

## **THE APPLICATION OF A MINIMAL INVASIVE CONNECTIVE TISSUE GRAFT TECHNIQUE (ENVELOPE TECHNIQUE) IN A TREATMENT OF A GINGIVAL RESSION**

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### **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 main indications for root coverage procedures are esthetic /cosmetic demands, root hypersensitivity and management of shallow root caries lesions and cervical abrasions.

The presentation demonstrates an envelope technique connective tissue graft procedure for root coverage in a 30 years old patient with Miller class I recession on teeth #14.

The connective tissue graft procedure led to achievement of satisfying clinical results in the presented case.

Key words: marginal tissue recession, root coverage procedures, connective tissue graft, envelope technique.

### **INTRODUCTION:**

Mucogingival deformity may be defined as „a significant departure from the normal shape of gingival and alveolar mucosa and may involve the underlying alveolar bone. Some of the most important goals in the treatment of mucogingival problems are the arresting the progression of gingival recession and improving the ability for plaque control. (8)

Marginal tissue recession is a displacement of the soft tissue margin apical to the cemento-enamel junction with exposure of the root surface. Traumatizing toothbrushing and tooth malposition are the factors most frequently found to be associated with marginal tissue recession (2,3,7).

The main indications for root coverage procedures are esthetic /cosmetic demands, root hypersensitivity and management of shallow root caries lesions and cervical abrasions. The choice of appropriate surgical treatment of gingival recession is according Miller's classification.

Miller (1985) described a useful classification of recession defects, taking into consideration the anticipated root coverage that it is possible to obtain (5).

- Class I: Marginal tissue recession not extending to the mucogingival junction. No loss of interdental bone or soft tissue.

- Class II: Marginal tissue recession extends to or beyond the mucogingival junction. No loss of interdental bone or soft tissue.

- Class III: Marginal tissue recession extends to or beyond the mucogingival junction. Loss of interdental bone or soft tissue is apical to the cemento-enamel junction, but coronal to the apical extent of the marginal tissue recession.

- Class IV: Marginal tissue recession extends beyond the mucogingival junction. Loss of interdental bone extends to a level apical to the extent of the marginal tissue recession.

While complete root coverage can be achieved in Class I and II defects, only partial coverage may be expected in Class III. Class IV recession defects are not amenable to root coverage. Consequently, the critical clinical variable to assess in order to determine the possible outcome of a root coverage procedure is the level of periodontal tissue support at the proximal surfaces of the tooth.

Several surgical techniques have been proposed for root coverage. Recently the subgingival connective tissue graft has been used most frequently with a coronally positioned flap. However releasing incisions in the treatment of maxillary incisors may jeopardize the aesthetic outcome. To avoid this disadvantage envelope technique was proposed (1, 6).

In cases with single Miller class I recession an alternative for root coverage is a minimal invasive envelope technique which includes the placement of the base of the connective tissue graft within an "pouch" prepared by an undermining partial thickness incision from the soft tissue margin. Compared to the epithelialized graft, the connective tissue graft is preferable due to less invasive palatal wound and improved esthetic result (1, 6).

**GOAL:** The presentation demonstrates a clinical case of treatment with an envelope technique connective tissue graft procedure for root coverage in a 30 years old patient with Miller class I recession on teeth #14.

## MATERIALS AND METHODS:

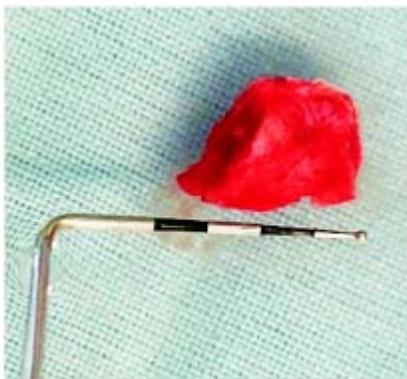
The surgical technique is presented on figures 1 - 5:



**Figure 1.** Initial status with 2mm Miller class I recession.



**Figure 2.** Preparation of a subepithelial pouch.



**Figure 3.** The connective tissue graft taken with the Hurtzeler-Weng technique (5).



**Figure 4.** Graft positioning and flap fixation



**Figure 5.** Suturing of the palatal donor wound.

## RESULT:

The root coverage obtained after the procedure is satisfactory. The achieved augmentation of the attached gingiva facilitates the plaque control and improves the prognosis of the tooth. Good aesthetic result with an excellent tissue color and volume match is observed one month after surgery (Fig. 5). The attained root coverage is stable six months after treatment (Fig. 6).



**Figure 6.** Result at the first month.



**Figure 7.** Result at the sixth month

### **CONCLUSION:**

The connective tissue graft procedure led to achievement of satisfying clinical results in the presented case. The application of envelope technique due to its minimal invasive approach quickens the healing process and allows better aesthetic results.

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