

## Treating Multiple Gingival Recessions by Pouch and Tunnel Connective Tissue Graft Technique

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### Abstract

Gingival recession is a common clinical finding and there are various surgical treatment procedures for its correction. Overtime many improvements in techniques and designing of the flap have been introduced to improve healing of the tissue for more aesthetic and predictable results. Pouch and tunnel connective tissue graft is one such alternative technique for treating multiple adjacent teeth gingival recessions especially for areas with thin gingival biotype. The case report presents the use of this technique for treating gingival recession in multiple maxillary anterior teeth which resulted in excellent root coverage with improved gingival biotype.

**Keywords:** Gingival Recession; Root Coverage; Pouch and Tunnel.

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### Introduction

Various surgical techniques are used frequently today for coverage of gingival recessions, and the use of each one of them is based on its advantage or disadvantage. The pouch and tunnel connective tissue technique is a technique which has shown to give predictable root coverage and maintain better blood supply for adequate early healing. The case report presents the use of this technique for coverage of multiple adjacent gingival recessions in maxillary anterior teeth.

### Case Report

35 year old female patients visited to the Department of Periodontics with complain of sensitivity to cold in all the teeth. An intraoral examination of the patient revealed gingival recessions of Miller's class I and II type in multiple teeth (Figure 1a, 1b). The interdental gingiva was

intact, healthy, firm and resilient with no signs of bleeding and with minimal plaque deposits.

Personal history of frequent and vigorous tooth brushing has probably resulted in multiple teeth recession. Her blood investigation reports were normal. Phase I therapy was given first and proper brushing technique was explained to the patient.

After careful examination, the pouch and tunnel connective tissue graft technique was selected as the line of treatment. The area to be treated was anesthetized. Pouch and tunnel was prepared by means of sulcular incision beyond mucogingival junction without cutting the papillary tip at the recession site from the mesial aspect of first premolar to the central incisor at one sitting. Equivalent size of connective tissue donor was procured (Figure 2a) from the palate (Figure 2b) and was introduced through the tunnel covering adjacent gingival recessions (Figure 3) and sutured at the site (Figure 4).

Periodontal dressing was used to cover the surgical site. Oral hygiene instructions and antibiotic and analgesic were given for 5 days. The patient was recalled after 10 days. The pack and suture was removed, the area of operation appeared normal with uneventful healing.

The same procedure was performed on the other side of the maxillary anterior teeth in the next sitting after a gap of two months. The gingival recession was totally covered with a beautiful aesthetic result in the maxillary arch (Figure 5a, 5b).

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Fig. 1a: Preoperative



Fig. 3: Connective tissue graft placed in prepared pouch and tunnel



Fig. 1b: Preoperative



Fig. 4: Flap sutured



Fig. 2a: Connective tissue graft harvested from palate



Fig. 5a: Postoperative showing coverage of recession



Fig. 2b: Donor site



Fig. 5b: Postoperative showing coverage of recession

## Discussion

Surgical root coverage may be achieved by a number of techniques, including pedicle gingival grafts, free autogenous gingival grafts, connective tissue grafts and guided tissue regenerations [1]. Pedicle gingival grafts offers excellent blood supply but should have sufficient adjacent donor tissue [2]. Free autogenous gingival grafts were used mainly to increase the width of keratinized gingiva and is generally not indicated for root coverage of deep and wide gingival recession areas because of insufficient blood supply to graft. Langer and Langer introduced the use of subepithelial connective tissue grafts for root coverage [3]. Root coverage using connective tissue grafts showed a high success rate [4]. To minimize incision and reflection of the flap and to provide abundant blood supply to donor tissue the pouch and tunnel technique was introduced. The placement of subepithelial donor connective tissue into pouches beneath the papillary tunnel allows intimate contact of donor tissue to the recipient site. The use of tunnel procedure preserves the interdental papilla and thus accelerates the initial wound healing [5]. One of the advantages of this technique is the

thickening of the gingival margin after healing. The thicker gingival margin is more stable to allow for the possibility of creeping reattachment of the margin and is also more resistant to frictional forces.

## References

1. Allen EP. Pedicle flaps, gingival grafts and connective tissue grafts in aesthetic treatment of gingival recession. *Pract Periodont Aesthet Dent.* 1993; 5: 29-38.
2. Grupe HE, Warren RE. Repair of gingival defects by a sliding flap operation. *J Periodontol.* 1956; 27: 92-95.
3. Langer B, Langer L. Subepithelial connective tissue graft technique for root coverage. *J Periodontol.* 1985; 56: 715-20.
4. Jahnke PV, Sandifer JB, Gher ME, et al. Thick free gingival and connective tissue autografts for root coverage. *J Periodontol.* 1993; 64: 315-22.
5. Zabalegui I, Sicilia A, Cambra J. Treatment of multiple adjacent gingival recessions with the tunnel subepithelial connective tissue graft: A clinical report. *Int J Period Rest Dent.* 1999; 19: 199-206.