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CASE STUDY

GIANT CELL FIBROMA – A CASE REPORT

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ABSTRACT

The giant cell fibroma is a localized reactive proliferation of fibrous tissue, much like the irritation fibroma. Clinically it usually manifests as a small, may have be sessile/peduncalate lesion. It is painless, often has lobules/ nodules on its surface. Microscopically the lesional tissue contains cells with large, stellate shaped fibroblasts, near the surface of the fibrous mass, beneath the overlying epithelium. In this article we report a case of 30-year old female who presented with a growth in the palatal gingiva adjacent to the maxillary central incisors. The lesion was excised and sent for biopsy. Microscopically the section showed epithelium and connective tissue stroma with large stellate shaped giant fibroblast. Based on microscopic findings, the lesion was diagnosed as "giant cell fibroma

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INTRODUCTION

Giant cell fibroma is a benign tumor first reported by Weathers and Callihan in 1974 as a lesion of oral mucosa with distinctive clinico-pathologic features. The name given to this variant is based on the presence of large multinucleated fibroblasts that tend to occur in close proximity to the overlying epithelium. These giant cells have oval nuclei with eosinophilic cytoplasm and they often assume a stellate appearance. Pathologically giant cells are classified in different types. They can be grouped under the following categories inflammatory, neoplastic, metabolic disorders and bone disorders. (Sekar *et al.,* 2011) Before Weathers' and Callihans' distinction of GCF, Eversole and Rovin compared and contrasted 279 fibrous hyperplastic gingival lesions, which falls 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. (Medhini Madi *et al.,* 2014)

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.

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(Pandita *et al.,* 2014) It may be pedunculated or sessile and is found most commonly on the gingiva, with the mandibular gingiva being affected more than the maxillary. It may also be found in extragingival sites, including the tongue, palate, and buccal mucosa. It is typically of normal mucosal color unless traumatized during mastication or any oral hygiene procedures. (Rajendran, 2009) Microscopic examination usually shows multiple large stellate-shaped and sometimes multinucleated fibroblasts (giant cells) in a loosely arranged vascular fibrous connective tissue (Sekar *et al.,* 2011).

Here, we report a case of a 30-year old female who had a growth in the palatal gingiva adjacent to the maxillary central incisors which turned out to be a giant cell fibroma after histopathologic confirmation.

CASE REPORT

A 30-year-old female reported with a small growth in the palatal gingiva adjacent to the maxillary central incisor. The growth well defined measuring approximately 1mm × 0.5 mm, smooth surfaced, normal mucosal colour and sessile. It was nontender and firm in consistency with no history of trauma. The lesion was having interference with the tongue. A clinical diagnosis of fibroma was given and was subjected to excisional biopsy. Histopathological examination of the section stained with H & E shows atrophic orthokeratinized stratified

squamous epithelium with lesional connective tissue (Fig. 1). The connective tissue shows dense irregularly arranged collagen fiber bundles along with spindle shaped fibroblasts and fibrocytes with minimal inflammatory component (Fig. 2). The connective tissue core just below the epithelium showed few stellate giant fibroblasts (Fig. 3). The deeper connective tissue also shows few vascular channels and mucous acini. Based on these features a final diagnosis of giant cell fibroma was given.

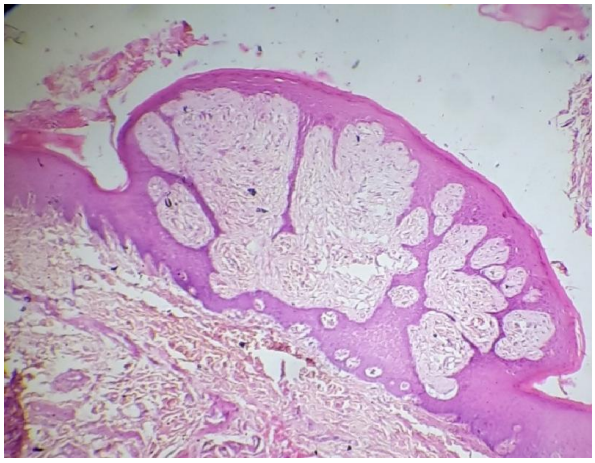

Fig. 1. Photomicrograph of the section showing epithelium and lesional tissue (H&E, x4X)

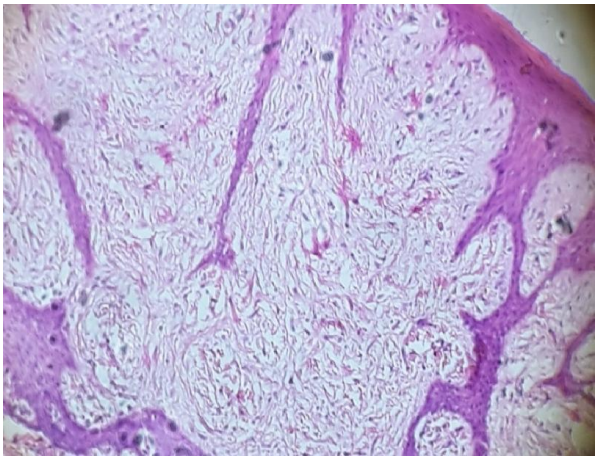

Fig. 2. Photomicrograph of the section showing lesional tissue with giant fibroblasts in collagen fibre bundles (H&E, x10X)

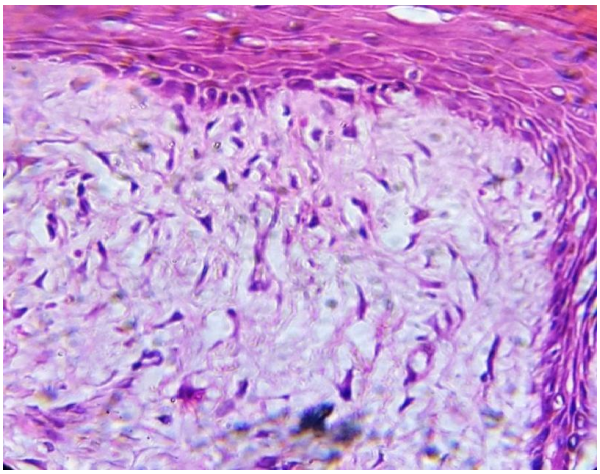

Fig. 3. Photomicrograph of the section showing the large stellate giant fibroblast in higher magnification. (H&E, x40X)

DISCUSSION

Giant cell fibroma is an entity which is separate from other fibrous lesions although the clinical behaviour and epidemiology of most of the non-neoplastic fibrous growths are similar, their histopathological features help in distinguishing them. It represents about 2-5% of all fibrous proliferations. The aetiology of GCF, according to many reports, suggests that minor trauma can trigger development of the lesion and that it is characterized by functional changes in fibroblastic cells (Samson Jimson *et al.,* 2013).

GCF was first described as a separate entity among fibrous hyperplastic soft tissue lesions by Weathers and Callihan in the early 1970s. GCF is a fibrous tumor with distinctive clinicopathology unlike traumatic fibroma; it is not associated with chronic irritation. (Sekar *et al.,* 2011) The lesion mostly manifest as an asymptomatic, sessile, or pedunculated lesion measuring about 0.5 to 1 cm with a bosselated or pebbly surface. The lesions are less than 1 cm in diameter with an average size more frequently under 0.5 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. It is typically of normal mucosal color unless traumatized during mastication or oral hygiene procedures (Medhini Madi *et al.,* 2014).

Histologically, GCF is characterized by the presence of numerous large stellate and multinucleated giant cells in a collagenous stroma of varying density. The giant cells are usually seen numerous in the connective tissue immediately adjacent to the epithelium. These giant cells have well-defined cell borders and show dendritic processes. Some of these cells, especially those located subjacent to the epithelium may contain small brown granules having staining characteristics of melanin. An artifactual space separating the giant fibroblasts from the surrounding fibrous stroma is sometimes seen. The overlying epithelium is hyperplastic with thin elongated rete ridges. Inflammatory infiltrate is usually absent. (Rodney J. Vergotine, 2012)

Despite many studies, the nature of the stellate multinucleate and mononuclear cell is not clear. (Rodney J. Vergotine, 2012)Very few case reports are seen regarding this tumor and controversy regarding the origin of this lesion continues.

Electron microscopic and immunohistochemical study revealed that this giant fibroblast are identified as atypical fibroblasts and formed by fusion of mononuclear cells. Several immunohistochemical studies have been performed to determine the origin of these giant cells. Giant fibroblasts showed negative reactivity for cytokeratin, neurofilament, HHF, CD 68, HLA DR, Tryptase and S 100 protein. The results showed positive staining only for vimentin and prolyl-4 - hydrolase. This suggests that the stellate and multinucleate cells of GCF have a fibroblast phenotype (Medhini Madi *et al.,* 2014). The treatment of choice for GCF in adults and adolescents is surgical excision and it is electro surgery in children. Recurrence is very rare, but certain cases have been reported, which were controlled by local measures. Periodic follow ups are essential. (Samson Jimson *et al.,* 2013)

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