

## EVALUATION OF INTEGRATIVE PERIODONTAL, SURGICAL, ORTHODONTIC AND PROSTHETIC TREATMENT IN SEVERE GENERALIZED AGGRESSIVE PERIODONTITIS

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### ABSTRACT

**Aim of the study** Evaluation and improving of periodontal status through alignment of the molars in mesial tipping. **Material and methods** We studied 26 patients, affected by aggressive periodontitis, with age between 26-35 years old, with extracted 3.6 and 4.6 from different reasons and second molar rotated and mesialized. Periodontal clinical exam revealed thin gingival tissue of 3-4 mm (21 cases, 80, 7%) on the mesial surface of the second molar. Radiographic exam revealed the enlargement of the periodontal space and the resorption of the interproximal mesial bone. The treatment for the second molar consisted in fixed orthodontic devices and different uprighting techniques depending on the periodontal status of the patient: 50% with uprighting spring, 30% with orthodontic implant and 20% with tip back technique. **Results** After treatment it was noticed an improving of the gingival tissue status, the reduction of the periodontal pockets with 2 mm and the reshaping of the bone. **Conclusions** Orthodontic treatment applied to partial toothless aims to create optimal conditions for the insertion of oral implants to represent elements of support for future prosthetic reconstruction.

**Keywords:** aggressive periodontitis, second molar, uprighting spring technique, prosthetic treatment

### INTRODUCTION

Orthodontics have today, between dental specialties, an intermediate position, which places it between the prosthetic and dentistry, which allows, in fact, to designate it with the term "dental-facial orthopedics", term currently accepted today by most orthodontic schools. Growth structures are actually the real objective of orthodontic therapy [1,2].

The concept of growth dominates all

orthodontic principles, not only in determining normal morphology and the etiology of dento-maxillary anomaly, but also in evaluation of therapeutic targets and disease prognosis [3,4,5].

Orthodontic treatment comes to respond to preprosthetic of any dental treatment, in order to restore the integrity of morpho-functional features of dentomaxillary system, with minimum of biological sacrifice. There are

several arguments that allow us to turn to orthodontics therapy: biomechanical, biological, aesthetic, prophylactic occlusal.

We aimed to describe possible types of orthodontic appliances used in orthodontic treatment, including surgery in patients with aggressive periodontitis. In some cases, orthodontic therapy combined with the prosthetic and surgical impose only certain types of orthodontic appliances, depending on the type of edentulous and teeth that have migrated to the toothless gap and the final plan prosthetic implant. There may be situations where orthodontic appliances must be combined with guided bone elongation or endosseous implants.

One of the most beneficial aspects of orthodontic treatment in adults with periodontal disease is to obtain redress second molar (leaning toward the edentulous space due to premature loss of permanent first molar) - Uprighting technique. In this case the second molar edentulous space leans towards the crown mesial inclines more than root, followed and gum tissue [6,7]. Result of producing these local changes will be noticed by the existence of the second molar arch with a marked inclination of its axis.

The purpose of this clinical trial was to evaluate the laboratory and subsequently improving periodontal status affect the recovery orthodontic year molars are in mesial tipping for the subsequent application of implant therapy. This phenomenon is signaled to early toothless of first molar, where there is a thin periodontal biotype or producing of pathological phenomena in supportive tissue [8].

#### **PURPOSE OF THE STUDY**

Evaluation and improving of periodontal status through alignment of the molars in mesial tipping.

#### **MATERIAL AND METHODS**

It was studied a group of 26 patients aged between 26 and 35 years were 3.6 and 4.6 extracted for various reasons. In all cases second molar was rotated and tilted at mesial surface. Periodontal examination revealed the existence of a thin marginal periodontium (about 3-4 mm in 21 cases, 80.7%) in the second molar mesial face (fig.1). In this context we initiated the hypothesis that forces developed nonaxial, targeted to the teeth in tipping position can lead to progressive loss of periodontal attachment.

Radiological examination revealed enlargement of the periodontal space and bone resorption to mesial interproximal space.

Applying fixed orthodontic treatment for the second molar were used various techniques of uprighting, techniques that have been applied according to orthodontic status and patient's periodontal biotype: 50% by uprighting spring, 30% with orthodontic implant, 20% type back technique.

Uprighting spring technique is, probably, the most popular device used for molars wich are in mesial tipping. Application of this orthodontic device exert controled extrusive forces during uprighting molars so that it can be used to position the second molar vertically without causing its migration over the occlusal plane.

Our therapeutic measures were: motivating patients for dental care and learning proper techniques to control plaque and removal predisposing factors; removing microbial factors by debridement, scaling, curettage and root planing, where periodontal pockets were greater than 5 mm we made open flap debridement if attached gingiva showed a reduced height; muco - gingival surgery (where attached gums presented sufficient height for creating a successful application of orthodontic treatment), periodontal maintenance treatment, orthodontic treatment

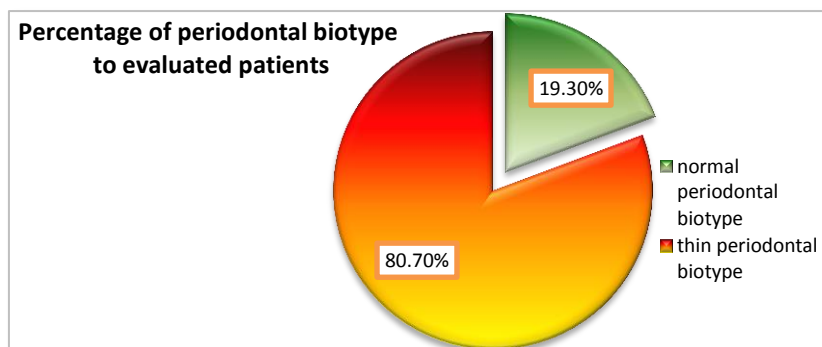
- the application technique UPRIGHTING, prosthetic restoration, regular checks.

patients although gender differences are not significant.

**RESULTS AND DISCUSSIONS**

The results showed the initial presence of periodontal biotype type fine most of the

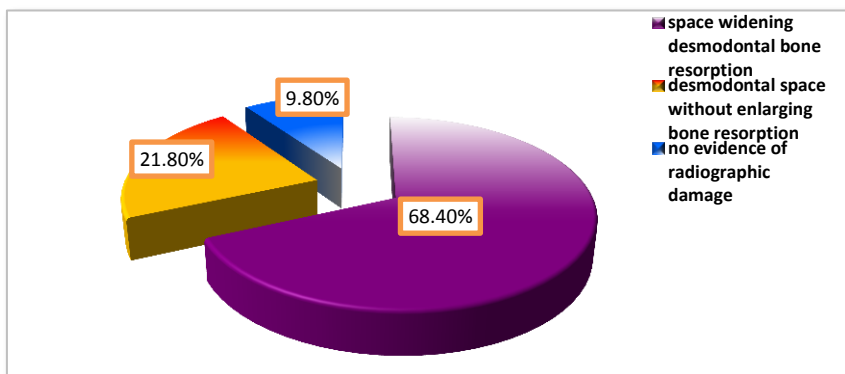
Evaluation of marginal periodontal biotype - the highest percentage in the studied group is fine periodontal biotype (80.7%).



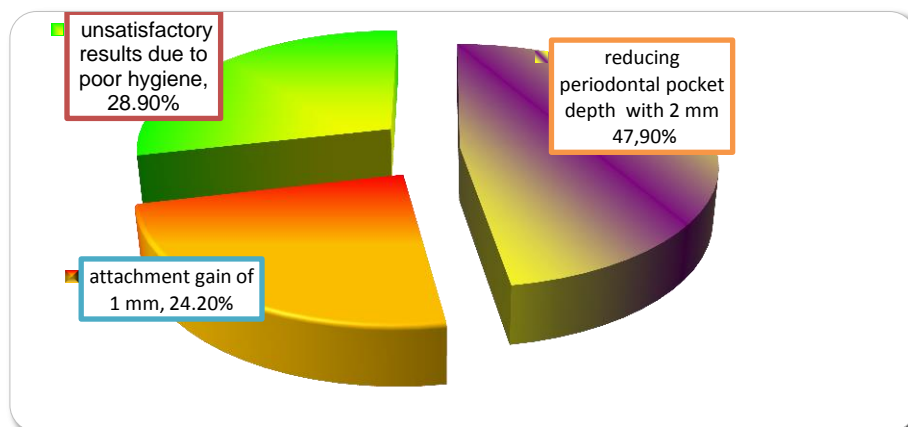
**Figure 1. Periodontal biotype**

Radiographic evaluation of periodontal tissue depth - it is noted that in most cases (68.4%) there is no evidence of impaired bone to second molar which are in mesial tipping at 21.80% desmodontal space

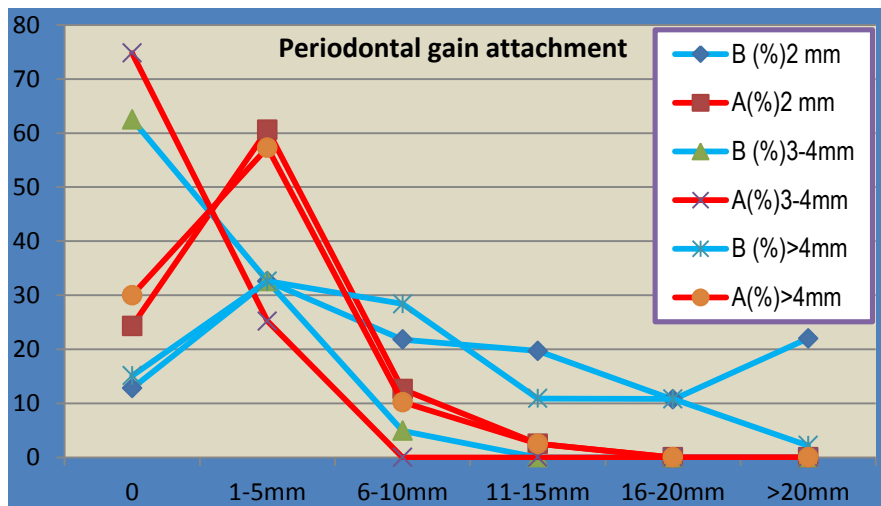
widening was found but no association with bone resorption and in 9.8% of cases periodontal damage was extensive, being present both desmodontal space enlargement and bone lysis (fig. 2).



**Figure 2. Radiographic evaluation of periodontal tissue depth**



**Figure 3. Evaluation results of etiological periodontal therapy**



**Figure 4. Periodontal gain attachment results after three months since the application of spring uprighting technique (A-initial, B-final)**

Evaluation results of etiological periodontal therapy - in most cases (47.90%) showed improvement of clinical parameters in patients with good oral hygiene that etiological treatment was applied correctly and completely.

We see better compliance of female patients in terms of maintaining optimal oral hygiene than in terms of the number of patients with poor hygiene (mostly male) that the results were unsatisfactory.

## DISCUSSIONS

Patients with a good hygiene medium (22.37%) showed an improvement of periodontal status (19.68%) and maintaining (3.43%) from baseline, unlike patients with poor hygiene (6, 98%) who experienced a progression of periodontal disease, in two cases occurring gingivitis evolution from a generalized chronic periodontitis with horizontal and vertical bone lysis and the appearance of periodontal pockets [9,10].

Of the 26 patients studied, with average or good hygiene, 20 (91%) had a gain of attachment at periodontal lesions located at mesial and / or distal tooth with periodontal pocket reduction at this level, which concluded that tooth movement through

carefully controlled application of orthodontic forces can generate new alveolar bone formation through a complex process of apposition / bone resorption (fig.3,4) [11,12].

Is mandatory in adult patients with orthodontic treatment to make prophylaxis and periodontal maintenance [13,14]. Only then the bone may be able to regenerate and thus periodontal reconstruction is a guaranteed success.

Orthodontics and oral implantology two specialties of dentistry in continuous development and close contact with each other. Progress has allowed addressing new treatment solutions toothless. Orthodontic treatment applied to partial toothless aims to create optimal conditions for the insertion of oral implants to represent elements of support for future prosthetic reconstruction.

Implantoprosthesis treatment comes to answer to any dental treatment, in order to establish functional and morphological integrity of dental apparatus functions with minimal biological sacrifice [15,16]. Arguments in support of this type of treatment are of biomechanical, biological, aesthetic and occlusal prophylaxis. Therefore orthodontics, understood as support therapy and prosthetic periodontal treatment is

another indication of orthodontic treatment in adults.

toothless aims to create optimal conditions for the insertion of oral implants to represent elements of support for future prosthetic reconstruction.

## CONCLUSIONS

Orthodontic treatment applied to partial

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