

Management of Endo-Perio Lesion with Regenerative Procedure- A Case Report

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ABSTRACT

The endodontium and periodontium are closely related and diseases of one tissue may lead to the involvement of the other. The collective existence of pulpal problems and inflammatory periodontal disease can complicate diagnosis and treatment planning. Furcation involvement presents major challenges in endodontic therapy with periodontal involvement. The treatment of furcation involvement includes open flap debridement, bio-modification of root surface and various regenerative procedures including GTR and bone grafts. Synthetic bio-inert materials are currently used as an alternative to autogenous bone graft. The purpose of this case report is to analyse the efficacy of Hydroxyapatite graft material & barrier membrane to regenerate bone in a deep furcation defect. A 36-year male patient with an endo-perio lesion in the right mandibular first molar was initially treated with endodontic therapy. Patient exhibited probing depth of 10 mm & on IOPA it showed furcation involvement with intrabony defect. Following endodontic treatment, periodontal defect was treated using G-Bone along with GTR membrane. Follow up of the patient was done at 1 and 6 month to evaluate the condition of the defect post treatment.

KEYWORDS: GTR, G-Bone, Endo-Perio Lesion

INTRODUCTION

Simring and Goldberg in 1964 first described the true relationship between the periodontal and pulpal disease. Periodontium and endodontium are interrelated as because the disease of one leads to the involvement of the other tissue. Furcation involvement is a periodontal involvement in the interradicular area of bone of multirooted tooth and is a major challenge in endodontic therapy.¹ Preservation of the natural dentition is the final goal of dental therapy. In periodontics, the goal is to maintain the natural dentition and to restore lost periodontium.²

A good prognosis for combined endodontic and periodontal (endo-perio) lesions, may be obtained by endo-perio therapy. However, when a significant loss of the periodontal attachment apparatus and osseous structure occurs, the long-term prognosis becomes poor.³ Pulp and periodontium are embryonically, anatomically and functionally interrelated. For the treatment of furcation involvement, many treatment modalities have been proposed which includes open flap debridement, biomodification of root surface and regenerative procedures including bone graft and GTR.⁴

CASE REPORT

A male patient aged 36 years, complained of pain and pus discharge from right mandibular first molar since 3-4 months. One year back, root canal treatment was performed.

On clinical examination, probing depth was 10 mm on distal aspect of 46 and there was no mobility. Buccal gingiva showed slight swelling and clear signs of inflammation and sinus tract opening in relation to 46. Periapical radiograph showed a bone loss extending to root apex of 46 in addition to the periapical radiolucency (Fig.1).



Figure 1- Periapical radiograph showed a deep bony defect extending to root apex of 46.

Therefore, considering the dental history, clinical and radiographic examination, the diagnosis was combined endodontic-periodontal lesion, according to Simon classification 1972 (Table.1).

Emergency treatment done was abscess drainage with a

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Simon et al classification of endo-perio lesions :	
1.	Primary endodontic lesion ,
2.	Primary periodontal lesion ,
3.	Primary endodontic lesion with secondary periodontal involvement ,
4.	Primary periodontal lesion with secondary endodontic involvement ,
5.	True combined lesion ²

Table 1: Simon classification

prescription of antibiotic regimen and analgesic for five days. A complete blood investigation was done and all the values were within normal limits. Reevaluation of patient after five days showed decrease in the swelling and inflammation. After evaluation of Phase I therapy, a periodontal regenerative procedure using alloplastic osteoconductive bone graft material was instituted. A full thickness mucoperiosteal flap was elevated under local anesthesia (Fig.2). On surgical debridement, a Grade II furcation involvement was evident and filled with the bone graft material consisting hydroxyapatite crystals, barrier membrane placed over the bone graft, the flap sutured with 4-0 black silk sutures and the periodontal dressing was applied and post-operative instructions were given (Fig.3,4,5 and 6).

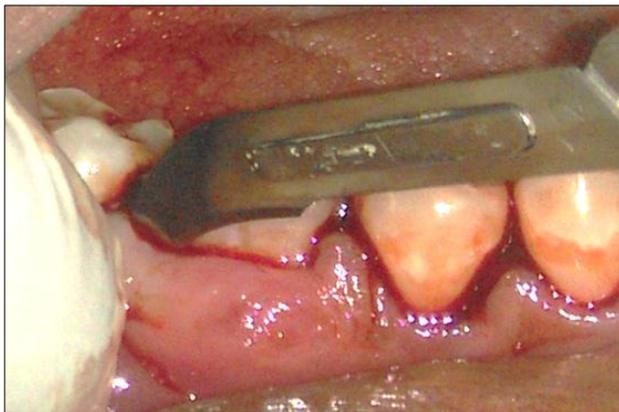


Figure 2- Elevation of full thickness mucoperiosteal flap



Figure 3- Surgical debridement, Grade II furcation involvement evident

Post-operative healing was satisfactory with minimal discomfort. Post-operative medications included antibiotic and analgesic for five days. Patient came for follow-up after one & six months (Fig.7 And Fig.8).



Figure 4- Bone defect filled with bone graft material consisting hydroxyapatite crystals



Figure 5- Barrier membrane was placed over the bone graft



Figure 6- flap was sutured with 4-0 black silk sutures.



Figure 7- post operative radiograph after 1 month.

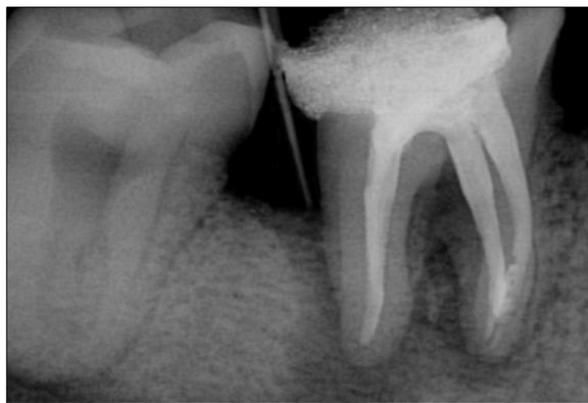


Figure 8- post operative radiograph after 1 month.

DISCUSSION

Generally, in a case of combined endo-perio lesion, an adequate endodontic therapy would result in healing of the endodontic component and the periodontal repair/regeneration would finally depend on the periodontal prognosis.¹

Recent data suggests that a number of common types of viruses, fungi and bacteria are involved in pathogenesis of periodontal and endodontic disease. Initially there is an increase in periodontal pathogens in periodontal pockets and then involvement in pulpal and periapical pathologies.⁵

Endo-perio lesion is a clinical manifestation of the pathologic/inflammatory intercommunication between pulpal and periodontal tissues via open structures such as apical foramina, dentinal tubules, and lateral accessory canals.⁶

Prognosis of endodontic and periodontal therapies primarily depends upon the severity of periodontal disease and the response to periodontal treatment. Range of symptoms is from slight discomfort to severe pain, tenderness of gingiva, swelling, tooth mobility, tooth elevation, the sensitivity of the tooth to palpation. Suppuration either spontaneous or after pressure on the abscess, combined with rapid tissue destruction and deep pocket formation can be seen.⁷

Examination of radiograph shows some degree of bone loss, ranging from a widening of periodontal space to a dramatic radiographic bone loss. Management of periodontal abscesses recommended protocol is: drainage through the pocket or stab incision to the most fluctuant

area. The definitive treatment was been carried out after one week.⁷

As there was Grade II furcation defect with deep periodontal pocket 10mm on distal aspect in relation to 46, Hydroxyapatite [$\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2$] bone graft materials was used. It is biocompatible and osteoconductive material that offer a chemical environment and a surface conducive to new bone formation.⁸

The most well accepted outcome of any furcation therapy would be the closure of the furcation by the regeneration of the lost attachment apparatus.

CONCLUSION

Endo - perio lesions present a diagnostic and treatment predicament. Treatment suggested for periodontal abscess with Grade-II furcation is root canal treatment followed by periodontal flap procedure with bone graft placement in the furcation of the involved tooth could result in complete healing of tooth, which was been considered hopeless.

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