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RESEARCH ARTICLE

GIANT CELL FIBROMA OF THE TONGUE- A RARE ENTITY

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ABSTRACT

Giant cell fibroma (GCF) is an extremely rare histopathological entity characterized by uninucleated or multinucleated giant fibroblasts subepithelially, representing 0.4 - 1% of total biopsies. Etiology is unknown and there are various controversies regarding origin of giant multinucleated fibroblasts. It clinically presents as an asymptomatic, pedunculated or sessile growth less than 1 cm in size. A 30 year old male patient reported with a small growth over the tip of the tongue. Intra-oral examination revealed a solitary, pinkish-white firm growth with a sessile base, was firm and fibrous in consistency. A clinical diagnosis of fibroma was given and excisional biopsy was done. Histopathological examination revealed long and slender rete ridges. The underlying connective tissue consisted of dense collagen bundles with large multinucleated stellate shaped fibroblasts subepithelially. Based on the microscopic findings a final diagnosis of a giant cell fibroma was made. This case is reported for its rare occurrence.

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INTRODUCTION

Weathers and Callihan in the year 1974 reported giant cell fibroma as a benign tumor with distinctive pathologic features. (Bakos, 1992) It is so called because of the presence of stellate shaped (Houston, 1982; Weathers and Campbell, 1974) multinucleated giant fibroblasts which are predominantly seen in close proximity to the overlying epithelium with an oval nuclei and eosinophilic cytoplasm. GCF clinically presents as an asymptomatic, pedunculated or sessile growth, achieving a size less than 1 cm. It is commonly seen in the mandibular gingiva, (Bakos, 1992; Houston, 1982) while sometimes seen as a painless lobule on the tongue and palate. This can be diagnosed accurately based only on its distinctive histopathology. The treatment options available are conservative surgical excision, electrosurgery and laser therapy (Butchi babu *et al*., 2010). Prognosis is good however long term follow up is required.

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Case presentation

A 30 year old male patient reported to a private dental clinic, for a growth over the tip of the tongue (Fig.1). Patient noticed the growth two years back for which he did not seek any medical assistance. The growth somewhat remained same over a period of time. There was no history of trauma, pain or discharge from the swelling. Medical history was not significant. Intra-oral examination revealed dome shaped solitary, pinkish-white growth on the dorsum of the tongue near the tip. The lesion had a sessile base, was firm and fibrous in consistency with a smooth surface. Based on its clinical presentation a provisional diagnosis of a fibroma was made. The treatment procedure was explained to the patient and after taking his consent excision was done. The specimen was sent for histopathological examination.

Investigations

Routine blood investigations were carried out and found to be within the normal limits. Excisional biopsy was taken and specimen was sent for histopathological examination under compound microscope. Histopathological examination of the excised specimen revealed long and slender rete ridges on the epithelium (Fig.2). The underlying connective tissue consisted

of dense collagen bundles (Fig.3) with large stellate shaped fibroblasts which were seen close to the surface epithelium (Fig.4). A few of them appeared to be multinucleated. Based on the microscopic findings a final diagnosis of a giant cell fibroma was made.

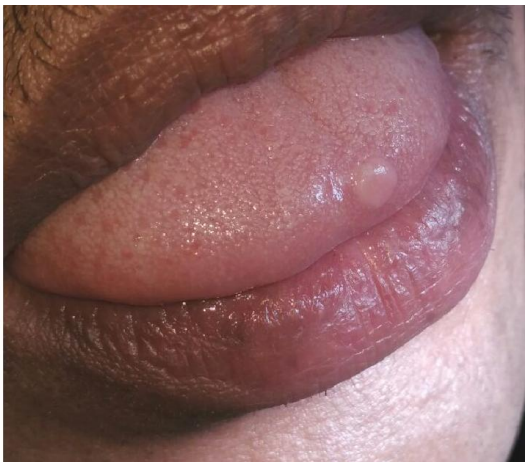

Figure 1. Dome shaped sessile growth on the tip of the tongue

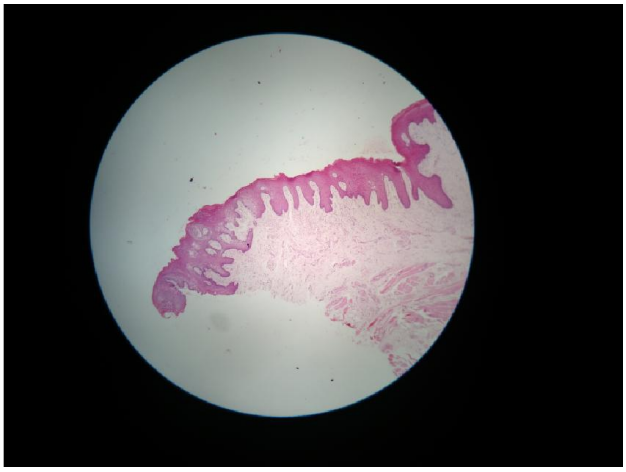

Figure 2. Photomicrograph showing long and slender rete ridges on the epithelium. (H&E 4×)

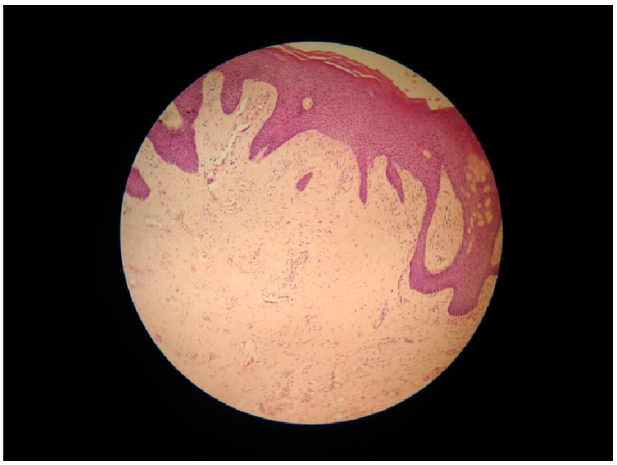

Figure 3. Photomicrograph showing dense collagen bundles interspersed with large stellate shaped fibroblasts subepithelially. (H&E 10 ×)

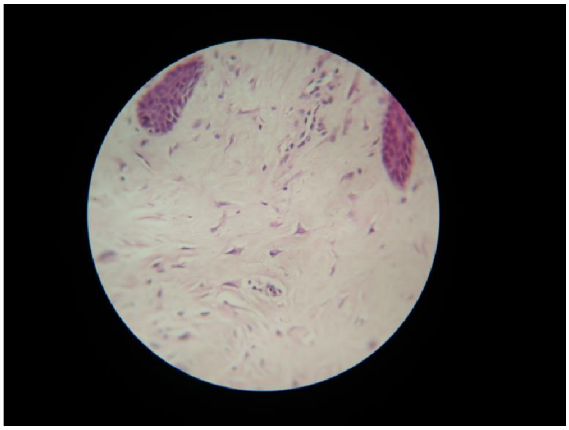

Figure 4. Photomicrograph showing giant cell fibroblast. (H&E 100 ×)

Differential diagnosis

There are various differential diagnosis of GCF. Clinical differential diagnosis are fibroepithelial polyp, pyogenic granuloma, peripheral ossifying tumors, focal fibrous hyperplasia, neurofibroma, papilloma, peripheral odontogenic fibroma and odontogenic hamartoma while the histological differential diagnosis are irritation fibroma and fibroma.

Treatment

The treatment options available are conservative surgical excision, electrosurgery and laser therapy (Butchi babu *et al*., 2010). The present case was treated by surgical excision.

Outcome and follow-up

Prognosis is good however long term follow up is required.

DISCUSSION

The giant cell fibroma is rare and interesting non-neoplastic lesion of the oral mucosa. The etiology for GCF remains unknown and it is not associated with chronic irritation. Many studies over times have failed to explain the nature of these cells. (Ragezi *et al*., 1987) There are various controversies regarding origin of giant multinucleated fibroblasts. This includes viral etiology, fusion of mononuclear cells and phenotypically different fibroblasts (Odell *et al*., 1994). There is no significant sex predilection. It is often asymptomatic. GCF occurs frequently in gingiva with mandible being most common site than maxilla (2:1 mandible to maxilla ratio). Other affected locations by descending order of frequency are the tongue, buccal mucosa, palate, lips and floor of the mouth (Weathers *et al*., 1974). Clinically it may be sessile or pedunculated. It is usually less than 1cm in diameter. GCF is characterised by the presence of large, stellate-shaped, mononucleated or multinucleated giant fibroblasts which are present subepithelially. (Houston, 1982; Weathers and Campbell, 1974) The rete ridges of the epithelium are long and slender while collagen fibers are present in connective tissue. A study has compared a nature of collagen in fibroma and GCF and reported that the collagen in GCF is more mature than that of fibroma (Datar *et al*., 2014). It can be commonly mistaken

for other growths such as fibroepithelial polyp, pyogenic granuloma, and fibroma (Sabarinath *et al*., 2012) and can be diagnosed accurately based only on its distinctive histopathology. Prognosis is good however long term follow up is required because recurrence was noted with few cases (Houston, 1982). The choice of treatment for GCF is surgical excision in adults where as in children electrosurgery or laser excision is preferred (Butchi babu *et al*., 2010).

Learning points/take home messages

Giant Cell Fibroma is a rare fibrous hyperplasic lesion, representing 0.4 - 1% of total biopsies.

It clinically presents as an asymptomatic, pedunculated or sessile growth less than 1 cm in size.

It is characterized histopathologically by the presence of stellate shaped mononucleated or multinucleated giant fibroblasts subepithelially.

GCF is commonly mistaken for other growths such as fibroepithelial polyp, pyogenic granuloma, and fibroma and diagnosed based on its distinctive histopathology.

The treatment options available are conservative surgical excision, electrosurgery and laser therapy.

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