

AN INTERIM DENTURE TECHNIQUE AND CASE REPORTS

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KEY WORDS

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An interim denture technique is presented describing the fabrication of an esthetic prosthesis that is used for short periods of time. The prosthesis conditions the patient for the acceptance of an artificial substitute for missing natural teeth until more definitive prosthodontic therapy can be provided. All the teeth in the arch are extracted simultaneously, and the interim prosthesis is inserted immediately thereafter. The prosthesis duplicates the morphology, color, and position of the extracted teeth. This technique satisfies a great need of socially and business-active patients because there is no interruption in their activities and no change in facial esthetics. Two case histories are presented.

INTRODUCTION

An interim (provisional or temporary) denture can be defined as a dental prosthesis to be used for a short interval of time for reasons of esthetics, mastication, occlusal support, or convenience. The objective of using an interim prosthesis is to condition the patient to the acceptance of an artificial substitute for missing natural teeth until more definitive prosthodontic therapy can be provided.

Patients today demand that the transition period from natural dentition to prosthodontic replacement be as short as possible with a minimum of alteration to esthetics, speech, and nutrition. Immediate replacement of an entire arch with a prosthesis that duplicates the natural teeth in morphology, color, and position

would be especially advantageous. Maintenance of occlusal vertical dimension and centric occlusion with existing interocclusal contacts and cuspal inclinations would be particularly helpful. The apprehensive patient can be assured that his or her appearance will not be altered. The interim denture concept fulfills these requirements and precludes many of the inherent problems of the more commonly used immediate denture.¹

Various techniques and materials for interim prostheses have been described in the literature,¹⁻¹⁰ with the contributions of Payne^{4,5} being most noteworthy. The technique presented is not new but does offer several suggestions to improve interim denture service.

PROCEDURE

An alginate impression is taken of the involved arch, and the

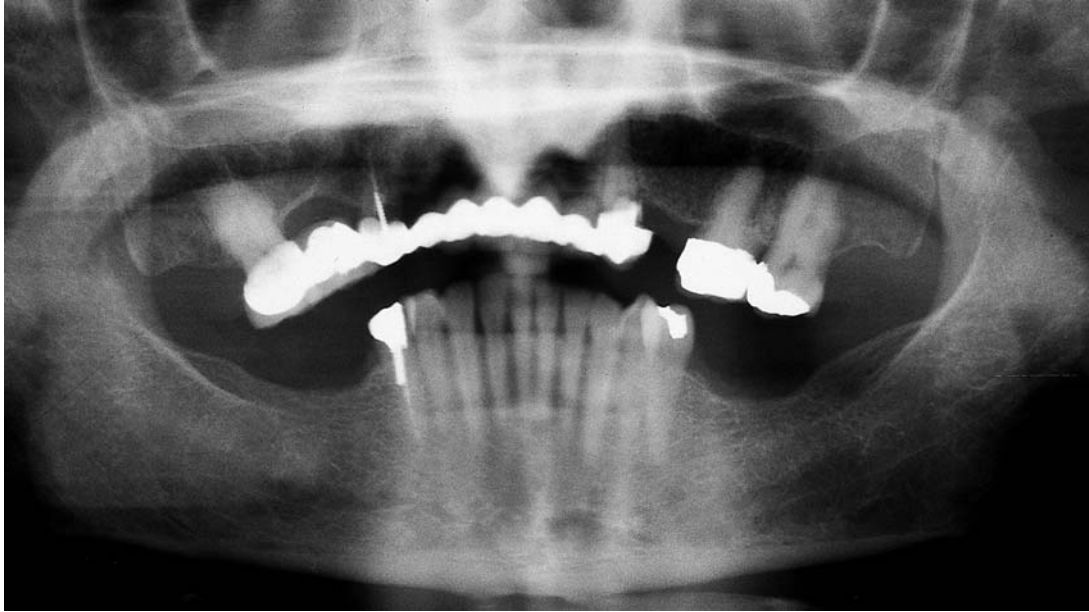


FIGURE 1. Panoramic radiograph of 56-year-old woman before fabrication of partial interim prosthesis.

tooth impressions are immediately filled with a pink or white wax up to the gingival margins. As soon as the wax hardens, the remainder of the impression is poured in stone. Any missing teeth are supplied (stock acrylic, porcelain, or wax teeth) and set in centric occlusion.

Esthetically, no attempt is made to change the position of the teeth. Existing interocclusal contacts and cuspal inclinations are maintained, which makes the transition to dentures as inconspicuous as possible. Tooth modifications, if necessary, are made gradually over a period of time.

The waxing is completed with a double thickness of wax at the peripheries that is thinned out near the necks of the teeth. The gingival margins must be sharply carved to help create a definite demarcation between the tooth-colored resin and the denture-base resin when the case is packed during the laboratory procedure.

All the teeth are made with tooth-colored acrylic resin, which is packed into the molds provided by the wax teeth and any

prosthetic teeth that may have been used temporarily.

CAST PREPARATION

Cast preparation should always be performed by the dentist. The convex contour of the alveolar ridges is maintained. With a sharp scalpel, all excess stone is carefully removed down to the gingival margins. Overtrimming must be avoided, as the prosthesis must have a passive fit. All line angles should be rounded. If a complete interim maxillary prosthesis or a removable partial prosthesis with complete palatal coverage is fabricated, a posterior palatal seal is added.

SURGERY

With the interim denture technique, all the teeth are extracted simultaneously, which allows uniform healing, and the prosthesis is inserted immediately thereafter. The most delicate and gentle extraction of the teeth is indicated, with the clinician gently teasing the remaining teeth out. The key words for the surgical procedure are *conservative* and *nontraumatic*.

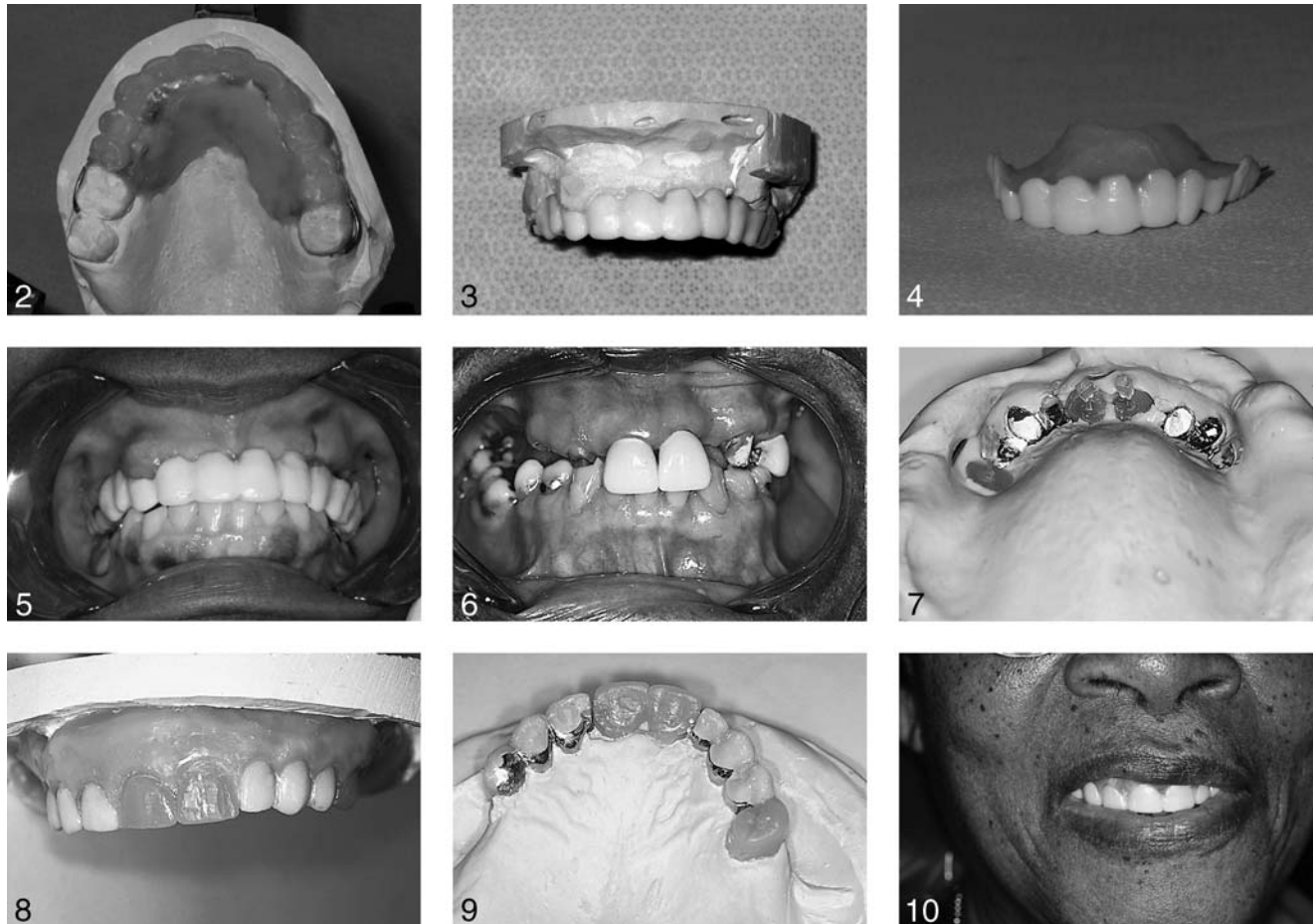
An attempt is made to maintain the gingival and interseptal tissues, as they provide good cushioning for the prosthesis. Under ideal conditions, no flaps are turned and no sutures are placed.

An interim prosthesis should not be constructed if the ridges are extremely bulky, if numerous and heavy undercuts exist, if the bone is very dense, or if the problem is one of periodontal disease. In these situations, nontraumatic surgery is too difficult to perform, and the subsequent inflammation may be substantial.⁵

INSERTION

The borders of the interim denture are made thin but must be well rounded and highly polished. Undercuts on the tissue side of the denture are relieved so the denture can fit into place without binding.

The patient is informed that discomfort may arise and adjustments will no doubt be necessary. Definite appointments should be made to see the patient on the day after insertion and frequently during the first few weeks to al-



FIGURES 2–10. Waxed prosthesis on master cast. Note the wrought wire clasps on the 2 maxillary first molars. FIGURE 3. Processed maxillary partial interim prosthesis on master cast. FIGURE 4. Finished and polished prosthesis before insertion. FIGURE 5. Facial view of patient with maxillary partial interim prosthesis. FIGURE 6. Facial view of 63-year-old woman before fabrication of maxillary complete interim prosthesis. FIGURE 7. Alginate impression with the patient's 2 fixed prosthesis segments in place and tooth sockets of the soon-to-be-extracted teeth filled with pink wax. FIGURE 8. Labial view of interim prosthesis wax-up before processing. FIGURE 9. Lingual view of interim prosthesis before palatal wax-up. FIGURE 10. Facial view of 63-year-old woman with maxillary interim prosthesis containing fixed prosthesis segments previously used by patient.

low for any necessary corrections before disturbing problems arise.

After the patient has worn the interim denture for about 4 or 5 weeks, and after the extraction sockets have filled, treatment linings are begun with a resilient cold-curing chairside liner. The liner is replaced every 4 to 5 weeks. Besides providing greater comfort to the patient, the lining will keep the denture in its normal relationship by preventing it from settling.

The interim denture is worn for approximately 5 to 7 months. By this time, the denture will

have become clumsy because of resorption and repeated linings, and the patient will be eager to have the definitive prosthesis fabricated. A removable prosthesis is then constructed in the conventional manner.

CASE HISTORIES

Interim partial prosthesis

A 56-year-old woman presented for treatment at Temple University School of Dentistry. She had a damaged 12-unit porcelain-fused-to-metal fixed prosthesis extending from the maxillary

right first molar to the left first molar. The right first molar crown was missing, a right bi-cuspid pontic was cantilevered off the adjacent cuspid, and the buccal porcelain on the left cuspid and first and second bi-cuspid pontics was no longer present (Figure 1).

The patient, a nonsmoker, had a history of elevated blood pressure and was taking HCTZ (a diuretic) and Procardia XL (a calcium channel blocker). She was assigned to a student dentist for comprehensive treatment, and she strongly stated that she did

not want to be without maxillary teeth for any period of time.

The treatment plan was to retain the first molars in the maxillary arch and construct an interim partial prosthesis with the first molars serving as abutments and a lower removable partial denture. New crowns were fabricated for the right and left first molars, and the right second molar was left intact.

An alginate maxillary impression was made, and the tooth sockets of the soon-to-be-extracted teeth were immediately filled with pink wax up to the gingival margins. As soon as the wax hardened, the remainder of the impression was poured in stone.

Wrought wire clasps were added to the first molars to provide retention (Figure 2) and the wax-up was completed. The cast was trimmed, the denture was flaked, and the tooth impressions were filled with tooth-colored acrylic resin after the wax teeth were boiled out. The denture was then processed, deflaked (Figure 3), and finished and polished in the conventional manner (Figure 4).

The patient was exceptionally pleased with the esthetics of the interim prosthesis (Figure 5) and overjoyed that she did not have to be without teeth for any period of time. Conventional upper and lower removable partial dentures were fabricated 6 months later.

Existing prostheses incorporated into an interim denture

A 63-year-old woman presented for treatment at Temple University School of Dentistry (Figure 6). She had a failing 9-unit porcelain-fused-to-metal fixed prosthesis, which she claimed had been in place for about 15 years, from the right first bicuspid to

the left second bicuspid. The maxillary cuspids and centrals were present, along with the right lateral incisor and the left second bicuspid. All the remaining maxillary teeth had been previously treated endodontically, and prefabricated posts were present. Pontics replaced the left lateral incisor and first bicuspid, and a pontic replacing the right first bicuspid was cantilevered off of the cuspid. The prosthesis had fractured in 3 places: between the right incisors, between the left incisors, and between the left bicuspids. The two 3-unit segments were no longer connected to the anterior portion.

The patient had a history of hypertension, which was being controlled without medication at the time of treatment. She was also being treated for a twitch of unknown etiology, which had been present since childhood on the left side of her face. This condition was controlled with Lorazepam and unilateral Botox injections, and the treatment resulted in a drooping and unsymmetrical left lip. The patient was undergoing physical therapy and psychological counseling after blunt-force trauma to her left palm 6 months before treatment.

The patient, a nonsmoker, was assigned to a student dentist for comprehensive care, and an interim complete upper denture was treatment planned. It was decided to include the 2 available 3-unit segments in the prosthesis. The segments were retained for impressioning with temporary cement, and an alginate impression was made. The segments were removed and placed into the alginate impression before the tooth sockets were filled with pink wax (Figure 7). As soon as the wax hardened, the remainder

of the impression was poured in stone (Figures 8 and 9).

The prosthesis was completed as previously described and inserted immediately after the necessary surgery. No attempt was made to correct the off-centered midline. The patient was pleased with her interim prosthesis (Figure 10) and happy that she could continue her activities without interruption. A definitive prosthesis was inserted 8 months later, with the midline corrected at that time.

DISCUSSION

For a patient who wishes to preserve his or her appearance during dental treatment, the interim denture concept is an excellent treatment plan. Because of the nontraumatic surgery without flaps and sutures, inflammation and discomfort are minimal. A maximum amount of ridge bulk is preserved. The patient is never without teeth, even during the fabrication of the second set of dentures and subsequent repairs and relines, for the interim prosthesis acts as a "spare." The clinician is more certain of the jaw relationships if natural tooth occlusion was originally present. Less alteration of the oral and perioral musculature occurs.¹

Arches can be treated individually (as the interim prosthesis can occlude with the opposing dentition) or simultaneously. The interim prosthesis protects the surgical site and therefore may hasten the healing process. An articulator mounting may not be required when a single arch is treated.

The interim prosthesis satisfies an important requirement for the socially and business-active patient because there is no interruption in daily activities and no esthetic compromise. Nutrition can continue with only minor

modifications during the first few days after surgery. The morphology, color, and position of the lost natural teeth can be almost exactly duplicated in an interim prosthesis, along with the maxillomandibular jaw relationships. Payne⁵ has written that interim prostheses “are the best solution of modern dentistry for one of our greatest problems, the too busy individual with the too loose teeth.”

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