Case Report

"Giant cell fibroma of buccal mucosa -an unusual lesion of unusual size": A case report

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Abstract

Giant cell fibroma is a benign oral fibrous tumour. The clinical appearance of majority of non-neoplastic fibrous growths is similar, but unique histopathological features of giant cell fibroma aid in its final diagnosis. It usually manifests as an asymptomatic, sessile or pedunculated mass usually less than 1 cm in diameter. In this case report, we highlight a case of giant cell fibroma in a 58-year-old male patient, which had an unusual size with associated pain. Although giant cell fibromas are benign lesions, it is important for dentists to be aware of this lesion based on its frequency of occurrence and need for its accurate diagnosis.

Keywords: Buccal mucosa, fibroma, giant cell

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INTRODUCTION

Giant cell fibroma (GCF) was first described by Weathers and Callihan in 1974. It is a common benign mucosal fibrous growth showing distinctive clinicopathologic features. It showed marked predominance of occurrence in Caucasian population with a female-to-male ratio of 1.3:1, and the occurrence of these lesions showed peak incidence in the first three decades of life.[1] The aetiological factor causing giant cell fibroma remains obscure and does not seem to be caused by chronic irritation.[2] It clinically appears as a sessile or pedunculated nodule that is less than 1 cm in diameter usually asymptomatic at initial presentation. The most common site is gingiva followed by tongue, buccal mucosa and palate.[1,3,4] GCF resembles other fibrous lesions of the oral cavity in appearance, except for few differences in size, pathogenesis, patient age and location that have been noticed.[2,5] There are a few case reports reported in the literature, and controversy around the origin of this lesion is still unclear.[6] In our case report, we present a case of giant cell fibroma of unusual size in the buccal mucosa and have also discussed the key features of this distinct entity along with differential diagnosis.

CASE REPORT

A 58-year-old male patient presented with a chief complaint of a growth in right cheek region associated with pain for 2 months. Patient had noticed the swelling 2 months back, which had slowly grown to present size with associated pain. There was no history of trauma, pus discharge or

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burning sensation. Medical history was non-contributory. He was an alcoholic, smoker and a tobacco chewer for past 10 years. Extraoral examination did not reveal any obvious facial asymmetry nor any palpable lymph nodes. Intraoral examination revealed a growth that was well defined, smooth, pink in colour measuring approximately 3 × 3 cm in size in relation to right buccal mucosa with respect to 44 [Figure 1]. On palpation, it was pedunculated, soft to firm in consistency, fluctuant and tender with no evidence of bruit or pulsations. Radiographic examination did not reveal any abnormalities. A provisional diagnosis of irritational fibroma was given. Excisional biopsy was performed, and lesion was submitted for histopathological examination.

Histopathological examination revealed well-circumscribed lesion showing overlying stratified squamous parakeratinized epithelium that was hyperplastic with very thin elongated rete ridges and also showed surface ulceration. Underlying connective tissue showed collagenous stroma with plump stellate shaped fibroblasts, endothelial lined blood vessels with chronic inflammatory cells [Figure 2]. Immunohistochemical staining was done which showed positivity for Vimentin, suggesting that the stellate and multinucleated giant cells are of fibroblastic phenotype [Figure 3]. Based on histopathological and immunohistochemical findings, the final diagnosis was giant cell fibroma. The healing has been uneventful and patient was followed up and has had no recurrence till date.

DISCUSSION

Weathers and Callihan in 1974 described giant cell fibroma as being one of the relatively rare fibrous and hyperplastic lesions of the oral cavity.[1,3,7]

The mean age of occurrence for GCF is 29 years reported in the literature with a marked female predilection.[1,3] The most common site of occurrence is gingiva followed by buccal mucosa, tongue and palate.[1-4] GCF presents as a raised lesion usually 1 cm or smaller in diameter with either a bosselated or pebbly surface, clinically getting misdiagnosed as papilloma, or it can appear to be sessile or pedunculated in appearance sometimes. GCF is usually of normal mucosal colour until traumatized by chronic irritation.[7]

Microscopically, giant cell fibroma shows the presence of large stellate and multinucleated giant cells in a fibro-collagenous stroma. The overlying epithelium is usually hyperplastic with thin elongated rete ridges and inflammatory cell infiltrate being usually absent.[1,2]

Various fibrous lesions of the skin and oral mucous membranes have been shown to contain stellate and multinucleated giant cells of presumed fibroblastic origin.

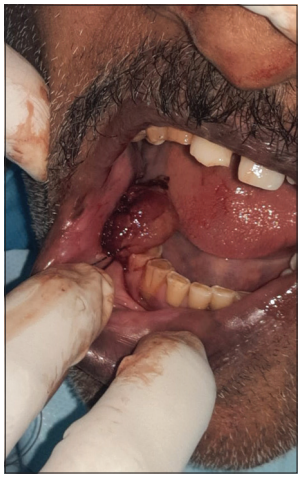

Figure 1: Clinical image shows growth in right buccal mucosa

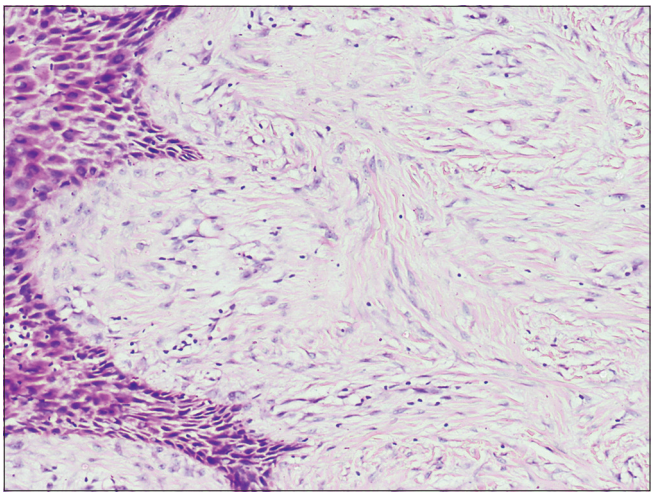

Figure 2: Histopathological image shows overlying stratified squamous parakeratinized epithelium with thin elongated rete ridges. Underlying connective tissue showed bundles of collagen fibres with plump stellate-shaped fibroblasts (H and E stain x10)

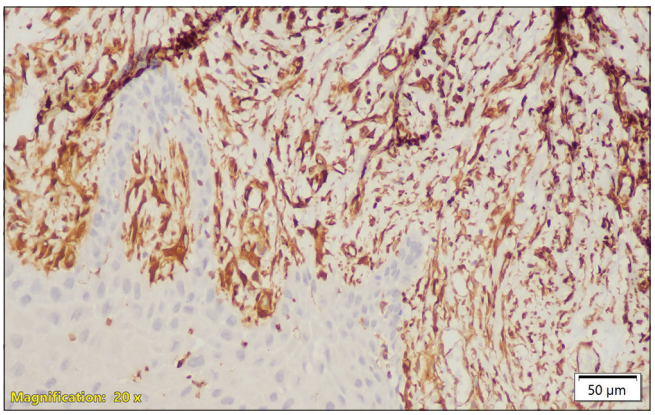

Figure 3: Immunohistochemistry showing positive for vimentin (Vimentin × 20)

As the presence of these cells is not just unique for giant cell fibromas, we have to perform immunohistochemistry to rule out other reactive, hamartomatous lesions or tumours of myofibroblastic origin as we did in our case. IHC has to be performed to know the exact nature of these giant cells and also to confirm the fibroblastic lineage of these giant cells that illustrates either a functional or degenerative change.[6]

Immunohistochemical studies have revealed that giant fibroblasts are of fibroblastic phenotype (+ve for vimentin as in our case), which also shows positivity for prolyl 4-hydroxylase as in few studies.[3,6] The fibroblasts showed -ve for CD68, tryptase, lysozyme and HLA-DR indicated they are not macrophages or leukocytes (-ve for leukocyte common antigen), or smooth or skeletal muscle cells (-ve for desmin and α smooth muscle actin), or melanocytes and Langerhans cells (-ve for S-100 protein). They are not peripheral nerve cells as they show -ve for S-100 and neurofilaments), or endothelial cell origin (-ve for CD31, factor VIII and lectin), or of nerve cell origin (-ve for neuron-specific enolase) or squamous epithelial cells (-ve for cytokeratin).[3,6]

The differential diagnosis for GCF should include irritation fibroma, pyogenic granuloma, retrocuspid papilla, papilloma, peripheral ossifying fibroma, focal fibrous hyperplasia and peripheral odontogenic fibroma.[5-9] The presence of giant stellate fibroblasts histopathologically distinguishes this lesion from the above lesions. Table 1 gives different differential diagnoses that should be considered.

Irritation fibroma was given as clinical diagnosis in our case, as the lesion was at the line of occlusion. It was smooth, pink in colour, pedunculated with no ulceration or peripheral induration and was slow growing. Retrocuspid papilla, which is clinically and microscopically similar to GCF, was ruled out as location is very characteristic for this lesion, which is developmental in nature. It occurs in mandibular lingual attached gingiva adjacent to cuspids as compared to GCF, which in our case was seen in buccal mucosa. Retrocuspid papilla frequently occurs bilaterally and appears as a small pink papule less than 5 mm in diameter and reported in children and young adults.[7] The presence of giant stellate fibroblasts histopathologically distinguishes this lesion from pyogenic granuloma, papilloma, peripheral ossifying fibroma, focal fibrous hyperplasia and peripheral odontogenic fibroma, which were other differential diagnoses as in our case.

The preferred treatment of choice for GCF in adults is surgical excision and electrosurgery in children. Recurrence is rare, but periodic follow-ups should be done.[10]

Table 1: Comparison between giant cell fibroma, irritation fibroma, retrocuspid papilla, papilloma, pyogenic granuloma and peripheral giant cell granuloma

	Giant cell fibroma	Irritation fibroma	Retrocuspid papilla	Papilloma	Pyogenic granuloma	Peripheral giant cell granuloma
Aetiology	Unclear	Chronic irritation and trauma	Developmental	Human papilloma virus (6 and 11)	Minor trauma	Local irritation or trauma
Age	1st-3rd decade	4th-6th decade	Children and young adults	30-50 years	Any age Common in children and young adults	30-60 years
Sex	Slight female predilection	Female male predilection.	Female predilection	No gender predilection or slight male predilection.	Female predilection	Female predilection
Common site	Gingiva, tongue and palate.	Buccal labial mucosa, tongue and gingiva.	Gingiva lingual to mandibular cuspids.	Tongue, lips, buccal mucosa gingiva and palate.	Lips, tongue and buccal mucosa.	Gingiva or alveolar ridge.
Histopathology	Unencapsulated mass of loose fibrous connective tissue that contains numerous characteristic such as large, plump, spindle shaped and stellate fibroblasts, few with multiple nuclei; surface epithelium has thin elongated rete ridges.	Nodular mass of fibrous connective tissue, dense and collagenized with mature fibroblasts. Epithelium is usually atrophic.	Loosely arranged delicate fibrous connective tissue with stellate and multinucleated fibroblasts. Elongation of rete ridges and/or vascularity seen.	Keratinized stratified squamous epithelium with finger like projections with a thin central connective tissue core. Koilocytes (HPV-altered epithelial cells) seen in superficial layers of epithelium.	Connective tissue stroma is delicate, frequently with fasciculi of collagen fibres, vast numbers of endothelium lined vascular spaces, proliferation of fibroblasts and budding endothelial cells. Epithelium is thin and atrophic, may be hyperplastic.	Non-encapsulated mass of tissue with delicate reticular and fibrillar connective tissue stroma with ovoid or spindle shaped plump fibroblasts and presence of multinucleated giant cells, endothelial lined blood capillaries, mature bone or osteoid also seen. Overlying epithelium is hyperplastic with occasional ulceration.

Although fibrous overgrowths of oral cavity are benign lesions, histologic examination of the tissue is important to rule out any possibilities of malignant changes. These benign growths may continue to grow in size following local irritation or chronic trauma unless source of irritation is removed or lesion is completely excised. Since the patient in our case was a smoker, early diagnosis was necessary as he is at a greater risk of developing oral cancer. Early excision of this lesion minimized the risk of more complicated surgical intervention at a later stage as in our case.

Literature shows giant cell fibromas of oral cavity occurs in patients in the second and fourth decades of life. Lesions are usually < 1 cm in diameter and are found more frequently seen in tongue and gingiva with no sex predilection. Exact aetiology is largely unknown, but few authors have suggested trauma or chronic irritation as triggering factors.[7] Our case stands unique as we have attempted to report a case of giant cell fibroma, which is unique in terms of size of lesion, patients age, site of involvement and absence of local trauma. It also highlights that a benign oral tumour, if continues to grow in size following local irritation unless the source is removed can pose a risk to develop malignant changes; hence, early diagnosis and intervention is needed to minimize complex surgical intervention and also follow-up needed to minimize patient discomfort as was done in our case.

CONCLUSION

Although giant cell fibromas are benign in nature, it is very important that dental and medical professionals recognize it amidst the frequency of occurrence and include it in differential diagnosis of other fibrous hyperplastic lesions of oral cavity. This will help in to arrive at a precise diagnosis and to further plan a proper treatment for the patient, even in cases where tumours are of abnormal and excessive size as reported in our case.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient (s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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