

LASER ASSISTED EXCISION OF RECURRENT PERIPHERAL OSSIFYING FIBROMA – A CASE REPORT

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ABSTRACT

Oral cavity is prone to occurrence of various non-neoplastic and neoplastic overgrowths. Peripheral ossifying fibroma is one of the non-neoplastic lesions that arises from the gingiva. Though the etiology of Peripheral Ossifying Fibroma is mostly suggested to be of reactive in nature, there are reports that claim them to be of odontogenic in origin. Peripheral ossifying fibroma mostly occur in the maxillary anterior teeth region from the interdental papilla. It occurs in all age groups and has a female predilection. Peripheral ossifying fibroma has a high rate of reoccurrence. This report represents a case of recurrent peripheral ossifying fibroma in a 24-year-old male, following its excision 6 months ago using scalpel and its management with LASER assisted periodontal surgery.

Keywords: Peripheral ossifying fibroma, laser, biopsy, periodontal disease.

INTRODUCTION

Reactive overgrowths frequently occur in the oral cavity and most of these lesions arise from the gingiva. These lesions almost have similar clinical presentations for which histopathological diagnosis is a must to provide definitive diagnosis [1]. These lesions have a tendency to recur when the underlying etiology is not completely resolved. Peripheral ossifying fibroma (POF) is one such overgrowth that originates from the gingiva [2]. POF accounts for 9.6% of gingival overgrowth lesions [3]. This case report describes the clinical presentation, histopathological features of recurrent peripheral ossifying fibroma and its management by LASER assisted excision in a 24-year-old male patient.

A CASE REPORT

A 24-year-old male reported to the Department of Periodontology, Karpaga Vinayaga Institute of

Dental Sciences, with a chief complaint of gingival swelling in the lower left front tooth region. History of fever, cold and any other symptoms related to covid positivity was asked and ruled out. His past dental history revealed he had a similar swelling in the same region one year back. It was diagnosed histopathologically to be Peripheral ossifying fibroma and it was excised surgically using scalpel and bp blade. After the surgery he was asymptomatic for about 10 months, after which the swelling started to grow in the same region.

On clinical examination, an erythematous swelling was present in relation to 33, 34. Swelling involved the interdental papilla on the labial aspect and extended to the lingual aspect till the mucogingival junction. The swelling measured 5mm x 5mm x 3mm in size. The swelling was present with diffuse borders and extended from the distal surface of canine to mesial surface of premolar. The swelling had a smooth non ulcerated surface and was sessile.

Calculus and soft Debris was present in interdental space between canine and premolar. The swelling was not painful, afebrile and was immobile. No bleeding or pus discharge was present. Based on previous history provisional diagnosis of peripheral ossifying fibroma was given. Treatment plan included excision of swelling mass using diode laser.

FIGURE 1: PRE-OPERATIVE



PROCEDURE:

FIGURE 1: PRE-OPERATIVE

Thorough ultrasonic scaling was performed to remove the local factors. Since the patient reported during the COVID 19 lockdown period he was instructed to undergo RT-PCR test 24 hours prior to surgery and come with the report. Patient reported on the day of surgery with test results which was negative. And the patient's body temperature was 96.7 °F. Necessary safety and precautionary measures including personal protective equipment (PPE) kit for the clinician and assistants, safety goggles, high vacuum suction, saline irrigation were followed. Anesthesia was achieved by local infiltration of lignocaine hydrochloride (1:200000). Indilase diode laser of wavelength 980nm was used to excise the swelling mass. The power setting was kept at pulsed mode for excision. Following which laser was set at 2W for removing the tissue remnants. Care was taken to ensure no remnants of the mass was left behind in

the surgical site.



FIGURE 2: LASER ASSISTED EXCISION OF POF IN RELATION TO 33, 34

The excised mass of tissue was stored in 10% formalin and since it is a recurrent swelling of the same nature in the same site, it was decided to include the expert opinion of oral pathologist. The details of the patient and tissue was transferred to the Department of Oral Pathology in Karpaga Vinayaga Institute of Dental Sciences for biopsy study.

BIOPSY REPORT:

Microscopic examination revealed that the excised tissue was overlined by hyperplastic stratified squamous epithelium. The sub epithelium shows cellular dense fibrous stroma consisting fibroblastic to stellate shaped cells. Amidst the fibroblastic stroma are seen foci of osteoid rimmed by proliferating osteoblast.

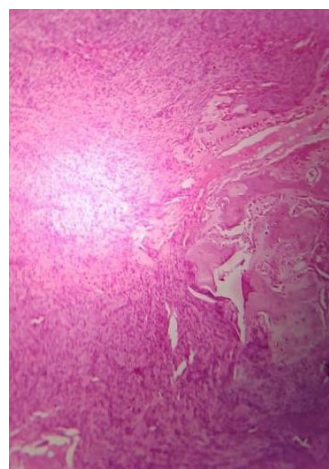


FIGURE 5: HISTOPATHOLOGIC IMAGE

The final diagnosis after the biopsy of the specimen was confirmed as peripheral ossifying fibroma. The swelling recurred for the second time in the same region within the span of one year. The patient was

asked to report for review once every week for the first month. The healing was satisfactory and patient was asked to come for routine checkup every six months. Patient reported after one year with no symptoms or recurrent swelling.



FIGURE 3:1 WEEK POST OPERATIVE HEALING



FIGURE 4: 1 YEAR POST OPERATIVE HEALING

DISCUSSION:

Peripheral ossifying fibroma is believed to be of mostly reactive in nature. It can occur at any age but frequently occurs in children and young adults. It has a female predilection, with the most occurrence in the anterior maxillary region [4]. It commonly arises from the interdental papilla with a sessile or pedunculated base. It appears to be red to pink in color. It is mostly painless swelling and the surface may or may not be ulcerated [5].

Histopathologically POF shows fibrous connective tissue with fibroblasts and myofibroblasts with mineralised material representing the presence of bone formation or cementum-like material or rarely dystrophic calcification [6]. The POF is said to be of periodontal origin due to the presence of oxytalan fibres. Radiographically superficial erosion of bone can be appreciated [7].

A few clinical differential diagnoses for POF are Peripheral giant cell granuloma. Lobular capillary

haemangioma, etc. the POF has a higher rate of recurrence of 9% to 20%. Recurrence is attributed to improper elimination of irritants and incomplete surgical removal of the lesion.

Due to its recurrent nature the lesion is surgically excised to the periosteum and thorough removal of irritative sources. Though conventional excision carried out using scalpel have greater precision, there are difficulties of maintaining a bloodless field and sterile environment, as these can result in chances of recurrence of the fibroma. To overcome these shortcomings that caused the recurrence as in this case described, LASER was used as an alternative for the excision of POF and further debridement of the soft tissue remnants.

Diode laser has maximum absorption by the soft tissues and haemoglobin thus it ensures effective coagulation promoting easy haemostasis [8]. Laser also has advantages of less post operative pain, minimal scarring and wound contraction [9]. This novel approach thus aids in lesser rate of recurrence. Thus, we conclude that use of LASER as an alternative to the conventional surgical therapy has been advantageous over the scalpel method by effective regression in the frequency of recurrence of Peripheral Ossifying Fibroma.

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