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Large Giant Cell Fibroma of the Palatal Mucosa Presenting As Pyogenic Granuloma: A Rarity

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Abstract: *Giant cell fibroma is a slow growing non-neoplastic lesion which has distinct clinical and histopathological characteristics The name "giant cell fibroma" denotes the presence of large multinucleated stellate shaped fibroblasts which are seen mainly in superficial connective tissue.This lesion usually occurs at a young age, and is more common between the second and third decades of life. Giantcell fibroma can be diagnosed only on histopathological examination. The prognosis is good and recurrence rare. The current report presents a case of a large palatally located giant cell fibroma in a 12 yr old boy, which presented as pyogenic granuloma, a rare finding.*

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I. Introduction

Giant cell fibroma is a slow growing ,non-neoplastic lesion which has distinct clinical and histopathological characteristics.1 The name "giant cellfibroma" denotes the presence of large multi nucleated stellate shaped fibroblasts which are seen mainly in superficial connective tissue.1,2 It was first reported by Weathers and Callihan in 1974.3

This lesion usually occurs at a young age, and is more common between the second and third decades of life.4,5 A high racial prevalence among Caucasians has been reported with a slight female predilection.6 Mandibular gingiva is the commonest site for occurrence. Other areas that might get affected include tongue, buccal mucosa, palate, lip, and floor of the mouth.2,7

Clinically, it presents as an asymptomatic pedunculated nodule with a papillary-like surface, usually small in size (0.5cm on an average). Surface papillary projections may be seen in few lesions, which might be mistaken as squamous papilloma.8 Other clinical differential diagnoses include common growths such as fibroepithelial polyp, pyogenic granuloma and fibroma etc.9

The cause of giant cell fibroma is yet not well determined. Some studies show that giant cell fibroma develops as a possible response to trauma or a recurrent chronic irritation, which may lead to a functional change in fibroblastic cells.10

Giant cell fibroma can be diagnosed only on histopathological examination Histologically, the giant cell fibroma is an un-encapsulated, mass of loose fibrous connective tissue, non-inflammatory, and covered with stratified squamous hyperplastic epithelium.11,12 The conclusive diagnostic features of these lesionsare the presence of large spindle-shaped, stellate-shaped, mononuclear as well as multinucleated fibroblasts. The stellate cells usually present with a large vesicular nuclei with prominent nucleoli. Inflammatory processes rarely occur, unless the surface epithelium is ulcerated. When present, the inflammatory infiltrate is mono- and polymorphonuclear.12The treatment is surgical removal and recurrence is rare.13,14

This study reports a case of giant cell fibroma, located in the lateral aspect of the palatal mucosa, in a 12-year-old boy.

II. Case Presentation

A 12-year-old boy reported with a large growth on the right lateral aspect of the palate, extending lingually to 24, 25 and 26.The lesion was present since the past 2 months. The growth was ovoid in shape, measuring approximately 0.8 mm × 0.6 mm, irregular surfaced, reddish white in colour and sessile (Figure 1). It was nontender and firm inconsistency with no history of trauma. The surface was non-ulcerated. However, the patient complained of it regularly hindering with mastication and speech. A clinical diagnosis of pyogenic granuloma was given. Based on the clinical appearance of the lesion, the differential diagnosis included primarily reactive and benign neoplastic lesions, such as, peripheral ossifying fibroma, peripheral odontogenic

fibroma, peripheral giant cell granuloma, fibrous hyperplasia, and giant cell fibroma. The lesion was excised completely under local anesthesia.

Histopathological examination of the excised specimen revealed a relatively avascular and sparsely cellular connective tissue mass. The surface epithelium was hyperplastic stratified squamous with elongated and thin rete ridges. Characteristically ,thestroma consisted of numerous giant cellse specially near the surface epithelium (Figure 2). The giant cells were stellate shaped with dendritic process, containing moderate amount of basophilic cytoplasm and large vesicular nuclei with prominent nucleoli (Figure 3). Numerous angular fibroblasts were also appreciable. Based on these features a final diagnosis of giant cell fibroma was given. The patient was kept under regular follow-up and no recurrence is noticeable after a year of follow-up.

III. Discussion

The current case shows findings correlating with previous cases in literature. GCF is a benign connective tissue lesion which presents as a fibrous tumor. It makes up an average of 5% of all biopsied fibrous lesions.13 The cases present themselves in such varied forms, that the differential diagnosis includes numerous lesions such as papilloma, fibroma,fibrous hyperplasia, and peripheral ossifying fibroma. All the before mentioned lesions also present similar clinical findings, namely: pedunculated nodule, the fibrous looking papillary surface, and pale/ normal mucosal hue. 12,14

However, the GCF has, as previously mentioned, a few peculiarities viz-a-viz age, gender and racial predilection.1-3,11Histopathological examination is essential to confirm the the final diagnosis, and clearly makes it stand apart from the rest.

The origin of the multinucleated and stellate cells seen in GCF has been hypothesized in literature.15,16 It has been suggested that the mononuclear and multinucleated cells of giant cell fibroma may come from monocytes/macrophage system or Langerhanscells.2 many theories have been propounded for the same:

a) Galndo et al (1974): In immune mediated phenomenon, large amounts of lymphokines are produced that causes fusion of macrophages which results in the formation of multinucleated giant cells .
b) Mariano et al (1974): Fusion occurs between young and older cells, the stimulus being the recognition of alterations in cell surface by young macrophages.
c) 3. Chambers et al (1978): Simultaneous attempted phagocytosis, where in 2 or more macrophages try to ingest same particle at the same time results in the fusion of endosomal margins and form multinucleated giant cells.17

On the contrary though, histochemical studies have negated any lineage of macrophages ,monocytes, as they presented a negative reaction to CD68, LCA, and HLA-DR reagents. Research work has also shown the fibroblastic origin of these cells (positive for vimentin). Campos and Gomez have suggested that the stellate and multinucleated cells of the giant cell fibroma are a result of either a functional or degenerative change in the fibroblasts. 16

Regarding location, the current case was found in the palatal mucosa, lingual to 15 and 16, a site less commonly seen. It is otherwise more commonly found in the mandibular gingiva than in the maxilla (2: 1).2,7,8

A total surgical removal was recommended in this case, as the lesion was causing interference in function and was detrimental to the child's oral hygiene. There was no recurrence of the lesion after a years follow-up. Literature reports that recurrence is rare.4,12 Houston only found 2 cases of recurrence in a total of 464 cases.18

Recent literature also sheds light on the unusual character and possible presentations of this lesion. Authors have suggested early diagnosis and treatment of these lesions are necessary to avoid developing unaesthetic soft tissue architecture and the need for extensive periodontal surgical management.19, 20

Oral and dental cariess of utmost importance and should be encouraged to enable dentists to provide effective guidelines for early diagnosis and adequate treatment of diseases of the oral cavity, thereby improving the chances of a correct prognosis and avoiding morbidity.

IV. Conclusion

The current case represents a large palatally located lesion of giant cell fibroma, presenting as pyogenic granuloma. Patient cooperation allowed a successful treatment. The prognosis was very good as no recurrence was noticed.

Consent

Parents have given due consent for treatment and usage of images for publication.

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FIGURES

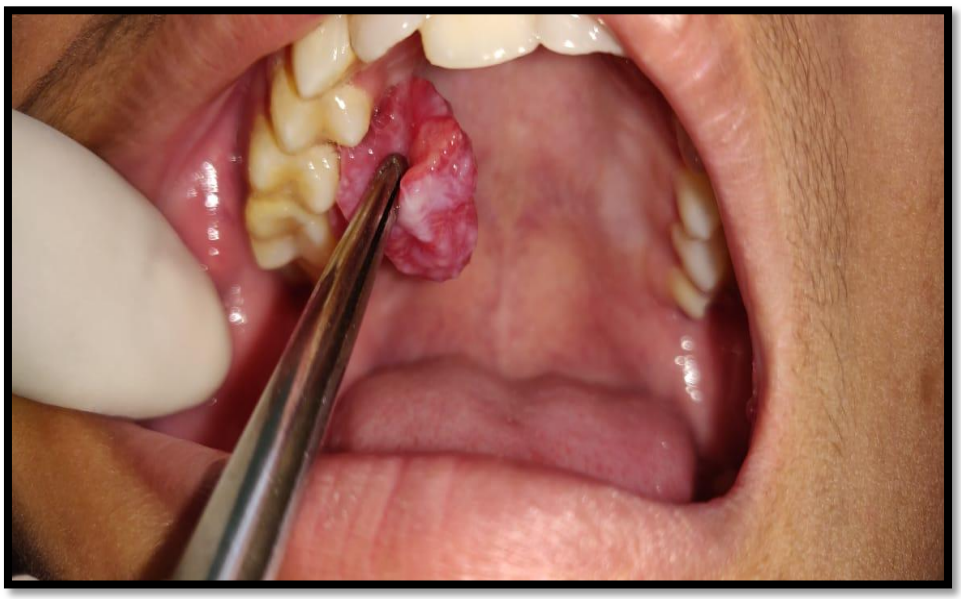

Fig 1: Intraoral photograph showing with a large sessile, reddish white growth on the right lateral aspect of the palate, extending lingual to 15 and16.

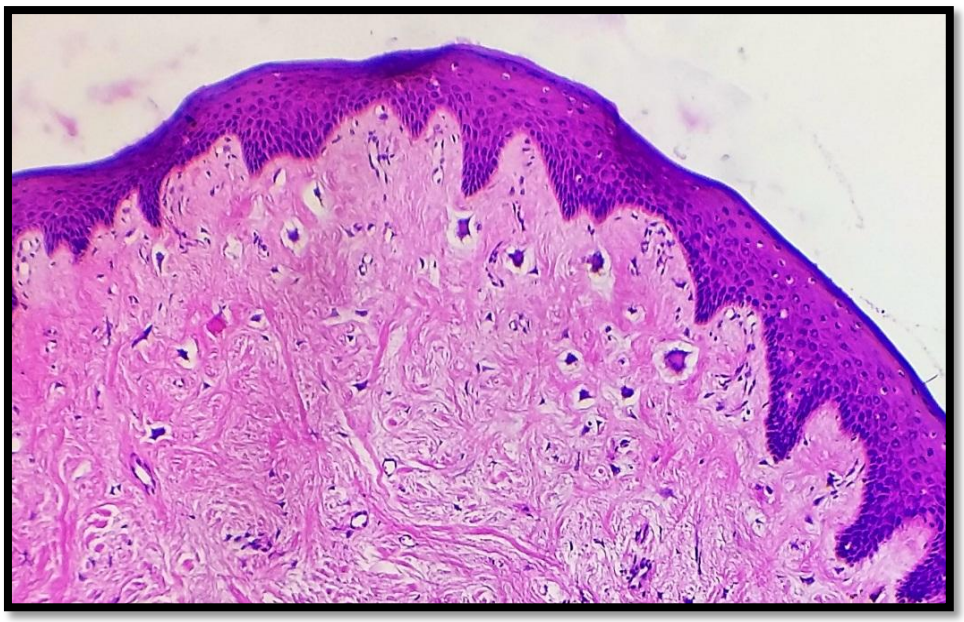

Fig 2: Photomicrograph depicting a fibrous connective tissue stroma with numerous stellate giant cells chiefly in the juxtaepithelial zone.(H & E, Magnification X 100)

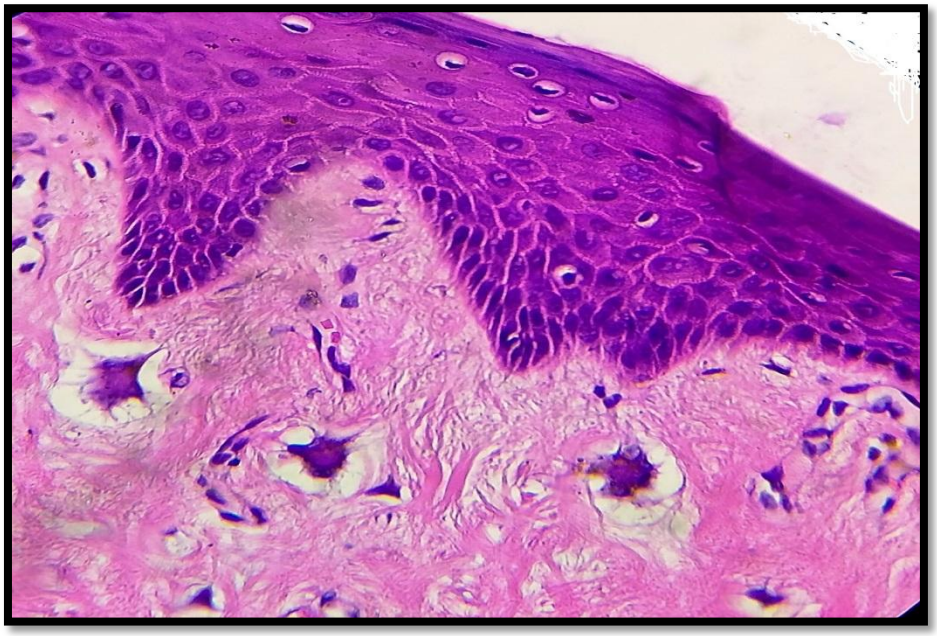

Fig 3: Photomicrograph showing large stellate multinucleate giant cells with prominent dentritic processes, surrounded by a loose fibrous connective tissue. (H & E, Magnification X 400)

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