The Complete Denture Prosthesis: Clinical and Laboratory Applications - Insertion, Patient Adaptation, and Post-Insertion Care

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This course is no longer offered for Continuing Education credit.

Overview

The insertion appointment represents a marked transition in complete denture treatment. From this point forward, the heretofore dentist-directed care now becomes patient-directed as the patient experiences new sensations and reports those that are unexpected or intolerable to the dentist for remedy. For this reason, at the insertion appointment the dentist must employ both technical and interpersonal skills in order to place the patient on a trajectory toward success. The technical quality of the prosthesis must be of the highest possible caliber, and the patient must be prepared psychologically for what will accompany insertion. This final course on complete denture treatment will review the steps that must be accomplished before the patient is dismissed with the new dentures, the essential elements of appropriate patient education about the new prostheses, and guidelines for diagnosing and addressing post-insertion problems that are most likely to be encountered.

Learning Objectives

Upon the completion of this course, the dental professional will be able to:

- List the necessary clinical and patient management procedures necessary at the insertion appointment.
- Describe methods for evaluating retention of maxillary and mandibular complete dentures.
- Describe evaluation of the occlusion.
- List the topics that need to be covered in the way of patient education at the denture insertion appoint.
- Describe hygiene considerations, diet variety, night use, and recall principles in complete denture care.
- List the mechanism, indications, contraindications, and techniques of denture adhesive use.
- Differentiate soluble from insoluble over-the-counter denture retention products.
- Describe the procedures of the first post-insertion appointment, likely findings, and adjustment methods.

Course Contents

- Denture Insertion
- Patient Instruction
- Protocol for the Use of Denture Adhesive
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Denture Insertion

Evaluate in patient's mouth

The synergy between base adaptation and occlusion cannot be precisely duplicated outside of the mouth, both because of minor distortions in the fabrication process and because the oral tissues are dynamic. Casts of the edentulous arches only represent the oral contours at the time the impressions were made.



The insertion appointment is the time to educate the patient on how to properly care for the new dentures. Words of encouragement are very important to ensure success. Whenever possible, the patient should be provided with printed material summarizing or elaborating on the most important spoken instructions.

Clinical Evaluation of the New Prosthesis

Maxillary Denture Retention

Retention of the upper denture can be assessed by two methods. When the denture is grasped by the incisors and pulled downward between thumb and forefinger, there should be resistance to displacement. Placing fingers on the palatal surface and pulling forward is a second method for checking retention. Again, there should be resistance to displacement. However, if the



Checked by pulling downward with two fingers

denture begins to drop but then holds well, this indicates that air is being trapped under the denture base upon placement. A likely cause for this action is overextension, which if left uncorrected, will cause ulceration within a matter of hours or days or a complaint that the denture drops when smiling or when opening the mouth widely.

To check lateral stability, the operator should place light pressure on the occlusal surfaces of one quadrant of posterior teeth to determine if the denture dislodges on the opposite side. Poor stability may not be able to be corrected if the maxillary posterior teeth had to be set buccal to the ridge crest for anatomic, esthetic, or occlusal reasons. The dentist needs to anticipate this and caution the patient to chew bilaterally whenever possible.

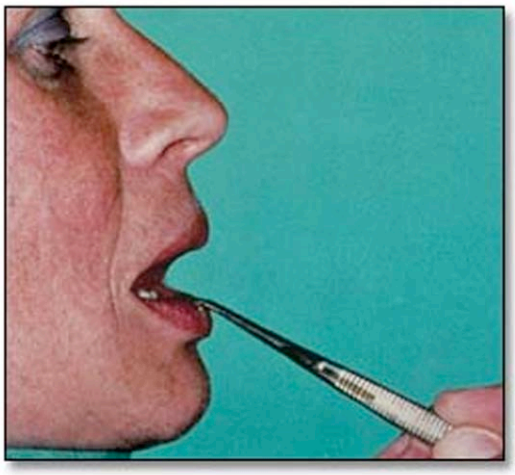
Retention of the Mandibular Denture

The retention of the lower denture is assessed by gently pushing posteriorly against the facial surfaces of the mandibular incisors. The denture should not become dislodged.

Pressure indicator paste should be used to recheck the adaptation to the bearing tissues of both upper and lower prostheses, even if retention seems acceptable. Small areas of excess pressure can disrupt occlusal harmony or lead to ulceration that erodes patient acceptance of the prosthesis.

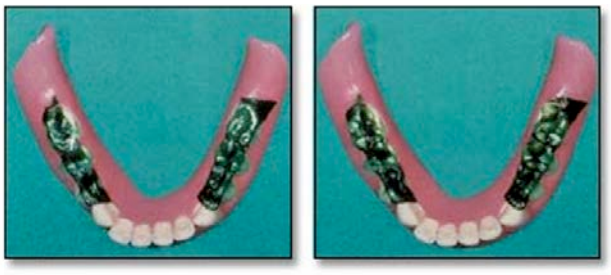
Checking the Occlusion with Wax

A variety of techniques can be employed for checking the dentures' occlusion.



Push gently against denture with tongue at rest position

Occlusal indicator wax is a soft, dark wax with an adhesive surface that is applied to the mandibular posterior occlusal surfaces bilaterally. After the patient has been instructed to occlude, three-dimensional impressions of the cusps of the opposing tooth contacts will be visualized as light areas in the dark wax. Isolated contacts that have penetrated the wax represent premature contacts and should be adjusted, after which the occlusion is checked again. This process continues until all contacts represent similar degrees of penetration into the wax.



Checking the Occlusion with Articulating Paper
Two pieces of occlusal marking paper (shown) or a single "horseshoe" articulating paper is inserted intraorally, placed over the mandibular teeth, and the patient is instructed to gently bite together once and release. Ideally, the desired interocclusal scheme will be represented by the contact marks. More typically, however, owing to subtle changes in the denture bases and intrinsically unavoidable distortions occurring during processing, only a small number of contacts will appear. These should be recognized as prematurities, adjusted, and the occlusion checked again. This process continues until the desired pattern is achieved.

After one or two passes, if contacts still only appear unilaterally or bilaterally but exclusively anteriorly or exclusively posteriorly, a laboratory remount will be required for proper adjustment of both centric and eccentric contacts.





Patient Instruction

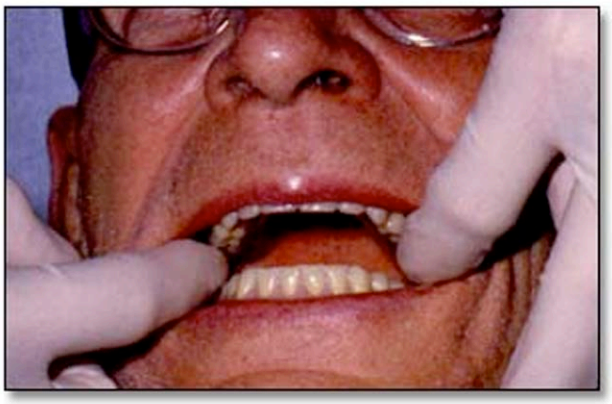
Patient instruction in the care of the dentures should include the following topics:

- Denture insertion and removal
- Cleaning dentures
- Diet
- Night use
- Recall
- Use of denture adhesive

Denture Insertion

Denture insertion is seldom a topic requiring patient instruction at the insertion appointment. However, there are three possible exceptions to this rule:

- First-time denture wearers may want to know if it matters which prosthesis is inserted first. A patient asking about this should be



reassured that the order of insertion does not matter—unless there is virtually no retention to the upper denture. In this case the lower plate should be inserted first.

- If the patient has significant undercuts in the retromylohyoid space, instruction should clarify the mandibular denture needs to be positioned posterior to its ultimate position; the posterior segment seated; and then the prosthesis brought anteriorly and then fully seated.
- If the patient suffers from cognitive dysfunction due to stroke or Alzheimer's Disease (or other dementia), it may be impossible for him or her to initially distinguish upper and lower denture or to correctly position a prosthesis over the ridge. In such an event, the dentist needs to work with both the patient and the caregiver who will be able to reinforce the information away from the office. Parenthetically, it should be stressed that for some patients, use of a mirror will actually make the process MORE difficult, whereas it may ease matters for others.

A fourth situation meriting instruction on insertion occurs when the subject of denture adhesive is brought up, whether by the patient or the dentist. This will be covered in more detail shortly, in the section titled "Protocol for the Use of Denture Adhesive."

Break the seal at the borders



Denture Removal

Patients with no prior familiarity to removing a denture should be instructed to break the seal by running one or both fingers along the full length of the flanges, or by puffing out the cheeks (making a "P!" sound).

Cleaning Dentures

Patients should be taught to remove their prostheses after each meal for a rinsing and to clean thoroughly at least once daily. Thorough cleaning involves brushing and soaking.



Use products specifically designed for dentures

Brushes specifically designed for denture cleaning should be recommended. These feature a wide handle for easy gripping; stiff bristles of one length on one side of the head (for use against broader, flatter denture surfaces such as facial, palatal, and lingual surfaces); and bristles set in a pyramidal arrangement on the other side (for cleaning the tissue surface of the denture). Patients should be cautioned not to use toothpaste (other than toothpaste specifically designed for use on dentures) as the high abrasivity of non-denture toothpaste will scratch acrylic, thereby, dulling and removing anatomic and esthetic details from the denture surface.

Daily soaking in cleanser specifically designed for dentures is recommended for assuring cleanliness and eliminating odors. Patients should be cautioned to always rinse the denture thoroughly after soaking in order to avoid ingesting traces of caustic cleaning agents.

Diet

- Continue former diet
- Add new foods as comfort increase

Patients should be cautioned that chewing and swallowing with the new dentures is a learned behavior and lip- and tongue-biting are very common risks at first. To ensure comfortable



eating while fostering confidence in the prostheses, patients should be urged to continue to consume the quality and variety of foods they did prior to receiving the new dentures until those foods can be easily consumed without discomfort from the dentures. As a patient gains skill with the prostheses, the range of foods can gradually expanded to include crisp fruits cut in small pieces, nuts, and sandwiches.

Night Use

Patients, whether first-time users or those receiving a new set, should always be instructed to leave their dentures out of the mouth for at least 6 hours per day in order to allow the bearing tissues to rest. For most individuals, this is most conveniently and acceptably accomplished during sleep. Whenever dentures are removed for an hour or more, they should be thoroughly cleaned and then placed in water or a cleansing agent.

- Remove denture for 6 hours/day
- Store in water or cleansing agent after cleaning
- Important to fit and function
- Examination of mucosal tissues





Recall

Patients with complete dentures likely have lower awareness of preventive dental behaviors than the average American consumer. As such, a deliberate, proactive effort must be made to bring them back to the practice annually for a recall. This is important to re-evaluate and revise, as necessary, the prostheses and to assess the health of the oral cavity. Over 90% of the 30,000 new cases of oral cancer diagnosed in America annually are found in persons over age 50 years. Denture use is correlated with advanced age, use of tobacco, and lower socioeconomic status—the three strongest risk factors for development of oral cancer. As such, it is essential for dental professionals to establish and stress a program of recall examinations for their edentulous patients just as they do for their patients who maintain their natural teeth.

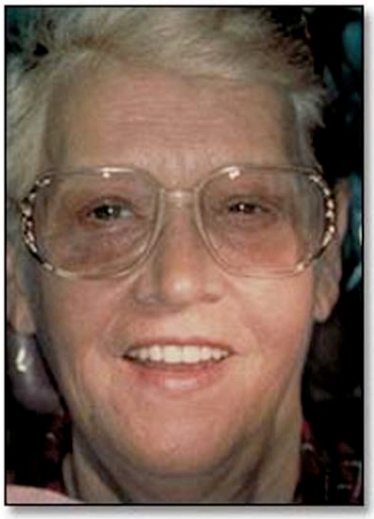
Protocol for the Use of Denture Adhesive

Clinical data shows that proper use of denture adhesive can enhance retention, stability, bite force, and the patient's sense of security with even a well-fitting denture. Dentists are the clinical experts of the mouth and should take the initiative to educate their denture patients about these products before the patients acquire incomplete or inaccurate information about these and related products from other, less reliable sources.

Denture adhesives should be discussed in detail at the insertion appointment with all patients who the dentist perceives will need the psychological or functional benefits of an adhesive product.

- In a well-fitting denture, adhesive use can enhance:
  - Retention, stability, bite force
  - Patient's sense of security
- Beneficial adjunct to a recall-based program of complete denture treatment

Patients with additional indications for using denture adhesive, such as those with expectations for their dentures that exceed anatomic limitations, those who place extreme demands on their prostheses, or those coping with maladaptive anatomic and/or physiological states, should be identified in advance and



The insertion appointment is an ideal time to discuss denture adhesive use with the patient.

instructed at the insertion appointment about denture adhesive in order to enhance satisfaction with the newly inserted denture.

Patients who use denture adhesive should always be enrolled in a recall schedule because less formal triggers for returning to the dentist, such as loosening of dentures due to normal anatomic and physiologic changes over time, may be obscured by the use of adhesive.

Indications

In addition to enhancing patient satisfaction with a properly constructed denture, denture adhesives can be particularly beneficial to patients who place severe demands on their prostheses, such as:

- Musicians
- Public speakers
- Those who feel the need for the additional sense of security conferred by use of the product

Denture adhesives are particularly useful for maladaptive patients such as those who:

- Have severely compromised residual ridge morphology
- Suffer from xerostomia
- Have undergone maxillofacial jaw resection
- Are neurologically compromised due to stroke, multiple sclerosis, or closed-head injury

Contraindications

The following are contraindications to the use of a denture adhesive:

- A patient with open cuts or sores in mouth
- An ill-fitting denture
- A denture that has not recently been evaluated by a dentist
- A patient who cannot or will not maintain adequate oral and prosthesis hygiene
- A patient with a known allergy to any product ingredient

Patient Education

When a dentist determines that a patient is a candidate for denture adhesive or when a patient inquires about the product, the dentist should educate the patient regarding:

- What is denture adhesive?
- What products are acceptable to use (soluble adhesives such as powders and creams)?
- What products should be avoided (insoluble wafers, pads, and home-reline products)?
- How to apply soluble denture adhesive products
- How to remove dentures that contain adhesive
- Denture hygiene when adhesive is being used
- Importance of regular recall

What is Denture Adhesive?

Denture Adhesion Principles
Physical = Bioadhesion
Chemical = Cohesion

Denture adhesive is a non-toxic, water-soluble material that is placed between the denture and the tissues to enhance the normal physiological forces that hold dentures in place. Dentures “adhere” to tissues because saliva adheres to both the denture and the tissue. Denture adhesive does a superior job of adhering to both surfaces, thereby, improving retention. Dentures also “cohere” to tissues because the film of saliva between tissue and denture resists being pulled apart. But the coherence of denture adhesive is far greater than the coherence of saliva.

Commercially available denture adhesive formulas vary by product, but all exhibit

dramatically enhanced coherence and adherence in the presence of saliva or water.

What Products are Acceptable to Use?

The various over-the-counter denture adhesives available to enhance the retention and stability of a prosthesis are all intended to improve function and patient satisfaction. They vary in their formulations, their physical form (powders versus creams) and in their performance (strength and longevity). They all share a common property of being soluble in saliva and water.

- Creams
- Powders
- Flow under pressure
- Even spread of product
- Even distribution of occlusal forces on tissue-bearing surfaces



Creams offer immediate adherence that is enhanced when the product interacts with saliva. Powders must be applied to a moist denture in order to positioned on the prosthesis, and only exhibit "hold" once some water is absorbed. But both powders and pastes work identically once they imbibe water; they flow (like any liquid) under pressure and, thereby, move away from areas of tight fit and concentrate where the prosthesis is not as intimately adapted to the bearing tissues. For this reason, soluble adhesive itself is unable to cause denture trauma.

What Products Should Be Avoided?

- Denture pads
- Synthetic wafers
- Adds thickness of unyielding material
- Can contribute to uneven load on tissue-bearing surfaces



Patient must be educated to avoid, at all cost, denture adhesive products that are insoluble, such as "denture liners," "pads," or "wafers." Consumers are understandably confused by the choices offered among denture products because the soluble adhesive products described above are usually displayed in proximity to these "insoluble" products. The insoluble products are unable or limited in their ability to flow under pressure and, thereby, exert adverse tissue pressures when interposed between a denture and the bearing tissues. The most dangerous among these are the "do-it-yourself" reline materials, which irreversibly alter the fitting surface of the denture and can cause severe hard and soft tissue damage.

How to Apply the Denture Adhesive

The four rules to follow for the application of a denture adhesive are:

1. Use the minimum amount necessary to provide the maximum benefit.
2. Distribute the adhesive evenly in the tissue-bearing surface of the denture.
3. Apply or reapply when necessary to provide the desired effect—only after following Rule #4.
4. Always apply the denture adhesive to a thoroughly clean denture.

Denture adhesive products are food-grade ingredient formulas designed to give all-day hold. Adhesive used for short time periods may make denture removal difficult. Patients who use adhesive need to be given guidelines, but then will have to experiment with varying amounts of adhesive to determine the minimum amount necessary to provide maximum hold.



Cream Adhesive Application

Maxillary Denture

On a clean denture (wet or dry) three short strips of product are applied: one at the crest of each of the ridge areas and one down the center. An alternative is to apply a series of very small dots of product, evenly spaced. Material should be placed no closer than 5 mm to a denture border. The patient should the insert and press the denture firmly in place and hold briefly.



Maxillary Denture



Mandibular Denture

Mandibular Dentures

For the lower prosthesis, a short strip is placed in the depth of the left, right, and anterior rid areas; or small dots are evenly spaced. As with the upper denture, the prosthesis must be clean but the product can be applied to either a wet or a dry surface. The patient should the insert and press the denture firmly in place and hold briefly.





The recommended method for applying powder adhesive is to sprinkle a thin uniform layer throughout the moistened tissue-bearing surface of the clean denture. Excess powder is shaken off and the denture is pressed into place.

Whether using a cream or powder denture adhesive, the patient should wait briefly (10-20 minutes) before drinking hot liquids or before chewing in order to allow the adhesive to attain its full cohesive and adhesive strength.

How to Remove Dentures Containing Adhesive

- Cautiously break seal at borders with finger
- Puff out cheeks
- Hold warm liquid in mouth



Because both cream and powder adhesives are so effective, the removal of a recently inserted adhesive-retained maxillary denture may be extremely difficult. If denture removal is resisting customary efforts, a patient should vigorously swish with warm water for a minute or more before repeating removal attempts. Following extended rinsing, alternating cheek puffing (the P! sound) with firm downward force applied by finger to the most distofacial flange area will retrieve the prosthesis.

Denture Hygiene when Adhesive is being Used

Daily removal of the denture adhesive from the denture is important for tissue health. Soaking the prosthesis overnight in water will loosen the adhesive material and allow it to be readily rinsed off. Alternatively, scrubbing the tissue surfaces of the denture under warm water will remove adherent product. Finally, when adhesive is supplemented in the course of the day, all





Soak overnight and/or scrub

remaining material should be thoroughly removed prior to adding additional material.

Importance of Recall

Ensures:

- Optimal fit and function
- Maintenance of mucosal health
- Patient communication

As previously discussed, patients must be educated that annual recall appointments are important to ensure the sustained optimal fit and function of their new prosthesis as well as for the maintenance of mucosal health. These considerations are particularly important for patients employing denture adhesive because the use of such product can modify or eliminate customary cues for returning to the dental office.

Post-Placement Care

The first post-insertion appointment should ideally occur the day following insertion of the dentures and never more than one week after insertion. In no case should the patient be told to "call if you have problems" at the insertion appointment because this creates the expectation that "problems" will be unexpected and undesirable. Rather, the dentist should promote the concept that the dental office has completed its phase of care (the fabrication of the prosthesis) and now the patient will begin directing the treatment (by using the prostheses and reporting areas for improvement to the dentist). Setting up a post-insertion appointment is essential to preserving this point of view.



- Physical
- Psychological

Once the patient has functioned with the new dentures for a day or a week, s/he will have information to share with the dentist; this should not only be encouraged, it should be scheduled. If substantial changes in the denture are required at the post-placement visit, another appointment should be made; this pattern should continue until the patient has a relatively problem-free appointment. At this stage, the dentist may suggest the patient call with future problems and then a recall appointment should be set.

This approach contributes to successful therapy in several ways. First, the patient has had ample opportunity to direct the care and, thereby, to build ownership in the dentures. Second, the patient is now in control of whether or not to return—but in the short term, will have to take the initiative to set another appointment, thereby, limiting the likelihood of spurious visits. Finally, the awareness of a recall appointment will encourage the patient to adjust to minor annoyances in the short-term (a necessary part of life for most denture patients), knowing that an opportunity for professional assessment is imminent.

Patient Interview

At the first post-placement appointment, the dentist should be an active listener. Encouraging the patient to talk will both allow him or her to share all that has been experienced, good and bad, since the previous visit. Also, it will allow the dentist to assess the patient's speech, swallowing, and facial expression patterns after a day or more of use.

Subjects that should be introduced by the dentist, if they have not already been raised by the patient, should include:

- Ease or difficulty of removal and insertion
- Pain accompanying chewing and swallowing

- Efficacy in chewing
- Ease and clarity of speech
- Esthetics in the patient's opinion and in the opinion of others

Intraoral Assessment of the Complete Dentures

Before examining the bearing tissues, the dentist should assess the prostheses in place. In particular the occlusion, which may have changed since insertion as the prostheses' relationship to the bearing tissues has achieved their ultimate state, should be carefully reassessed. This is important in order to avoid unnecessarily and destructively modifying a denture base that fits acceptably despite the presence of "sore spots" that have an occlusal origin.

The occlusion should be checked by one or more of the following:

- Guiding the patient into centric relation occlusion and visually confirming simultaneous bilateral contact
- Assessing maxillary retention before and after the patient bites down to check for even loading
- Checking for prematurities through the use of "horseshoe" occlusal marking paper

The occlusion should now be adjusted as necessary.

Mandibular Examination

This graphic shows a traumatic ulcer caused by a portion of the denture border restricting the labial frenum. The frenum area should be relieved, and a benzocaine-containing cream can be provided if necessary.

Sore Spot and Tissue Adaptation Indicators

When erythematous or ulcerated "sore spots" are noted, their correspondence to a location on the denture base may be accurately achieved through the use of pressure indicator paste or a low viscosity silicone impression material. Actual adjustment of the area should be delayed until any possible occlusal cause has been identified and corrected.

Post-Placement Care

Maxillary Examination

This graphic shows an asymptomatic red area on the maxillary anterior residual ridge. The use



Traumatic ulcer



of a pressure indicator paste or a marking stick will reveal the corresponding area in the tissue-bearing surface of the denture.

Localizing and Removing the Cause

The interior surface of the denture base is covered with a very thin layer of pressure indicator paste brushed in a single direction and then chilled briefly in cold water. The denture is placed in the mouth and the patient is asked to bite.

The location of the sore spot is identified on the base of the denture. If this spot identifies an obvious area of misfit (i.e., a small acrylic bleb), adjustment of the area is done with an acrylic bur, followed by a recheck of the area to see if proper relief has been made. If there is no obvious, discrete prominence of acrylic corresponding to the sore spot, an occlusal source for the trauma must be ruled out before any adjustment is undertaken.



Asymptomatic area of ridge



Pressure indicator paste can provide clues



Summary

The insertion appointment represents a marked transition in complete denture treatment. From this point forward, the heretofore dentist-directed care now becomes patient-directed, as the patient experiences new sensations and reports to the dentist those that are unexpected or intolerable. For this reason, at the insertion appointment the dentist must employ both technical and interpersonal skills in order to place the patient on a trajectory toward success. The technical quality of the prosthesis must be of the highest possible caliber and the patient must be prepared psychologically for the possible sequelae of insertion.

Course Test Preview

To receive Continuing Education credit for this course, you must complete the online test. Please go to www.dentalcare.com and find this course in the Continuing Education section.

1. Adjustments to the denture are usually necessary at the insertion appointment because:

a. Impressions of edentulous arches only represent the situation at the times that they are made
b. Jaw movements of the patient cannot be exactly duplicated by an articulator
c. Both of the above
d. Neither of the above

2. At the insertion appointment, patients should be educated about which of the following:

1. denture removal
2. denture cleaning
3. denture adhesives
4. night use
5. dental office recall
6. diet with dentures
7. impression techniques
8. function in retruded position
9. orthodontics
10. osseointegration

Choose ONE of the following:

a. 1, 3, 5, 7, 9, 10
b. 2, 4, 5, 8, 9
c. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
d. Not a, b, or c

3. Patient education:

a. Is an optional part of the denture insertion appointment
b. Is assisted by providing the patient with written materials summarizing or expanding on important verbal instructions
c. Should begin, for legal reasons, by providing the patient copies of MSDS (Material Safety Data Sheets) for all dental products involved in denture fabrication
d. All of the above

4. Retention can be checked by:

a. Pulling the upper denture downward between thumb and forefinger
b. Lifting the lower denture with thumb and forefinger
c. Placing light pressure on a single tooth of the upper denture
d. All of the above

5. Denture base adaptation:

a. Should be checked with pressure indicator paste even if retention is acceptable
b. May be improved if areas underlying smeared pressure indicator paste are lightly reduced
c. Should be checked with the use of a pressure indicator paste, with firm occlusal pressure directed to the denture
d. All of the above

6. Checking the occlusion:

a. Is unnecessary if the patient reports no discomfort
b. May be accomplished with occlusal wax, articulating ribbon, and/or bite registration wax
c. Should be followed by an adjustment to maximize contact on the patient's preferred chewing side
d. All of the above

7. A patient remount:

a. Is unnecessary if a laboratory remount has been done properly
b. Is unnecessary if the original bite registration was done correctly
c. Is necessary if bilateral contacts persist after several cycles of intraoral adjustment
d. Is necessary if unilateral contacts persist after several cycles of intraoral adjustment

8. Instruction in complete denture insertion may be necessary:

a. If the dentist perceives that the patient is a candidate for denture adhesive use
b. If the patient has a particularly undercut retromylohyoid area
c. If the patient has a cognitive deficit
d. All of the above

9. Points to cover when educating the patient about denture hygiene include:

a. Always use toothpaste to enhance plaque removal
b. Dentures should be soaked in denture cleanser no more frequently than alternate weeks
c. Use of a denture brush will ensure access both to broad, shallow areas and narrow, deep regions of the denture base
d. All of the above

10. Counseling a new denture patient with respect to diet:

a. Is unnecessary in most cases
b. Should include the recommendation to emphasize raw vegetables at meals
c. Is important because patients need to be cautioned to consume the quality and variety of foods that were being eaten prior to receiving the dentures, before they try to expand their dietary range
d. Needs to stress the four food groups

11. Use of dentures at night:

a. Will retard or halt alveolar ridge resorption
b. Is acceptable if the dentures are out of the mouth for an extended period during another part of each day
c. Is unacceptable if the dentures are cleaned prior to sleep
d. All of the above

12. A recall program for complete denture patients:

a. Is a waste of time because denture teeth experience neither caries nor periodontal disease
b. Is important to ensure the office has a ready supply of reline cases
c. Makes sense because denture patients also tend to be at elevated risk for oral cancer
d. Is the best way to ensure that dentures last for a lifetime

13. Denture adhesive use:

a. Can enhance function, bite force, and patients' sense of security and overall satisfaction with complete denture service
b. Is a sign of the dentist's failure to provide an acceptable service
c. Should be initiated by the patient, never the dentist
d. Is exclusively for non-retentive or otherwise poorly made and ill-fitting dentures

14. Denture adhesive employs:

a. Gravitational forces to improve the fit of the lower denture
b. The same forces that are involved in denture retention, but enhances their effects
c. Materials which swell and may lead to gastric distension
d. Two of the above

15. Denture adhesives are:

a. Indicated in situations of ill-fitting dentures that have not be recently evaluated by a dentist
b. Indicated for patients who place severe demands on their dentures, such as wind instrument musicians and public speakers
c. Contraindicated for maladaptive patients, such as those with xerostomia or those who have undergone jaw resection
d. Contraindicated for patients who are neurologically compromised, such as stroke survivors

16. Patients should be educated that:

a. All products are equal, and equally bad
b. Pads, liners, and wafers are safe if used only in the upper denture
c. Soluble denture adhesive products flow under pressure and therefore cannot foster severe hard and soft tissue trauma
d. Insoluble denture adhesive products are superior to soluble ones

17. Application of denture adhesive should:

a. Emphasize the need to use sufficient amount so that excess is expressed, thereby ensuring a uniform coating
b. Involve the least amount necessary to derive the desired effect
c. Be made to a denture that already has a layer of saliva-saturated adhesive present
d. Not be necessary to be repeated in the course of a day

18. Removal of denture adhesive from the denture:

a. Is aided by the use of an acid fluid, such as fruit juice or vinegar
b. Is aided by the use of extremely cold water
c. Is aided by the use of warm water
d. Is unnecessary because the material is non-toxic

19. A post-placement denture appointment:

a. Should only occur when the patient requests it
b. Ideally is scheduled six months after insertion
c. Provides an opportunity to solidify the transition from the dentist-directed to patient-directed phase of care
d. Is unnecessary if all prior denture fabrication steps have been conducted correctly

20. At the post-placement appointment, the dentist should:

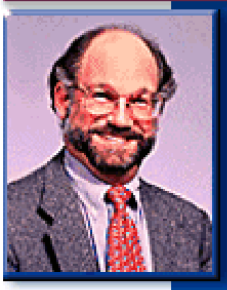
a. Listen to the patient and observe the dentures in the mouth and in function before examining the intraoral tissues
b. Use pressure indicator paste to adjust the occlusion if any sore spots are identified
c. Only adjust areas of the denture base that the patient identifies as painful. Erythematous but asymptomatic but areas should be left alone

References

1. Boone M. Analysis of soluble and insoluble denture adhesives and their relationship to tissue irritation and bone resorption. Compend Contin Educ Dent. 1984;Suppl 4:S22-5. No abstract available.
2. Friedman N, Landesman HM, Wexler M. The influence of fear, anxiety, and depression on the patient's adaptive response to complete dentures, Part I. J Prosthet Dent. 1987 Dec;58(6):687-9.
3. Friedman N, Landesman HM, Wexler M. The influence of fear, anxiety, and depression on the patient's adaptive response to complete dentures, Part II. J Prosthet Dent. 1988 Feb;59(2):169-73.
4. Grasso JE, Rendell J, Gay T. Effect of denture adhesive on the retention and stability of maxillary dentures. J Prosthet Dent. 1994 Oct;72(4):399-405.
5. Landesman HM. "Building rapport: the art of communication in the management of the edentulous predicament" in Zarb GA, Bolender CL, Carlsson GE, eds, Boucher's Prosthodontic Treatment for Edentulous Patients, 11th edition, 1997. St. Louis: Mosby. pp 125-138.
6. Shay K. "The retention of complete dentures" in Zarb GA, Bolender CL, Carlsson GE, eds, Boucher's Prosthodontic Treatment for Edentulous Patients, 11th edition, 1997. St. Louis: Mosby. pp 400-411.
7. Zarb GA, McGivney G,. "Completing the rehabilitation of the patient, Part I: delivery of the completed dentures" in Zarb GA, Bolender CL, Carlsson GE, eds, Boucher's Prosthodontic Treatment for Edentulous Patients, 11th edition, 1997. St. Louis: Mosby. pp 358-381.
8. Zarb GA, McGivney G. "Completing the rehabilitation of the patient, Part II: Maintaining the comfort and health of the oral cavity in a rehabilitated edentulous patient" in Zarb GA, Bolender CL, Carlsson GE, eds, Boucher's Prosthodontic Treatment for Edentulous Patients, 11th edition, 1997. St. Louis: Mosby. pp 381-399.

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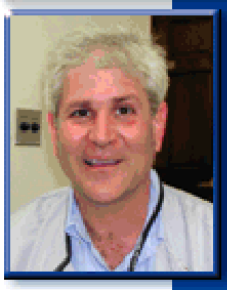
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