Open Journal of Clinical & Medical Images

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Case Report

Open Access, Volume 1

Retreatment in removable partial dentures : A procedure of repairing teeth abutment under an existing framework : A case report

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Received: Nov 10, 2021

Accepted: Dec 06, 2021

Published: Dec 10, 2021

Archived: www.jclinmedimages.org

Abstract

Retreatment in removable partial dentures may concern supporting tissues as well as the existing prosthesis itself. Concerning supporting tissues, Tooth fractures due to traumatisms and caries are the most common situations praticians faced, in addition to mucosal tissues' alteration and periodontal diseases. Different techniques were cited in literature about retreatment in partial dentures. This article describes a simple procedure, in which, teeth supporting clasps under a prexisting removable partial denture framework were crowned, and the removable partial denture was adaptated to fit the new dental scheme.

Introduction

Partial edentulism remains increasing all over the world even in developed countries [1], Researchers estimate that it may be greater than 20% in some regions [2]. However, just almost 40% of edentulous patients, treated by removable partial dentures, who keep wearing their prosthesis during the five years post-insertion [2]. According to some recent studies, this is due to sociodemographic factors, esthetics, and functional failures causing pain and discomfort to the patients [2,3]. Therefore, retreatment in removable partial prosthodontics is suggested to overcome these treatments' failures and prosthesis' abutement. This article describes a simple technique of retreatment concerning abutment teeth under an existing framework, when realizing a new partial removable denture.

Case presentation

A 54-year-old woman was seen in the Dental center of consultation and treatment of Rabat.

In the present case, the clinical exam reveals that the patient is partially edentulous in the maxillary dental arch, presenting a KENNEDY class III mod1. The teeth missing are: 15,16, 17, 24, 25 and 26. During her removable prosthodontic treatment phase, precisely after constructing a removable partial denture framework. The dental investigations demonstrate an abutment of posterior teeth due to a loss of tooth surface during the prosthetic treatment, those teeth have been already treated endodontically (Figures 1,2).

Figure 1: Intraoral occlusal view of maxillary dentition.

Figure 2: Intraoral occlusal view of maxillary dentition and framework.

In the present case, we realize an impression using a resin coping (DURALAY resin acrylic) to replicate clasps assembly in the mouth (Figure 3). Duralay resin is applied to the tooth, then the preexisting metallic framework is seated in the mouth. The resin coping should cover all the teeth implicated and the clasp assembly, without debording on the external surfaces of the clasp assembly.

Figure 3: Duralay resin is placed over the preparation and the framework is seated in the mouth.

Once the resin coping is set, we remove the framework and the Duralay resin from the mouth accurately (Figure 4).

The existing framework is used as a guide to identify the limits between the clasps and the future crowns.

After that, The light Silicon is injected over the preparations, then, the framework with the Resin coping (Duralay) is placed accurately in the mouth, using digital pressure in order to avoid the materiel thickness over the palatal area (Figure 5).

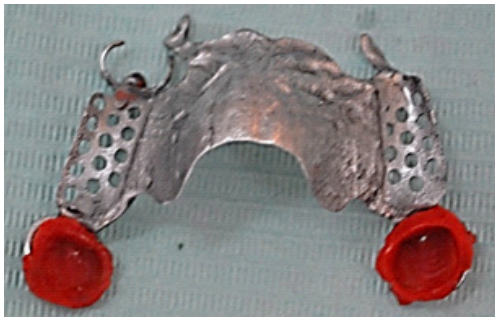

Figure 4: The framework with the resin of coping (Duralay) is removed from the mouth

Figure 5: Impression of the preparation using the preexisting framework.

A second impression is realized over the preparations after seating the coping resin and the preexisting framework over it, using irreversible hydroccolloid alginate (Figure 6). Then, the occlusion is registred.

The metallic crowns and the removable partial denture are tried in to verify marginal adaptation and occlusal contacts (Figure 7). Moreover, we check if they fit together in term of retention, occlusion and stability. Minimal adjustments are made as necessary.

The patient is satisfied with the treatment (Figure 8), she stated having no problems with the prosthesis at her follow-up appointments. However, an occlusal equilibration is made as necessary.

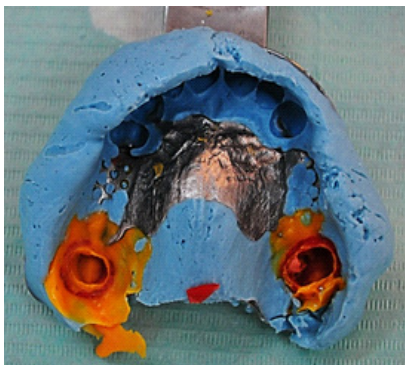

Figure 6: An alginate impression of the maxillary arch, over the framework and the preparations'impression.

Figure 7: Metallic crowns and the maxillary removable partial denture are tried in.

Figure 8: Facial view of restored maxillary and mandibular dentition.

Discussion

Retreatment in removable partial prosthesis is an alternative which is neither difficult, nor expansive. Techniques required for retreatment may be direct, direct-indirect or indirect [4]. In that case-report, a direct-indirect technique using a resin coping (Duralay) to replicate clasps assembly in the mouth, the primary advantage of Duralay resin is its ease to manipulate, indeed, it requires less time than other resin materials because it is fast setting and easy to detach from the cast. Another advantage known is that it presents a good dimensional stability [5-7]. On the other hand, when realizing the impressions using light silicon and Duralay Resin over the preparations, a digital pressure should be applicated, so, material thickness over the palatal area is avoided. However, one of the limitations of this article is that occlusion was not registred at the same time when realizing the impression of posterior teeth with the resin coping and the preexisting framework seated in the mouth.

Seltzer in 2007 suggested that a well-conceived removable partial denture should be designed according to a built-in permanence in mind. Indeed, it should be easy to be repaired after an eventual tooth loss, clasp fractures, or simples failures, without altering function, comfort or aesthetics. So, it is preferable to conceive a predictable removable partial denture [8].

As a perspective of retreatment in removable partial dentures. Some recent studies described a digital technique for fabricating a crown under an existing partial removable dental prosthesis, by using an intraoral digital scanner and computer-assisted design and computer aided manufacturing (CAD/CAM) technology. The authors suggested that this alternative technique is simple, efficace, with a limited time-consuming [9,10].

Conclusion

This clinical report demonstrated that this technique of removable partial denture retreatment is simple and inexpensive to restore teeth abutment under preexisting metallic framework. However, the success of that procedure is conditionned by the intraoral adaptation of the framework, the quality of the coping material, the pronostic of teeth abuted and patients' motivation.

Acknowledgements: The authors reported no conflicts of interest related to this study.

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