



Harmony in Dentistry: Orchestrating Solutions for Endo-Perio Lesion.

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KEYWORDS

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ABSTRACT:

Introduction: Simring and Goldberg initially reported the connection between periodontal and pulpal diseases in 1964. Since then, lesions caused by inflammatory agents that are present in the pulpal tissues and periodontium to differing degrees have been referred to as "perio-endo" lesions. It is the most typical issue. Recurrence of symptoms even after endodontic treatment has been attributed to the difficulty of diagnosis and the disregard for interdisciplinary treatment. Here, CGF and DFDB bone graft have been used to treat an endo perio patient with recurrent abscess, resulting in both radiographic bone fill and clinical symptom relief.

DFDB & CGF showed potential for bone regeneration.

Objectives: We aim to provide a study on periodontal regeneration using DFDB bone graft and concentrated growth factor to treat an endo perio lesion with recurrent abscess formation even after successful endo treatment, thus showing the need for periodontal therapy to be taken into consideration for ultimately saving teeth.

Methods: A 31-year-old male patient with no systemic history and a history of endodontic infection that led to periodontal damage with a vertical defect was chosen for the trial employing regenerative material i.e DFDB bone graft and CGF.

Results: Periodontal regeneration therapy was successful in terms of clinical and radiographic characteristics.

Conclusions: DFDB bone graft and CGF showed bone fill as well as resolution of clinical symptoms, indicating the need for periodontal consideration in endo perio lesion for the success of endodontic treatment and ultimately saving the tooth.



Introduction

1. The interrelation between the pulp and the periodontium are very difficult to understand and also have been a controversial topic over years which could be owed to their developmental, anatomic and functional similarities^{1,2}.
2. Decalcified freeze-dried bone allograft (DFDBA) have shown potential in periodontal regeneration³. DFDBA is osteoconductive and has bone morphogenic properties helps in periodontal regeneration.
3. Various platelet concentrates are used in the regeneration of infrabony defects. The introduction of third-generation autologous platelet concentrate, known as a concentrated growth factor (CGF) by Sacco in 2006⁴, regenerative properties of CGF have gained popularity in the treatment of intra bony defects⁵.

Objectives

The Objective is to determine the regenerative efficacy and clinical symptoms relief using the material DFDBA bone graft and CGF in endo perio lesion causing bone loss.

Methods

After receiving endodontic treatment for the lower right back tooth region, a 31-year-old male patient was sent to the Perio Department due to recurrent abscess development.

Examination revealed a clinical abscess with 46, a buccal probing depth of 5 mm, and radiographic analysis revealed advanced bone loss with 46, short root trunks, and bone loss in the furcal area as well. The patient had no history of systemic illness.



FIGURE 1: PREOP PROBING DEPTH



FIGURE 2: PREOP RVG SHOWING BONE LOSS

Based on all the clinical and radiographic findings, diagnosis made was, “**Primary Endodontic lesion with Secondary Periodontal involvement**”.

Rotstein I, 2006 Stated: the endodontic infection induces periodontal pocket evolvment, and thus the affection of the attachment, leading to the progression of periodontitis. Three main pathways which were considered as prime route for endodontic-periodontal lesions are⁶: Apical foramen. Dentinal tubules. Lateral and accessory canals. The patient was referred for blood investigations, and periodontal regenerative treatment was scheduled.

The study was approved by Institutional ethical committee and patients informed consent was taken before the surgery.

Surgical procedure followed was:

Intraoral antiseptis & extra oral antiseptis were performed using iodine solution. Local anesthesia was administered. Following administration of local anesthesia, sulcular incisions were made, and mucoperiosteal flap was reflected. Defect debridement was carried out with the help of area specific curettes. CGF along with DFDBA Bone graft was placed in the defect. The mucoperiosteal flap was repositioned and secured in place using 3-0 non-resorbable black silk surgical suture followed by Coe Pack periodontal dressing.

CGF was prepared using the standard protocol developed by Sacco in 2006 in which 9 ml blood was drawn and centrifuged at 2700 rpm for 2 min, 2400 rpm for 4 min, 2700 rpm for 4 min, and then 3000 rpm for last 3 min in centrifugation machine (REMI™ centrifugation machine).



FIGURE 3: DEFECT AFTER DEBRIDEMENT



FIGURE 4: DEFECT AFTER DEBRIDEMENT



FIGURE 5: DEFECT FILLED USING CGF + DFDB GRAFT

Post-operative care:

Antibiotics and analgesics (Cipro bid TZ 500 mg two times a day for 5 days and anti-inflammatory and Serrato peptidase two times a day for 5 days) were prescribed along with 0.2% chlorhexidine mouth wash twice daily, for 1 week.

Periodontal pack and sutures were removed after 1 week postoperatively.

Patient was instructed for gentle brushing with soft toothbrush. Patient was instructed for oral hygiene maintenance and examined weekly for 1 month and then 3 and 6 months

Results

Follow up Healing after 2 weeks and consequently at 3 and 6 months, showed no recurrence of abscess formation with 46. Clinical probing depth was reduced and there was radiographic bone fill seen. Bone fill was evident in the furcal region too.



FIGURE 6: POST OP RVG SHOWING BONE FILL AFTER 6 MONTHS

Discussion

A perio-endo lesion can have a varied pathogenesis which ranges from quite simple to relatively complex one.

Communication between the lesions of the two diseases, then the root canals should be medicated until the periodontal treatment has been completed and the overall prognosis of the tooth has been reassessed as being favorable. Due to the complexity of these affections, an interdisciplinary approach with a good collaboration between Periodontist and endodontist is recommended.

Role of periodontists is very vital in Perio Endo cases or Endo Perio cases.

Periodontal Regeneration of infected tissue or lost tissue is very crucial for preserving the integrity of the attachment apparatus and ultimately saving the tooth.

Guillemin et al. (1993) compared the effect of DFDBA alone with a combination of barrier materials and



DFDBA in intrabony defects with significant amount of CAL gains and bone fill at six months⁷. A combination of CGF (Concentrated Growth Factor) and DFDB bone graft gives excellent stability and retention, as well as a lower risk of displacement. This is a necessary condition for effective regeneration, which leads to better treatment and bone filling outcomes in this case.

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