REINSTATEMENT OF FUNCTION AND AESTHETICS WITH THE BRACKETS PROVISIONAL FIXED IN PATIENT WITH CHRONIC LOCALIZED PERIODONTITIS

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ABSTRACT

Periodontal disease affects the periodontal ligaments, and the supporting tissue destruction caused by bacterial toxins or by induction of an immunopathological response and, consequently, the tooth loss occurs. This tooth loss alters both the occlusion and esthetics of the patient and this fact might cause psychosocial problems. In order to reduce this discomfort and restore proper function to the patient a dental intervention is required. In this case report, the patient was diagnosed with advanced localized chronic periodontitis, leading to loss of tooth 31 and 41. The goal of treatment was to restore the function and aesthetics for the patient via immediate realization multidisciplinary planning including areas of Periodontology, Surgery, Orthodontics and Prosthodontics. The patient's expectations were met and the goal achieved, it returned aesthetics, function and kept the space of missing teeth immediately for a future definitive rehabilitative treatment.

KEYWORDS: Fixed orthodontic appliances, orthodontics, periodontics, provisional with natural tooth.

1. INTRODUCTION

The literature describes that periodontal disease¹ is a multifactorial infectious affecting bone and periodontal ligament². The gingival tissue edema and bleeding as a result of the disease can lead to bone resorption and tooth loss by the total elimination of connective tissue². This destruction of connective tissue is determined by the virulence factor of the bacteria that directly damage tissue through the production of toxins or indirectly through the induction of immunopathological response³.

Undoubtedly the loss of teeth causes numerous occlusal changes and consequently, aesthetic⁴. The mass media, especially television shows that people with beautiful smiles, induce changes in habits and customs of the population seeking dental offices in search of solution to your dental problems, taking into account their correlation with psychosocial problems from the standpoint of modern society⁴.

Due to loss of some teeth because of the periodontal disease it is deemed necessary to the preparation of interim, so that the patient feels well waiting for the final restoration, providing him an improvement in aesthetics, phonetics and mastication⁶.

This report aims to present a clinical case of oral rehabilitation combining different dental specialties with the aim of restoring aesthetics, phonetics and proper chewing to the patient via provisional with natural teeth fixed to the orthodontic brackets.

2. CASE REPORT

Patient (JFR), female, 28 years old, brown, was attended in a dental school clinic of University Severino Sombra (USS) - Vassouras (RJ), complaining of tooth loss 41. The patient was asked to take the tooth in the following query. The clinical examination was detected in advanced chronic periodontitis localized region of lower incisors with mobility grade III in tooth 31 (Figure 1) and radiographic examination was observed that the tooth 31 had no bone support (Figure 2).



Figure 1. Initial clinical aspect.

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Porto et al. / J. Surg. Clin. Dent.

The treatment was interdisciplinary, involving Periodontology, Surgery, Prosthodontics and Orthodontics.

We started the session with supragingival clinical ultrasound with scrapes the teeth from 33 to 43, coronary polishing with rubber cup and prophylactic paste. Then infiltrative anesthesia was made in the bottom of the hall, to the tooth 31, thereby realizing the extraction of this; then was begun the making of immediate provisional using teeth 31 and 41 of the patient. The roots of the above teeth were cut 2 mm below the cementum enamel junction (CEJ) and the entries of the conduits of these teeth were etched with 37% phosphoric acid for 15 seconds and the adhesive applied to its proper sealing with light-cured resin (Figures 3, 4, 5 and 6).



Figure 2. Conditioned and sectioned teeth.



Figure 3. Teeth cleaned.



Figure 4. Application of adhesive at the entrance of the pulp chamber.

V.3,n.1,pp.18-21 (Oct - Dec 2014)



Figure 5. Sealing of the pulp chamber with composite resin after curing of the adhesive.



Figure 6. Photoactivation of composite veiling the entrance of the pulp chamber.

After sealing, the crowns of the teeth from 33 to 43 were etched with 37% phosphoric acid for bonding of orthodontic brackets 9 (Figure 7).



Figure 7. Photoactivation of the resin cement used for fixing the bracket.

The orthodontic appliance was installed for the purpose of securing the immediate provisional, which served as a space maintainer, and they stay stable was done a total ligature. The orthodontic force was applied to the minimum possible arc using Twist-Flex 0,15 and elastic bands (Figures 8, 9, 10 and 11).

Porto et al. / Braz. J. Surg. Clin. Res.

V.3,n.1,pp.18-21 (Oct - Dec 2014)



Figure 8. Brackets fixed.



Figure 9. 31 and 41 teeth with brackets and wire.



Figure 10. Final clinical aspect.



Figure 11. Final Smile.

3. DISCUSSION

The accumulation of bacterial plaque causes tooth decay and periodontal infections, diseases that are more common in the oral cavity^{7,8,9}. The prevalence of periodontal disease is directly linked to poor oral hygiene and

is independent of age and socio-economic status^{10,9} and, furthermore, advances in all regions and all classes permeate ⁹.

Dental caries, periodontal disease with destructive insertion loss started from chronic inflammatory gum disease, chronic systemic diseases, trauma, fractures, and social class are directly related to loss of teeth¹¹. The loss of any tooth unbalanced occlusal relationships between the remaining teeth, decrease occurs because of chewing ability^{11,12}, modification of phonetic and cause cosmetic damage that can lead to psychological changes¹².

Although tooth loss is not a life threatening condition, this has an important impact in relation to social and functional limitations of the individual and the community¹³. Further, periodontitis can therefore increase the risk for development of systemic diseases^{1,9} and some diseases such as diabetes and osteoporosis, can act as an aggravating periodontal disease¹.

The main features of chronic periodontitis are defined as low rate of progression, and can be mild to moderate, with episodes of rapid progression can come to pass; presence of local irritants compatible with the severity of the disease; and higher incidence in adults¹⁴.

In many cases where the patient exhibits absence of one or more teeth becomes necessary to replace the provisional preparation of temporarily these edentulous spaces. The temporary treatment only has quality when considering your prosthetic function, such as protecting the tooth preparation, preservation of pulp-dentin complex and periodontal, maintenance of interproximal and occlusal spaces, aesthetics, among others⁶. In the present case the intention of the interim was made to keep the interproximal and occlusal spaces, aesthetics and proper function of the patient.

The most commonly used materials abragem provisional acrylic resins polyethyl methacrylate (ARPM) and poly-methyl-methacrylate (PMMA) and Bis-acryl composite resin^{15,16}. According to the literature¹⁷, the grip of a bracket to a prefabricated provisional acrylic resin is low, regardless of membership materials used, so this clinical case we chose to use natural provisional because the adhesion of light-cured resin, material choice for bonding of brackets, is greater in enamel, agreeing to study¹⁸ which states that the technique of etching, adhesive and composite natural teeth promotes adhesion force greater than necessary.

Orthodontics is not only indicated for correction of malocclusion patients, it also has an important role in restorative and prosthetic treatments^{4,19}, this fact could be observed in the case reported in the orthodontic appliance was used to maintain stable natural provisional. The static arrangement of the teeth as well as a balance between the dental arches and an appropriate anatomy of each tooth group are related to a functional occlusion¹⁹, so, the scope of aesthetics is necessary because of the

absence, especially earlier, dental elements generates a dissatisfaction with physical appearance and decreased self-esteem, influenced by aspects of valuing individual beauty^{19,20,21}.

4. CONCLUSION

The treatment has consolidated the expectations of the patient and professionals that conducted by returning the function and aesthetics and thus the degree of satisfaction was great on both sides, in addition it was possible to wait for the time to complete healing and maintain the spaces of missing teeth for a future rehabilitation treatment.

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