CASE REPORT

SECONDARY PERIODONTAL MANAGEMENT OF SYMPTOMATIC ROOT CANAL TREATED TOOTH- A CASE REPORT

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ABSTRACT

Endo-perio lesions mostly occur due to the proximity of anatomic and vascular connections between the pulp and the periodontium. Endodontic-periodontal combined lesion pose a clinical dilemma primarily because of difficulty in choosing the right treatment and prognosis determination. If primary endodontic lesion is left untreated, it can result in the secondary involvement of periodontal collapse. This case report presents the diagnosis and treatment adopted for a primary endodontic lesion with secondary periodontal involvement by means of a combined therapy involving GTR and osseous graft.

Key words: endo perio lesion, furcation, regenerative therapy, swelling.

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INTRODUCTION

Around 50% of tooth mortality results due to pulpal and periodontal problems. A common functional, anatomical and embryonic interconnection is shared by these tissues. The strong relationship between periodontal and pulpal tissues and the associated diseases can be traced to the origin of embryological development, where they share a common mesodermal source as origin.[1]

In 1972, Simon, Glick and Frank classified endoperio lesions into the following categories[2]

- Primary endodontic lesion
- Primary periodontal lesion
- Primary endodontic lesion with secondary periodontal involvement
- Primary periodontal lesion with secondary endodontic involvement
- True combined lesion

Treatment and prognosis of the individual lesions depend upon the diagnosis, extent of pulpal and periodontal involvement and systemic conditions of the patient. In case of an endodontically treated tooth with periodontal involvement, furcation involvement is a matter of concern. The greater incidence of accessory canals in molar teeth supports the association of the role of pulpal pathology in furcation involvement.[3]

Case report

A 54 year old female patient came to the out patient department with a chief complaint of pain and swelling in the lower right back tooth since 4-5 days. The patient had severe pain for the past few days. She gave a history of black coloured restoration done long back in the lower right back tooth region.

On clinical examination an amalgam restoration was present in relation to 46. [Figure 1] The tooth was tender on percussion. Swelling could be appreciated along the buccal mucosa of 46. On radiographic examination secondary caries was observed along the distal aspect approximating pulp.

The proposed treatment plan was conventional root canal treatment of 46. Prior to the start of treatment, informed consent was obtained from the patient. Root canal retreatment was initiated with adequate access preparation of 46. In the first appointment cleaning and shaping was completed and proper irrigation protocols were followed and intra canal medicament was placed. Working length was calculated using Woodpex 3 apex located which was correlated with X ray measurements. Cleaning and shaping was done with the appropriate file systems. The root canals were simultaneously irrigated with 17% EDTA solution and 5.2% Sodium hypochlorite along with intermittent saline irrigation. After 2 weeks, the patient was found to be asymptomatic with all the symptoms got subsided. Later single cone obturation was attempted.[Figure 2]

Figure 1: Pre- operative clinical view

Figure 2: Post endodontic treatment IOPAR

Within a few days of obturation, the swelling reappeared. [Figure 3] Thus it was planned to assess the possibility of periodontic involvement of the root canal treated tooth. Sinus tract tracing was done with gutta percha cone which showed a clear-cut area of infection around the furcation area. [Figure 4]

The patient was referred to the Department of Periodontics for further evaluation of the periodontal status of the tooth. The probing depth was calculated to be approximately 5mm depth. But, there was a Grade II furcation involvement when measured using the Naber's probe along the buccal surface of the tooth. This led to a diagnosis of Endo perio involvement of the case with primary endodontic lesion with secondary perio involvement.

Following the diagnosis periodontal regenerative surgery was planned in this case for treatment of furcation defect. After taking care of asepsis and sterilization the surgery was planned. The selected site was prepared for surgery and was anesthetized using xylocaine with adrenaline. Regenerative flap surgery was initiated with Kikland incision followed by full thickness flap was elevated buccally extending from the distal aspect of 45 to the mesial aspect of 47. [Figure 5] After reflecting the flap of involved area, thorough degranulation and debridement was done using Gracey's curette # 13 and 14. After adequate isolation of area and proper bleeding control, osseous graft (xenograft) and healiguide (GTR membrane) was placed. Into a sterile dappen dish, the osseograft was incorporated and was mixed with normal saline to reach a packable consistency. Later the bone graft was packed into the involved site in increments with the help of wet gauze and condenser.

Figure 3: Reappearance of clinical symptoms

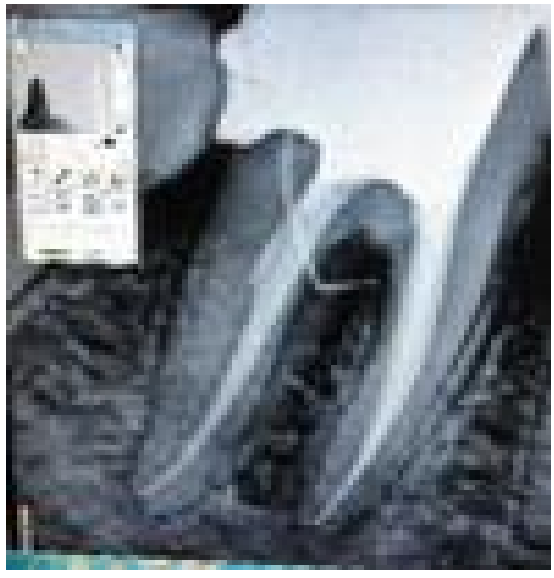

Figure 4: GP tracing

Figure 5: Incision placed & flap raised

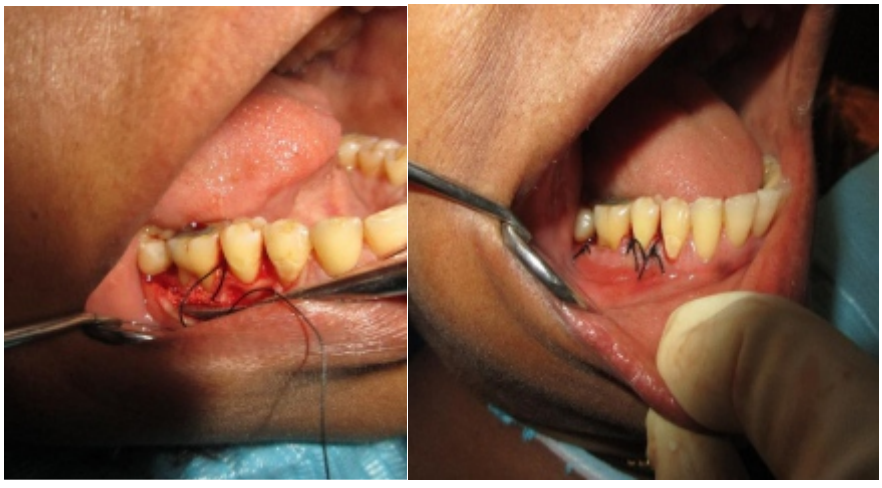

Figure 6: Flap repositioned and suturing

Figure 7: Post -operative view

Adequate filling followed by tight condensation of the bone graft was ensured. All possible measures were taken to avoid over filling the defect. The primary soft tissue closure was done with non-resorbable black silk (3-0) suture. [Figure 6].

As a part of post-operative instructions, the patient was recommended to follow plaque control measures and was prescribed 0.12% chlorhexidine mouthwash for twice daily. The first recall was scheduled after 10 days. The sutures were removed 10 days after surgery. The post operative view is given in Figure 7. The subsequent visits were scheduled at fixed intervals till the normal probing depth of 2-3 mm was achieved.

Discussion

In the current scenario as the patient complained of severe night pain of the involved tooth, radiograph was taken to confirm the endodontic involvement. The radiographic findings were in line with the clinical symptoms, hence root canal treatment was initiated. But the re-appearance of symptoms even after post endodontic therapy left behind the suspicion of periodontal involvement. Generally in case of a primary endodontic lesion, a satisfactory endodontic therapy would result in curing of the endodontic component.[1] Here there were no changes in clinical parameters, along with the incomplete waning of symptoms. On subsequent periodontal check-ups, the case was diagnosed as primary endodontic lesion with secondary periodontal involvement.

Tinti and Vincenzi in 1990 used the principles of guided tissue regeneration (GTR) to obtain coverage of the denuded root surface along with regeneration of the entire attachment apparatus.[4]

Guided Tissue Regeneration has been extensively studied to have the potential to regenerate periodontal attachment to an acceptable extent in humans.[5]

Generally, collagen is the most commonly used GTR membrane. It is documented that the inherent incapability of collagen to generate and maintain space by itself between the root surface and the overlying GTR membrane results in poor prognosis. The immigration of progenitor cells onto the detoxified root surface and their subsequent differentiation into cementum and periodontal ligament cells requires space beneath these membranes. For this purpose, along with Healiguide an osseous graft had been introduced. Healiguide, a bio resorbable membrane mainly consists of Type I collagen and has haemostatic property that permits the membrane to hasten the wound healing in the surgical site, thus yielding faster result.[6] The use of bone grafts help in preventing the collapse of the membrane into the defect area and enable the proliferation of osteogenic progenitor cells.[7,8]

Conclusion

The finding of this report indicates that the combined use of GTR technique (collagen membrane) and a xenogenic bone graft material proved to be successful in the management of periodontal defects. This blend of these two technique yielded better results outcomes in terms of clinical and radiographic parameters.

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