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Case Report

Root Biomodification enhancing the predictability of isolated recession coverage – A 3 year follow-up case report

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ABSTRACT:
One of the most common esthetic concern associated with the periodontal tissues is gingival recession. The etiology is multifactorial and includes excessive or inadequate teeth brushing, destructive periodontal disease, tooth malposition, alveolar bone dehiscence, high muscle attachment, aberrant frenal pull, occlusal trauma, iatrogenic factors and smoking. Complete information on marginal tissue recession is essential for diagnosis, prognosis, treatment planing, and for communication between clinicians. In the present case report an isolated gingival recession is managed using lateral pedicle graft (LPG) technique in combination with tetracycline root biomodification
Keywords: Gingival recession, Lateral pedicle graft, Root biomodification

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INTRODUCTION

Gingival recession (GR) is the apical migration of marginal gingiva.[1] The etiology of GR is multifactorial in origin such as, excessive brushing, periodontal disease, tooth malposition.[2] Some controversies in the dental profession is whether root exposure is pathologic, physiologic, or a combination of both.[3] Pedicle flaps such as coronally or laterally advanced or combination procedures can produce predictable results.[4]

Additive materials like Platelet Rich Fibrin (PRF) as a membrane, etc. have proven their efficacy in recession coverage.[5] This case report highlights the use of the laterally positioned pedicle flap technique in combination with tetracycline hydrochloride.

CASE REPORT

A 35 years old healthy female patient reported to Outpatient department of Periodontology, Subharti Dental College and Hospital, Meerut, Uttar Pradesh with a chief complaint of sensitivity in lower front tooth region and esthetic concern for past one year. Patient had a non- contributory medical history. Intraoral examination revealed 9mm of recession in lower left central incisor. (Fig-1)

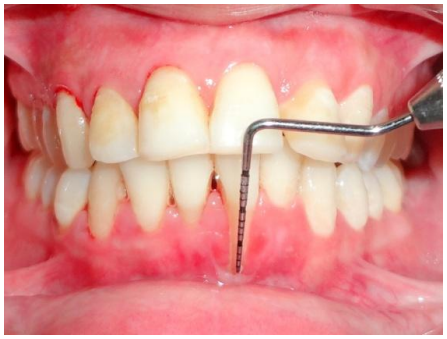

Figure 1: Pre op photograph

Informed consent was taken after explaining the procedure. Following pre-surgical rinse with chlorhexidine the area was anesthetized using local anesthesia. (2% lignocaine with 1:80000 adrenaline). The exposed root surface was thoroughly scaled and root planned by using gracey curettes to remove plaque, accretions and any surface irregularities. Convexity of the root surface was reduced by

mechanical root biomodification. Root conditioning was performed with a cotton pellet soaked in a solution of 100mg/ml tetracycline for 3 minutes. (Fig-2)

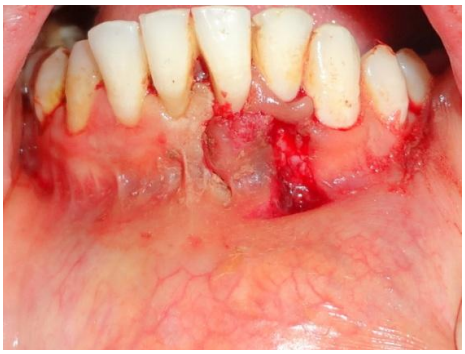

Figure 2: Flap reflection

At the recipient site 'V' shaped incision was made along the soft tissue margin with an internal bevel incision on the gingival margin adjacent to the donor site and an external bevel incision on the opposite margin to remove the epithelium and connective tissue. A horizontal incision 1-2 mm below the gingival margin followed by vertical incision in an oblique direction till mucogingival junction incorporating the frenal pull was made. Flap was raised using blunt dissection.

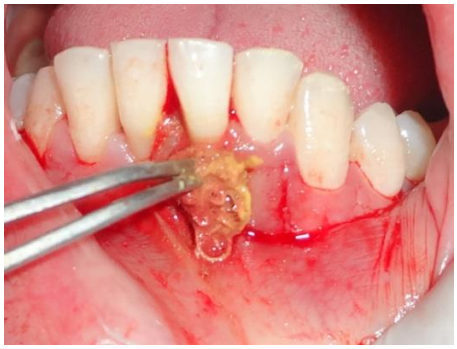

Figure 3: Tetracycline root biomodification done

(Fig-3) To ensure that the flap was free enough to permit free movement to the recipient site a cut back releasing incision was made and the flap was approximated 1 mm coronal to the cement-enamel junction and sutured by 5-0 silk sutures.(Fig-4) Periodontal dressing was placed to protect the surgical site.

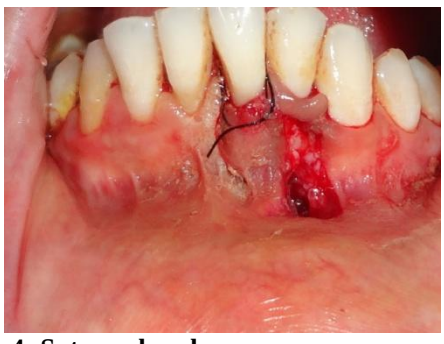

Figure 4: Suture placed

Post- operative instructions were given to patient, and asked not to brush at the surgical site for 2 weeks. Analgesics and antibiotics were prescribed for 5 days along with 0.2% chlorhexidine mouthwash twice daily for 3 weeks. Sutures were removed 2 weeks postoperatively.

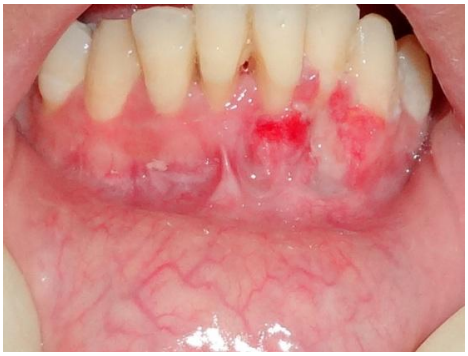

Figure 5: Two weeks post-op photograph

(Fig-5) Healing was uneventful with complete coverage of root surface with excellent color matching seen after 3 years. (Fig-6)

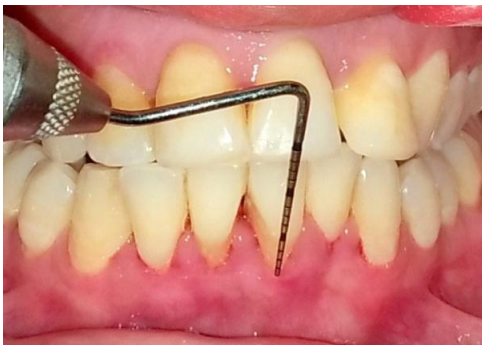

Figure 6: Three years post-op photograph

DISCUSSION

The main goal of periodontal therapy is to improve periodontal health and thereby to maintain a patient's functional dentition right through his/her life. However, in the present case, patient had a Millers class II recession in the tooth no 31 with the concern regarding unpleasant esthetics and hypersensitivity. LPG was first described by Grupe and Warren as a surgical procedure comprising the use of a full thickness pedicle flap moved horizontally to cover the denuded root; this can consequently lead to exposure of donor area's bone tissue.[6] Success of root coverage procedures depends on several factors like elimination and control of etiology, interproximal bone level, and the choice of best coverage procedure based on the clinical situation. In this case, we chose Lateral pedicle graft technique described by Staffileno because of the good periodontal condition of the neighbouring tooth with adequate keratinized gingival and normal bone height.[7]

Advantages of using lateral pedicle graft over the root coverage procedure is that it requires only a single surgical site, with no separate donor site and offers an

excellent color matching of the graft tissue in harmony with surrounding tissues as observed in present case. The disadvantage of using lateral pedicle graft is possible bone loss and gingival recession on the donor site.[8] Success of root coverage procedures depends on several factors like elimination and control of etiology, interproximal bone level, and the choice of best coverage procedure based on the clinical situation.[9] Guinard and Caffesse reported an average of 1 mm of post-operative gingival recession on the adjacent donor site, while no recession was observed following three years in the present case.

Root conditioning of denuded root was done with tetracycline in the current case. Tetracycline reacts with tooth hard tissue and act as a long lasting antimicrobial agent slowing biofilm formation and diminishing the collagenolytic activity of bacterial endotoxins.[8]

CONCLUSION

In the present study a laterally positioned flap with tetracycline root modifiers was used to cover Millers recession defects in the mandibular anterior region. This technique has been demonstrated to be a reliable and predictable treatment modality for obtaining root coverage in recession defects for complete or partial root coverage. However careful case selection and surgical management is critical if a successful outcome is to be achieved.

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