



CASE SERIES

Pouch Technique - A Pragmatic Approach for Gingival Recession

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ABSTRACT : The quest for predictable clinical solutions to the problem of gingival recession has led to several important surgical advances this past decade. Site preparation for root coverage procedure has evolved from the original surgical dissection of an open vascular bed, used for the placement of an exposed graft overlying the recipient bed, to the coronally advanced flap and tunnel methods used for submerged grafts. The Pouch and Tunnel technique along with the use of a subepithelial connective graft has proven several benefits including early tissue healing, esthetic results and good patient cooperation. This article emphasizes on the effectiveness of using the pouch technique which improves the success rate for treating gingival recession in a series of 3 cases.

Keywords : *gingival recession, root coverage, pouch technique, connective tissue graft*

INTRODUCTION

Gingival recession can be defined as root surface exposure to the oral cavity because of the destruction of the marginal gingival tissues and of the connective tissue attachment of one or more teeth. ¹ The recession of the gingiva, either localized or generalized can lead to clinical problems such as root surface hypersensitivity, root caries, cervical abrasion, difficult plaque control and diminished cosmetic appeal. For many years periodontists are in apursuit of developing therapies that predictably causes gingival recession coverage. Gingival augmentation can be performed by various pedicle flaps, free soft tissue grafts, tunnel technique, guided tissue regeneration, allografts or by combination techniques. ²⁻⁷ The ideal soft tissue grafting procedure should provide esthetics, predictable results and allow treatment of one or more teeth. This case series presents the outcomes obtained through the application of pouch technique with a connective tissue graft for the treatment of Miller class I and II gingival recession defects.

DESCRIPTION OF CASE:

A 32 year old male patient reported to the outpatient Department of Periodontology with the chief complaint of sensitivity with respect to the lower front tooth region since a few months. He was systemically healthy and the medical and family history was

noncontributory. His personal history revealed that he was using horizontal scrub motion to brush teeth. Upon clinical examination the patient was diagnosed to have Miller's class I gingival recession on the mandibular right central incisor (Figure1). The loss of attachment was 4 mm in tooth #41. There was adequate width of attached gingiva. Traumatic occlusion was ruled out for the patient. Considering the factors which affect the treatment outcome of the root coverage procedures, a pouch technique with connective tissue graft was considered.

Presurgical therapy:

The surgical procedure was explained to the patient and an informed consent was obtained. Prior to the surgery the patient was given oral hygiene instructions, supragingival scaling and root planing was done. The clinical parameters like probing depth, recession depth were recorded before and after the surgery. The brushing habit was corrected before the surgical procedure.

Surgical treatment:

After the patient demonstrated asatisfactory standard of plaque control, he was scheduled for surgery. Prior to administration of local anesthetic, the patient rinsed with 15 ml of 0.12% chlorhexidine to reduce the bacterial load. The exposed root of the recipient tooth was scaled and planed (Figure 2), and tooth

convexities were reduced by using a smooth diamond bur and a high speed handpiece. The surgical site was anesthetized using 2% xylocaine HCl with adrenaline (1:200000). A sulcular partial thickness incision was made through the recession area using #15C scalpel blade (Figure 3), followed by additional incisions performed with Orban's knife on labial aspect of # 41. This created a pouch undermining the tissue far beyond the mucogingival junction so that there is adequate relaxation of this pedicle flap to allow the entrance of the connective tissue graft underneath (Figure 4). Care was taken not to cut or perforate the flap or the interdental papilla in order to maintain blood supply and facilitate healing.

The connective tissue graft was harvested from the palate using Bruno's technique⁸ (Figure 5). After harvesting the graft, donor site was sutured. The graft that was procured was placed within the prepared pouch and finger pressure was applied to stabilize the graft until hemostasis was achieved. Later the graft was secured to mesial and distal papilla of # 41 with 3-0 silk suture (Figure 6). Application of an ice pack was recommended to minimize postoperative swelling. The patient was instructed to take analgesics thrice daily and was advised not to brush intreated area for a week but to rinse his mouth with 0.2% chlorhexidine twice daily. During the next 4 weeks, only gentle tooth brushing was permitted. Similar procedure was followed in the next 2 cases. (Figures 8, 9, 10, 11)

Results

Healing was satisfactory. Patient was recalled every week for the first one month. The sutures placed in the palate were removed after a week and those placed in relation to the recipient site were removed after 15 days. Oral hygiene instructions were reinforced at every appointment. Adaptation of the edges of the graft to the surroundings and increased color matching were observed. Postoperative healing after 2 months was satisfactory. Healing after 6 months in the first 2 cases revealed good amount of attached gingiva with acceptable recession coverage, satisfactory gain in the clinical attachment and the position of the mucogingival junction remained the same (Figures 7, 9). In the third case, the one month post op follow up shows excellent root coverage and the patient is kept under regular observation. (Figure 11)

DISCUSSION:

Gingival recession is defined as the displacement of the gingival margin apical to the cemento-enamel junction. It is characterized by the loss of periodontal connective tissue fibres, along with tooth cementum and alveolar bone⁵. An exposed root surface often causes pain and or/ sensitivity upon exposure to cold and hot substances and is more prone to caries⁹.

and Langer described the subepithelial connective tissue grafting technique in 1985 for use in the treatment of adjacent gingival recession defects. The high success rate obtained with this type of graft was related to maintaining the blood supply at the overlying flap and the connective tissue basement. The major benefits of subepithelial connective tissue grafting are improved color blending at the recipient site and reduced morbidity at the donor site. In the same year, Raetzke¹⁰ described the envelope technique for treatment of single deep-wide gingival recession defects; the method involved subepithelial connective tissue grafting in an envelope created around the root surface with a split-thickness dissection without vertical incisions. This technique offers many advantages, such as good healing (related to maximum contact between the graft and host tissues), minimal surgical trauma at the recipient area, increased blood supply from the lateral and papillary areas, minor wound surface at the palatal site and improved esthetic appearance in the early phase of healing.

Various modifications of the basic envelope procedure have been put forward. In 1994 Allen¹¹ demonstrated a supraperiosteal envelope technique in soft-tissue grafting for root coverage for multiple adjacent areas of gingival recession. He used partial-thickness dissection at the recipient area without vertical incisions. In 1999 Zabalegui¹² et al reported highly successful root coverage in the treatment of 21 teeth with subepithelial connective tissue grafting combined with a tunnel technique. Blanes and Allen¹³ introduced the bilateral pedicle flap-tunnel technique to cover adjacent recession defects with subepithelial connective tissue grafts.

The strategy to the pouch technique is that it preserves

the lateral and the apical blood supply of the flap by eliminating vertical incisions. Tarnow demonstrated that lateral blood supply was more significant than the apical as tissues survived even after severing the apicocoronal blood supply¹⁴. This suggests vertical releases may compromise the lateral blood supply leading to delay in healing. Thus the advantage of using this technique is the preservation of lateral blood supply and also the intimate contact of the donor tissue

to the recipient site.

In the present cases satisfactory root coverage was achieved with good esthetic results. The gingival blood supply was preserved at the apical and lateral surfaces which influenced early healing. The overlying gingiva was also preserved which prevented it from becoming necrosed. Hence the pouch technique is a predictable root coverage procedure for treating isolated Miller's Class I & II gingival recession defects.



Figure 1: Presurgical view of # 41 with Miller's class I gingival recession



Figure 2: Planing the root surface of # 41



Figure 3: Incision given using no 15C blade



Figure 4: Creation of pouch without severing the interdental papilla



Figure 5: Connective tissue graft harvested from the palate



Figure 6: Graft secured within the pouch and sutured with a 3-0 silk suture



Figure 7: Post-operative healing after 6 months



Figure 8: Presurgical view of # 34 with Miller's class I gingival recession



Figure 9: Post-operative healing after 6 months



Figure 10: Presurgical view of # 34 with Miller's class II gingival recession



Figure 11: Post-operative healing after 1 month

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