



ISSN Print: 2394-7489
ISSN Online: 2394-7497
IJADS 2023; 9(3): 23-26
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www.oraljournal.com
Received: 02-05-2023
Accepted: 04-06-2023

Dr. Aditi Radhakrishna Sangle
Department of Periodontology,
Pacific Dental College and
Hospital, Debari, Udaipur,
Rajasthan, India

Dr. Krishna Agarwal
Department of Periodontology,
Pacific Dental College and
Hospital, Debari, Udaipur,
Rajasthan, India

Dr. Neema Shetty
Head of Department &
Professor, Department of
Periodontology, Pacific Dental
College and Hospital, Debari,
Udaipur, Rajasthan, India

Dr. Aditi Mathur
Professor, Department of
Periodontology, Pacific Dental
College and Hospital, Debari,
Udaipur, Rajasthan, India

Dr. Ashish Bali
Reader, Department of
Periodontology, Pacific Dental
College and Hospital, Debari,
Udaipur, Rajasthan, India

Corresponding Author:

Dr. Aditi Radhakrishna Sangle
Department of Periodontology,
Pacific Dental College and
Hospital, Debari, Udaipur,
Rajasthan, India

Treatment of peripheral ossifying fibroma: A case report

**Dr. Aditi Radhakrishna Sangle, Dr. Krishna Agarwal, Dr. Neema Shetty,
Dr. Aditi Mathur and Dr. Ashish Bali**

DOI: <https://doi.org/10.22271/oral.2023.v9.i3a.1780>

Abstract

Aim: This report presents a case of fibroma with its clinical features, treatment, and diagnosis and follow up period.

Background: Fibroma is the lesion that occur in response to a stimulus within the oral cavity, and may result in aesthetic and functional issues related to mastication. Peripheral ossifying fibroma is considered to be reactive, non-neoplastic lesion that exhibit variant characteristics. This article describes a case of reactive lesion of gingiva and its treatment. This case report involved a female patient who presented with a chief complain of swelling in her maxillary right anterior teeth region since 6-7 months. Following a clinico-radiographic examination and histopathological confirmation, the final diagnosis for the case was determined to be peripheral ossifying fibroma. The lesion underwent treatment using an 810nm diode laser. The duration of follow-up for the case was for a period of one year. No recurrence was seen. **Conclusion:** It is recommended to implement appropriate measures for the complete eradication of reactive lesions to prevent their recurrence.

Clinical Significance: The case highlights the necessity of conducting thorough clinical, radiographic, and histopathological evaluations to ensure accurate diagnosis by dental practitioners and to develop an appropriate treatment strategy.

Keywords: Peripheral ossifying fibroma, focal fibrous hyperplasia, diode lasers, recurrence, biopsy

1. Introduction

Oral cavities frequently exhibit local reactive focal overgrowths. Focal fibrous hyperplasia, peripheral ossifying fibroma, peripheral giant cell granuloma, and pyogenic granuloma are all examples of localized reactive lesions that can manifest on the gingiva [1]. Neville [2] categorized the prevalent lesions of gingival overgrowth into distinct groups, which are as follows: Pyogenic granuloma, commonly known as pregnancy tumor, Peripheral ossifying fibroma, which is also referred to as ossifying fibroid epulis, peripheral fibroma with calcification, calcifying fibroblastic granuloma, and peripheral odontogenic ossifying fibroma, and Peripheral fibroma, which is also known as fibrous hyperplasia. These conditions are characterized by the growth of abnormal tissue in the peripheral regions of the body, particularly in the oral cavity. The nomenclature of these conditions varies, with multiple synonyms being used to describe them. The prevalence of these lesions is higher among females, except for the peripheral giant cell granuloma, which does not exhibit a consistent gender predilection [3]. This report details the case of peripheral ossifying fibroma with a comprehensive analysis of the clinical, histopathological, and radiographic outcomes.

Case description

A 64 -year-old female reported with the chief complaint of swelling in her upper right front teeth region for the past 6-7 months. Growth was associated with pain and pus discharge on brushing. The patient did not give any history of trauma. Intraoral examination (Fig.1) revealed poor oral hygiene and solitary, sessile growth on the area extending mesiodistally from the distal aspect of 11 up to the mesial aspect of the 15 regions. It was reddish pink in colour. The growth was oval and approximately 1.5 × 1.5 cm in size with a hard fibrous consistency. It was non-fluctuant and non-compressible with mild bleeding on probing. The clinical differential diagnosis for the growth was irritational fibroma, pyogenic granuloma, and

a provisional diagnosis of irritation fibroma concerning the 12,13, and 14 regions were made. On radiographic examination (Fig.2)-IOPA and CBCT revealed calcifications on the buccal alveolar crest i.r.t 12-13. All the necessary blood investigations were done and found to be within normal limits.

To remove the local irritants, full-mouth oral prophylaxis was performed. After getting informed consent from the patient, the growth was excised conservatively under local anaesthesia with an 810 nm diode laser (Fig.3) in contact mode. Osteotomy was done using a straight diamond bur to remove bony spicules. The L-PRF membrane (Fig.4) was prepared from the patient's blood and then applied to the operated region (Fig.5) to promote quicker healing and facilitate soft tissue regeneration, in the affected area. The patient reported no post-operative pain, and proper haemostasis was accomplished. Coe-Pak (Fig.6) was used to help stabilize the PRF membrane. The patient was prescribed with analgesic (Tablet Ketorolac-SP) three times a day for 3 days. Excised growth (Fig.7) was then sent for histopathological examination. Histopathological examination (Fig.8) under the scanner and low-power views displayed bits of tissue with epithelium and connective tissue stroma with bone trabeculae. High power view confirmed epithelium and connective tissue stroma features, and overall features after clinicopathological and radiographic correlation suggested the final diagnosis of Peripheral Ossifying Fibroma. The patient was reviewed after 1 year. The healing of the lesion was uneventful with no signs of recurrence for up to 1 year. (Fig.9)

Figure format



Fig 1: Pre-operative – intraoral view

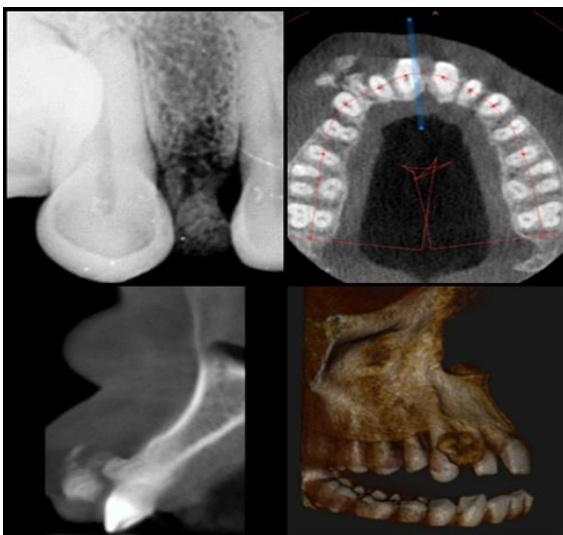


Fig 2: Pre-operative radiographic analysis – IOPA and CBCT)



Fig 3: Diode laser-810nm



Fig 4: Immediate post-operative



Fig 5: PRF placement



Fig 6: Coe-pak placement



Fig 7: Excised Specimen

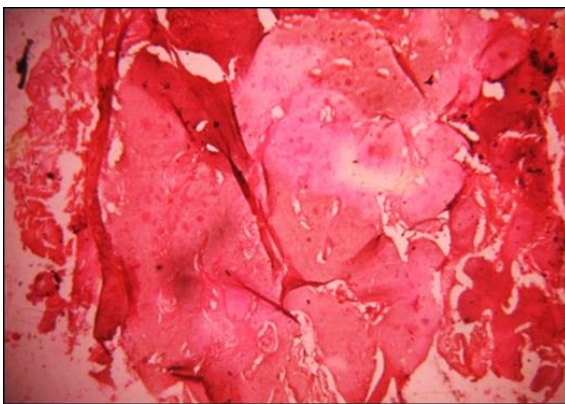


Fig 8: Histopathological analysis -scanner view



Fig 9: 1 year follow up

Discussion

Irritation is a common cause of fibrous epulis, focal hyperplasia of the gingiva, or alveolar mucosa. On clinical examination, it will manifest as an increase in the size of the gingiva in the interdental papillae. The gingiva usually occurs coral pink or like normal gingiva and is sometimes pale in color with a firm consistency. Local irritation resulting from malocclusion, mouth breathing, subpar restoration margins, or orthodontic or prosthetic appliances could be the cause of fibrous hyperplasia^[4]. While fibrous hyperplasia can emerge anywhere in the mouth, the buccal mucosa along the occlusal plane is where it is most often found. Common sites include the labial mucosa, tongue, and gingiva; however, Zarei MR *et al.* report that the lesion is most frequently located on the

gingiva^[5]. The incidence of the condition is observed to be twice as high in females as compared to males. In most cases, recurrences of this lesion are extremely uncommon. On the other hand, Cook found that out of 78 biopsy specimens, there were only three instances of recurrence^[6]. On the other hand the peripheral ossifying fibroma is a cellular entity that commonly generates bone tissue, with the possibility of cementum-like material or dystrophic calcification co-occurring. Female-to-male ratios ranged from 2:1 to 3:2, which supports Cundiff's^[7] findings that there is a clear preference for women. Peripheral ossifying fibroma frequently manifests in the anterior maxillary and mandibular regions, with a majority of cases (Over 50%) presenting in the incisor and canine regions^[8]. The ossifying fibroma has the potential to exhibit a diverse range of calcifications. The etiopathogenesis of this lesion is a topic of considerable debate in the academic community. The development of the lesion is influenced by various local etiological factors, including subgingival plaque and calculus, trauma, dental appliances, poor-quality dental restorations, microorganisms, food lodgment, masticatory forces, cells of periodontal ligament PdL, and iatrogenic factors^[9]. Although there is a tendency for such overgrowths of the gingiva to recur, maintaining excellent oral hygiene may prevent, postpone, or reduce the severity of recurrences of the enlargement^[6]. The recurrence rate of peripheral ossifying fibroma is estimated at 16-20%. The recommended approach for managing the gingival lesion involves eliminating local irritants and performing a conservative complete excision of the lesion, followed by regular monitoring to prevent its recurrence.

The application of lasers to eliminate soft tissue lesions has been a widely recognized and established procedure for a considerable period^[3]. Studies investigating the efficacy and safety of diode lasers for the elimination of minor exophytic lesions have indicated that this method is characterized by ease of application, appropriate coagulation, lack of suturing, and minimal levels of inflammation and pain. Additionally, diode laser treatment has been associated with accelerated recovery and wound healing time. Diode lasers are also a suitable option for the elimination of benign oral lesions such as ranula, mucocele, pyogenic granuloma, peripheral ossifying fibroma, and fibrous hyperplasia^[10]. In both cases, the utilization of a diode laser was used in contact and pulsed mode to prevent possible thermal injury to the tissue. Additionally, the PRF membrane was used in the case to cover the exposed bone and aid in soft tissue regeneration. PRF membrane has an autogenous source, is inexpensive, has no risk of allergic or adverse effects, and promotes better reconstruction for superficial wounds^[11].

Conclusion

In conclusion, diode laser treatment is a highly effective option for the treatment of various benign oral lesions, including peripheral ossifying fibroma. With accelerated recovery and wound healing time, diode lasers are a preferred choice due to the lack of bleeding and pain during the surgical procedure, the absence of suturing requirements, and the lower intensity of postoperative pain. Therefore, diode lasers can be considered the primary option for minor surgical treatment in the oral cavity. As peripheral ossifying fibroma and fibrous hyperplasia are pathological tissue growths that have a tendency for recurrence. The clinical diagnosis of the condition under consideration is challenging, and therefore, confirmation of the final diagnosis requires radiological and histopathological examinations. To avoid the recurrence of a

reactive lesion, it is advisable to perform a complete excision of the lesion.

Conflict of Interest

Not available

Financial Support

Not available

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How to Cite This Article

S Aditi Radhakrishna, A Krishna, S Neema, M Aditi, B Ashish. Treatment of peripheral ossifying fibroma: A case report. *International Journal of Applied Dental Sciences.* 2023;9(1):xxx-xxx.

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