



ISSN Print: 2394-7500
ISSN Online: 2394-5869
Impact Factor: 8.4
IJAR 2021; 7(11): 294-296
www.allresearchjournal.com
Received: 07-09-2021
Accepted: 09-10-2021

Dr. Nageswaran GR
Dayananda Sagar College of
Dental Sciences, Bengaluru,
Karnataka, India

Dr. Savita AM
Head of the Department,
Department of Periodontics,
Dayananda Sagar College of
Dental Sciences, Bengaluru,
Karnataka, India

Dr. Archana R Naik
Reader, Department of
Periodontics, Dayananda
Sagar College of Dental
Sciences, Bengaluru,
Karnataka, India

Corresponding Author:
Dr. Nageswaran GR
Dayananda Sagar College of
Dental Sciences, Bengaluru,
Karnataka, India

Management of peripheral ossifying fibroma by combination of laser and flap surgery: A case report

Dr. Nageswaran GR, Dr. Savita AM and Dr. Archana R Naik

Abstract

Gingival growths may pose a challenge in clinical identification and diagnosis. They should be differentially diagnosed before deciding the appropriate treatment plan. Peripheral ossifying fibroma (POF) is one such benign overgrowth of the gingiva which is commonly observed in young adults with an incidence range of 8-9% of all gingival overgrowths. This article describes a case of a male patient who reported with a growth measuring around 1x2 cm² in the lingual aspect of the mandibular anterior teeth, hard in consistency, extending from 42 to 44. Diode laser excision followed by flap reflection and debridement was employed. The growth was diagnosed as peripheral ossifying fibroma based on the characteristic clinical and histopathological features. The patient was followed up for 1 year and no adverse events or recurrence was observed. Peripheral ossifying fibroma is a rare solitary enlargement which is frequently misdiagnosed. A definitive diagnosis is arrived at through histopathological examination.

Keywords: peripheral ossifying fibroma, diode laser, dystrophic calcifications, case report

1. Introduction

Benign gingival overgrowths of the gingiva are primarily attributed to local irritation and minor trauma. In 1972, Eversole and Rovin described peripheral ossifying fibroma (POF) as a reactive lesion of gingiva and the term POF was coined by Gardner in 1982^[1].

Ossifying fibromas of the oral cavity can be central or peripheral. 9.6% of all gingival overgrowths are considered as peripheral which account for around 3.1% of all oral lesions. POF occurs predominantly between the second and third decades of life (mean - 28 years), male: female ratio of 1.22:1^[2]. It is hypothesized that the growth arises due to the pluripotent cells in periodontal ligament and periosteum, which may undergo a metaplastic change into osteoblasts, fibroblasts, or cementoblasts^[3].

Soft tissue excision of various oral and gingival growths has been successfully carried out using thermal lasers of varying wavelengths. Laser permits a bloodless field and favours precise cutting and faster healing. Diode laser (800-980 nm) is an effective soft tissue laser for incision, hemostasis and coagulation and is well absorbed by pigmented tissues^[4].

The purpose of this case report is to emphasise the supremacy of application of diode laser in excision of this soft tissue oral lesion and highlight its advantages as compared to traditional surgical treatment.

2. Case Description

A 18 year old male patient reported with a complaint of swelling in the lower front teeth region for the past three months. He gave a history of a swelling which began as a small lesion and gradually increased in size within 3 months to reach the present size. He gave history of holding screws in the affected area during his working hours for the past 2 years. There was no contributing medical history. On clinical examination, a well defined circumscribed growth measuring around 1x2 cm was seen in relation to teeth 42,43,44 (figure 1a). The growth was pink in color, oval in shape with well defined margins, and irregular borders extending mesially from the mesiolingual line angle of 42 to mesiolingual line angle of 44 distally and from mandibular occlusal plane superiorly to mucogingival junction inferiorly. On palpation, the growth was nonpulsatile, non ulcerated and firm to hard in consistency. A pocket of 5mm depth was present between 42 & 43. On radiographic interpretation, alveolar crestal bone loss & loss of lamina dura was observed between 42 & 43 (figure 1b). A provisional diagnosis of ossifying fibroma was given based on the patient's history, clinical and radiographic features.

In most cases, management of ossifying fibroma includes surgical excision of the growth followed by thorough scaling and root planning of the teeth to remove all local factors. A partial or full thickness flap can also be elevated in order to preserve marginal gingiva. The treatment opted was diode laser excision followed by flap reflection and through debridement of the affected area.

Under local anesthesia, the growth was held using tissue forceps and excision was done with 970nm laser at 2W using 300um optical fiber (figure 2a). Thorough debridement was done with area specific curette (3/4) after reflecting a gingival flap in the interdental area. Scaling of the adjacent area was done to remove any calculus which could be a source of irritant. Sling sutures were placed (figure 2b). The biopsy specimen was preserved in 10% formalin and sent for histopathological examination (figure 2c).

Histopathological examination of the excised tissue revealed the presence of hyperplastic, parakeratinised stratified squamous epithelium with dense fibrocellular connective tissue composed of numerous collagen fibers, dilated capillaries and a few areas of dystrophic calcification. Also chronic inflammatory infiltrate predominantly composed of plasma cells and lymphocytes was seen (figure 3). The patient was reviewed after one week, one month and finally reported after one year (figure 4). Oral hygiene maintenance was not satisfactory. However the lesion had healed completely without any recurrence.



Fig 4: 1 year postoperative view

3. Discussion

Gingival lesions, either reactive or inflammatory account for over 90% of gingival biopsies. Peripheral ossifying fibroma develops continuously with the periodontal ligament and occurs in response to local irritation and minor trauma. Other names for the growth include peripheral fibroma, fibrous epulis, ossified fibrous epulis, peripheral cementifying fibroma, calcifying fibroblastic granuloma, or peripheral fibroma with calcification.

In this article, we describe a histologically diagnosed case of a peripheral ossifying fibroma and its management affecting the anterior lingual aspect of the mandibular gingiva. Possible etiological factors include local trauma or irritation such as dental plaque, calculus, microorganisms, masticatory force, ill-adjusted dentures or inadequate restoration [3]. The surface of the lesion could be either smooth or ulcerated with reddish pink colour and measures around 6-9 cm. Occasionally, radiographs may reveal foci of calcification dispersed in the lesion and superficial bone resorption. Histopathological evaluation of biopsy specimens reveals presence of parakeratinized epithelium, fibrotic connective tissue, endothelial proliferation, dystrophic calcifications [5]. The lesion has a high recurrence rate varying from 8.9% to 20% [6]. Possible causes for recurrence include incomplete excision, persistence of local irritants and repeated injury to the site [7].

In a recent case report by Kranti *et al.* [8] only soft tissue laser excision was employed. There is scarce data published in the literature where a combination treatment is performed. Karmakar *et al.* [9] reported a case where a combination of laser and scalpel excision was used. Our report could be the first case of its type where a combination of laser excision and flap reflection was done. In contrast to traditional surgical excision; lasers ensure a clear visualization of surgical field and more precise depth of excision by decreasing the bleeding through sealing off small vessels and also achieve simultaneous disinfection of the wound. [8]

In this report however, an additional procedure of raising the gingival flap was done to ensure thorough debridement of underlying tissues and to prevent recurrence.

4. Conclusion

Laser excision of peripheral ossifying fibroma by Diode laser can be an efficient treatment of choice. Further Case Series with longer follow up and prospective studies should be conducted to validate the results.



Fig 1: Preoperative view: a) growth in 42, 43 & 44 region b) radiograph showing bone loss between 42 & 43

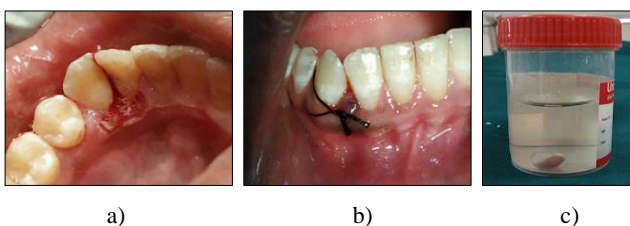


Fig 2: a) after laser excision b) flap sutured with sling suture c) excised mass preserved in 10% formalin

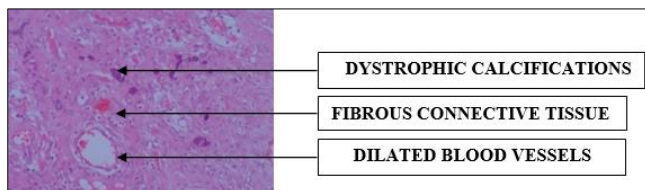


Fig 3: histopathological image showing areas of dystrophic calcifications and dilated blood vessels

5. References

1. Marianoa RC, Oliveira MR, Carvalho Silva A, Almeida OP. Large peripheral ossifying fibroma: Clinical, histological, and immunohistochemistry aspects: A case report. *Rev Esp Cir Oral Maxillofac* 2017;39(1):28-49.
2. Canger EM, Celenk P, Kayipmaz S, Alkantar A, Gunhan O. Familial ossifying fibromas: Report of two cases. *J Oral Sci* 2004;46:61-4.
3. Alerraqi E. An update on peripheral ossifying fibroma: case report and literature review. *Oral Maxillofac* 2017;21:99-100.
4. Deppe H, Horch HH. Laser applications in oral surgery and implant dentistry. *Lasers Med Sci* 2017;22:217-1. Link: <https://bit.ly/3nRrtTX>
5. Kendrick F, Waggoner WF. Managing a peripheral ossifying fibroma. *ASDC J Dent Child* 1996;63:135-8.
6. Marcos JAG, Marcos MJG, Rodriguez SA, Rodrigo JC, Poblet E. Peripheral ossifying fibroma-A Clinical and immunohistochemical study of 4 cases. *J Oral Sci* 2010;52:95-9.
7. Jain A, Deepa D. Recurrence of Peripheral Ossifying Fibroma: A Case Report. *Peop J Sci Res* 2010;3(1):23-5.
8. Kranti K, Ashwini S, Pramod N, Pragya. *J Dent Oroacial Res* 2017;13(2):66-9.
9. Karmakar S, Srinath R, Prakash S. A Novel Approach for the Treatment of Peripheral Ossifying Fibroma: A Case Report with 1Year Follow Up. *J Dent Lasers* 2018;12:36-40.