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Free Gingival Graft for the Treatment of Gingival Recession: A case report

[1]Dr. Anita Mehta, Professor, Department of Periodontology & Implantology, Dasmesh institute of Research & Dental Sciences, Baba Farid University of Health Sciences, Faridkot, Punjab, India

[2]Dr. Nitin Khuller, Prof and HOD, Department of Periodontology & Implantology, Dasmesh institute of Research & Dental Sciences, Baba Farid University of Health Sciences, Faridkot, Punjab, India

[3]Dr. Harsukhman Kaur, Assistant Professor, Department of Periodontology & Implantology, Dasmesh institute of Research & Dental Sciences, Baba Farid University of Health Sciences, Faridkot, Punjab, India

[4]Dr. Ramandeep Singh Brar, Professor, Department of Oral and maxillo facial surgery, Dasmesh institute of Research & Dental Sciences, Baba Farid University of Health Sciences, Faridkot, Punjab, India

[5]Dr. Preetinder Singh, Professor, Department of Periodontology & Implantology, Swami Devi Dyal hospital and Dental College, Barwala, Panchkula, Haryana

Corresponding Author: Dr. Anita Mehta, Professor, Department of Periodontology & Implantology, Dasmesh institute of Research & Dental Sciences, Baba Farid University of Health Sciences, Faridkot, Punjab, India

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Abstract

The etiology of gingival recessions is considered to be multi-factorial. The triggering factors which act on an anatomically vulnerable area produce apical displacement of the marginal gingiva. In some cases, nonsurgical treatment which target at the etiology may be used. In cases of objectionable aesthetic alteration, increased hypersensitivity[1] or progressive recessions, surgical treatment must be done. Depending upon the presence of adequate or inadequate keratinized tissue, surgical technique should be selected.

Keywords: gingival recession, root coverage, free gingival graft

Introduction

Gingival recession coverage represents one of the main challenges in perio plastic surgery. Inadequate width of keratinized gingiva, protrusion of teeth and faulty tooth brushing may lead to gingival recession. Several techniques like free gingival grafts, laterally positioned flaps or semilunar coronally positioned flaps with guided tissue regeneration and connective tissue grafting are used for root coverage.

The free gingival graft involves a keratinized epithelial graft which is obtained from the palate or an edentulous ridge and it is placed in the recession area. Hattler[2] was the first to utilize the keratinized gingiva to cover denuded root surfaces. This technique was popularized by Sullivan and Atkins[3] who described its biologic aspects of wound healing, the specifics and principles of the free gingival graft technique.

In this article, free gingival graft is used for coverage of gingival recession.

Case description

In September 2015, a 28 years old female patient reported to Department of Periodontics at Dasmesh Institute of Research and Dental Sciences, Faridkot. Her chief complaint was sensitivity to cold fluids since one month and recession of gums since one year. Patient's medical history was not relevant. Patient cleans her teeth with toothbrush and toothpaste twice a day after breakfast and after dinner in vertical direction. No deleterious habits were present.

Intra-Oral Examination

Gingiva was grayish pink in colour, soft and edematous, scalloped with rolled margins, stippling was absent with mild bleeding on probing. There was 3mm of recession with 2mm of pocket depth, **i**nadequate width of attached gingiva and tension test was positive .

Investigations

IOPA X-ray was taken. Hemogram and blood sugar was with in the normal limits. Urine examination was done and no abnormality was detected.

Diagnosis

The case was diagnosed as chronic localized periodontitis along with Miller's[4] class-II gingival recession with respect to 31.

Treatment Plan

After Phase – I therapy, re-evaluation was done. In Phase – II therapy, gingival augmentation and root coverage with 31 by using free gingival tissue graft was done. Recipient site was prepared by doing root planing to remove the soft cementum and reduce or eliminate the prominent convexity of the root. Citric acid was used to burnish over the exposed root surface to enhance the linkage. Basic incisions were outlined as donor flap should be 1 ½ times the size of the recipient area to be covered & 3 to 4 times longer than it is wide. V – shaped incision was made about the exposed root with No. 15 scalpel blade. On the opposite side of the donor area, give a beveled incision to permit overlap of flap. Then donor site was prepared. Final dissection of the pedicle was in apicoocclusal direction. Pedicle flap was then prepared. Flap was released and reflected exposing the underlying periosteum. Tension was there on the pedicle when positioning was attempted so a releasing incision was made and suturing was done. Sutures were covered with periodontal pack. Periodontal pack and sutures were removed after one week. Patient was on the frequent maintenance phase at 1 month, 3 month, 6 months interval for 30 months.

Discussion

The choice of surgical technique depends on several factors and each technique have its advantages and disadvantages. The clinician should choose from the different surgical procedures by selecting the least traumatic to the patient. We chose free gingival graft technique to be a viable option for root coverage in Miller's[4] class I and II type of gingival recession.

There are four basic techniques for root coverage: 1. free gingival grafts[5], 2. pedicle grafts[6], 3. connective tissue grafts[7] and 4. membrane barrier guided tissue regeneration technique.[8] All the methods are used frequently and the

use of each one of them is based on its advantage or disadvantage, as well as on the individual surgeon's preference and experience.

The rationale of the pedicle graft is to cover the exposed avascular root surface with a contiguous soft tissue auto-graft from an adjacent site. Laterally positioned pedicle graft was introduced by Grupe and Warren[9] in 1956. This graft represents one of the first in the series of procedures of mucogingival surgery designed to cover exposed root surfaces.

In case of deep recession, the flap may be coronally positioned to provide greater coverage and better blood supply to the connective tissue graft.[7] Subpedicle connective tissue graft was presented by Nelson and which was further modified by Harris.[10] The rationale of this approach is to provide optimal nutrients to the connective tissue lining of the root surface. Envelope technique is another version of the connective tissue graft.[7] The graft is placed directly on the denuded root surface and its major part is inserted into a recipient bed prepared by split-thickness dissection without flap elevation. This technique is indicated only in recessions with isolated tooth.

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Legends Figure

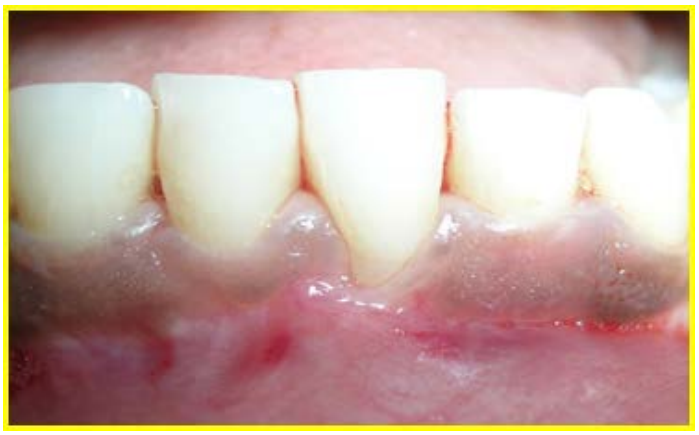

Figure 1 : Pre-operative view of 31

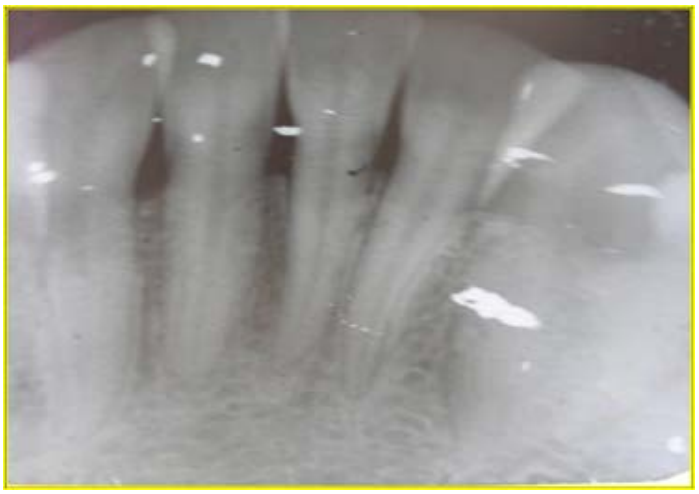

Figure 2 : IOPA X-ray

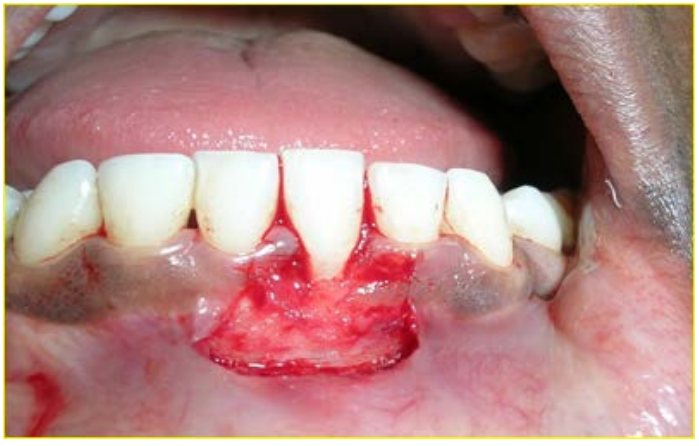

Figure 3 : Recipient site

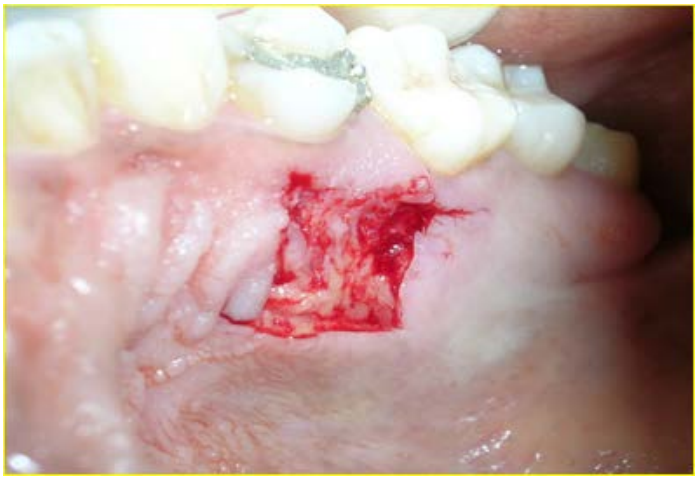

Figure 4 : Donor Site

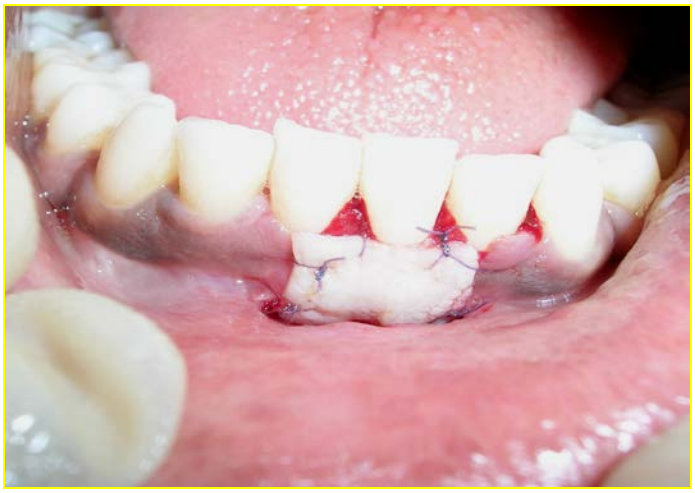

Figure 5 : Free gingival Graft with sutures placed on recipient site

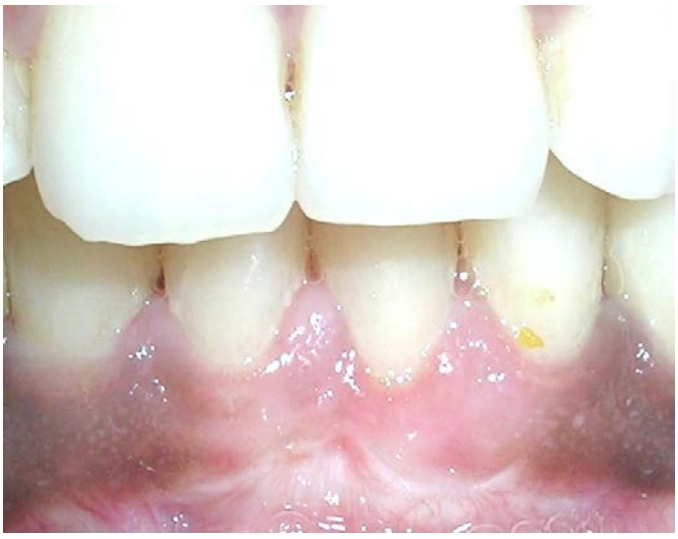

Figure 6 : Post-operative view after 6 months