

CONNECTIVE TISSUE GRAFT IN THE TREATMENT OF MULTIPLE ADJACENT GINGIVAL RECESSIONS

Christina Popova, K. Kotsilkov
*Department of Periodontology
Faculty of Dental Medicine, Medical University - Sofia, Bulgaria*

SUMMARY:

Marginal tissue recession is a displacement of the soft tissue margin apical to the cement-enamel junction with exposure of the root surface. The etiology of the gingival recession is associated with the gingival inflammation, mechanical factors like improper toothbrushing in the circumstances of tooth malposition, bone dehiscence, thin periodontal tissue, and aberrant frenulum. The treatment of the gingival recession in the last years includes gingival grafting procedures. The most generally used procedure is the free gingival graft. Recent studies have demonstrated that connective tissue grafting is an effective treatment of gingival recession. The graft used may either be an epithelialized graft or a subepithelial connective tissue graft of palatal masticatory mucosa.

The presentation demonstrates a connective tissue graft procedure for root coverage in a 23 years old patient with Miller class II recessions on teeth #14, #15, #24, and Miller class I recessions on teeth #16, #25, #26 and the results.

In the limitations of this case the connective tissue graft procedure led to clinical improvement which is a premise for better maintenance of the achieved root coverage.

Key words: marginal tissue recession, soft tissue graft procedures, epithelial collar, root coverage.

The most common cause for the marginal tissue recessions is abrasive and traumatic toothbrushing habits. Teeth positioned buccally tend to have greater recession. Recession on the gingival tissue and bone exposes the cementum surface, which allows abrasion and ditching of the cervical area.

Periodontal inflammation and the consequential loss

of attachment results in reduced attached gingiva. Advanced periodontal involvement in areas of minimal attached gingiva result in the base of pocket extending close to, or apical to, the mucogingival junction.

Frenal and muscle attachments encroach on the marginal gingiva distend the gingival sulcus, fostering plaque accumulation, increasing the rate of progression of periodontal recession, and causing their recurrence after treatment. The problem is more common on facial surfaces, but it may also occur on the lingual surface.

Orthodontic tooth movement through a thin buccal osseous plate leading to a dehiscence beneath a thin gingival tissue can cause recession and/or loss of the gingiva (1, 3, 9).

One of the most generally used procedure for root coverage is the free soft tissue graft procedure. The graft used may either be an epithelialized graft or a subepithelial connective tissue graft of palatal masticatory mucosa.

The technique utilizing a subepithelial soft tissue graft, i.e. the connective tissue, involves the placement of the graft directly over the exposed root and the mobilization of a mucosal flap to be coronally or laterally moved for coverage of the graft (2, 4, 6, 7, 8).

GOAL: The presentation demonstrates an envelope technique connective tissue graft procedures for root coverage in a 23 years old patient with Miller class II recessions on teeth #14, #15, #24, and Miller class I recessions on teeth #16, #25, #26.

MATERIALS AND METHODS:

The surgical protocol of the both treated sites is presented on the following photos – Figures 1-6.



Figure 1. Initial status- Miller class II recessions on teeth #14, #15, #24, and Miller class I recessions on teeth #16, #25, #26.



Figure 2. Initial horizontal and intrasulcular incisions



Figure 3. Partial thickness flaps are reflected. The prominent root surfaces and dehiscence are seen.



Figure 4. The connective tissue graft taken according the Hurtzeler-Weng technique (5).



Figure 5. Connective tissue graft with epithelial collar on the right side and connective tissue graft without epithelial collar on the left side. Both grafts are positioned and immobilized with interdental resorbable sutures.



Figure 6. Fixation of the graft and coronal flap positioning.

RESULTS:

On the first month after surgery complete root coverage was obtained. The gain of attached gingiva is 3mm on teeth #16,#15,#14 and 1mm on teeth #26,#25, and

#24. The color and the appearance of the connective tissue grafted area is similar to the adjacent gingiva which leads to good aesthetic result. The result is stable on the sixth month after treatment.



Figure 7. Result at the sixth month - complete root coverage is achieved.

CONCLUSION:

In the limitations of this case the connective tissue graft procedure led to tissue root coverage, shallow residual probing depths, gain in clinical attachment and an increase in gingival height and width, which is a premise for better maintenance of the achieved root coverage. The epithelial collar approach led to better gain of attached gingiva but the aesthetic result was worse because of the rugged gingival surface.

REFERENCES:

1. Bernimoulin J. P., Loscher B, Muhlemann H. R. (1975) :Coronally repositioned flap. *J Clin Periodontol* 2;1
2. Bruno, J. F. (1994). Connective tissue graft technique assuring wide root coverage. *International Journal of Periodontics and Restorative Dentistry* 14, 127- 137.
3. Hall W. B. (1984) Pure mucogingival problems. Etiology, treatment and prevention. Chicago, Quintessence.
4. Harris, R. J. (1994). The connective tissue with partial thickness double pedicle graft: the results of 100 consecutively-treated defects. *Journal of Periodontology* 65, 448-461.
5. Hurtzeler, M. B., Weng, D. (1999):A single incision technique to harvest subepithelial connective tissue grafts from the palate. *Int J Periodontics Restorative Dent* 19, 279.
6. Langer, B. & Langer, L. (1985). Subepithelial connective tissue graft technique for root coverage. *Journal of Periodontology* 56, 715-720.
7. Nelson, S. W. (1987). The subpedicle connective tissue graft. A bilaminar reconstructive procedure for the coverage of denuded root surfaces. *Journal of Periodontology* 58, 95-102.
8. Wennstrom J & Pini Prato G.P. (2003) "Mucogingival Therapy -Periodontal Plastic Surgery" in Jan Lindhe's "Clinical Periodontology and Implant Dentistry" Blackwell Munksgaard, a Blackwell Publishing Company (Fourth Edition)
9. Woofer C. (1969): The prevalence and etiology of gingival recession. *Periodont Abstr* 17:45.

Address for correspondence:

Assoc. prof. Christina Popova, PhD
Department of Periodontology, Faculty of Dental Medicine, Medical University of Sofia,
1, Georgi Sofiiski Str., Sofia, Bulgaria
Mobile: +359 88 875 90 49; E-mail: hrpopova@yahoo.com