

CASE REPORT

A New Innovative Approach for Treatment of Gingival Recession: A Clinical Case

¹Himanshu Deswal, ²Amit Bhardwaj, ³Harpreet Singh Grover, ⁴Yogender Singh Deswal

ABSTRACT

Gingival recession is characterized by the apical migration of tissue margin apical to cement enamel junction. These defects give rise to both functional and esthetic challenges. A new innovative technique of periodontal plastic surgery was used in which periosteum was incised and mobilized at the apical part of the mucoperiosteum flap to cover the defect. The purpose of this case report was to clinically evaluate the use of periosteum eversion technique to cover gingival recession defect.

Keywords: Eversion technique, Gingival recession, Periodontal flap.

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INTRODUCTION

Gingival recession is the apical migration of the gingival margin to the cemento-enamel junction, either coaginated with inflammatory periodontal disease¹ and mechanical trauma² or with the presence of a host of predisposing factors that include tooth malposition and root prominence, gingival phenotype,³ underlying alveolar dehiscence,^{4,5} orthodontic tooth movement,^{4,6} aberrant frenulum attachment⁷ and iatrogenic restorative and periodontal treatment-related factors (surgical recession).⁸ For the correction and management of mucogingival deformities and defects, variety of periodontal plastic surgery procedures have been described in the literature, with the aim to set up and preserve the dentition and periodontium, healthy and functional with most favorable esthetics throughout the life time. Since, the addition of finest esthetics to the goal of periodontal therapy parallels a great revolutionary step in speciality of periodontology. This is where the

periodontal plastic therapy as an active contributor in the field of esthetic dentistry. Root coverage techniques can be broadly divided into transposition of free tissue graft or transposition of periodontal flaps or application of membrane, although combination procedures, with or without adjunctive regenerative and root biomodification procedures, using citric acid, tetracycline, and ethylenediaminetetraacetic acid.⁹

Therefore, the best clinical results for covering extended denuded root surfaces are achieved by free soft tissue graft surgical techniques but this leads to donor site morbidity.¹⁰ To exploit the advantages of a connective tissue graft on the one hand and to avoid donor site-related problems on the other, a new surgical technique for root coverage has been developed over the last few years. The bases of this technique transposition of the local periosteum combined with a mucoperiosteum transpositional flap. Herein, the new periosteum eversion technique used in this study is described in this case report.

CASE REPORT

A 38 years old male patient reported to the Department of Periodontology, Faculty of Dental Sciences, Sri Guru Gobind Tricentenary University, with the chief complaint of unesthetic appearance in the upper front tooth region. A 3 mm class I gingival recession defect (Miller, 1985) was diagnosed on examination in relation to maxillary left premolars (i.e. 24,25) (Fig. 1). After the approval by the ethical committee for the surgical procedure, informed



Fig. 1: Preoperative photograph

^{1,4}Postgraduate Student, ²Reader, ³Professor

^{1,4}Department of Periodontology, SGT Dental College, Gurgaon Haryana, India

Corresponding Author: Amit Bhardwaj, Reader, Department of Periodontology, SGT Dental College, Gurgaon, India
Phone: 9818718872, e-mail: amitmds1980@rediffmail.com

consent was obtained from the patient after thorough explanation of the risks and benefits of the clinical procedure planned. Patient was a non-smoker, systemically healthy and had no contraindications for periodontal surgery. For the root coverage, periodontal plastic surgery was planned with transposition of periosteum in combination with a mucoperiosteum transpositional flap.

Surgical Technique

Following careful debridement of exposed root surfaces, The surgical area was anesthetized with 2% lignocaine hydrochloride containing adrenaline at a concentration of 1:80,000. An intrasulcular incision was made by using Bard parker number 15 blade (BP Blade) at the buccal aspect of the involved tooth. Two oblique vertical incisions were extended beyond the mucogingival junction to relieve muscle tension and a trapezoidal full thickness flap was raised and extended apically beyond the mucogingival junction, releasing the tension (Fig. 2).

Root surface was mechanically cleaned by scaling in combination with the conditioning of the root surface. Then prepare the everted periosteum flap. With the baseline incision (Fig. 3), the periosteum was separated from the underlying submucous connective tissue up to attached gingival border. The crestally pedicled periosteum was everted and transpositioned coronally where it was fixed with interdental sutures (Fig. 4). The mucoperiosteum was coronally transpositioned and then mucoperiosteum flap was also sutured interdentally (Fig. 5).

Periodontal pack (Coe pack) was placed (Fig. 6). Patient was instructed to refrain from mechanical plaque control measures particularly in the surgical area for 4 weeks.

However, active chemical control was maintained by 0.12% chlorhexidine mouthwash in dosage of 15 ml for 30 seconds to 1 minute twice a day. Furthermore, the patient was instructed to take tablet ibuprofen 400 mg twice a day for 3 days. Clinical follow-up was performed after 1 week and 6 weeks postoperatively (Figs 7 and 8).



Fig. 2: Full thickness flap elevated



Fig. 3: Baseline incision



Fig. 4: Periosteum sutured



Fig. 5 : Mucoperiosteum flap sutured



Fig. 6: Periodontal dressing (Coe-pack) placed



Fig. 7: One week postoperative



Fig. 8: Six week postoperative

DISCUSSION

The advantage of periodontal plastic surgery is that the morphology of the defects dictates the techniques to be performed. However, the root coverage procedures success rate is mostly depends on amount of recession coverage required and the pocket depth along with the clinical attachment loss.¹¹ the success of root coverage procedure depends upon various conditions including case selection with intact interdental papilla and interdental alveolar bone level and sufficient blood supply ensured to donor tissue, gingival biotype, no severe carious lesion or abrasion present on the exposed root surface.¹² This technique allowed for better control over flap repositioning without tension and also reduce tissue retraction in apical direction during root coverage procedure (Figs 7 and 8).¹³

CONCLUSION

Due to an increasing patients demand for cosmetic/esthetic dentistry, the treatment of gingival recession by new innovative technique (i.e. periosteum eversion technique) which is highly suitable for covering extended denuded roots caused by recession. The technique is similar to a combined therapy of connective tissue graft

and flap transpositioned. Its main advantage is that the periosteum remains vascularized and there are no donor site problems.

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