Sometimes Conventional Removable Partial Denture is the Only Remedy!
Nihel C1, Imed O2, Lamia M3, Mounir T4

1Department of Removable Partial Prosthodontics, University Dental Clinic, Monastir, Tunisia; 2Department of Removable Partial Prosthodontics, Dental Medicine of Monastir, Monastir, Tunisia; 3Prosthetic Department, Dental Clinic of Monastir, University of Monastir, Avicenna Avenue, 5019 Monastir, Tunisia; 4Prosthetic Department, Dental Clinic of Monastir, University of Monastir, Avicenna Avenue, 5019 Monastir, Tunisia

ABSTRACT
Management of partially edentulous patients can still be a prosthodontic challenge especially for extensive maxillary Kennedy Class I. Replacing the missing teeth using conventional fixed and Removable Partial Dentures (FPD/RPDs) associated with extracoronal attachments remains sometimes the only remedy for partial edentulism. The use of osseointegrated dental implants turn the possibilities of prosthetic reconstruction endless, but what about patients with absolute contraindication of surgery. It is therefore the objective of this article to describe the treatment sequence and technique for the use of attachments in therapy combining FPD/RPD.

Keywords: Extra coronal precision attachments; Fixed partial denture; Removable partial denture.

INTRODUCTION
When the use of conventional Fixed Partial Dentures (FPDs) and/or dental implants is limited or not indicated, association between FPD and Removable Partial Denture (RPD) by means of attachments becomes an important alternative to a conventional clasp-retained RPD [1,2].

These retainers have been recommended as an alternative for abutment teeth of RPD, permitting the placement of rests and retentive clasps on the anterior teeth at sites that do not interfere with aesthetic appearance, thus making rehabilitation more acceptable to patients [3,4].

Despite the desirable improvement in esthetic appearance and retention and functional efficiency obtained, biomechanical factors must be taken into consideration to guide the therapeutic decision and treatment plan.

Removable dentures associated with attachments also exhibit some negative aspects: extensive dental crown preparation, financial burden, time-consuming and complex clinical and laboratory procedures [5,6].

That is why their indication must be taken only after considering other treatment options.

This article describes a maxillary rehabilitation of an extensive kennedy class I using a combination of FPD/RPD therapy with extra coronal precision attachments.

METHODS
A 60-year-old man was referred to the Prosthodontics Department, in the dental clinic of Monastir-Tunisia, for esthetic and functional rehabilitation.

Questionnaire reported compromised medical condition that prevent the ability to have any surgical procedures.

(Figure 1) shows an extensive maxillary Kennedy Class I with only remaining four anterior teeth. Clinical and radiographic (Figure 2) examinations revealed severely resorbed alveolar ridges, a lack of posterior support, an evident loss of Occlusal Vertical Dimension (OVD), and alteration in the occlusal plane.

*Correspondence to: Charfi Nihel, Department of Removable Partial Prosthodontics, University Dental Clinic, Monastir, Tunisia, Tel: 216760631; Email: charfinihel@outlook.fr

Received: August 02, 2021; Accepted: August 23, 2021; Published: August 30, 2021


Copyright: © 2021 Nihel C, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.
Figure 1: Pretreatment maxillary and mandibular frontal.

Figure 2: Panoramic radiograph examination.

After analysis of the diagnostic casts mounted on a semi-adjustable articulator (Figure 3), treatment planning consisted of a maxillary rehabilitation by means of an association between tooth-supported FPD (from maxillary left canine to right central incisor with 12 in extension) and RPD with attachments (Figure 4).

Figure 3: Analysis of diagnostic casts mounted on semi-adjustable articulator.

Figure 4: Maxillary prosthetic project.

This therapeutic modality was selected for those reasons:

- The large prosthetic space and the patient’s maxillary bone width and height condition, which would require bone grafts, and that is already impossible especially for medical condition.
- Severely resorbed alveolar ridges that hinder the ability to place implants for an implant retained RPD and that require a resin flange to provide adequate support for facial structures.
- Compromised remaining teeth that cannot be used as abutments for traditional RPDs, and must be splinted for better resistance.

After Endodontic treatment of the remaining teeth, the maxillary anterior teeth were prepared in accordance with biomechanical and esthetic principles [7,8]. The maxillomandibular relationship, including reestablishment of the curves of Spee and Wilson and the OVD, was recorded with occlusion rims and an acrylic resin template, according to the metric, phonetic, and esthetic methods (Figure 5). The maxillary cast was oriented on the semi-adjustable articulator with a facebow record and the mandibular cast was mounted.

Figure 5: Maxillo-mandibular occlusion record after tooth preparation.
The maxillary cast was surveyed in a dental surveyor to
determine the most suitable path of insertion and removal.
After that, the wax up sculpture of the maxillary anterior teeth
were done with a cantilever right lateral incisor. The lingual
surfaces were flattened to guide the insertion/removal path of
the RPD. A stress breaking extra coronal precision attachment
(OT Cap, Rhein 83) with a vertical freedom of movement and
an activation portion were fixed parallel to the path of insertion
using a mandrel on the distal surface of the maxillary right
lateral incisor and left canine.

The attachment was placed slightly palatal relative to the axis of
the alveolar ridge; this position subsequently facilitates the
assembly of artificial teeth (Figure 6).

Figure 6: Wax pattern and attachments placement.

After checking the vertical prosthetic space, the wax patterns
were casted with nickel-chromium alloy (Figure 7 and Figure 8).

The RPD framework was cast in a cobalt-chromium alloy and
clinically tried to check seating. The artificial teeth were selected
and positioned. After deflasking, the RPD was finished and
polished and the metal-ceramic FPD was glazed.

To ensure adequate seating during FPD cementation, the
prostheses were attached extraorally (Figure 9), and glass
ionomer cement was used. This procedure must be carried out
when attachments are used for the association of an FPD/RPD,
because a minimal error during FPD cementation may
compromise the oral rehabilitation.

Figure 9: Fixing the female part of attachment.

RESULTS

After polymerization, excess cement was removed, occlusal
adjustment was performed, and the patient was instructed not
to remove the RPD for 24 hours. On the next day, the over
compression of tissue was eliminated, and the occlusal
adjustment was refined. The result achieved (Figure 10) indicates
that both treatment planning and the treatment implemented
were adequate. The patient received hygiene and care
instructions.

Figure 10: The final result.

DISCUSSION

Distal extension partial dentures (Kennedy Class I and II)
present challenges for clinicians, as these dentures are subject to
modalities considering the limiting bone condition and the extension of the prosthetic space. Furthermore, this treatment option provides a better esthetic appearance and improved retention and function than does a conventional clasp-retained RPD.

REFERENCES