

The Endo-Perio Dilemma: Treating It the Multidisciplinary Way

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ABSTRACT

Background: Endo-perio lesions are frequently encountered due to the intimate relationship between the pulp of a tooth and the surrounding periodontium. They have always been a challenge to the clinician in diagnosis and treatment due to its varied pathogenesis. This is a case report of a 31 year old male patient, diagnosed with a primary periodontal and secondary endodontic lesion with guarded prognosis with respect to left first premolar. He was treated with the unique approach of endodontic therapy followed by guided tissue regeneration. Favorable outcome was seen with the tooth restored to function. Patient was kept on regular maintenance. To have the best prognosis, a combined endo-perio case must be treated after consultation with the concerned specialities.

Keywords: Endo-perio, Apicectomy, PRF, xenograft, GTR membrane.

INTRODUCTION

The pulp and the periodontium of the tooth have embryonic, anatomic and functional inter-relationship. Embryonic development is responsible for the anatomical connections which remain throughout the life of the tooth.¹ Simring and Goldberg in 1964 first described the relationship between periodontal and pulpal pathology.² It has been a subject of speculation, confusion and controversy for many years. Due to the many possible pathways for the spread of inflammation and infection from one component to the other, they pose a difficulty in diagnosis and treatment.

The term perio-endo lesion describes lesions formed due to inflammatory products found in both the periodontium and pulp. The continued apical progression of a periodontal pocket may lead to the pulp becoming necrotic due to infection entering via lateral canals or the apical foramen.³

The effect of chronic periodontitis on the vitality of the pulp is controversial. It has been reported that pulpal changes resulting from periodontal disease occur when the apical foramen is involved.⁴ There is a strong correlation between the presence of microorganisms in root canals and their presence in periodontal pockets of advanced periodontitis. Failure of any periodontal treatment occurs when the presence of a necrotic pulp has not been diagnosed and no endodontic treatment.⁵

CASE REPORT

A 31 year old male patient reported to the Department of Periodontics with the chief complaint of dull pain in the upper left back tooth region since 1 month. On clinical examination, there was inflammation of attached gingiva, pain on percussion with a probing pocket depth of 13 mm (Fig 1) at the distofacial aspect and grade I mobility in relation to the upper left first premolar. Pulp

Received: Jan. 26, 2016; Accepted: Mar. 13, 2016

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Fig 1: Preoperative probing pocket depth.

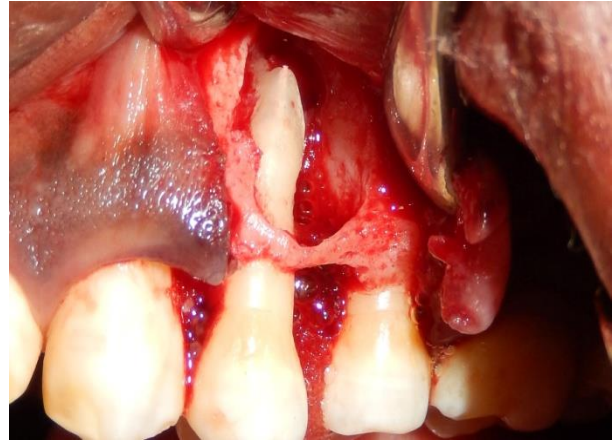


Fig 4: Post debridement with extruded gutta percha.



Fig 2: Preoperative IOPA.

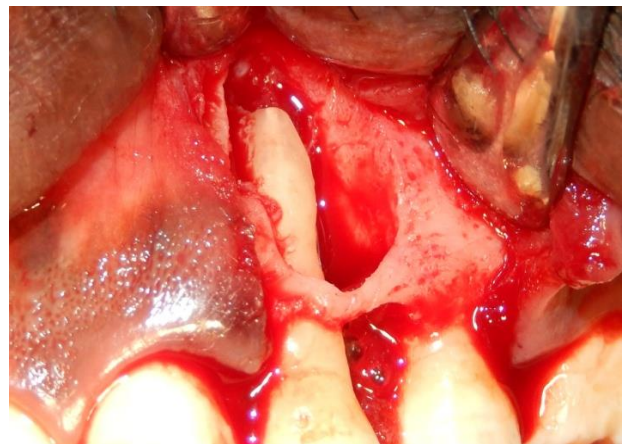


Fig 5: Post apicectomy.



Fig 3: Post endodontic IOPA.



Fig 6: PRF and Biogen bone graft placed.

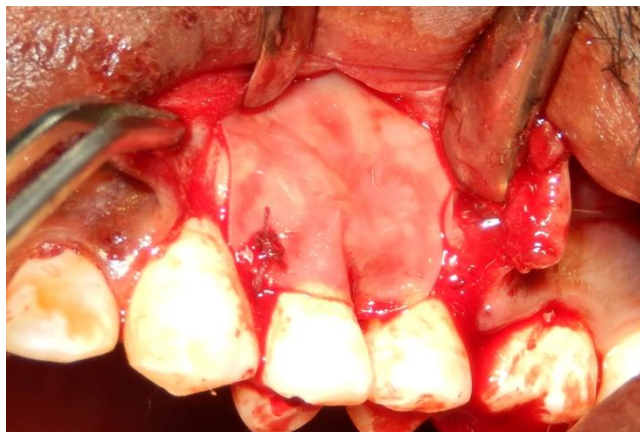


Fig 7: GTR membrane placement.



Fig 8: Follow up probing pocket depth with prosthesis.



Fig 9: Follow up IOPA.

vitality test result stated the tooth to be non-vital. Radiographic examination revealed severe bone loss around the apex, distal and buccal aspect of the tooth (Fig 2), all the findings indicating it to be a combined endo-perio lesion. The initial phase of treatment consisted of scaling and root planing. Root canal therapy was performed.

After 3 months, the patient was recalled. It was diagnosed as primary periodontal lesion with secondary endodontic involvement. He was explained about the questionable prognosis of the teeth and was willing to go ahead with the treatment. The regenerative surgical procedure was planned. Radiographic examination showed presence of extruded gutta percha cone through the apex of the buccal root (Fig 3), hence apicectomy was planned alongside.

Under local anesthesia, a mucoperiosteal flap was raised followed by curettage. A large defect extending beyond the apex was seen with just a rim of the marginal bone intact. The lingual cortical plate was intact and gutta percha cone extruded out of buccal root was seen (Fig 4). Apicoectomy of the buccal root was carried out (Fig 5). As the defect was of considerable dimensions Biogen™ bone graft mixed with PRF (platelet rich fibrin) was placed (Fig 6), Healiguide™ membrane of adequate dimension was placed and secured with Vicryl sutures (Fig 7).

Flap was repositioned and secured with sutures and Coe pak™ was placed. Radiograph was taken. Antibiotics and analgesics regimen were explained to the patient. Sutures were removed after 10 days and the wound healing was satisfactory. The patient was put on regular recall. A crown was fabricated and placed and optimal sluiceway was maintained so that the area became self cleansable. On follow up at 9 months, the probing depth reduced from 13 to 4 mm (Fig 8). Radiographically there was considerable bone formation after 6 and 18 months (Fig 9). Mobility was absent. The patient has been followed up for 18 months and the results are stable.

DISCUSSION

PRF is a regenerative material, first developed by Choukroun et al. in France in 2001.⁶ GTR (Guided tissue regeneration) concept was the work of Melcher.⁷ Epithelial cells migrate

approximately 10 times faster than other periodontal cells types.⁸ GTR prevents this epithelial cell migration and allows true regeneration to occur.

The novel use of autologous platelet concentrate has proved to be successful in the treatment of infrabony defects. Placement of a barrier membrane and underlying xenograft and PRF resulted in a considerable amount of dense and hard tissue radiographically. El-sharkawy et al.⁹ observed the regenerative potential of PRF and suggested that the administration of growth factors in tissue regeneration procedures for the treatment of intrabony defects, furcations, and cyst cavities. The use of PRF in dentistry as a way to enhance the body's natural wound healing mechanisms is under intense study.

Initial endodontic therapy was followed by periodontal therapy after 3 months. This sequence of treatment allows sufficient time for healing and better assessment of the periodontal condition. There is a reduced risk of infection with bacteria in the initial healing phase. Although healing of an endodontic lesion is highly predictable, the regeneration of periodontal tissues is questionable when associated with it.

Result of the case presented here show that the combined treatment with PRF, xenograft and GTR is effective in treating combined perio-endo lesions. More clinical research is required to assess the long-term effectiveness of this combined therapy as an adjunct to endodontic therapy in the treatment of combined defects to salvage teeth on a long term basis.

CONCLUSION

The success of combined periodontal and endodontic therapy depends on the resolution of both disease processes. With the advent of new regenerative materials, successful periodontal treatment of compromised lesions is predictable and successful.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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