SPLINTING - A NEW METHOD OF AESTHETIC PERIODONTAL IMMobilIZATION

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Abstract

Dental mobility appears as an unwanted effect of the periodontal disease. Splinting with glass fiber is a rapid, aesthetic and minimum invasive technique, granting immediate, time-stable results. As an adjuvant method applied in the treatments specific to periodontitis, the eutrophic character of splinting assures the healing effect upon tissues. Equally, the aesthetic aspect of splinting has a positive influence on the mental condition of the patient. An immediate functional and aesthetic improvement after the treatment motivates patient to cooperate during the life long periodontal treatment.

Keywords: periodontal immobilization, aesthetics, splinting, minimum invasive.

1. INTRODUCTION

Visual information has a major impact in the lives of people, so that the patients of today resort to aesthetic dental treatments.

From a periodontal perspective, aesthetics should assure a normal gingival aspect and a gingival contour observing the criteria of gingival height. [1]

Marginal periodontium includes all tissues which maintain and support teeth inside the maxillary bones. The periodontal disease represents an affection of the marginal periodontium, the etiopathogeny of which includes local (causal and favorizing) and general factors. Pathological dental mobility, appearing as one of the unwanted effects of periodontitis, [2] is not a disease as such, but rather a sign of the morphological modifications produced. [3]

As part of the complex treatment of marginal periodontopathies, immobilization of the periodontotic teeth appears as an efficient therapeutical means of functional equilibrium [4, 5]. Temporary immobilization may assure optimum healing conditions while, in extreme cases of advanced mobility, the extraction decision may be postponed. [6]

Immobilization plays a significant part in the prolongation of the functional life time of teeth [7]. The normal functional stresses may exceed the resistance capacity of the periodontium of teeth affected by periodontal mobility. Their immobilization by the splinting technique assures distribution of the functional forces on several periodontal units, while concomitantly reducing the stresses below the resistance value of the periodontium. This is a rapid, aesthetic and minimum invasive technique leading to immediate, time stable results.

2. MATERIALS AND METHODS

The working method applied for glass fiber immobilization is the following:

- First, professional hygienization is done: scaling with ultrasounds, brushing followed by spraying of sodium bicarbonate powder with Prophy-Jet (Cavitron Prophy-Jet, Dentsply).
- The following step assumes isolation by the application of the rubber dam, which includes – as a function of the clinical situation – the whole frontal group, possibly the first premolars, as well.
- Fixation of the immobilization materials is realized with a demineralization-rinsing type adhesive system: phosphoric acid 37% and Single Bond II (3M Espe) adhesive. By means of a cylindrical burr, the enamel surface is rendered hard, followed by application of the demineralizing acid for 15 sec, washing for 10
sec and drying. There follows application of the adhesive, the first layer, followed by a mild drying with an air jet, and the second application, drying and photopolymerization for 5 sec for each tooth.

- For polymerization, the LED Elipar Freelight 2, 3M ESPE, lightguide Ø 8 mm, 1000mW/cm² photopolymerization lamp was used.
- In the following stage, the glass fiber (Interlig, Angelus) is placed on the lingual sides of the teeth to be treated, being fixed temporarily with the Filtek Ultimate Flow (3M Espe) fluid photopolymerizable composite. Photopolymerization is performed for 10 sec on each tooth in part. When the fiber was positioned and fixed in the right place, there follows the final modelling with the Filtek Ultimate (3M ESPE) composite material. Its compacting is followed by photopolymerization for 10 sec per tooth.
- The foil of the rubber dam is removed through cutting, after which the premature contacts are checked by means of an articulating paper and elimination of the surplus material is made. Any contact on the string elements should be removed.

**CASE I:**

Male, 45 year-old patient suffering from gingival retraction generalized along the whole lower frontal group 42 and 32 gingival retraction of 3 mm, 31, 41, 33 and 43 gingival retraction of 5 mm, degree II mobility at the level of teeth 41, 31. Immobilization of the whole frontal group was performed. (Figs. 1-5)
CASE 2

Male, 72 year-old patient, 31, 41, II degree mobility, gingival retractions at the level of the whole lower frontal group. Immobilization with glass fiber splint of the whole frontal group was performed. (Figs. 6-9)

3. RESULTS AND DISCUSSION

The immobilization techniques represent a frequent therapeutic solution in the treatment of I or II degree dental mobility [8, 9].

The literature of the field shows that application of the immobilization methods on periodontotic teeth improves, in most of the cases, periodontium trophicity and reduces the mobility degree [10, 11]. No secondary effects of such a treatment were recorded.

As an adjuvant method applied in the treatments specific to periodontitis, the eutrophic character of splinting assures the healing effect upon tissues. Equally, the aesthetic aspect of splinting has a positive influence on the mental condition of the patient. An immediate functional and aesthetic improvement after the treatment motivates patient to cooperate during the periodontal treatment.

4. CONCLUSIONS

Splinting is an aesthetic technique used for the immobilization of periodontally affected teeth. Having long-lasting results, it can be effectively
employed for a long-term control of the evolution of the periodontal disease.

The election zone in which this technique is applicable is the area of the lower frontal group, even if it may be used on the upper frontal group, as well.

Unlike the metallic string for immobilization, the advantages provided by the glass fiber are of aesthetic nature.

References