

Bone-Added Periodontal Plastic Surgery: A Case Report

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Abstract: *This article proposes a combined technique which includes bone grafting, connective tissue graft and coronally advanced flap to create space for simultaneous root coverage and bone growth.*

A 52 year-old female was reported to out patient department with a severe class II Miller recession and lack of attached gingiva. The suggested treatment plan comprised of root coverage combined with Nano crystalline HA bonegraft bone particles. Bone-added periodontal plastic surgery can be considered as a practical procedure for management of deep gingival recession without buccal bone plate.

Keywords: *Plastic surgery, Root coverage, Bone graft, Periodontal regeneration,*

I. INTRODUCTION

Gingival recession is the exposure of root surfaces due to apical migration of the gingival tissue margins; gingival margin migrates apical to the cemento-enamel junction. Literature has shown that gingival recessions can be predictably covered by various surgical procedures like as pedicle flaps, subepithelial connective tissue grafts (CTG) with or without coronally positioned flap (CPF), and guided tissue regeneration (GTR), if the interdental papilla is not affected.

II. CASE PRESENTATION

A 52 year-old female was reported to the outpatient Department of Periodontics, Azeezia college of dental science and research centre, Kollam with a chief complaint of hypersensitivity, fear of tooth loss and gingival recession in the mandibular anterior tooth. She was in good general health

Intraoral examination showed a good oral hygiene status. A deep class III Miller recession with the lack of attached gingiva, and narrow band of keratinized tissue was observed. Probing depths (PD) and clinical attachment level (CAL) measurements and registrations of marginal gingival recession (MGR) were obtained. Tooth mobility was assessed and graded 1.

The suggested treatment plan comprised root coverage combined with nanocrystalline HA bone particles. Initial therapies, including supra-gingival plaque removal, polishing, occlusal adjustment, and oral hygiene instruction with proper tooth brushing method were performed. Written informed consent was obtained from the patient for publication of this case report.

III. SURGICAL PROCEDURE

After local anesthesia of the recipient site using 2% lignocaine with epinephrine 1: 100 000, an intra crevicular

incision was made from right to left mandibular canines. Two vertical releasing incisions were placed along neighboring teeth. A partial thickness flap was elevated using a No.15c surgical blade beyond the mucogingival junction. The exposed root surface was debrided. Root debridement done with a curette (3/4 Gracey curette) and root biomodification with tetracycline powder done.

Dehiscence bone defects over exposed root surfaces were overfilled with a mixture of sybograft and blood obtained from a peripheral vein. Connective tissue graft obtained from palate was trimmed and sutured over the defect with a 5-0 bio-absorbable suture. Previously reflected partial-thickness flap was sutured as double papillary technique described by Harris, and then coronally positioned to cover the entire graft without tension. The flap was sutured in place with sling sutures.

The patient was instructed to discontinue tooth brushing for 3 weeks and to avoid trauma at the surgical site. A 0.2% Chlorhexidine digluconate mouth wash was prescribed twice daily. Professional cleaning was done by a hygienist every day until the sutures were removed on day14.

CLINICAL OUTCOMES

Wound healing was uneventful. The general color and volume match were satisfactory. The clinical and patient-centered outcomes were excellent. No scars resulting in esthetically displeasing appearance were observed. Clinically, the grafted tissues seemed to be attached to the root surfaces.



Figure 1: PRE OPERATIVE



Figure 2: INCISION PLACED



Figure 3: FLAP REFLECTED



Figure 4: ROOT BIOMODIFICATION



Figure 5: CONNECTIVE TISSUE GRAFT



Figure 6: DONOR SITE



Figure 7: SYBOGRAF PLACED



Figure 8: CONNECTIVE TISSUE GRAFT



Figure 9: SUTURING DONE



Figure 10: PRE OPERATIVE



Figure 11: PRE OPERATIVE



Figure 12: POST OPERATIVE AT 1 MONTH

IV. DISCUSSION

The gold standard procedure for covering Miller Class I and II gingival recessions is Subepithelial connective tissue grafts. The advantages of CG with a CAF over other procedures is that it results in a larger increase in the keratinized tissue compared to the repositioned flaps alone.

McGuire et al reported that no histological evidence. Of cementum, bone, or periodontal ligament (PDL) and, therefore, regeneration could be determined using CTG + CPF. Thus, they recommended addition of some regenerative materials to accelerate the capacity of tissue regeneration.

Maurer and Leone and Nozawa et al. used CTG coupled with enamel matrix derivative (Emdogain) to maximize the regenerative potential. And reported root coverage and coronal bone regrowth.

More than 9mm root coverage was detected in a case report by Gholami et al. which could be achieved through following clinical guidelines:

- ✓ Preparation of an extensive bed for sufficient blood supply,
- ✓ Using xenograft bone particles over denuded root surfaces for space maintaining,
- ✓ Adding own patients blood mixed with bone graft granules for accelerating the healing during initial phase,
- ✓ Excellent stabilization of connective tissue graft over bone particles at the level of CEJs,

V. CONCLUSIONS

The present case report demonstrates that Bone added periodontal plastic surgery can be considered as a stable and efficient method for root coverage of class III gingival recessions. Clinical trials with sufficient cases are needed for the comparison of the results with those of more conventional procedures.

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