

LASER EXCISION- A CASE REPORT OF GIANT CELL FIBROMA OF TONGUE A RARE PRESENTATION

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ABSTRACT

Giant cell fibroma (GCF) is a lesion of connective tissue origin with distinctive clinicopathological features. Its presentation on tongue being rare and unique made the provisional diagnosis led to multiple opinions. Soft tissue lasers are becoming popular among the clinicians due to their potential value in surgical procedures providing surface sterilisation, dry surgical field and increased patient acceptance. In past two decades much experience and knowledge has been gained regarding this new venture. The right choice of laser surgical excision done in this case moved the prognosis to its excellence.

Key words:

Giant Cell Fibroma, Diode Laser, Stellate Fibroblasts, Multinucleated Giant Cells

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INTRODUCTION

Laser plays a crucial role in management of oral and maxillofacial pathologies; and this role is established well by implementing procedures like ablation, biopsies, gingivoplasties, gingivectomies, soft tissue surgeries, and crown lengthening procedure.^{1,2} The advantages of oral-laser surgeries include a great visibility in field, precision, enhanced infection control and elimination of bacteraemia, quite bloodless surgical and postsurgical period, minimum swelling and scarring, reduced postsurgical pain, minimal administration of anaesthetics shots.³

Here we are reporting a case of which made lasers to be best treatment option.

Case Report

A 59 year old male patient reported to the department of oral medicine and radiology of Meenakshi ammal dental college Chennai with the chief complaint of growth on the right side of the tongue for past 10 months. Growth is asymptomatic and initially smaller in size and had slowly progressed to present size. On clinical examination there is a spherical pedunculated smooth growth measuring approximately 1*1 cm on the right anterior lateral border of tongue, 1cm away from the tip, no surface changes, scar or ulceration is seen. The growth is firm in consistency non tender on palpation. 15 and 43 had attrition with sharp margins occluding the existing swelling (FIG 1 & 2). Considering the history and clinical examination we arrived at a Provisional diagnosis of traumatic fibroma in relation to

right anterior lateral border of tongue. Differential diagnosis include squamous papilloma, giant cell fibroma, pyogenic granuloma and peripheral giant cell granuloma. The haematological values were and or within normal limits. Contemplating the site of the growth and age of the patient Laser excision was performed.

Histopathological examination revealed fibrovascular connective tissue with presence of large, stellate shaped mononuclear and multinucleated fibroblasts within the superficial connective tissue. Chronic inflammatory cell infiltrate predominantly lymphocytes were present. The overlying epithelium is para keratinized stratified epithelium with elongated rete ridge (FIG 3 & 4). Correlating with clinical and histopathological findings a final diagnosis of giant cell fibroma was made.



Figure 1

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Figure 2

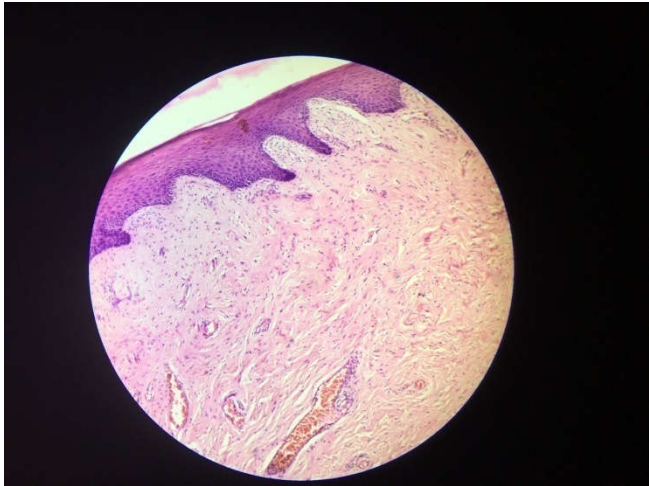


Figure 3

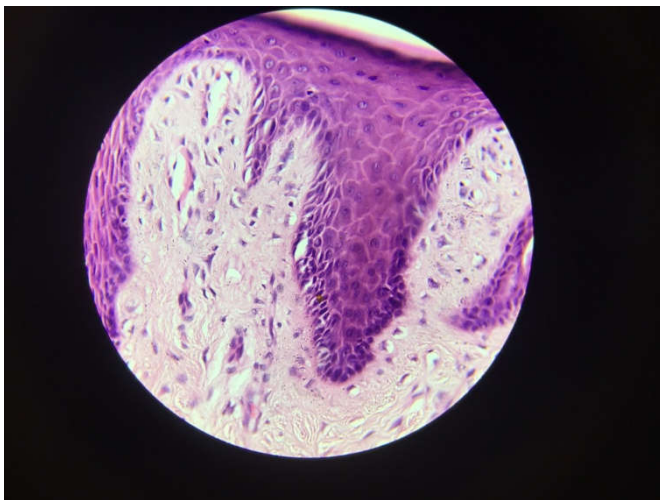


Figure 4

DISCUSSION

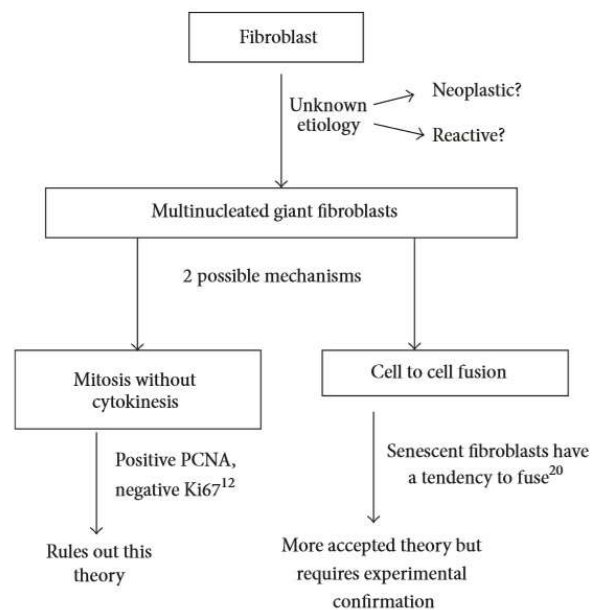
Giant cell fibroma is an unusual fibrous mucosal mass with several unique features which is distinct from other oral fibrous hyperplasias.⁴ Weathers and Callihan in the year 1974 first reported giant cell fibroma as a benign tumor with distinctive pathologic features. Bakos, 1992 specified the presence of stellate shaped multinucleated giant fibroblasts which are predominantly seen in close proximity to overlying epithelium with an oval nuclei and eosinophilic cytoplasm.⁵ The etiology for GCF remains unknown and does not appear to be associated with chronic irritation.⁴ Giant cell fibroma is an asymptomatic, sessile or pedunculated nodule commonly seen in mandibular gingiva followed by tongue, buccal mucosa,

palate, lip and floor of mouth. Although there were similarities in histological features between GCF and common irritation hyperplasias (including fibrous hyperplasias, fibroepithelial hyperplasias, and fibromas). The abundance of stellate giant cells could be used to differentiate GCF from the other lesions. Generally all these fibrous lesions, including GCF, have recently been regarded as a reactive hyperplasia of fibrous connective tissue.⁶ although some pathologists still believe that GCF represents a true neoplasm and distinguish GCF from other reactive fibrous hyperplasias.⁷

Collagenous fibroma (desmoplastic fibroblastoma), first described by Evans in 1995⁸ and giant cell collagenoma (GCC), first proposed by Rudolph *et al.* in 1998⁹, show many morphological similarities to GCF, including the characteristic stellate giant cells. In contrast to the small size of GCF, collagenous fibroma tends to become larger and entrap adjacent muscular or adipose tissue. Based on the morphologic and immunophenotypic overlap of the lesions, GCC of the skin might be a counterpart of GCF in the oral cavity.

A fibroblastic origin of stellate giant cells is the most accepted theory. An origin from dermal melanocytes and Langerhans cells is excluded due to negative S-100 immunostain and lack of Birbeck granules ultrastructurally.

Although the fibroblastic origin of these giant cells is clear, the reason as to why these giant cells are formed still remains uncertain. Fibroblast plays multifunctional and dynamic role during wound healing process and is the main cell influencing the extracellular matrix protein synthesis. Tettamanti *et al.*¹⁰ described the ultrastructure of a stimulated fibroblast as stellate shaped due to the cytoplasmic membrane laminae whereas the quiescent fibroblasts were spindle shaped. Substantial evidence is present at light microscopic and electron microscopic level which indicates that the giant cells are active cells. The stellate morphology, presence of vesicular nucleus with prominent nucleoli, basophilic cytoplasm due to high mRNA content characterizes a cell which is involved actively in synthesis process. Positivity for prolyl-4-hydroxylase obtained by Odell *et al.*¹¹ further supports the finding. They concluded that these giant cells show a functional fibroblast differentiation.



Schematic Representation Showing Possible Histogenetic Mechanisms for giant Fibroblasts

Histological basis plays a key role in diagnosis of giant cell fibroma. Present case being unique in its clinical site of appearance and laser excision as the choice of treatment made this a distinctive presentation.

CONCLUSION

This article shows complete removal of benign exophytic soft tissue lesion with diode laser has been associated with appropriate healing time and minimal bleeding. Although GCF is a rare entity the presence of it on tongue made this an eccentric lesion.

References

1. Mazarei Sotoode S, Azimi S, Taheri SA, *et al.* Diode laser in minor oral surgery: a case series of laser removal of different benign exophytic lesions. *J Lasers Med Sci.* 2015;6(3):133-138
2. Azma E, Safavi N. Diode laser application in soft tissue oral surgery. *J Lasers Med Sci.* 2013;4(4):206-211.
3. Eliades A, Stavrianos C, Kokkas A, Kafas P, Nazaroglou I. 808 nm diode laser in oral surgery: a case report of laser removal of fibroma. *Res J Med Sci.* 2010;4(3):175-8. doi:10.3923/rjmsci.2010.175.178.
4. D. R. Gnepp, *Diagnostic Surgical Pathology of the Head and Neck*, Saunder Elsevier, Philadelphia, Pa, USA, 2nd edition, 2009.
5. Dr. Prakhar Kapoor, Dr. Ipsita Kukreja and Dr. Shilpa Jamenis of *Current Research*, 8, (08), 37163-37165.
6. Regezi JA, Sciubba JJ and Jordan RCK. *Oral Pathology: Clinical Pathologic Correlations*. 5th ed. WB Saunders, Philadelphia, 2008; 156-9.
7. Neville BW, Damm DD, Allen CM and Bouquot JE. *Oral and Maxillofacial Pathology*. 3rd ed. WB Saunders, Philadelphia, 2009; 507-14.
8. Evans HL. Desmoplastic fibroblastoma. A report of seven cases. *Am J Surg Pathol* 1995; 19 1077-81.
9. Rudolph P, Schubert C, Harms D, Parwaresch R. Giant cell collagenoma: a benign dermal tumor with distinctive multinucleate cells. *Am J Surg Pathol* 1998; 22 557-63.
10. G. Tettamanti, A. Grimaldi, L. Rinaldi *et al.*, "The multifunctional role of fibroblasts during wound healing in *Hirudo medicinalis* (Annelida, Hirudinea)," *Biology of the Cell*, vol.96, no.6, pp.443-455, 2004.
11. E. W. Odell, C. Lock, and T. L. Lombardi, "Phenotypic characterisation of stellate and giant cells in giant cell fibroma by immunocyto chemistry," *Journal of Oral Pathology & Medicine*, vol.23, no.6, pp.284-287, 1994.

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