

Epithelialized palatal graft for the treatment of gingival recession- A case report

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Abstract- Periodontal plastic surgery performed to correct or eliminate anatomic, developmental, traumatic or disease induced defects of the gingiva, alveolar mucosa or bone". The contemporary opinion is that even in the areas with insufficient or absent attached gingiva oral hygiene maintenance is possible but if the gingival tissue is thin, there is an increased risk of gingival recessions. The treatment of buccal gingival recessions one of the indications of PPS as it involves patient's aesthetic concerns. The free gingival graft (FGG) is a technique introduced more than 50 years ago to address the lack of keratinized tissue by Bjorn in 1963 and was first described by Sullivan and Atkins in 1968. FGG can also be attempted for treatment of gingival recession and root exposure. It is a simple and highly predictable when used to increase the amount of attached gingiva.

Index Terms- Gingival Recession, Root Coverage, Free Gingival Graft

I. INTRODUCTION

Periodontal plastic surgery is defined as any surgical procedure that is performed to correct or eliminate anatomic, developmental, traumatic or disease induced defects of the gingiva, alveolar mucosa or bone". 1996, World Workshop in Clinical Periodontics[1] renamed mucogingival surgery as "periodontal plastic surgery," which was originally proposed by Miller in 1993[2]. The goals of the treating a mucogingival defect are arresting the progression of gingival recession (esthetic correction) and improving the ability for plaque control in cases with healthy and disease marginal tissues (maintenance of oral hygiene). Lang & L oe in 1972[3] reported that 2 mm of keratinized gingiva is adequate for maintaining gingival health. The contemporary opinion is that even in the areas with insufficient or absent attached gingiva oral hygiene maintenance is possible but if the gingival tissue is thin, there is an increased risk of gingival recessions.

Multiple approaches have been used in the past to replace lost, damaged or diseased gingival tissues. A thorough diagnosis is helpful for predictability of root coverage procedures. In 1960 Sullivan and Atkins[4] classified gingival recessions into four morphologic categories as, a) Shallow-Narrow, b) Shallow-Wide,

c) Deep-Narrow and d) Deep-Wide. This classification was not useful to the clinician to predict outcome of root coverage procedures. In 1985, Miller[4] has given a useful classification of gingival recession, taking into consideration of anticipated root coverage. According to this classification, a complete root coverage is achieved in Miller's Class-I and Class-II gingival recessions, and only partial coverage may be expected in Class-III. But root coverage is not amenable in Class-IV gingival recession cases.

The term periodontal plastic surgery (PPS) was first suggested by Miller in 1988[5], and defined it as "surgical procedures performed to prevent or correct anatomical, developmental, traumatic or plaque disease-induced defects of the gingiva, alveolar mucosa, or bone" (The American Academy of Periodontology 1996). The treatment of buccal gingival recessions one of the indications of PPS as it involves patient's esthetic concerns. PPS is also indicated when the exposed root is associated with dental hypersensitivity and/or root caries. Moreover, these defects should also be treated in situations where there is an unfavorable contour of the gingival margin that limits proper plaque control and fails to respond to adequate oral hygiene measures. A variety of periodontal plastic surgeries have been suggested for root coverage. These surgical procedures can be classified as pedicle soft tissue grafts, free soft tissue grafts or a combination of both

II. CASE REPORT

Case 1

A male patient 22 years of age reported to the Department Of Periodontics, ITS Dental college& Hospital, Greater Noida with a chief complaint of receding gums in the lower front tooth region. He started noticing sensitivity in the same area in the past 3 months.

On extraoral examination, no abnormality was detected in the lymphnodes and temporomandibular joints. Face appears to be bilaterally symmetrical and patients has competent lips. On intraoral examination, lower anterior incisors showed gingival recession of 2mm with no loss of interdental papilla Figure 1 (b), Figure 2 (b). The case can be classified as shallow and narrow

according to Sulivans and Atkins(1960) or as Miller's Class I gingival recession.

Case 2

A male patient 25 years of age reported to the Department Of Periodontics, ITS Dental college& Hospital, Greater Noida with a chief complaint of receding gums in the lower front tooth region, which he noticed 2 years back . He has no pain or sensitivity associated with the same.

On extraoral examination, no abnormality was detected in the lymphnodes and tempormandibular joints. Face appears to be bilaterally symmetrical and patients has competent lips. On intraoral examination, lower anterior incisors showed gingival recession of 6 mm with no loss of interdental papilla. The case can be classified as deep and narrow according to Sulivans and Atkins (1960) or as Miller's Class II gingival recession.

Surgical Technique

After through examination, oral prophylaxis was completed followed by root planning. Patient was recalled on maintenance phase after 14 days. On the day of the surgery, patient was prepared with povidone iodone scrubbing extraorally and intraoral disinfection with 0.2 % chlorhexidine mouthrinse followed by local anaesthesia with 2% lignocaine

Preparation of Recipient site

After local anaesthesia, through root planing is done on the recipient area using Graceys 1/ 2 curette. An aluminium foil template was made with adequate width of about 1.5 times the recession area [Figure 2 (e)], which would be used as a template for the harvesting site later on. The horizontal incision was made at the level of cemento-enamel junction extending from the line angle of the adjacent teeth on either side of the recession. The recipient sites are now marked and the whole area was de-

epitheialized using a no-15 blade and root biomodification was done with the help of carbamide-peroxide EDTA [Figure 1 (d), Figure 2 (f)]

Preparation Of The Donor Site

The free gingival graft is harvested from the palatal area distal to the canine and mesial to the first molar tooth. The different techniques for harvesting the graft are: Mesh graft (accordion) technique (Rateitschak et al)[6], Strip technique (Han et al.) and Vertical strip technique (Khoshkhoonejad et al.). In the presented cases Strip technique was applied. Using the help of a template prepared earlier the donor site is marked using a hematoxylin pencil. A no-15 blade was used to harvest the graft. [Figure 1(f), Figure 2 (g)]

Adaptation of the graft to the recipient site

The graft was placed on the recipient bed and sutured by means of interrupted sutures (4-0 Vicryl resorbable) at the coronal and apical borders Figure 1 (h), Figure 2 (i). The prepared aluminium template was then placed followed by coe-pak. [Figure1(i)Figure 2 (k)]

III. RESULT

Coe-pak was removed on the 14th day of surgery. Patient was recalled after 1 month [Figure 1 (k), Figure 2 (l)]. The surgical site showed gain in clinical attachment level after 3 months. Patients were followed up every month for 1 year. Oral hygiene instructions were reinforced to the patient on every visits. Surgical site showed complete healing and was firmly attached to the root surface on the first month of surgery.

CASE 1

TREATMENT DONE:- FREE GINGIVAL GRAFT i.r.t. 31,41

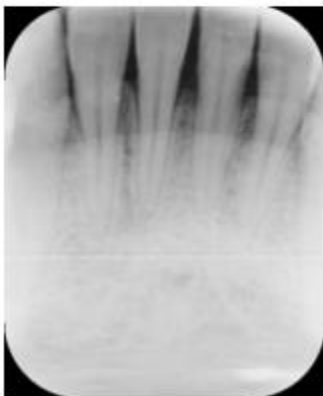


Figure 1(a) IOPAR 31,32,41,42 LEVEL



Figure 1 (b) CLINICAL ATTACHMENT



Figure 1 (c.) AFTER FRENECTOMY
RECEPIENT BED



Figure 1 (d) PREPARATION OF



Figure 1 (e) MARKING OF THE DONOR SITE
GRAFT



Figure 1(f) HARVESTING

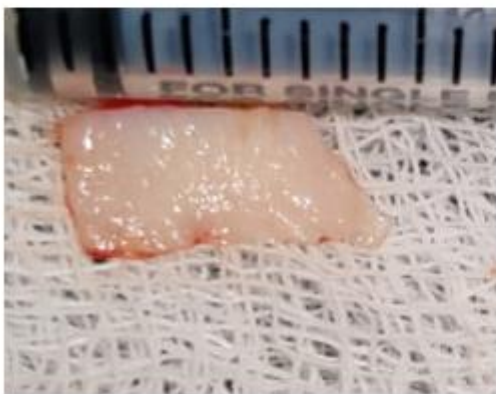


Figure 1 (g) HARVESTED GRAFT



Figure 1 (h) PLACEMENT OF
GRAFT AND
SUTURE USING 5-0 VYCRYL
SUTURE



Figure 1 (i) PLACEMENT OF COE-PAK PPOST OPERATIVE



Figure 1 (j) 21 DAYS

CASE 2

TREATMENT DONE - ROOT COVERAGE SURGERY FREE GINGIVAL GRAFT i.r.t. 31



Figure 2 (a) IOPAR 3132,41,42,43



Figure 2 (b) PRE-OPERATIVE



Figure 2 (c) RELATIVE ATTACHMENT RECESSON



LEVEL Figure 2 (d) WIDTH OF



Figure 2 (e) PLACEMENT OF TEMPLATE ON RECIPIENT BED AND DONOR SITE



Figure 2 (f) PREPARATION OF RECIPIENT BED OF DONOR SITE



Figure 2 (g) PREPARATION



Figure 2 (g) PLACEMENT OF AB-GEL



Figure 2 (h) CYANOACRYLATE TISSUE ADHESIVE



FIGURE 2 (I)FREE GRAFT
SUTURED ON RECIPIENT BED



Figure 2 (j)SUTURE AND
CUANOACRYLATE SEALED

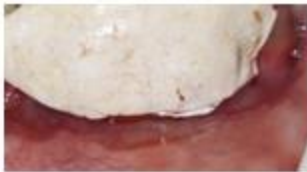


Figure 2 (k)PLACEMENT OF COE-PAK



Figure 2 (l) 4 WEEK S FOLLOWUP ON DONOR SITE AND RECEPIENT SITE

IV. DISCUSSION

Proper mucogingival therapy should lead to gingival augmentation and create a vestibule with adequate depth in the regions with insufficient attached gingival tissues. The free gingival graft (FGG) is a technique introduced by Bjorn in 1963[6] and described by Sulivans and Atkins in 1968[6] to address the lack of keratinized tissue. The FGG is a subject of extensive research in the field of periodontics focusing on either the technique of harvesting the graft itself or adaptation on the donor site. Although other techniques, such as the subepithelial connective tissue graft, are considered a more efficient procedure for root coverage procedures, the FGG is still commonly used to increase keratinized tissue and anticipated root coverage.

This case report describes free gingival graft technique for the treatment of gingival recession and to increase the keratinized tissue. Paul J et al (2017), Raoofi S et al (2019), Harris RJ 2001 [7,9,10]in their study showed that FGG is a excellent technique to increase the width of keratinized gingiva and for the maintenance of oral hygiene. A study done by Agarwal C and co-workers

(2015)[8] evaluated and compared the effectiveness and of FGG and acellular dermal matrix allografts and concluded that FGG yields better result in increase the width of attached gingiva.

The main disadvantages of this technique are the presence of two wound areas, the unfavorable color match , the rough texture of the graft, and the limitations connected with the extent of the donor area which restricts the area of gingival augmentation to three, max. four teeth. In addition, the color of recipient site does not match the color of the adjacent tissues.

V. SUMMARY AND CONCLUSION

A free gingival graft is a clinical procedure where in a small section of epithelial and connective tissue graft is taken from the oral cavity and placed at the area of recession. The clinician should be aware of the type of recession and prognosis of the treatment. The procedure involves two surgical sites which could cause discomfort and pain to the patient. According to Millers classification, 100% root coverage is anticipated in Class I and Class II recession.

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