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COMBINATION OF APICALLY POSITIONED AND CORONALLY ADVANCED FLAP IN THE TREATMENT OF A COMPLEX MUCOGINGIVAL AND RESTORATIVE PROBLEM. A 3-YEAR FOLLOW-UP. (Case Report)

Kamen Kotsilkov[1], Teodora Nedialkova[2].
1) Department of Periodontology, Faculty of Dental Medicine, Medical University, Sofia.
2) Post graduate student, Faculty of Dental Medicine, Medical University, Sofia, Bulgaria.

ABSTRACT:

INTRODUCTION: The modern Periodontology has various approaches to achieve a complete functional and aesthetic rehabilitation of the mucogingival complex. These techniques include application of flaps with apical or coronal advancement in order to achieve different treatment objectives. Complex cases with different pathology on adjacent teeth require several surgeries thereby increasing treatment time and patient discomfort. New combined approaches are needed to meet the challenges of such cases.

OBJECTIVE: This report presents a case with a simultaneous application of a resective and a mucogingival technique in one dental sextant.

METHODS: I.C. (36) with a localized chronic periodontitis, Miller Class I gingival recessions (13,14) and subgingival caries lesions (15,16). A combined approach with simultaneous crown lengthening with apically positioned flap for 16,15 and root coverage with enamel matrix derivate and a coronally advanced flap for 14,13 was applied in order to avoid multiple surgical procedures.

RESULTS: On the third month after the surgical procedure a complete root coverage (13,14) was achieved. The crown lengthening procedure enabled the restoration of the caries lesions and the placement of new crowns (15,16). The result at the third year demonstrates a stable gingival margin with no recurrence of the gingival recessions.

CONCLUSION: The applied combined procedure led to a complete resolution of the existing problems with a single surgery.

The simultaneous application of different procedures seems a promising approach aimed to reduce the treatment time and to diminish patient discomfort.

Keywords: resective periodontal surgery, root coveradge, combined treatment approach.

INTRODUCTION:

The modern Periodontology has various approaches to achieve a complete functional and aesthetic rehabilitation of the mucogingival complex. The most frequent problems treated in the contemporary clinical practice are gingival recessions and deep sub-gingival caries lesions invading the biological width.

Marginal tissue recession is a displacement of the soft tissue margin apical to the cement-enamel junction with exposure of the root surface. The most common cause for the marginal tissue recessions is abrasive and traumatic tooth brushing habits. Teeth positioned bucally 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 [1].

The most well-documented and predictable approach for achieving root coverage is the coronally advanced flap procedure [2, 3].

In the recent years the application of enamel matrix proteins in the root coverage procedures improved their success rate and predictability [4, 5].

On the other hand in cases with deep caries lesions invading the biological width a respective surgical approach is indicated in order to recreate the proper bone and gingival morphology and to provide sufficient sound tooth surface for the dental restoration. The most frecuently use approach for these cases is the crown lengthening procedure with bone re-contouring and apically positioned flap [6, 7].

These techniques include application of flaps with apical or coronal advancement in order to achieve different treatment objectives. Complex cases with different pathology on adjacent teeth require several surgeries thereby increasing treatment time and patient discomfort. New combined approaches are needed to meet the challenges of such cases.

OBJECTIVE:

This report presents a case with a simultaneous application of a crown lengthening and root coverage procedures in one dental sextant.

MATERIALS AND METHODS:

I.C. (36) with a localized chronic periodontitis, Miller Class I gingival recessions on teeth #13, #14 and subgingival caries lesions on teeth #15, #16 (Fig. 1).

Fig. 1. Initial status.

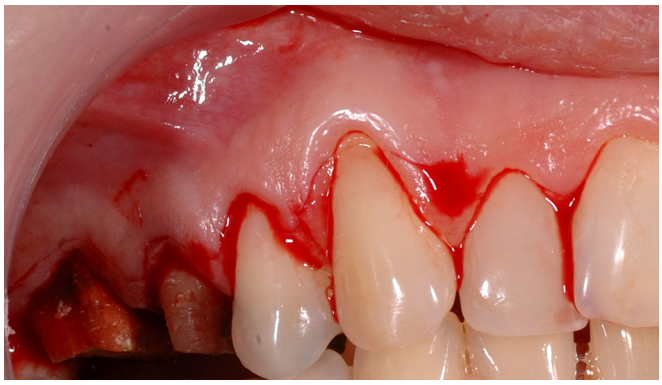
A combined approach with simultaneous crown lengthening with apically positioned flap for #16,#15 and root coverage with enamel matrix derivate and a coronally advanced flap for #14,#13 was applied in order to avoid multiple surgical procedures.

The first step was the restoration of the proper contour of the vestibular tooth surface to the level according to the predetermined root coverage [8] (Fig. 2).

Fig. 2. Restoration of the vestibular tooth contour.

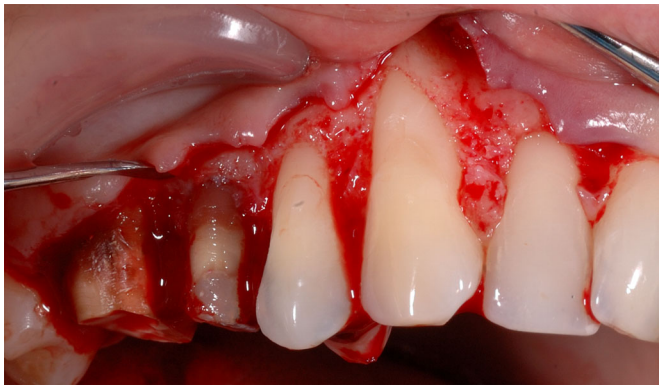
The incision was a combination of internal bevel incision at teeth #16 and #15 and sulcular incision forming a triangular surgical papillae at teeth #14, #13 and #12 (Fig.3).

Fig. 3. Initial incision.



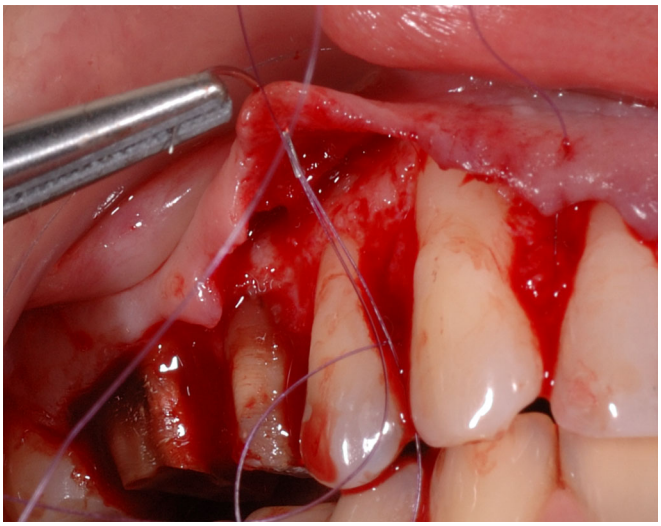
A full thickness flap was elevated at teeth #16, 15, while on teeth #14, #13, #12 a split thickness elevation of the surgical papillae was performed followed with full thickness elevation of the flap 3 mm apically of the existing bone dehiscence. An ostectomy and osteoplasty was performed in the bone surrounding #16 and #15 to recreate proper bone contour and to expose enough sound tooth structure for the future restoration.

Fig. 4. Flap elevation and bone recountouring.



Deepitelization of the anatomical papillae was performed followed by deep and superficial split thickness incisions in the area of #14 and #13 to ensure the coronal positioning of the flap (Fig. 5). The root surface of #14 and #13 was treated with enamel matrix derivate (Emdogain®).

Fig. 5. De-epitelization of the anatomical papillae.



The root coverage was achieved by suturing of the flap in the coronal position at teeth #14,#13 with a sling sutures while at teeth #15 and #16 was apically repositioned to obtain lengthening of the clinical crowns (Fig. 6).

Fig. 6. Flap adaptation and suturing.

RESULTS:

On the third month after the surgical procedure a complete root coverage on teeth #13,#14 was achieved . The crown lengthening procedure enabled enough tooth structure for the restoration of the caries lesions and the placement of new crowns on teeth #15,#16.The interdental contact points of teeth #17-#16-#15-#14 were placed 5 mm over the underlining bone in order to create enough space for the interdental papillae.

Fig. 7. Result on the third month.

The result at the third year demonstrates a stable gingival margin with no recurrence of the gingival recessions. A complete restoration of the interdental papille between #17-#16-#15-#14 was observed.

Fig. 8. Result on the third year.

CONCLUSION:

The applied combined procedure led to a complete resolution of the existing problems with a single surgery. The simultaneous application of different procedures seems a promising approach aimed to reduce the treatment time and to diminish patient discomfort.

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Address for correspondence:
Kamen Kotsilkov:
Department of Periodontology, Faculty of Dental Medicine,
1 Georgi Sofiiski str., Sofia, Bulgaria.
E-mail: kamenkotsilkov@gmail.com