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CLINICAL ARTICLE

Giant cell Fibroma of Lip: A case report

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This case report describes a rare presentation of a giant cell fibroma (GCF) on the labial mucosa of a 24-year-old female. GCF is a benign fibrous connective tissue neoplasm, typically occurring on the gingiva and tongue. The patient presented with a small, pedunculated nodule on the lower lip. A clinical diagnosis of irritational fibroma was made, and excisional biopsy confirmed the presence of GCF based on histopathological examination, revealing characteristic stellate-shaped giant fibroblasts. The lesion was successfully excised with no recurrence at the one-year follow-up. This case highlights the importance of considering GCF in the differential diagnosis of benign fibrous lesions, even in atypical locations like the labial mucosa. Increased awareness and reporting of such cases can aid in better understanding the etiology and pathogenesis of GCF, ensuring accurate diagnosis and effective management.

Keywords: Giant cell fibroma, labial mucosa, stellate fibroblasts.

Introduction

Giant cell fibroma (GCF) is a rare benign fibrous connective tissue neoplasm accounting for about 4.7% of benign oral fibrous connective tissue growths.[1] The entity, first reported in 1974, has inherited its name owing to the presence of characteristic stellate-shaped large fibroblasts in its histopathological picture.[2]
The lesion commonly occurs on the gingiva and tongue and is seldom noted in other sites such as the palate, buccal mucosa, or lip. It appears as an asymptomatic, sessile/pedunculated submucosal growth with a surface resembling normal mucosa.[3] Surgical excision generally suffices for its treatment and malignant transformation or recurrence after surgery has rarely been reported. The present case report describes a GCF unusually occurring in the labial mucosa of a middle-aged female.

Case Report

A 24-year-old female reported with a growth on the lower lip region for one month. The patient's medical history was unremarkable, however, she had a chronic parafunctional habit of lip biting. A pedunculated nodule of size 0.5 cm covered by apparently normal overlying mucosa was noted in the labial mucosa. The lesion was firm and non-tender on palpation(fig.1).

Figure1.Awell-circumscribed pedunculated growth on lower right lip region.

With a working diagnosis of irritational fibroma, an

excisional biopsy was obtained and stored in formalin for 24 hours. The differential diagnosis included mucocele, pyogenic granuloma, and squamous papilloma.

Microscopic examination revealed a hyperplastic stratified squamous parakeratinised epithelium with an underlying fibrous connective tissue. The connective tissue stroma comprised haphazardly arranged dense bundles of collagen fibers interspersed with sporadic stellate-shaped large fibroblast-like cells that were mono- or bi-nucleated. Numerous small to large endothelial-lined blood vessels were noted without any definite inflammatory component.

Considering the histopathological features, a final diagnosis of 'Giant cell fibroma' was imparted(fig.2).

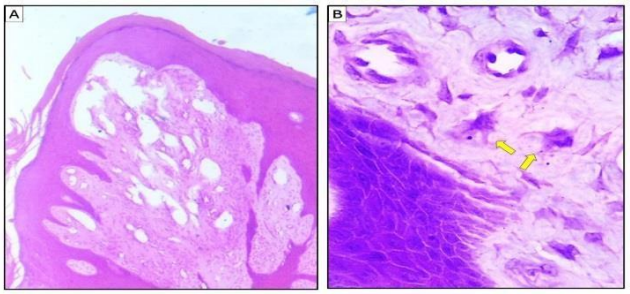

Figure 2 H & E-stained tissue section showing a part of epithelium and lamina propria at A) 4X magnification and B) 40X magnification (Arrows indicate Giant Fibroblasts).

The fibroma was surgically excised and had a favorable healing outcome.Satisfactory healing was observed at a one-month follow-up visit and no evidence of disease was reported after one year (fig.3).

Figure3.Complete healing at one-month postoperative follow-up.

Discussion

The etiology of giant cell fibroma is yet unclear. While it is majorly considered a benign fibrous neoplasm, trauma has been suggested as an etiological factor. In support of the former, histochemical analysis of collagen fibers in giant cell fibroma by picrosirius red staining suggests the neoplastic nature of the lesion.[4] Contrariwise, another study demonstrated the occurrence of fibroblastic changes due to chronic recurrent irritation or trauma.[5] In the present case patient gave a history of lip-biting habit which might be the initiating factor for GCF.

GCF predominantly occurs in the second to fourth decades of life and does not exhibit any specific gender predilection although a slight female predilection has been reported by some authors.[6] Clinically, the lesion does not exceed one centimeter, occurring commonly on the gingiva and tongue. In the present case, a lesion occurred in the labial mucosa of a 24-year-old female which is an unusual site of occurrence for GCF.

Histologically the lesion should be differentiated from benign fibrous tissue lesions like epulis fissuratum, peripheral ossifying fibroma, and pyogenic granuloma.[7]

Epulis fissuratum is usually associated with dentures commonly occurring on the gingiva or palate; the present case, however, occurred on the labial mucosa. In peripheral ossifying fibroma, areas of calcification are present in the stroma which were are not apparent in the present case. Pyogenic granuloma is characterized by an endothelial proliferation of capillaries with intense chronic inflammatory cell infiltrate which was not observed in the present case. Microscopically, the present lesion exhibits keratinized, hyperplastic stratified squamous epithelium while the underlying connective tissue is fibro-vascular.

Characteristically, lamina propria fibroblasts have large stellate/angular fibroblasts with one or more nuclei. Spoorti Kulkarni reported a rare case of pigmented giant cell fibroma exhibiting melanin incontinence in giant fibroblasts.[7] Immunohistochemical positivity for vimentin and prolyl-4 - hydrolase also confirms the fibroblastic origin of these giant fibroblasts.[8] Ultrastructural studies show these are unusual fibroblasts.[9-10] Surgical excision is the treatment of choice and recurrence is rare reported as 2 out of 464 cases in a study. [11] Likewise, the present case showed uneventful healing at one month post-surgery and no evidence of disease at a one-year follow-up.

Studies show a lower rate of congruence between

clinical and histological diagnosis representing less awareness of GCF among clinicians. More reports should be reported to know the aetiology and the pathogenesis of the lesion. The lesion can be considered in the differential diagnosis of benign fibrous lesions occurring in the oral cavity.

Conclusion

GCF is a rare benign fibrous connective tissue neoplasm, often presenting challenges in clinical diagnosis due to its resemblance to other benign fibrous lesions. This case report highlights an uncommon presentation of GCF on the labial mucosa of a 24-year-old female, a site less frequently associated with this lesion. The histopathological examination remains the cornerstone for definitive diagnosis, with characteristic stellate-shaped giant fibroblasts distinguishing GCF from other similar lesions.

The successful surgical excision and favorable healing outcome in this case reinforce the effectiveness of conservative management for GCF. Additionally, the rarity of recurrence underscores the benign nature of the lesion. This case underscores the need for heightened clinical awareness and consideration of GCF in the differential diagnosis of oral fibrous growths, particularly in atypical sites. Further studies and case reports are essential to deepen our understanding of the etiology and pathogenesis of GCF, contributing to more accurate diagnoses and optimal patient outcomes

Declarations:

Conflicts of interest and financial disclosures:

The authors declare that they have no conflict percent and there was no external source of funding for the research in question.

Ethical approval:

The study was approved by the Institutional Ethics Committee.

Informed consent:

Informed consent was obtained from all individual participants included in the study.

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REFERENCES

1. Silveira HA, Silva-Sousa YT, Reyes MR, da Rocha Bernardini V, Floriam LJ, León JE. Pedunculated, papillary giant cell fibroma in a pediatric patient: An immunohistochemical and in situ hybridization study. Pediatric Dental Journal. 2023;33(1):74-9.
2. Sabarinath B, Sivaramakrishnan M, Sivapathasundharam B. Giant cell fibroma: A clinicopathological study. Journal of Oral and Maxillofacial Pathology. 2012;16(3):359-62.
3. Masannan Mozaffari P, Saeedi M, Mohtasham N, Khosravi F, Farjami F. Giant Cell Fibroma of the Oral Cavity: Case Series and Literature Review. Journal of Research in Dental and Maxillofacial Sciences. 2023;8(3):221-5.
4. Schmidt MJ, Dierks C, Gernhardt C, et al. Histochemical analysis of collagen fibers in giant cell fibroma and inflammatory fibrous hyperplasia. Acta Histochem. 2016;118(2):123-30.
5. Mello-Moura ACV, Santos AMA, Bonini GAVC, Zardetto CGD, Moura-Netto C, Wanderley MT. Giant Cell Fibroma in a Two-Year-Old Child. Case Rep Dent. 2016;2016:7058356. doi:10.1155/2016/7058356.
6. Sabarinath B, Sivaramakrishnan M, Sivapathasundharam B. Giant cell fibroma: a clinicopathological study. J Oral Maxillofac Pathol. 2012;16(3):360-4.
7. Kulkarni S, Chandrashekar C, Kudva R, Radhakrishnan R. Giant-cell fibroma: understanding the nature of the melanin-laden cells. J Oral Maxillofac Pathol. 2017;21:429-33.
8. Kuo RC, Wang YP, Chen HM, Sun A, Liu BY, Kuo YS. Clinicopathological study of oral giant cell fibromas. Journal of the Formosan Medical Association. 2009;108(9):725-9.
9. Filioreanu AM, Popescu E, Cotrutz C, Cotrutz CE. Immunohistochemical and transmission electron microscopy study regarding myofibroblasts in fibroinflammatory epulis and giant cell peripheral granuloma. Rom J Morphol Embryol. 2009;50(3):363-8.
10. Parekh NM, Bansal SP, Mehta V, ShirsatPM, Prasad P, Desai RS. PersistentBuccopharyngeal Membrane - A SystematicReview of Case Reports and Case Series. Cleft PalateCraniofac J. 2024;61(9):1509-1525.
11. Houston GD. The giant cell fibroma: a review of 464 cases. Oral Surgery, Oral Medicine, Oral Pathology. 1982;53(6):582-7.