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CASE REPORT

A technique for relining transitional removable denture – A case report

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Abstract Transitional denture is a removable dental prosthesis serving as an interim prosthesis to which artificial teeth will be added as natural teeth are lost and that will be replaced after postextraction tissue changes have occurred. Its role is important in protecting the socket against trauma from tongue, food, or the opposing teeth. The aim in this report is to describe a new simple technique to create limited room on the tissue surface of the transitional denture to receive a relatively even thickness of a resilient material. A male patient, aged 48 years old, came to the prosthodontic clinics seeking replacement of the maxillary anterior teeth. After clinical and radiographic examination the treatment plan included extraction of the offending teeth (#13 and #24), the necessary wait for healing to occur, and providing the patient with a definitive partial denture. The esthetic appearance was of the utmost importance for the patient. Therefore, the treatment plan was modified to construct a transitional partial denture to be inserted following teeth extraction during the same appointment. A tissue-conditioning material of suitable thickness was applied on the tissue surface of the denture limited to the extraction area. Application of the resilient materials in such a manner may be more effective and should fulfill all the intended uses appropriately.

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1. Introduction

Transitional denture is a fixed or removable prosthesis, designed to enhance esthetics, stabilization and/or function for a limited period of time, after which it would be replaced by a definitive prosthesis. Such prostheses are often used in determination of the therapeutic effectiveness of a specific treatment plan or the form and function of the planned definitive prosthesis.¹ These dentures are usually made of acrylic resin poly (methyl methacrylate) in which stainless wrought wire clasps are attached.

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The transitional denture can be fabricated to be placed immediately after extraction of some or all natural teeth. Its role is important in protecting the socket against trauma from tongue, food, or the opposing teeth.²⁻⁴ Tissue-conditioning materials are applied on the tissue surface of the denture to form a resilient pad. However, application of these materials after full adaptation of the acrylic resin onto the master cast will result in a thin layer which in turn cannot adequately protect the wound from the denture itself because of its hardness especially during function.⁵⁻⁷ Moreover, full coverage of the entire surface of denture with these materials is questionable and is material-wasting. This report presents a proposed technique to relined transitional partial denture with adequate thickness at the time of delivery.

2. Clinical report

A male patient, aged 48 years old, came to the prosthodontic clinics – Faculty of Dentistry, Khartoum University, Khartoum City, Sudan – seeking replacement of the missing maxillary anterior teeth with new partial denture. The clinical and radiographic examination revealed a generalized periodontal disease on both arches. Gingival recession was noticed on teeth #13 and #24 besides all remaining mandibular teeth. In maxilla most teeth were missing except #17, #13, #24, #26, and #27. The six anterior teeth were missing in the mandible (Fig. 1). Mobility grade III was observed in teeth #13 and #24 with some degree of tilt. The patient presented with a small piece of his old broken removable partial denture on the upper anterior segment containing three artificial teeth (#12, #11, and #21) and two clasps. Even though one of the abutment teeth was missing (#22) and the other one was extremely mobile (#13), the patient was still using this piece of denture. The patient claimed that he used his upper lip and tongue to maintain this piece in its place. The patient used this broken fragment for several months because of esthetic reasons. Patient stated that he couldn't walk around or go to work with his front teeth missing. The radiographic examination revealed generalized bone resorption. No other pathology was detected (Fig. 2). No other abnormality was detected during extra and intraoral examination. The teeth #13 and #24 were planned to be extracted at the time of insertion. The patient was referred firstly to the periodontic department for the required periodontal treatment. After that, the preliminary impression was made using irreversible hydrocolloid impression material (Alginmax,



Fig. 1 Intraoral view.

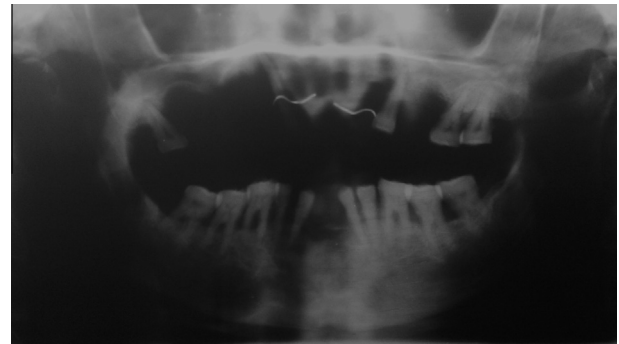


Fig. 2 Radiographic view.

Major, Moncalieri, Italy) and poured with type III dental stone (Gyproc, Prevest Denpro, Jammu, India) to produce a diagnostic cast on which the custom tray was constructed. The final impression was made using silicone impression material (PVS Oranwash L, Zetaplus, Zhermack, Italy) and was poured with type III dental stone to produce the master cast. The following procedures were carried out in the laboratory:

1. Teeth – to be extracted – were cut off from the master cast. Contouring and smoothing of the residual ridge was accomplished according to what was described by Jerbi⁸. Then the master cast was duplicated using irreversible hydrocolloid impression.
2. A laminate sheet (Essix Plastic, Raintree essix, LA, USA) of 1 mm. in thickness was used as a vacuum-formed spacer on the duplicated master cast.
3. The spacer was trimmed and confined to the area of extraction only.
4. After wax elimination on the original master cast, the spacer was securely placed on the target area (Fig. 3).
5. Packing and curing were carried out as usual. After finishing and polishing the spacer was removed from the entire surface (Figs. 4 and 5).
6. A (heated) blade was used to make the removal easier.



Fig. 3 Adaptation of the spacer on the master cast.

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