



## CASE REPORT

# The effect of laterally positioned flap-revised technique and 24% ethylenediaminetetraacetic acid root conditioning on root coverage: A case report



Jagmohan Singh <sup>a,\*</sup>, Vipin Bharti <sup>b</sup>

<sup>a</sup> Employees' State Insurance Model Hospital, Ministry of Labour & Employment, Govt. of India, Bari Brahmana, Jammu & Kashmir, India

<sup>b</sup> Dept. of Periodontology, Govt. Dental College and Hospital, Patiala, Punjab, India

Received 20 September 2013; revised 21 December 2013; accepted 31 March 2014  
Available online 6 May 2014

### KEYWORDS

Ethylenediaminetetraacetic acid;  
Esthetics;  
Gingival recession;  
Pedicle flap;  
Root coverage

**Abstract** Complete root coverage is considered the true goal of treatment of gingival recession defects because only complete coverage assures recovery from the hypersensitivity and esthetic defects associated with recession areas. Previous studies have shown that the laterally positioned flap (LPF) technique or root surface biomodification yields a higher percentage of complete root coverage upon gingival recession treatment. This article highlights the use of the laterally positioned pedicle flap-revised technique (LPFRT) as a modification of the LPF technique, along with 24% EDTA gel as a root surface biomodification agent, in the management of localized gingival recession defects. Clinical examination revealed a Miller class II recession defect on the buccal aspect of the lower right central incisor, as well as the presence of aberrant frenum pull adjacent to the recession defect. The LPFRT, together with 24% EDTA gel, was speculated to cover the gingival recession defect. The frenectomy, along with periosteal fenestration, was planned simultaneously with LPFRT. After 6 months of therapy, the clinical condition was stable with complete root coverage and satisfactory healing of the gingival tissues at both the donor and recipient sites with no signs of inflammation.

© 2014 King Saud University. Production and hosting by Elsevier B.V. All rights reserved.

\* Corresponding author. Address: H. No. 68, Master Colony, Magrala Road, Dinanagar Distt., Gurdaspur 143531, Punjab, India. Tel.: +91 8198804446.

E-mail addresses: [jagmohan231@gmail.com](mailto:jagmohan231@gmail.com) (J. Singh), [gdc\\_perio@yahoo.com](mailto:gdc_perio@yahoo.com) (V. Bharti).

Peer review under responsibility of King Saud University.



Production and hosting by Elsevier

## 1. Introduction

Gingival recession is defined as the location of the marginal periodontal tissues apical to the cemento-enamel junction (CEJ) (Loe et al., 1992). The etiology of gingival recession is multifactorial and may include plaque-induced inflammation, calculus and restorative iatrogenic factors, mechanical factors such as trauma from vigorous tooth brushing, tooth malposition, high frenum attachment, and uncontrolled orthodontic movements (Loe et al., 1992; Tugnait and Clerehugh, 2001).

The main indications for surgical root coverage to correct recession defects include the need to improve localized soft tissue esthetics, reduce hypersensitivity, improve plaque control, and prevent further progression of the recession defect (Saha and Bateman, 2008).

Multiple surgical procedures such as coronally advanced flaps (CAFs), laterally positioned flaps (LPFs), free gingival grafts (FGGs), and subepithelial connective tissue grafts (SCTGs) appeared as novel approaches to achieve improvements in recession depth, clinical attachment level, and width of keratinized tissue (Chambrone et al., 2010). CAFs and LPFs are recommended if adequate keratinized tissue exists close to the recession defect (Patel et al., 2011). In these surgical approaches, the soft tissue utilized to cover the root exposure is similar to that originally present at the buccal aspect of the tooth harboring the recession defect and, thus, the esthetic result is more satisfactory. Furthermore, the post-operative course is less troublesome because other surgeries in donor sites far from the tooth harboring the recession defect are uninvolved (Patel et al., 2011; Milano, 1998).

LPFs are commonly used to cover isolated, denuded roots that have sufficient width, length, and thickness of keratinized tissue adjacent to the area of gingival recession. This surgical technique is not affected by vestibule depth due to the small coronal displacement required to cover the recession defect (Rasperini et al., 2011). This method is most suitable for root coverage in gingival recession with a narrow mesio-distal dimension (Tugnait and Clerehugh, 2001). Possible bone loss and gingival recession at the donor site are disadvantages of this method (Guinard and Caffese, 1978). Various modifications in LPF have been proposed in order to avoid the reported undesirable results on the donor site. Laterally positioned pedicle flap-revised technique (LPFRT) was introduced by Ruben et al. (1976) as a modification of the LPF technique first described by Grupe and Warren (1956). This flap is elevated from the donor zone as full-thickness mucoperiosteal tissue near the recession and split-thickness mucoperiosteal tissue on the distal portion (away from the recession). The objective of the full-thickness flap design is to place the periosteum over the exposed root to utilize its dynamic reparative potential and provide a more tenacious connective tissue-cementum fixation of the flap. The split-thickness portion of the flap will limit the post-operative complication of bone resorption by preserving the periosteal protection and blood supply to the septum (De waal et al., 1988). Recently, a randomized controlled clinical study has shown 95.5% mean root coverage and 83.4% complete root coverage (15 out of 18 patients) with a similar modified LPF technique in the management of localized Miller class I recession defects (Santana et al., 2010).

Chemical root surface conditioning, which has been advocated in root coverage procedures, involves the use of a variety of agents to detoxify, decontaminate, and demineralize the root surface, thereby removing the smear layer and exposing the collagenous matrix of dentin and cementum (Selvig et al., 1981; Polson and Proye, 1982). A meta-analysis (Al-Hamdan et al., 2003) of guided tissue regeneration (GTR)-based root coverage revealed that root surface conditioning resulted in a significantly improved percentage of sites with complete root coverage. Various chemical agents have been used for root surface biomodification, such as citric and phosphoric acids, ethylenediaminetetraacetic acid (EDTA), and tetracycline hydrochloride (Oliveira and Muncinelli, 2012).

EDTA gel operates at neutral pH, and its chelating property may enhance the attachment of connective tissue to the root surface by exposing more intact collagen fibers and, as a consequence, may enhance root coverage (Blomlof et al., 1996a,b).

In the treatment of gingival recessions, EDTA has been used with the subepithelial connective tissue graft and semilunar coronally repositioned flap (Kassab et al., 2006; Bittencourt et al., 2007) techniques. The aim of the present case report was to evaluate the root coverage of a Miller class II recession defect by means of LPFRT along with 24% EDTA gel.

## 2. Case report

A 28-year old male patient came to our department of periodontology with the chief complaints of receding gums and sensitivity of the lower teeth. The patient also complained of the difficulty of maintaining oral hygiene in the affected area. The patient was a non-smoker and systemically healthy, and his overall oral hygiene was reasonably good. On clinical examination, a Miller class II recession defect was present on the buccal surface of the lower right central incisor (Fig. 1). A clinical attachment loss of 7 mm was apparent on the mid-buccal surface of the recession defect. The distance between the CEJ and the gingival margin was 5 mm (Fig. 2) and the distance between the gingival margin and the base of the sulcus was 2 mm (Fig. 3). The base of the sulcus was apical to the mucogingival junction (Fig. 3). Clinical examination also revealed a labial aberrant frenum pull mesial to the recession defect and slight malpositioning of the lower anterior teeth. Radiographically, no evidence was found regarding crestal bone loss, and the lamina dura was intact around the lower right central incisor.

### 2.1. Treatment plan

The patient was reluctant to undergo free gingival and connective tissue grafting. Under conditions of acute scarcity of keratinized gingiva below the recession site and an adequate amount of attached gingiva present on the lower right lateral incisor, LPFRT (Espinel and Caffesse, 1981) as a modification of the LPF technique, along with 24% EDTA gel, was speculated to cover the gingival recession defect. The frenectomy,



Figure 1 Pre-operative view.

Download English Version:

<https://daneshyari.com/en/article/2688793>

Download Persian Version:

<https://daneshyari.com/article/2688793>

[Daneshyari.com](https://daneshyari.com)