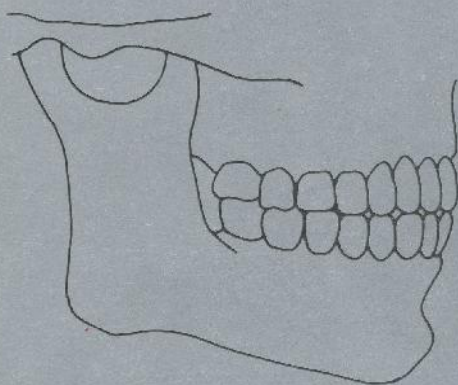


Compendium

The Compendium of Continuing Education in Dentistry

Vol. X, No. 9

September, 1989/\$6.00



This Issue (September):

Ovarian Hormones and Oral Health:
Pregnancy Gingivitis
Dr. Rita D. Zachariassen

An Overview of Gly-Oxide® Liquid in
Control and Prevention of Dental
Disease
Diana Stindl
Dr. Linda Quenette

Esthetics and Emotional Factors in
Immediate Denture Construction
Dr. Gerald L. Herman

Dental Bacteremia and Its Relationship
to Bacterial Endocarditis: Preventive
Measures
Dr. I.B. Bender
Dr. Michael J. Barkan

Clinical Pharmacology of Chronic
Orofacial Pain Medication
Richard E. Paul
Dr. Elliot V. Hersh

Dental Amalgam: A Review of the
Literature
Dr. David W. Eggleston

Esthetic and Emotional Factors in Immediate Denture Construction

Gerald L. Herman, DMD
Clinical Assistant Professor
Department of Prosthodontics and
Occlusion
New York University
College of Dentistry
New York, New York

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"¹ 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."² 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.³ 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."⁴ Attention to detail and the use of sound prosthodontic principles are essential to accurate denture impressions.

Passamonti 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.⁵

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 a

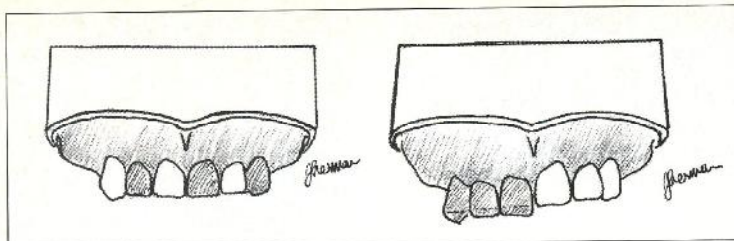


Figure 1—Arrangement of maxillary anterior tooth (denture teeth are unshaded).



Figure 3—Partially completed denture with labial band.



Figure 4—Try-in of partially completed denture.



Figure 2—Preoperative view of immediate denture patient.



Figure 5—Master cast

compromise in the esthetic result. To quote from Glickman, a periodontist, "The bone belongs to the patient."

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 not 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 (ie, #11, #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.⁶

Hurst 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 (ie, #6-7-8, #9-10-11) when the natural tooth position requires alteration⁷ (Figure 1).

Klein⁸ 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 set 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 denture 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



Figure 6—Stone index



Figure 7—Extracted teeth will be prepared for immediate denture.

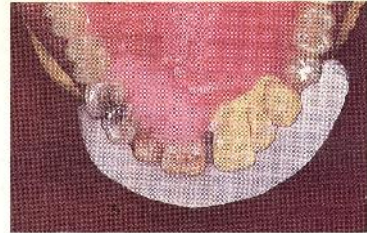


Figure 8—Matrix addition of natural anterior teeth to denture.



Figure 9—Immediate denture is inserted.



Figure 10—Immediate denture is inserted.



Figure 11—Immediate denture is inserted.

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 rebase or complete remake of the denture usually will be necessary because of tissue changes. The patient should be on 1-month recall until this occurs.

When the patient's natural an-



Figure 12—Comparison of remade denture to immediate denture.



Figure 13—The remade denture contains many features of the immediate denture; undesirable features have been omitted.

terior 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, esthetic 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

1. *Glossary of Prosthodontic Terms*, ed 4, 1977.
2. Richardson J: *A Practical Treatise on Mechanical Dentistry*, 1860.
3. Lefer L: The Lame, the Halt, the Blind, and the Intact Elderly Person in the Doctor's Office. *J Oral Med* 36:1981.
4. Blank III: Impression Materials for Maxillary Immediate Dentures. *J Prosthet Dent* 11:414, 1961.
5. Passamonti G: Immediate Denture Prosthesis. *Dent Clin North Am* Nov:781, 1964.
6. Swenson MG: Immediate Denture Service. *J Am Dent Assoc* 26:719, 1939.
7. Hurst WW: A Complete Immediate Denture Technique for the General Practitioner. *J Am Dent Assoc* 27:1903, 1940.
8. Klein IE: Immediate Denture Prosthesis. *J Prosthet Dent* 10:14, 1960.