CASE REPORT

Combined Endo-Perio Lesion in an Anterior Tooth, its Management & Resolution - A Case Report

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Abstract

Objective: To evaluate the effectiveness of demineralized freeze-dried bone allograft (DFDBA) as a bone graft for the treatment of osseous defects in an anterior tooth with Endo-Perio lesion.

Materials and Methods: Patient with an Endo-Perio lesion having combined osseous defect of maxillary left central incisor was treated with DFDBA bone graft and was assessed for 6 months.

Results: Significant improvement in all periodontal variables was found. There was reduction in probing depth of 6 mm, resolution of tooth mobility and increase in the bone fill at 6 months postoperatively.

Conclusions: DFDBA improves healing outcomes, namely, reduction of probing depth, resolution of osseous defects and tooth mobility.


Key words: DFDBA, Endo-Perio lesion, Combined osseous defect.

Introduction

Endo-Perio lesions are those lesions which result from spread of inflammation and infection from one component to the other. The relationship between periodontal and pulpal disease was first described by Simring and Goldberg in 1964. Since then the term “endo-perio” lesion has been used to describe lesions due to inflammatory products found in varying degrees in both the periodontium and the pulpal tissues. Endo-perio lesions are responsible for more than 50% of tooth mortality. An endo-perio lesion can have a varied pathogenesis which ranges from quite simple to relatively complex. Knowledge of these disease processes is essential in coming to the correct diagnosis.

The prognosis and treatment of each endodontic-periodontal disease type varies. Primary periodontal disease with secondary endodontic involvement and true combined endodontic-periodontal diseases require both endodontic and periodontal therapies. The prognosis of these cases depends upon the severity of the periodontal disease and the response to...
periodontal treatment. In a combined Endo-Perio lesion the most critical determinant of prognosis is the extent of loss of periodontal support.

It is evident from the above description that the clinician is often posed with a very difficult decision in determining the initial etiology of the lesion. It is important, however, that this etiology be determined so that correct therapy can be rendered.

The prognosis of the affected teeth can be improved by increasing bony support by regenerative procedures. This case report describes the management of combined endodontic & periodontal lesion affecting maxillary left central incisor with deep intrabony osseous defect using DFDBA bone graft.

Case Report

A 26 years old male patient reported to the Department of Periodontics, AECS Maaruti College of Dental Sciences & Research Centre, Bangalore with pain in upper left central incisor since 15-20 days. Pain was of severe, continuous & throbbing type. Patient reported history of pain, swelling & pus discharge 6 months back which subsided after taking medication and also gave a history of trauma to tooth due to hand pump which occurred when he was 10 years old.

On clinical examination probing pocket depth was 10 mm mesially, recession was 3mm on mesial aspect of upper left central incisor. The tooth was tender on percussion, had Grade II Mobility with mild labial migration, and vitality test showed the tooth was non-vital (Figure 1).

Intra-oral periapical radiograph showed angular bone loss extending up to apex on mesial aspect of upper left central incisor (Figure 2). The condition was diagnosed as Type V lesion – Combined Pulpal-Periodontal lesion according to Simon’s classification.

Treatment

Treatment was carried out as per guidelines for a combined endo-perio lesion. Root canal therapy was done first followed by Periodontal treatment of the lesion.

Root canal therapy was first completed on 21 followed by thorough scaling and root planing. Splinting was done from 12 to 22 using a Resin bonded Fibre splint material (Supersplint) (Figure 3).

It was decided to treat the osseous defect surgically using dembone® bone graft, which is a human decalcified freeze-dried bone allograft (human DFDBA). A papilla preservation flap was reflected between 11 & 21 to expose the underlying bony defect (Figure 4).
Following a thorough debridement a combined osseous defect was seen on mesial aspect of 21 (Figure 5). Bone graft was placed in the defect and condensed so as to fill the bony defect (Figure 6 & Figure 7).

Sutures were placed using a vertical mattress suture and an immediate post-op intra-oral periapical radiograph (IOPA) was taken followed by placement of periodontal pack on the surgical site (Figure 8 & Figure 9).

Patient was given all the post-operative instructions and put on antibiotics and analgesics for next 7 days. Patient was recalled for follow-ups and IOPA radiographs were taken after one week, one month and 6 months (Figure 10, Figure 11).

Results

The clinical examination showed the tooth had improved considerably at the time of evaluation six months following treatment. There was a complete resolution of Grade II mobility of 21. The periodontal pockets had reduced from 10 mm to 4 mm mesially of 21, radiographic evidence showed a significant bony fill. The results were stable and maintained at the end of 6 months follow-up (Figure 12, Figure 13).
Endo-perio lesions are common conditions that are often difficult to diagnose and persistent if not treated completely. Awareness of the reciprocal relationship between endodontic and periodontal pathologic processes is of particular importance in diagnosing the endodontic and periodontal components of lesions. Before the commencement of any advanced restorative work to treat endo-perio lesions the prognosis of the tooth should be considered carefully. Whether there is functional need of the tooth, whether the tooth is restorable after the lesion has been treated and whether the patient is suitable for a lengthy, costly and invasive treatment are factors that should be taken into consideration.

The main factors to be considered for treatment decision-making are pulp vitality and type and extent of the periodontal defect. The long-term prognosis for a tooth with a combined lesion is therefore closely related to the extent and configuration of the periodontal attachment loss. With advanced horizontal attachment loss, even an optimal endodontic result may not be sufficient to retain the tooth as a functioning member of the dentition. If the periodontal lesion is an advanced, multiwalled bony defect, the success of therapy likely depends on the ability to fill or regenerate attachment to obliterate the defect.

Studies have shown 65% bone fill with DFDBA graft in periodontal osseous defect. DFDBA grafting, having osteoinductive properties, results in new attachment apparatus characterized by new bone, cementum, and periodontal ligament fibers. Hence in the present case DFDBA was used to treat the combined osseous defect. This case of a patient with an endo-perio lesion who was treated endodontically and followed by regenerative therapy to treat the combined osseous defect, emphasizes the need for careful evaluation of complicated cases where conventional therapy fails due to incomplete elimination.

Present case report of 6 months follow-up showed excellent results with bone fill of 6 mm and there was complete resolution of Grade II mobility. In this case, successful treatment can be attributed to a correct diagnosis, successful endodontic therapy, and bone fill achieved due to the use of human DFDBA.

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