

THE IMPACT OF THE ADAPTATION STAGES OF THE PARTIALLY REMOVABLE DENTURES ON THE PROGNOSIS OF THE PROSTHETIC TREATMENT

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ABSTRACT

Oral rehabilitation with removable denture is associated with an increased risk of caries, periodontal disorders, as well as the accentuated resorption of the edentulous ridges, when the adaptation and the forces which are developed on the prosthetic field are not equally distributed. The elements that influence the prognosis of the prosthetic treatment, of the oral rehabilitation, are essential regarding the evolution, from the standpoint of the health of the stomatognathic system's parts. The tissues that come into direct contact with removable dentures are the most vulnerable, so there is a significant risk of developing a pathology or a complication of an already existing pathology.

The risk of complications is directly proportional to the degree of adaptation of removable dentures. Without a periodic reassessment of the patient and possible maintenance treatments, the health of the tissues of the oral cavity could be deteriorated.

Keywords: removable partial denture, prognosis of treatment, complications

INTRODUCTION

The design of overall restoration of the arches allows an aesthetic and functional reconstruction, but it generates important clinical difficulties.

The elements that influence the prognosis of prosthetic treatment, of oral rehabilitation, are essential regarding the evolution, from the standpoint of the health of the stomatognathic system's parts. Tissues that come into direct contact with removable dentures are the most vulnerable,

so there is a significant risk of developing a pathology or complication of an already existing pathology.

The accumulation of bacterial plaque on the denture's components leads to the appearance of periodontal diseases [1].

The removable denture has a physical, chemical and biological character that might cause various reactions of the oral cavity tissues. [2,3]. Removable dentures can increase the number of carious lesions and can influence the stability of the teeth, when the stresses that occur on the

level of the dental clasp are not correctly applied [4,5]. The correct preparation of dental faces before recording the impression for making the removable partial denture, helps the maintenance of dental health by reducing the risk of cariogenic or periodontal pathology. [6]

THE AIM OF THIS STUDY

The purpose of this study is to highlight the importance of adapting the removable dentures so as to avoid the accumulation of bacterial plaque and the appearance of changes in the dental and periodontal structures, due to the physical, chemical or biological factors that act on the prosthetic field.

MATERIAL AND METHOD

In order to carry out this study, 40 treated patients, aged between 50 and 75 years old, have been examined for a period of 7 years in the Dental Medicine Clinic. The following elements are analyzed: the material from which the prosthesis is made, the components of the prosthesis and their relation with the elements of the prosthetic field, the number of teeth which are in contact with the components of the removable partial denture, the type of maintenance, support and stability that are used to stabilize the prosthesis.

DISCUSSIONS

The treatment by removable dentures or mixed prosthesis comes to achieve a restoration of the patient's oral

conditions and includes procedures that will improve and restore facial functions and morphology. Vieira A et al. have devised a „Theory of Planned Behavior” that plays an important role in dealing with the oral rehabilitation regarding the factors that motivate the patient in accepting the prosthetic treatment. [7].

Depending on the peculiarities of each clinical case, there are several elements of the prosthetic field whose health must be maintained that are involved in this process. Their damage must be avoided due to incorrect adaptations of the removable prostheses.

The concept of creating removable prostheses must be in accordance with the degree of predictability regarding the prognosis of therapy, by preventing consequences that may occur as a result of the edentation, due to its peculiarities and structure [8,9]. A partially removable prosthesis can increase the incidence of carious lesions, the damage of the periodontium's support and the appearance of harmful forces that lead to modifications of the natural teeth [10].

The complications that occur as a result of disregarding the follow-up stages are the appearance of injuries on the level of the lateral faces of the teeth or on the vestibular face that comes into contact with the clasps, the pathological changes on the level of gingiva, the appearance of dental mobility as a result of overloading the teeth and the most important aspect that plays a crucial role in the appearance of complications is the accumulation of bacterial plaque. (fig 1, fig 2)





Fig. 1 a, b, c Carious lesions on the vestibular faces of the teeth, caused by the incorrect adaptation of the clasps.



Fig.2 a, b Structural change on the mesial face due to the incorrect adaptation of the partially removable prosthesis

Regarding the periodontal disease, if the forces that act are continuous and excessive, it leads to bone resorption, especially when the forces are exerted

paraaxially and when there is no element of the prosthesis that could neutralize the forces developed by the retentive arm of the clasp. (fig.3)



Fig. 3 Gingival retractions on the level of the abutment teeth associated with the increasing of dental mobility

The studies conducted by Kern et al. have reached to the conclusion that in the case of the patients wearing removable prostheses, who have not been assessed over a period of 10 years, the number of extracted teeth due to the incorrect application of the clasp is 26%, compared to 14%; the percentage refers to the teeth that are not in contact with the components of the removable partial denture [11]. The loss of adjacent teeth has been reported to be a

common problem for wearers of denture. Therefore, the accumulation of bacterial plaque, gingival bleeding, gingival retractions, as well as the depth of periodontal pockets greatly contribute to the unfavorable prognosis.

The tight contact or too much space created between the base of the prosthesis and the adjacent tooth lead to the accumulation of the bacterial plaque, which

favors the appearance of periodontal disease and carious lesions. (fig.4)



Fig.4 Impairment of the marginal periodontium, on the mesial face, of the molar 4.8

In the study conducted by Shimura Y et al, there are no statistical differences regarding the amount of bacterial plaque accumulated on the level of the clasp, on different types of clasp, such as wire, I bar clasps and circumferential crochets. For cast crochets, it is recommended to prepare a guide plane, as close as possible to the gingival's edge for reducing the accumulation of bacterial plaque on the proximal faces of the teeth [6].

Some studies have shown that if the patients are constantly examined and the adaptation of the dentures is made when it becomes necessary and if the patient are reminded as well as well of the techniques of sanitizing, then this removable rehabilitation might not cause damage to the

periodontium [12,13]. The occurrence of periodontal disease is closely related to the systemic status of the patient that influences the prognosis of oral rehabilitation [14,15,16]. The prognosis of the treatment can also be influenced by the previously applied treatments, both in terms of correctness and in terms of materials used. [17,18,19].

The shape of the prosthesis can influence the health of the periodontal tissue and the unnecessary coverage of the gingival edge can lead to an unfavorable prognosis. The correct execution of the main connector, by passing the bridge over the marginal periodontium and avoiding contact with it, represents an important clinical-technological aspect. [1].

CONCLUSIONS

The risk of complications is directly proportional to the degree of adaptation of removable dentures.

Without a periodic reassessment of the patient and possible maintenance treatments, the health of the tissues of the oral cavity could be deteriorated.

For patients susceptible to carious disease, the treatment consists in restoring the dental structure by replacing and

carrying out measures to prevent the development of the carious disease.

The preservation of the alveolar ridges is an essential criterion in achieving the objectives of the prosthetic treatment, the quality and quantity of the alveolar bone conditioning the functional results of the prosthetic dental restorations.

Complications on the level of the alveolar bone are associated with changes of the mucoisal tissue of the edentulous ridge, which changes the stability of the removable prosthesis on the prosthetic field.

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