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Diagnosis and management of Giant Cell Fibroma – A Case Report

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Abstract
Giant cell fibroma is a non-neoplastic lesion of fibrous connective tissue origin with distinct clinicopathologic features. The presence of large multinucleated stellate fibroblasts led to the tumor being named a Giant Cell Fibroma. This case report outlines the diagnosis, clinical features, histopathological findings and management of a Giant Cell Fibroma on the dorsum of the tongue using Laser.

Key Words: *Giant Cell Fibroma, Stellate fibroblast, Laser*

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I. Introduction

Several fibrous soft tissue lesions commonly occur in the oral cavity and are mostly reactive or reparative in nature rather than neoplastic. One such lesion is the Giant Cell Fibroma, which was first described by Weathers and Callihan in 1974 [1]. The Giant Cell Fibroma is fibrous tumor with distinct clinicopathologic features [2]. These lesions represent about 1% of all oral biopsies and constitute nearly 5% of all fibrous lesions involving the oral mucosa [3]. The tumor is characterized by the presence of large stellate shaped mononuclear or multinuclear giant fibroblasts , leading it to be known as Giant Cell Fibroma[4]. These cells are predominantly seen just below the epithelium and are fewer or absent in the center of the lesion. Electron Microscopy has revealed these large stellate , multinucleated cells to be atypical fibroblasts [5,6]. The lesion is usually diagnosed during the first three decades of life with a slight female predilection [2] and mostly reported in the Caucasian population [3]. The most common site of occurrence of this lesion is the mandibular gingiva followed by maxillary gingiva, tongue and palate and clinically they may appear to be sessile or pedunculated masses[2,7,8].

This case report describes the clinical manifestation, histopathological findings, diagnosis and treatment of a giant cell fibroma on the tongue.

II. Case Report

A 32 year old female reported to the outpatient clinic, Department of Periodontology with a chief complaint of an asymptomatic growth on the tongue for the past 2 months. A complete medical history was elicited and the patient was found to be systemically healthy. Intra-oral examination revealed the presence of a small, round, exophytic nodule on the dorsum of the tongue. The mass was pedunculated and the surface appeared smooth. No erythema was noted. On palpation, the growth was soft in consistency and non-tender. Oral hygiene was satisfactory. Routine blood investigations were performed. A clinical diagnosis of fibroma was made. Informed consent was obtained. A pre-procedural mouth rinse with 0.2% Chlorhexidine was given to the patient. Owing to the location and size of the lesion, an excision biopsy was performed under local anaesthesia (2% lidocaine with 1:200,000 adrenaline). The entire mass was excised using Diode Laser (Biolase) and sent for histopathological examination. Hemostasis achieved. The patient was prescribed analgesics (Paracetamol 500mg BD x 3 days). Healing was satisfactory with no signs of inflammation in the post-operative period. No recurrence was noted in the one year follow up visit.

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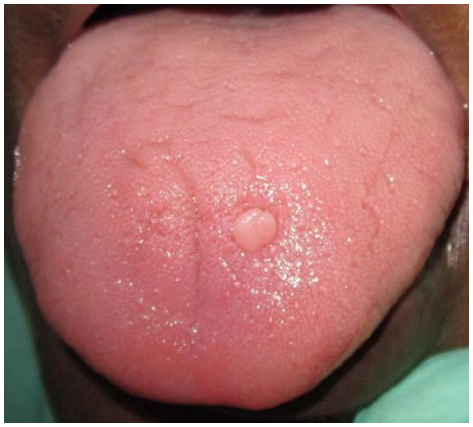
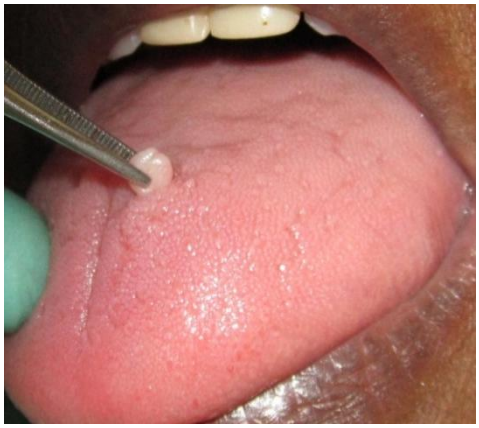

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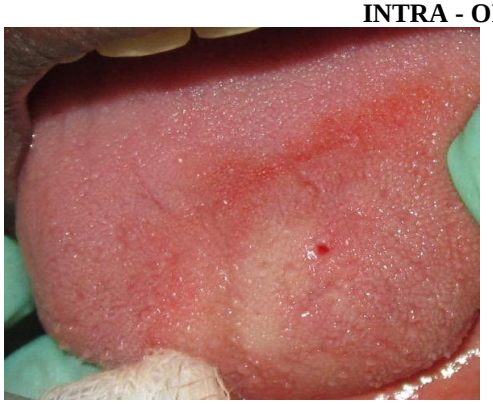
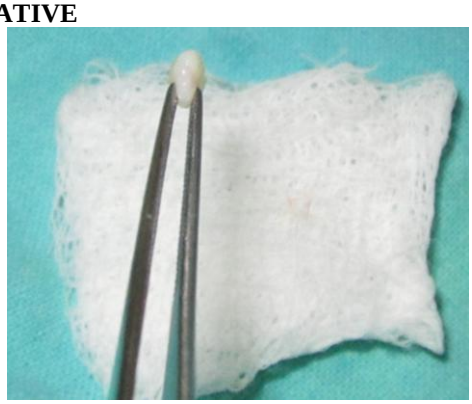
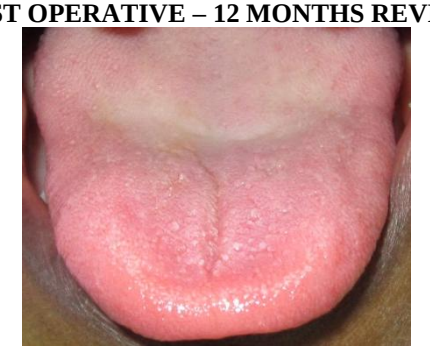



POST OPERATIVE – 12 MONTHS REVIEW

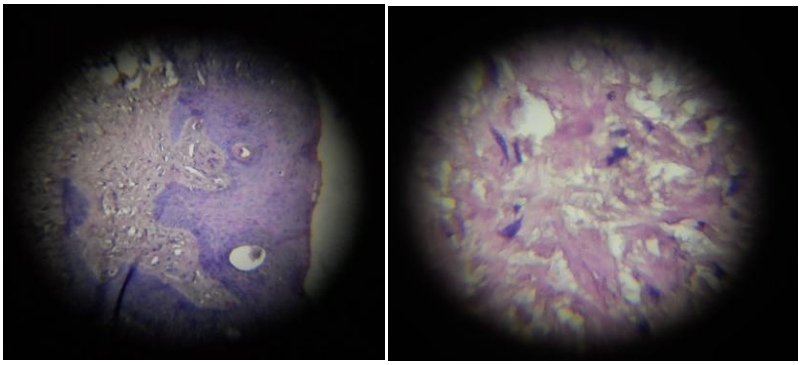


HISTOPATHOLOGICAL EXAMINATION

Histopathological examination revealed the presence of hyperplastic stratified squamous parakeratinised epithelium with narrow, elongated rete pegs. The connective tissue stroma showed densely packed collagen fibers. The hallmark feature was the presence of numerous prominent **stellate shaped fibroblasts** containing several nuclei. Inflammatory infiltrate was minimal.

Based on the clinical and histopathological findings, a final diagnosis of Giant Cell Fibroma was made.

HISTOPATHOLOGICAL EXAMINATION – STELLATE SHAPED FIBROBLASTS



III. Discussion

Giant Cell Fibroma was first described as a separate entity by Weathers and Callihan in the early 1970's despite its similarity with other non-neoplastic fibrous lesions in the oral cavity [1]. The true distinction of Giant Cell Fibroma from other fibrous lesions such as Irritation / Traumatic Fibroma can be made by means of histopathological examination only which leads to establishing the final diagnosis [9,10,11,12]. Studies suggest that the aetiology of the lesion can be due to minor trauma and is specifically characterized by functional changes in fibroblastic cells [13].

The benign fibrous lesion generally develops in the first three decades of life and a slight female predilection is noted [2,10,14,15]. It represents approximately 1% of all oral biopsies and constitutes nearly 5% of all fibrous lesions involving the oral mucosa [3,11,16]. The lesions are usually <1 cm in diameter and the more common sites include the mandibular gingiva, followed in descending order by the maxillary gingiva, tongue, palate, buccal mucosa, lips and floor of the mouth [2,16]. Giant Cell Fibroma's are mostly asymptomatic and appear as sessile or pedunculated masses that are typically of normal mucosal color unless traumatized during mastication or oral hygiene procedures [2,13]

The case reported here was of a 32 year old female patient with an exophytic nodule on the dorsum of the tongue. The mass was small, round, pedunculated with no signs of erythema or inflammation. The surface was smooth and the color resembled that of normal oral mucosa. The lesion was notably non-tender and its consistency soft.

Despite clinical similarities between the various fibroma's , fibrous hyperplasias and fibroepithelial hyperplasias, a true distinction of the Giant Cell Fibroma can be made histlogically. Histopathological examination revealed the presence of stratified squamous parakeratinised epithelium with elongated and thinned out rete pegs. It is characterized by the presence of numerous mono or multinucleated stellate fibroblasts in a loose collagenous stroma. These cells are pathognomonic of Giant Cell Fibroma , present with a smudged appearance and are never hyperchromatic [4].

Based on the clinical and histological findings, a diagnosis of Giant Cell Fibroma was made. The treatment of choice for the lesion is surgical excision [12]. Incomplete removal of the lesion can lead to recurrence [1]. Several modalities have been proposed for the treatment of Giant Cell Fibroma comprising of surgical excision, electrocautery and Laser depending

upon the clinical and anatomic considerations. Lasers such as CO_2 , neodymium-doped yttrium aluminium garnet (Nd: YAG), erbium-doped YAG (Er: YAG) and Diode lasers have been successfully employed in the treatment of several intra-oral soft tissue lesions including fibroma, papilloma, pyogenic granuloma , gingival hyperplasia etc.[17,18]. The advantages of laser ablation include better visibility due to an almost bloodless field, precise cutting, lesser risk of damage to adjacent structures, lesser post-operative pain and oedema with faster recovery, minimal scar tissue contraction and maintain tissue elasticity [19]. In the reported case, complete surgical excision of the lesion was performed using diode laser. Sutures were not necessary as hemostasis was achieved. Healing was satisfactory and no post-operative complications were recorded. Laser-induced wounds result in clean precise cuts and margins and heal by secondary intention with no or minimal scar tissue formation. Minimal wound contraction following laser irradiation, that occurs through induction and formation of smaller number of myofibroblasts and collagen contribute to faster healing outcomes and better patient comfort [20,21]. Complete excision of the mass was achieved and no recurrence was noted when reviewed after one year.

IV. Conclusion

The Giant Cell Fibroma often mimics other fibrous lesions of the oral cavity. However the lesion presents with distinct histological features that can aid in diagnosis and subsequent successful management.

DISCLOSURE STATEMENT

The authors report no conflicts of interest.

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