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Esthetic and Emotional Factors in Immediate Denture Construction

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Some patients delay the extraction of infected teeth because of the fear and dread of becoming edentulous. In immediate denture service, the humiliating edentulous period is eliminated. An immediate denture is defined as a "denture constructed for insertion immediately following the removal of the natural teeth" and is desirable and indicated for a majority of patients who lose their remaining teeth. This article discusses techniques and materials used in the preparation of immediate dentures.

Introduction
Immediate denture construction has come a long way since 1860, when Richardson wrote: "The value of immediate sets of teeth to the patient...is unquestionable. They fulfill in a tolerable degree all the requirements of artificial teeth under any circumstances, if we except that of mastication, this function being, more or less imperfectly performed with such pieces."
Current techniques in denture construction, as well as improved denture base, and tooth materials enable dentists to provide immediate dentures that satisfy the functional requirements of most patients.

The dentist must also focus attention on the psychological factors involved in immediate denture service. The restoration of esthetic appearance and identity is as important as the restoration of masticatory function. The impact is great when a patient is confronted with the loss of his or her remaining teeth. Loss of teeth confirms the loss of youth, vitality, and heralds the coming of death. The prosthodontist may ease the mental burden of this patient by constructing an immediate denture that preserves or improves the dimensions of the patient's face. If the immediate denture does not restore facial contours and proper tooth position, a serious emotional situation may arise.

Diagnosis and Treatment Planning
In immediate denture service, there is no opportunity for an anterior try-in. Therefore, the esthetic (and phonetic) results are not known for certain until the prosthesis is inserted. The dentist must make the patient realize that this denture will be an interim prosthesis that will have to be remade in order to modify the unsatisfactory features of the restoration. The dentist should remind the extremely critical patient of this often during treatment. An immediate denture may not be the treatment of choice for an uncooperative or antagonistic patient.

While planning treatment, the operator must determine what changes should be made in tooth arrangement and vertical dimension, whether an unfavorable vertical or horizontal overlap should be corrected, and what teeth should be extracted before impression-making. Old photographs of the patient may aid in the esthetic interpretation of the immediate denture.

Impressions
"An impression is made, not taken. Therefore, the anatomic and physiologic conditions of the denture-bearing surface must be known by the dentist." Attention to detail and the use of sound prosthodontic principles are essential to accurate denture impressions.

Pasamonti emphasizes that the final impression custom tray should be closely adapted to the labial portion of the maxilla. If this is done properly, lip displacement is minimized and the width and height of the labial flange in the finished denture will be esthetically and functionally satisfactory.

Surgery
A conservative surgical approach is taken to preserve the denture foundation. Severe reduction of the labial cortical plate and extensive alveolectomy are not indicated, even if it means...
Arrangement of Maxillary Anterior Teeth.

It is undesirable for the dentist to make radical changes in the anterior tooth-to-tooth relationship of a Class II patient. Small changes can be made to improve esthetics, but large changes will adversely affect phonetics and comfort. Class III relationships should also be restored to the original position so as to upset stability and retention of the maxillary denture.

In Swenson's technique for arranging the anterior teeth, the dentist removes the stone teeth from the cast, one at a time, and replaces them with the denture teeth in an alternating sequence (i.e., #13, #6, #9, #7, #10, #8) to maintain the width, length, and position of the natural teeth. When all of the denture teeth are in place, the result should be a reproduction of the natural teeth with any undesirable features omitted. Swenson states that a full complement of anterior teeth is not necessary for use of the immediate denture technique. Any remaining teeth serve as a guide to the correct position, shape, and arch form of the new teeth.

Burt advocates Swenson's every-other-tooth method of arranging the anterior teeth when the natural tooth position merits exact replication or only slight modification. He recommends that the denture teeth be set three-at-a-time (i.e., #6-7-8, #9-10-11) when the natural tooth position requires alteration (Figure 1).

Klein suggests using the patient's natural anterior teeth in the immediate denture whenever possible. Using this technique, the patient's original appearance can be readily restored (Figure 2). A preliminary impression by the dentist is made and a custom tray is fabricated on the preliminary cast. A polysulfide rubber impression is made in the border-molded custom tray. On the cast produced from this impression, a record base with occlusal rim is fabricated posterior to the remaining teeth. A face-bow transfer and centric relation record are made to mount the working and opposing casts. After the posterior teeth are cast into the record base, centric relation is verified and the trial denture is waxed and processed. A labial band connecting the posterior flanges above the level of the anterior teeth is included in the wax-up to be processed along with the posterior set-up (Figure 3). The labial band facilitates the subsequent addition of anterior teeth to the denture. The partially completed dentures with labial band is tried in the mouth (Figure 4). A final impression is then made with irreversible hydrocolloid in a stock tray. This impression relates remaining natural anterior teeth to the partially completed denture (Figure 5). The cast holding the partially completed denture is mounted with a wax interocclusal centric relation record. A stone index is made on the final cast including the incisal edges, labial surfaces, and labial band (Figure 6). The patient's anterior teeth are extracted by the dentist, being careful to preserve the buccal plate of bone, and the teeth are stored in normal saline solution (Figure 7). The teeth are
prepared for the denture by cutting off the roots slightly apical to the cemento-enamel junction and filling the pulp chambers with acrylic resin. The stone teeth are cut off the master cast and a socket is prepared. The matrix is then used to autopolymerize the natural teeth to the palatal portion of the denture (Figure 8). After all of the teeth have been added, the anterior flange is added in autopolymerizing acrylic resin. The original appearance is preserved, enabling the patient to retain her sense of identity while making the initial adjustments to becoming a denture wearer (Figures 9 through 11).

**Aftercare and Follow-up**

The patient must be seen by the dentist 24 hours after the immediate denture is inserted and then daily until it appears that adjustments are no longer necessary. At the postinsertion visits, the dentist should give the patient reassurance and encouragement. Within the first 6 months of immediate denture insertion, a rebuke or complete remake of the dentures usually will be necessary because of tissue changes. The patient should be on 1-month recall until this occurs.

When the patient's natural anterior teeth are used in the immediate denture or when esthetic modifications of the immediate denture are necessary, the immediate denture will have to be remade. Many patients, after having made a positive adjustment to wearing a complete denture, are eager to have their immediate denture remade. Here is the opportunity to correct any features of the immediate denture, aesthetic or otherwise, that the patient or dentist feels are not satisfactory (Figures 12 and 13).

**Conclusion**

The immediate denture patient is usually extremely anxious about becoming edentulous and is concerned about the esthetic result. In immediate denture service, the prosthodontist must have control over the technical, esthetic, and patient's psychic factors involved.

It is possible to preserve or improve the patient's original appearance with an immediate denture.

**REFERENCES**

2. Richardson J. A Practical Treatise on Mechanical Dentistry, 1891.