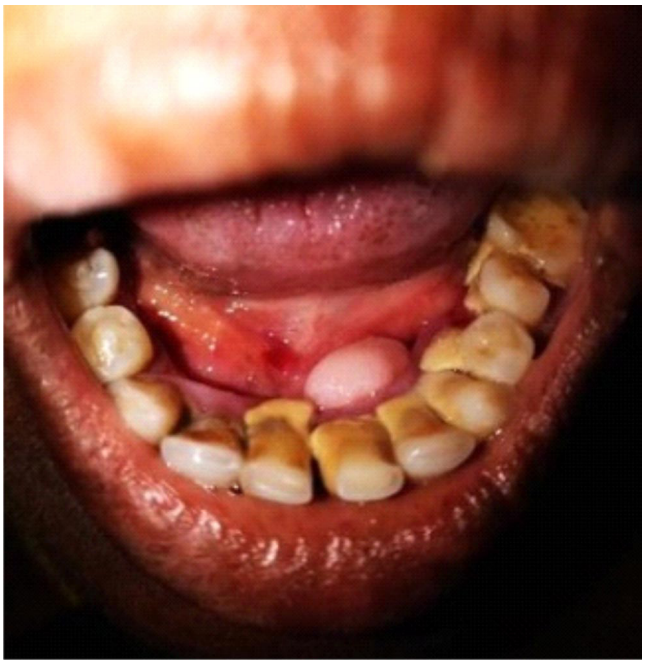

Figure 1: Intraoral picture of giant cell fibroma in relation to 31, 32 and 33 along with the involvement of frenum

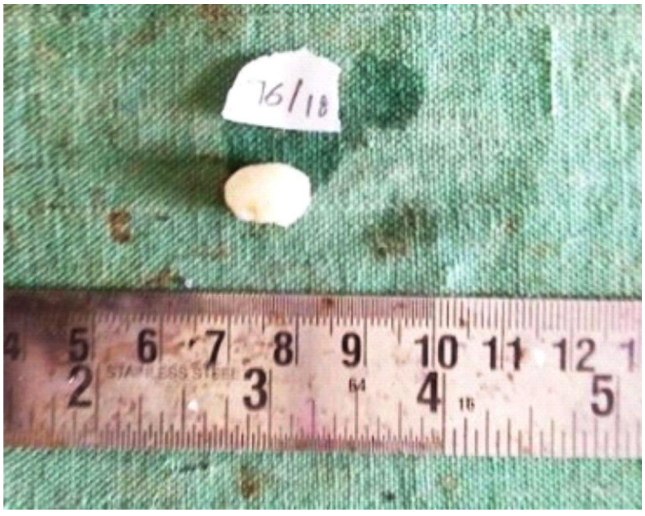

Figure 2: Grossing specimen measuring 10x10x 0.9 mm

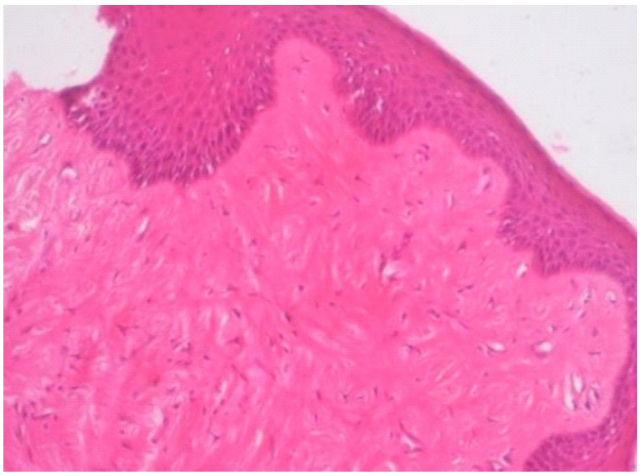

Figure 3: H&E picture under 10x showing epithelium and connective tissue with stellate shaped fibroblasts

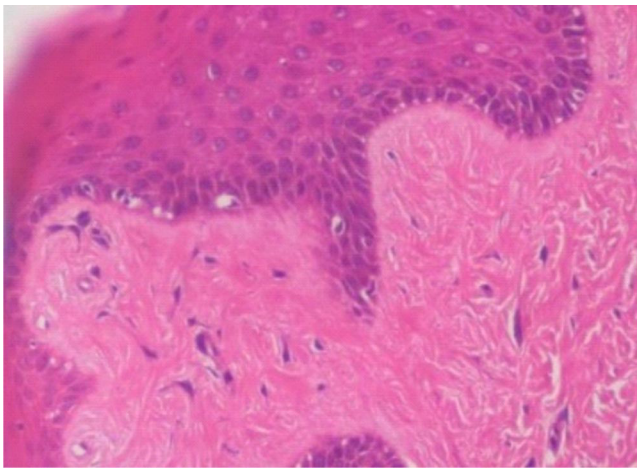

Figure 4: H&E picture under 40x showing stellate shaped fibroblasts at superficial connective tissue

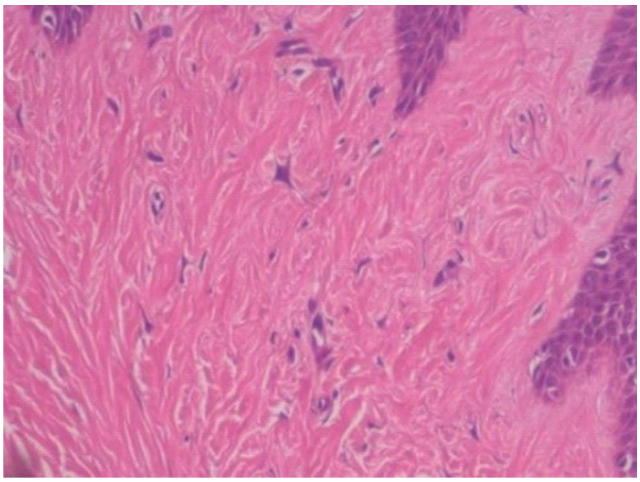

Figure 5: H&E picture under 40x showing stellate shaped multinucleated giant fibroblasts

CONCLUSION

GCFs Giant cell fibromas are mostly seen in younger adults, with trauma and chronic irritation being the most common aetiological factors. This case presents GCF giant cell fibroma in a 60 sixty-year-old female patient, which is a rare finding. The diagnosis of this lesion was made histologically by the presence of unique stellate multi-nucleated giant fibroblasts in the connective tissue. This article provides a clue to evaluate the clinical features of GCF giant cell fibroma. Further case reports and studies are required to know the lesion in detail.

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