



Case Report

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A Precise and Esthetic Approach for The Excision of Peripheral Ossifying Fibroma Under Surgical Microscope- Case Reports

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Abstract

Peripheral ossifying fibroma (POF) is third most common lesion of all localized hyperplastic lesions. Occurring most frequently in first and second decades of life in the anterior maxillary region which interferes with normal functioning. Since these lesions have high recurrence rate, excision under surgical microscope was planned as it offers greater versatility than conventional techniques by providing a range of magnification. Here we report 2 cases of POF which was excised under surgical microscope to achieve precise excision and enhanced esthetics.

Keywords: Esthetics, Periodontal Microsurgery, Peripheral Ossifying Fobroma, Precision.

INTRODUCTION

A therapeutic revolution, using magnification and microsurgery in periodontal therapy has increased the success rate of both non-surgical and surgical treatment. Various procedures have demonstrated to be potential for treatment of periodontal diseases, but use of surgical microscope and microsurgical instruments increases the ability of clinician's precision in the manipulation of tissues during surgery [1]. Any treatment done would prove insufficient to stop the progression of the disease. In this case the practitioner used magnification combined with minimally invasive techniques, aiming at better exposure of the surfaces to debride and also at reconstructing soft tissue architecture. Magnification is the chief asset to provide better healing, reduced pain and insignificant post-operative scarring than conventional surgical procedures. The main advantage of the operating microscope is the ability to provide acute visual inspection [2]. Taking this advantage into consideration in the present case report we aimed to excise peripheral ossifying fibroma, which is classified under gingival diseases- non dental biofilm induced in the revised classification of periodontal and peri-implant diseases and conditions 2017 [3]. Peripheral ossifying fibroma is a lesion with high recurrence rate, under surgical microscope as it offers greater versatility than conventional techniques by providing a range of magnification with superior optical performance which results in enhanced wound healing while addressing the patient esthetic needs. This following case report describes 2 cases of peripheral ossifying fibroma in the maxillary anterior region being excised with precision under surgical microscope to achieve esthetically pleasing results.

CASE REPORT 1

A 45-year-old male patient reported to the Department of Periodontics, with a chief complaint of swelling in the upper front tooth region since 3 months which was slowly increasing from a peanut size to the present size as shown in fig:1 a. Personal history revealed habit of smoking once daily for the past 6 years. The patient was found to be systemically healthy.

On Intraoral examination, a solitary gingival overgrowth was seen between 11 and 21 interdentially (fig: 1 a, b) measuring approximately 1.5 x1 cm, which is pedunculated with a broad base. The overlying mucosa

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appeared inflamed, erythematous, and non-ulcerated. On palpation, the lesion was firm in consistency with minimal bleeding on probing.

Intraoral periapical radiograph (IOPAR) revealed minimal crestal horizontal bone loss with discontinuity and thickening of lamina dura. After phase I therapy, surgery under microscope was planned to completely excise the lesion. The treatment plan was informed to the patient and consent was obtained.

Surgical procedure

After the administration of adequate local anaesthesia, the lesion was excised under the surgical microscope using microsurgical blade no 63 with a magnification of 0.4x. Care was taken to involve the uninvolved healthy gingiva of 1mm around from the border of the lesion. Soft tissue tags were removed until a firm bed was found. Once the lesion was completely excised, it was submitted for histological analysis and the surgical site was protected with a periodontal dressing. The analgesic was prescribed as required and advised to use 0.12% chlorhexidine mouth wash twice daily for 1 week. The patient was recalled at 15 days, 1 month and 3 month post operatively and showed satisfactory healing with no evidence of recurrence on follow up. (Figs 1: c-f)

Histopathological examination

Microscopically the lesion revealed the presence of parakeratinised stratified squamous epithelium with elongated rete ridges. The underlying connective tissue was comprised of large proliferating plump fibroblasts intermingled within fibrocollagenous stroma. The connective tissue showed distinct calcification in the form of single or multiple interconnecting trabeculae of bone. There was also evidence of engorged blood vessels with RBC's and inflammatory infiltrates compromising mainly of lymphocytes and plasma cells suggestive of Peripheral Ossifying Fibroma. (Fig:1.g)

CASE REPORT 2

A 37-year-old female patient reported to the Department Of Periodontics, with a chief complaint of swelling in the upper front tooth region since 2 months. Her habits revealed areca nut chewing since 5 years. She also gave a history of the swelling gradually increasing in size for the past 2 months. The patient did not have any significant medical history.

Intraoral examination revealed a solitary gingival overgrowth in between 21 and 22 interdentally (fig:2 a) measuring about 1x0.9cm with a broad base (fig:b,c). The overlying mucosa appeared slightly erythematous to the surrounding tissue and non-ulcerated. On palpation, the lesion was firm in consistency and the surface was irregular. Intraoral periapical radiograph (IOPAR) of left maxillary anterior region revealed areas of faint, irregular radiopacity with 1-2 mm of crestal horizontal bone loss. After phase I therapy, excisional biopsy under surgical microscope was planned. It was informed to the patient and consent was obtained for the same.

Surgical procedure

Surgical procedure followed was similar to the previously described case 1. 15 days, 1 month and 3 month post operative follow up revealed satisfactory healing with no evidence of recurrence (Figs 2: a-f). The excised biopsy specimen was then submitted for histological analysis.

Histopathological examination

Microscopically the lesion revealed the presence of para-keratinised stratified squamous epithelium and underlying connective tissue. Epithelium shows presence of elongated rete ridges. Underlying connective tissue is cellular with presence of fibro-collagenous stroma

and along with several round to ovoid cementum like calcification (fig 2.g).

A diagnosis of Peripheral ossifying fibroma was made considering both clinical and histopathological findings.

DISCUSSION

As patients nowadays are becoming more aware of the esthetics in dentistry, there is an increasing demand for minimal surgical intervention. The question arises as how do we enhance optimal tissue response and long term health while addressing the esthetic concerns of the patient. Our focus in this article is to evaluate if microscope assisted surgical excision of the lesion helps to create more precise, more healthy, and aesthetically pleasing results compared to conventional procedure.

Microsurgery refers to the surgical procedure performed under a microscope which embraces three distinct values. First, is enhancement of motor skills to improve surgical ability. Second, is the decreased tissue trauma at the surgical site, which is apparently due to use of microsurgical instruments and a reduced surgical field. Third, is the application of microsurgical principles to achieve passive and primary wound closure [4]. It helps to detect even the tiny changes in regard to shape of the gingiva caused by gingival inflammation and different colors, different magnitudes of curvatures, compared to areas which are not inflamed. High level magnification also improves the ability of dentist to observe the very minute details at and below the gingival margin which aid in enhanced treatment outcomes of periodontal therapies [5].

The aim of the present case report was to excise the lesion to avoid re-occurrence while maintaining the esthetic need of the patients. Gingival enlargement is a common finding in daily clinical practice. Peripheral ossifying fibroma represents 2-9 % of all gingival lesions [6]. It is a focal, reactive, non-neoplastic, tumor-like growth of soft tissue often arising from the interdental papilla [7]. It comprises up to 60 % cases in the maxilla with 50 % of them presenting in the anterior region [8]. The pathogenesis of this lesion is uncertain and may be associated with the presence of plaque, calculus, dental prosthesis, faulty restorations, and dental appliances. Management of this lesion is challenging when it is in the anterior region due to an unaesthetic outcome after conventional surgical procedure. Since POF has a very high recurrence rate due to its reactive proliferation, incomplete excision, failure to eliminate local irritants, and difficulty in access during surgical excision [7]. Hence surgical microscope was utilized in this present case report to overcome the untoward drawback of the lesion as mentioned earlier.

The histopathological report of the lesion showed stratified squamous epithelium covering elongated rete pegs and the underlying connective tissue comprised of plump fibroblasts, fibrocytes, fibrillar stroma, and areas of mineralization with inflammatory infiltrate comprising of plasma cells. Calcifications were seen in the form of single or multiple interconnecting trabeculae of bone and small globules. The dystrophic calcifications are usually seen in early, ulcerated lesions, whereas the older, mature, non-ulcerated lesions show well-formed bone and cementum-like material, which was evident in the present case also (fig 2.g). Most of the localised gingival lesion in the oral cavity show similar characteristic appearance hence histopathological analysis should be done to provide evidence necessary to confirm the diagnosis of the lesion.

Even after 1 year post-operatively there was no sign of recurrence of the lesion in either of the cases while the patient was satisfied with the aesthetic outcomes post-operatively. These results could be attributed to the precise excision rendered due to the use of microscope with enhanced visual acuity. However there are only few studies in literature

that have attempted to excise localised gingival lesion under the surgical microscope and hence further more studies are required in this field.

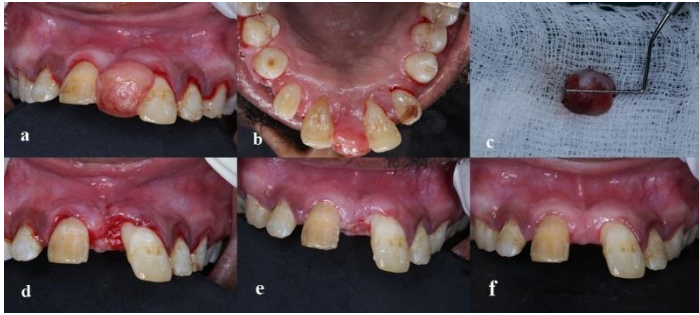


Figure 1: a) Preoperative View Of POF. b) Palatal View Of The Lesion. c) Measurement Of The Excised Lesion. d) Immediate Post Operative View. e) 1 Month Post Operative View. f) 3 Month Post Operative View.

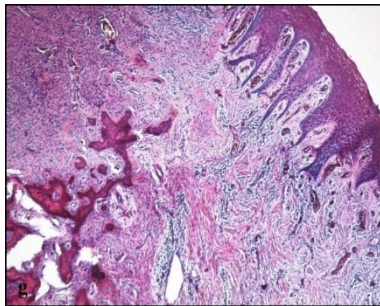


Figure 1: g) Histology Of Peripheral Ossifying Fibroma (H&E staining at 10 x magnification)



Figure 2: a) Preoperative view of POF in the maxillary anterior. b & c) Measurement of the lesion using a periodontal probe. d) Microsurgical excision of the lesion. e) Immediate post operative view. f) 1 month post-operative view.

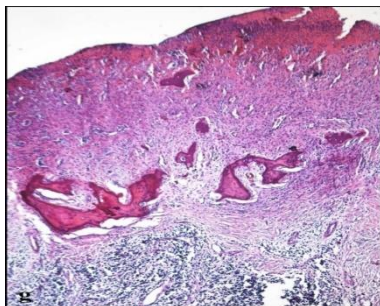


Figure 2: g) Histology Of Peripheral Ossifying Fibroma (H&E staining at 10 x magnification)

CONCLUSION

After thorough search literature provides no evidence of peripheral ossifying fibroma being excised under surgical microscope. Hence an attempt was made to excise it under surgical microscope which revealed satisfactory healing with aesthetically pleasing results. As the benefits of

magnification in periodontal surgical procedures are realized, its incorporation in periodontal practice at global level will become a treatment standard in the future.

Conflict of interest

The author reports no conflicts of interest.

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