

Complete-denture insertion appointment: what to look for?

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INTRODUCTION

Denture insertion represents the culmination of a series of carefully considered and exacting procedures on the part of the Prosthodontics. It is also the moment eagerly waited by the patient, who has co-operated in both time and effort toward this event. Well made dentures enable the patient to have comfort, adequate function and an appearance that will further societal relationships and participation. These are the goals of denture insertion that are usually obtained, indicative of a satisfying experience to both dentist and patient, amply repaying the skill and training of the former and the patience of latter.

BEHAVIOURAL FACTORS AFFECTING INSERTION¹⁻³

There is a wide spectrum of behavioural problems associated with denture insertion. There is the early satisfied patient who returns after the insertion visits for only one or two minor adjustments. At the other end of spectrum is patient who becomes an office fixture ; he or she can be found awaiting adjustments at frequent, short intervals. The complaints are of excessive discomfort, usually of a general nature, poor function, or of nonspecific and bizarre symptoms that contribute to massive frustration for the patient and doctor. Between these extremes is the average denture patient whose success is eventual only because the efforts of the doctor are based on recognition that problems may exist. Once such recognition is accomplished, problem solving is an orderly procedure.

PATIENT MOTIVATION¹⁻³

All patients have a “**threshold of acceptability**” that determines their response to denture insertion. This threshold is part of the motivation mechanism of the patient, which may be identified early in treatment. Patient acceptance of treatment and reaction to the results of treatment are measures of his motivation. The complexity of behavioural factors involved in motivation may cause the doctor to misinterpret patient response in any phase of the treatment procedure, especially during the initial diagnostic procedure.

COMMUNICATION⁴

Establishing good communication between doctor and patient early in treatment can prove highly supportive. Early discussion provides clues that are useful about expectations at the time of denture insertion. A review of the patients self image is beneficial in predicting acceptance. Good communication should continue throughout treatment procedures and is especially important during insertion. The ability of the doctor to listen and his skill at translating clues offered by the patient into positive approaches are valuable at insertion time.

DENTURE INSERTION PROCEDURE^{1-3, 5, 6}

Denture insertion is not a separate and distinct from all other phases of denture fabrication it may be regarded as a pause in treatment to provide an overview that takes account of all phases of treatment, which began with the initial interview.

Before the insertion appointment inspect the dentures to determine

- 1) That the polished surfaces are smooth and devoid of scratches.
- 2) That no imperfections on tissue surface remain
- 3) That the borders are sound with no sharp angles in the border areas.

In addition, be sure

- 1) That the accurate maxillary remount cast is properly attached to the articulator.
- 2) That an accurate mandibular cast is prepared for the patient remount.

STEPS IN INSERTION PROCEDURE

Step I REVIEWING INSTRUCTIONS

The first step is to review the patient the instructions that were given to him during the diagnostic phase.

Step II EVALUATING TISSUE SIDE

Evaluation is done for undercut areas and accuracy of tissue contact. Before inserting the denture, paint the entire tissue side of the denture base with a thin coat of pressure disclosing paste, insert and remove the denture. When tissue undercuts are present, the paste will be dragged from the denture base in the area of tissue contact. When undercut area is positively established, relieve the denture by grinding with an acrylic bur. Repeat the procedure until adequate relief is assured. Smooth the altered surface. Areas of exostosis or areas of bone covered with tissue that is not displaceable, such as midpalatal suture often appear as pressure areas even when the denture is seated with very little pressure. The altered area is not smoothened until the denture is subjected to the pressure of occlusion and are can see that no further relief is required.

Step III EVALUATING BORDERS

Evaluate the borders and the contour of the polished surfaces in the mouth to determine if

- 1) The border extensions and contour are compatible with the available spaces in the vestibules.
- 2) The borders are properly relieved to accommodate the frenum attachments and the reflection of the tissues in the hamular notch area.
- 3) The dentures are stable during speech and swallowing.

Apply disclosing wax to the borders of the maxillary denture in the same manner as the green stick compound was applied during the border refining procedures. Instruct the patient to open the jaws as in yawning, push the lower jaw forward, and move the lower jaw from right to left. Disclosing wax is more displaceable than softened compound; therefore slight overextensions that might be developed with compound can be determined. Relieve any existing over extensions by grinding; polish the relieved area. The same procedure is done for all areas of both dentures.

Step IV EVALUATION OF DENTURE SUPPORT

The denture support can be evaluated by applying disclosing paste to inner portion of the denture and then seating it with considerable finger pressure over the posterior teeth. When evaluating support, occlusal contact should not be used to apply force, since it would superimpose any occlusal discrepancy that may exist. Support can also be evaluated by seating the denture and applying finger pressure in a tissueward direction alternately on one posterior occlusal section and then on the other.

Step V EVALUATION OF STABILITY

It can be evaluated by grasping the denture and attempting to rotate or displace it laterally. The amount of movement must be considered relative to the shape and character of the supporting structures.

Step IV EVALUATION OF RETENTION

- Retention can be evaluated for the maxillary denture by applying an upward and anterior force on the lingual aspect of the anterior teeth to indicate the efficiency of posterior border seal.
- Buccal force on lingual aspect of the posterior teeth on one side indicates the degree of border seal on the opposite side of mouth.
- Retention in the posterior portions of the mandibular denture can be evaluated by applying a downward and anterior force on the lingual aspect of the anterior teeth.
- Anterior retention of mandibular denture can be evaluated by applying a superiorly directed force.

Both retention and stability can be evaluated further by placing a trial addition of low-fusing modeling compound on the suspected area of deficiency. An increase in retention or stability or both after this temporary addition confirms the location of the deficiency and indicate that improvement can be made.

Step VII OCCLUSAL CORRECTION

Occlusal harmony in complete denture is necessary if the dentures are to be comfortable, to function efficiently and to preserve the supporting structures. It is difficult to see occlusal discrepancies intraorally with complete dentures. The resiliency of the supporting tissues and the displaceability of the tissues in varying degrees tend to disguise premature

occlusal contacts. The tissues permit the dentures to shift; as a result, after the first interceptive occlusal contact the remaining teeth appear to make satisfactory contacts. Occlusal faults can be determined by obtaining an interocclusal record from the patient and remounting the dentures on an articulator. These faults can be corrected by selective grinding procedures. **Remounting** and **selective grinding** procedures should be carried out at the time of placement of the dentures. Postponing this important step will lead to

- 1) Deformation of the underlying tissues
- 2) Discomfort
- 3) Destruction of supporting bone.

Occlusal disharmony in complete dentures may result from

- a) Undetected errors in registering jaw relations.
- b) Errors in mounting casts on the articulator
- c) Differences in tissue adaptation between the processed denture bases and the record bases that were used in recording maxillomandibular relations.
- d) Changes in the supporting structures since the impressions are made.

PROCESSING ERRORS ^{7,8}

CURING SHRINKAGE

When methylmethacrylate monomer is polymerized, the density changes from 0.94 gm/cm³ to 1.19gm/cm³. This change in density results in a volumetric shrinkage of 21 percent, usually called the **polymerization shrinkage**. The volumetric shrinkage, due to polymerization contraction, probably contributes very little to the linear shrinkage that has been observed with all of the resins used for denture bases. The greater the linear shrinkage, the greater is the discrepancy usually observed in the initial fit of the denture. The value for linear shrinkage value for various commercial denture base materials is **0.2-05%** (heat cure – 0.53%, selfcure – 0.26%).

A curing shrinkage in a maxillary denture is often evidenced by a discrepancy in the palate region. Presumably, during cooling, the resin shrinks toward the areas of greatest bulk, which in this case are the ridge portions of the denture base. Such a shrinkage causes a tensile stress to occur in the thinner palate region. In the thinner palate region. When the stress is relieved in upper denture the resin is pulled away from palate, and with both upper and lower dentures the posterior teeth on opposite sides of the arch are pulled closer together. This accounts the linear shrinkage phenomenon.

A **loss vertical dimension** of occlusion is generally associated with the processing of denture bases by fluid resin techniques when a hydrocolloid mold or flask is used. Increase in vertical dimension is greater in compression molding technique ⁹.

Method of reducing the shift of teeth in denture processing ¹⁰

Processing of resin dentures has been a frustrating experience for dentists because of volumetric change in resin during polymerization. There is one consistent change in posterior tooth relationships that can always be noted after remounting dentures in which cuspid teeth are used; an anterior shift of maxillary posterior teeth in relation to the mandibular posterior tooth. When a maxillary denture is first inserted in a patients mouth, disclosing paste patterns demonstrate a derangement of the rugae pattern, excessive contact in the anterior palatal area, and heavy contact of denture against the posterior slopes of tuberosities. This indicates that the shrinkage is occurring in a forward direction in the maxillary denture. No similar phenomena were noted in mandibular denture.

The theory that evolved to explain these observations is that, in each instance, the labial position of the maxillary alveolar ridge anchored the anterior part of the polymerizing and shrinking resin so that all volumetric and linear contraction began posteriorly and moved anteriorly, carrying the posterior teeth forward. The mandibular denture exhibits no similar phenomenon because the labial aspect of alveolar ridge is neutralized by the lingual flange. The remaining posterior area has no perceptible shrinkage either in an anterior or posterior direction.

Solution : An artificial flange, using the posterior aspect of the maxillary cast, is waxed up.

Gayle A Laughlin 2001 conducted a study to investigate the effect of resin anchoring system on the adaptation of denture base resin to master cast after compression molding. He concluded that anchoring holes placed in an edentulous master cast along the posterior land area and at the midline significantly improved the adaptation of denture bases.

CRAZING^{11,12}

Relaxation of surface stresses may result in the formation of cracks, which may deleteriously affect the denture. It consists of formation of small cracks, which may vary in size from microscopic dimensions to a size that is readily visible to the unaided eye. In some instances, the crazing in a clear resin is evidenced by a hazy or foggy appearance rather than by individual cracks.

Results : Weakness the resin, reduces the esthetic quality of denture.

It may occur under mechanical stress, or as the result of an attack by a solvent. The modern concept is that crazing is an actual mechanical separation of polymer chains or groups of chains under tensile stress. Crazing starts on surface in a region in which the polymer molecules are oriented at right angles to the direction of the applied tensile stress. It then gradually penetrates upward. The tensile stress was probably induced by the contraction of the resin around the tooth during the cooling of denture, after it had been processed under heat. The cracks became evident only after limited water immersion and may be the result of stress relaxation brought about by the water absorption.

This can be **avoided** by

- a) Using cross linked acrylic
- b) Metal molds

Bleaching of teeth

Bleaching acrylic teeth occurs during the process of denture base material.

Reason :

- Inferior colour pigment.
- Faulty methods of molding by manufacture
- Excessive heat higher than 130°C
- Blending with moisture during processing.

POROSITY

It is a processing error in acrylic resin. When porosity occurs on surface, it makes denture base unaesthetic. It also compromises the physical and hygienic properties of a processed denture base.

It result from the vapourisation of unreacted monomer and low-molecular-weight polymers, when the temperature of a resin reaches or surpasses the boiling points of monomer.

Reasons

- 1) Over heating
- 2) Inadequate mixing of powder and liquid
- 3) Rapid temperature elevation
- 4) Inadequate pressure or insufficient material in the mold during polymerization
- 5) Air inclusion during mixing of powder and liquid

Porosity may be two type –

- 1) **External porosity**
- 2) **Internal porosity**

Internal porosity

It is in the form of voids or bubbles with in the mass of polymerized acrylic. It is not present on surface of denture and mostly seen in thickest portions of dentures.

Reason

Due to vapourisation of monomer

- It can be avoided by long curing cycles. (74°C for 8 hours)

External porosity

Occurs due to lack of homogeneity and adequate pressure during final closure.

INSERTION ERRORS

Reasons for errors in occlusion

The errors in occlusion on the first insertion of denture can be due to several reasons they are :

- a) Unhealthy temporomandibular joint
- b) Inaccurate jaw relation
- c) Errors in transferring jaw relation records to the articulator
- d) Improper seating of occlusion rims on the cast
- e) Ill fitting temporary bases
- f) Failure to use facebow
- g) Changing vertical dimension on articulator
- h) Incorrect arrangement of posterior teeth
- i) Failure to close flask completely
- j) Use of too much pressure in closing the flasks
- k) Overheating while polishing the denture leads to wastage.
- l) Shrinkage of acrylic resin.

Checking errors in occlusion

There are many acceptable intraoral methods for correcting occlusal disharmony

1) Articulating paper

It alone will not give as accurate indication as some other methods. The resiliency of the supporting tissues allows the denture to shift; therefore, the paper markings are frequently false and misleading. To place articulating paper on one side of the arch may induce the patient to close to or away from that side. Articulating paper should be placed on both arches, a procedure sometimes difficult to do accurately.

2) Central Bearing Devices

Some operators use one type of **central-bearing device**, the **correlator**, to correct occlusion in the mouth. The central-bearing pin works on a spring. As the patient closes his mouth, the pin in the mandibular mounting contacts a metal plate in the vault of maxillary denture. Thus, by holding the maxillary denture up and mandibular denture down, the pin creates a tension before the teeth contact. If a premature contact is made by one tooth, the dentures do not shift because the spring holds other teeth apart. The central bearing device can be remounted on dentures in 3-4 minutes. Another type of central-bearing device, the coble device, has a central bearing pin without a spring like the correlator, it requires careful control of patient throughout the procedure.

3) Occlusal wax

Adhesive green wax is placed on the occlusal surfaces of the mandibular denture. Points of penetration that occur upon closing with the jaws in centric relation may be marked with a lead pencil and relieved where indicated.

Disadvantages : Shifting of dentures over resilient supporting tissues in eccentric jaw positions will give false markings.

4) Abrasive paste

The use of abrasive paste in the mouth has many disadvantages

- 1) The shifting of the base as a result of premature contact may result in altering the occlusion so that centric occlusion does not correspond to centric relation.
- 2) Cusps that maintain the occlusal vertical dimension may be destroyed.

HAND POSITION FOR TESTS OF OCCLUSION

- The left hand of a right handed dentist is used to maintain the dentures in position and to feel the touch and slide error in the occlusion.
- The hand is turned so that the little finger is up and the palm of the hand is towards the patients face.

- The ball of the thumb and index fingers are placed between the upper and lower teeth. The finger nail of the other hand is placed on top of the incisor edges of the lower anterior teeth.
- The patient is instructed to pull the lower jaw back and close slowly until a back tooth touches.
- If there is an error, the finger and the thumb will feel the slide that follows the first tooth contact.

As the lower teeth approach the upper teeth, the finger nail is removed from the incisor edges of lower anterior teeth. The word "slowly" is repeated so that the movement will not be too fast for the observations to be felt by fingers. This record is registered by placing two thickness of passive-type wax (approx 1 1/2 mm) on occlusal surface of mandibular teeth on cast. Soften it with flame or immerse it in water at 130⁰ F and carry to the mouth and have patient close into the wax when the jaws are in centric relation. After properly orienting the mandibular denture by means of interocclusal record, secure it with sticky wax. Now seat the mandibular cast in the denture and attach it to the mandibular member of articulator with plaster.

PATIENT REMOUNT AND SELECTIVE GRINDING

The patient remount method is to remount the dentures on an articulator by means of interocclusal records made in patient's mouth. This is by far the most accurate procedure. It has the following advantages :

- 1) It reduces patient participation
- 2) It permits the dentist to see better what he is doing
- 3) It provides a stable working foundation; bases are not shifting as on resilient tissues.
- 4) The absence of saliva makes possible more accurate markings with articulating paper or tape.
- 5) Corrections can be made away from the patient, thus preventing occasional objections when patients see their dentures being ground.

To carry out a patient remount procedure, orient the mandibular denture to the maxillary denture by means of an interocclusal record with the jaws in centric relation.

- 1) Place two thickness (approx 1½ mm) of passive type wax on the occlusal surfaces of the mandibular teeth. Soften with a flame from alcohol torch or immerse in water at 130⁰F.
- 2) Carry to mouth and have the patient close into the wax when the jaws are in centric relation. Closure must be short of tooth-to-tooth contact. The wax record is not acceptable if the teeth penetrate to make contact. Chill with cold air and remove.
- 3) Trim the wax so that only slight indentations remain and expose the facial side. After properly orienting the mandibular denture to the maxillary denture by means of the interocclusal record secure with sticky wax. Seat the mandibular cast in the denture and attach to the mandibular member of articulator with plaster.

Simplified clinical remount for complete dentures¹¹

This clinical remount procedure requires the use of maxillary and mandibular custom made mounting jigs (CMMJS) that are constructed over articulator mounting plates. They are made in advance and kept ready for use when required.

Construction of CMMJS

- 1) Wrap boxing wax around the periphery of maxillary and mandibular mounting plates to form cups for holding the resin.
- 2) Trim the boxing wax, so that it makes a divergent cylinder of 1 inch high and 2.5 inch diameter at opening for maxillary and 5/8 inch high and 2½ inch diameter at top.
- 3) Pour a mix of resin self-curing custom tray material to fill the divergent cup.
- 4) Allow tray material to set; remove the wax boxing and form a mix of resin tray material into two rolls and place over surfaces of both maxillary and mandibular divergent cylinders to form U-shaped edentulous ridge.
- 5) Trim the edentulous ridges to make buccal and lingual undercuts and adjust the vertical height of ridges to 4-6mm.

Mounting the dentures

- 1) After making a centric relation interocclusal record, secure maxillary and mandibular CMMJS in articulator.
- 2) Place high viscosity elastomer (putty) over mandibular CMMJ and position the mandibular denture on it.
- 3) Secure maxillary denture in centric interocclusal record, place putty material in the denture and close the upper member of articulator in to putty material.
- 4) After putty has set, open articulator and selective grinding is carried on.

Advantages of this method

- 1) Dentures can be remounted without the necessity of making separate remount casts.
- 2) If centric relation record is incorrect, the mandibular denture can be remounted quickly with a new centric relation record.
- 3) Blocking out undercuts is not needed.
- 4) Mounting can be performed at chairside with minimal cleanup.
- 5) Putty material can be preserved for subsequent appointments.

ELIMINATING OCCLUSAL ERRORS IN NON ANATOMICAL TEETH

An interocclusal CR record is made in a bite registration material with the opposing teeth just out of contact. The dentures are mounted in the articulator and the following procedures are undertaken.

- 1) After being detected by articulating paper between the teeth, gross premature contacts in CR are removed by grinding. The same procedures are used to remove all occlusal interferences in lateral and protrusive occlusions.
- 2) Abrasive paste is placed on the teeth in the articulator. These teeth are milled when the upper member of the articulator moves in and out of protrusive and right and left lateral excursions. When the teeth slide smoothly through all excursions, the denture is removed from articulator and washed.
- 3) Spot grinding is done to correct any small discrepancy in CR that remain after grinding with abrasive paste.

ELIMINATING OCCLUSAL ERRORS IN ANATOMIC TEETH

Final correction of any occlusal disharmony that may exist in the dentures that may exist in the dentures from any cause is made at this time by means of selective grinding.

- Articulating paper of minimum thickness is used for marking the actual contact of the teeth. Thick paper gives deceptive results. The paper is interposed between the teeth and markings are obtained by tapping the teeth together in CR position. This can be done on both sides at the same time if two pieces of thin articulating paper are fastened together in from with a paper clip. After the first few taps on articulating paper, only few spots appear. Grinding is done with mounted changes stones no 16, 11 and 5. The marking process and the grinding are repeated until all except the anterior teeth contact in CO. During this procedure, the incisal guide pin is relieved of contact on the incisal guidance table to allow for the slight reduction in vertical dimension that must necessarily take place.

Thin articulating paper is placed over the teeth on both sides, the articulator is moved into one of the lateral positions, and the contacts are marked on both sides for the same lateral movement. The markings will show contacts of the maxillary and mandibular buccal and lingual cusps and the maxillary and mandibular incisors on the working side. Marks will also appear on lingual cusps of maxillary teeth and buccal cusps of mandibular teeth. If the incisal pin rises away from the incisal guide table during this lateral movement, the buccal cusps of the maxillary teeth and the lingual cusps of mandibular teeth on the working side are reduced with a mounted stone. The balancing side marks are reduced on the lingual of the mandibular buccal cusps to eliminate balancing side defective occlusal contacts. The registration of these markings is continued with same lateral movement including the intermediate movements and grinding of these defective contacts is continued until the pin stays in contact in all lateral and intermediate movements. This whole procedure is repeated for the right lateral movement.

After CO has been perfected, the lingual cusps of maxillary teeth and the buccal cusps of the mandibular teeth must be shortened.

If the grinding has been done in right and left lateral and intermediate movements, grinding in protrusion will also have been accomplished. Testing with articulating paper should show contact throughout the arches of the maxillary and mandibular dentures.

Types of occlusal error in centric occlusion and their correction

Three types of occlusal errors can exist in CO, and each can be correlated by specific grinding for that error.

- 1) Any pair of opposing teeth can be too long and hold the other teeth out of contact. For correction of this error, the fossa of the teeth are deepened by grinding so the teeth will, in effect, telescope into each other.

- 2) The maxillary and mandibular teeth can be too nearly end to end. For correction of this error, grinding is done on the inclines of the cusps in such a way as to move the maxillary cusp inclines buccally and the mandibular cusp inclines lingually.
In the process, the central fossae are made broader, the lingual cusp of the maxillary tooth is made more narrow when it is ground from the lingual side and the buccal cusp of mandibular tooth is made more narrow when it is ground from the buccal side. The cusps are not shortened.
- 3) Maxillary teeth can be too far buccal in relation to the mandibular teeth. For correction of this error, the lingual cusp of maxillary tooth is made more narrow by broadening the central fossa, and the buccal cusp of mandibular tooth is moved buccally by broadening the central fossa.

In effect, maxillary lingual cusp is moved lingually and the mandibular buccal cusp is moved buccally so the teeth telescope into each other.

Types of working side occlusal errors and their correction

Six types of errors can exist in the occlusal contacts on the working side. Each of these will cause other teeth to be held out of contact in working occlusion, and each requires selective grinding of specific cusp inclines for its elimination.

- a) Both the maxillary buccal cusp and the lower lingual cusp are too long. For correction of this error, length of cusps is reduced by grinding to change the incline extending from the central fossa to the cusp tip. The central fossa is not made deeper but the maxillary buccal cusps and mandibular lingual cusps are made shorter so other teeth will touch in that position.
- b) The buccal cusps make contact but the lingual cusps do not. For correction of this error, the buccal cusps of maxillary teeth are ground from the central fossa to the cusp tip to shorten the cusp and change the lingual incline of the cusp so it will be less steep.
- c) The lingual cusps make contact, but the buccal cusps do not. For correction of this error, the mandibular lingual cusps are shortened by changing the buccal incline of the mandibular lingual cusp so it is not as steep. The maxillary lingual cusp is not shortened, and central fossa is not made deeper.
- d) The maxillary buccal or lingual cusps are mesial to their intercuspal positions. For its correction, grinding is done so the mesial inclines of the maxillary buccal cusps are moved distally when the cusps are narrowed and the distal inclines of mandibular cusps are moved forward.
- e) The maxillary buccal or lingual cusps are distal to their intercuspal positions.
This error may also occur along with buccolingual errors. For its correction, grinding is done from the distal of maxillary cusps and from mesial of mandibular cusps.
- f) The teeth on working side may not contact. The cause of this error is excessive contact on the balancing side.

Types of balancing-side errors and their correction

There are two types of balancing-side errors

- 1) The balancing side contact is so heavy so that the working-side teeth are held out of contact. For correction of this error, paths are ground through the buccal cusps of mandibular teeth to reduce the incline of the part of the cusp that is preventing the teeth on the working side from contacting.
- 2) There is no contact on the balancing side.
To correct this error, it is necessary to shorten the buccal cusps of maxillary teeth and the lingual cusps of mandibular teeth on the working side.
In this process, the lingual inclines of the buccal cusps of maxillary teeth and buccal inclines of lingual cusps of the mandibular teeth are made less steep. No grinding is done in the central fossae.

BASAL SURFACE ERRORS

Before inserting the new dentures for the first time the impression surface must be carefully checked for any potential cause of pain.

The common causes of pain arising from the impression surface of a denture are:

- 1) **An undercut flange** : Which traumatizes the mucosa when the denture is inserted and removed.

The part of flange causing discomfort is identified by direct observation and by use of a disclosing material such as soft wax. A thin layer of disclosing material is applied to the suspect area and the denture is inserted and removed. The precise location of undercut producing the pain is shown up as an area of acrylic from which wax has been displaced.

2) Acrylic spicules

These are produced by acrylic resin being processed into indentations on the cast which are the reproductions of surface irregularities in the mucosa.

- 3) **Acrylic nodules** : Nodules occur commonly and are the result of acrylic resin being processed into small air blows in the cast.
- 4) **Sharp acrylic margins** : Sharp edges are associated with presence of a tinfoil relief on the cast.

BALANCING RAMPS IN NONANATOMIC COMPLETE DENTURE OCCLUSION^{12,13}

Cuspal contacts provide balancing contacts in protrusive and lateral excursions when anatomic denture teeth are to be balanced. Nonanatomic teeth have no cusp inclines; therefore balancing contacts must be obtained by other means. One method is to arrange teeth to a flat plane with no overbite. Another method is to incline the mandibular 2nd molar to provide contact with maxillary denture in all excursions. Arthur Nimmo discusses treatment with non anatomic teeth arranged on a flat plane with use of balancing ramps. Ramps can be developed after final try-in or at time of clinical remounting of dentures at insertion appointment.

Technique

This requires use of semiadjustable articular the condylar guidances are set with a protrusive record made at time of final try-in

- 1) Add wax to surface posterior to most distal mandibular molar in opposition to most posterior maxillary molar.
- 2) Release central locks on articulator
- 3) Assume an edge-edge position of opposing anterior teeth. The upper member is sequentially moved down the ramp into centric relation to give the ramp its basic shape.
- 4) Reheat the wax and move the upper member through lateral border excursions.
- 5) Reheat wax and perform intermediate excursions
- 6) Evaluate the balancing contacts to ensure contact in all excursions and add wax as necessary.
- 7) Process the dentures. Do not adjust balancing ramps during the laboratory remount.
- 8) Evaluate balancing ramps at the patient articulator clinical remount and adjust as necessary to ensure smooth balancing contacts without interferences.

These ramps can be incorporated at insertion appointment in conjunction with clinical remount by adding autopolymerizing resin and performing all eccentric motions when it is soft.

The advantages of using this method are:

- 1) Provide tripodization of denture bases
- 2) Balancing contacts give improved horizontal stability to dentures.
- 3) Esthetics and phonetics are greatly enhanced because there is more freedom in placing the anterior teeth.

CONCLUSION

Denture insertion is the culmination of extensive and sometimes difficult treatment procedures. Doctors should not have the casual attitude of **“Here they are. I hope you like them”**, but rather should adopt the more serious and considered approach of **“Here we are. Let us both do what we can do to make you look good, be comfortable, and enjoy what we have created.”**

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