Complete Denture

Waxing, carving & post dam

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Lecture 12

Waxing, carving & post dam

Waxing: The contouring of a pattern in wax, generally applied to the shaping inwax of the contours of a trial denture**.**

There are three principal surfaces are concerned in the functional stability ofdentures:

1. The impression surface.
2. The occlusal surface.
3. The polished surface.

The polished surface is defined by the width of the border, the buccolingual position of the teeth and the fullness given the wax to obtain concavity or convexity both facially and lingually. The form of the polished surfaces of a denture influences its stability and retentive quality and esthetic.

Requirements of waxing the polished surface:

1- They should duplicate the covered soft tissues as accurately as possible realistic, not exaggerated.

2- The borders, both labial and buccal should full the vestibules.

3- Notches should be provided to accommodate the mucous membrane attachment(frenum), both in size and direction.

4- The contour of the facial flanges should be compatible with the cheekand lips.

5- The contour of the lingual flanges should be compatible with the tongue.
6- The palatal section of the maxillary denture should be nearly a reproduction of the patient palate and rugae.
7- Avoid a bulky wax-up. The additional bulk of acrylic resin may contribute toporosity and dimensional processing error.

Method of waxing: There are two methods of waxing up:
1- free hand (conventional method).
2- the physiologic or flange method.
1-Free hand (conventional method), there are two methods:

A-Press on
1- Reduce the thickness of the border and flanges or build up to the desired dimensiondictated by the final impression.
2- Seal the denture bases of the trial denture to the master cast at the border to reduceocclusal errors during waxing.
3- Be sure the surface of the trial denture is clean and dry.
4- Mold softened strips or rolls of baseplate wax to the labial and buccal surfaces of the trial denture to provide a slight excess. A warm wax spatula or similar instrument is used to trim and seal the border to the determined thickness and extension and to sealand trim the gingival margins to their shape and contour.
5- Remove the mounted casts from articulator and place them in water for waxminimizes tooth movement and makes carving much easier.

This method is more favorable than drip on because it gives uniform thickness in all surfaces and drip on requires more skill from technician.

B-Drip on
1- Seal the denture bases of the trial denture to the master cast at the border to reduceocclusal errors during waxing.

2- Be sure the surface of the trial denture is clean and dry.
3- a portion of sheet of base plate wax is softened and rolling into a wax stick a little larger than the diameter of a lead pencil, the wax stick is heated on the Bunsen borderflame and then the molten wax on the end of the stick is dripped on to the denture base.
4- Remove the mounted casts from articulator and place them in water.

2) The physiologic or flange method:
Remove all excess baseplate wax from the buccal, labial and lingual surfaces ofboth trial denture, retaining only enough wax to hold the teeth in position.

Waxing maxillary denture
1- Add softened flange wax to the buccal surface of the maxillary trial denture to slightly exceed the size and shape of the contours previously molded on the occlusionrims.
2- Add slight excess of the soft flange wax on the labial surface to be contoured bylip function and facial expression.
3- Add enough soft flange wax on the palatal surface completely around the arch to enable the tongue to reestablish the lingual form of the ridge in posterior region andanterior curvature of dental arch in anterior region.
4- Slowly and evenly soften the flange wax that has been added the maxillary trialdenture with an alcohol torch.
5- Temper the wax quickly in water at 100 F.
6- place the maxillary denture in the patient's mouth.

Waxing mandibular denture:
1- Add a slight excess of the flange wax on buccal and labial surface.
2- Add an appreciable excess of flange wax beyond the usual arbitrary curving on theposterior part of the lingual surface of the lingual flanges.

3- Add somewhat large amount of excess of flange wax to the anterior part of lingualsurface of the lingual flange from bicuspid to bicuspid.
4- Carefully soften the flange wax on mandibular denture in the flame of an alcoholtorch.
5- Temper the wax quickly in water at 100 F.
6- Place the mandibular denture in the patient's mouth.
7- Instruct the patient to swallow forcibly, grin broadly, pucker the lips, read aloudfor a few minutes, and make other movements of the mouth.
8- Examine the flanges during the oral movements, the excess flange wax tends tomove toward the occlusal and incisal surfaces of teeth.
9- The trial denture should now feel natural and comfortable to the patient.

Carving: it is the process by mean of which gingival portion of complete denturethat simulate natural gingival contours.

Instrument used in carving
Instruments used for carving: wax knife, lacron carver, wax spatula.

Carving procedure:
1) Trim the wax around the neck of the labial and buccal surfaces of the teeth
-With the gingival margin placed apically in accord with the patient's age to simulatenormal physiologic recession.

-With long pointed interdental papillae for young patient and shorter blunter papillaefor older patient.

2)

A-The root of maxillary canine is longest, the root of lateral incisor is shortest andthe root of central incisor is between these two.

B- On the mandibular denture the root of the canine is longest, the root of centralincisor is shortest and the root of lateral incisor is between these two.

3) Smooth the buccal and the labial wax surface with an alcohol torch to soften andblend the previously established contour.

4) Apply wax with a wax spatula for the muco-labial fold to the gingival margin toaccommodate the frenum.

5) Wax the palatal surface to restore contours present before the loss of the tooth andsupporting structure.

Festooning: is to reproduce the same curvature of gums around necks of dentureteeth similar to natural teeth.

Festoon from Latin Festum = Cosmetic, Beautifying.

Festooning procedure:

1) A sharp instrument used to cut the wax back around the teeth. The wax is cut backto the cervical line on the artificial tooth, or, if gingival recession is to be simulated, a little beyond the cervical line. Failure to cut the wax to the cervical line will result in the teeth appearing too short and will also result in having the teeth fall out of the flask when the wax is eliminated after flasking.

2) The proper angle at which the instrument must be held when carving the wax tothe cervical line. Holding the instrument in this position prevent a “ditch” being formed around the tooth. It will also maintain the proper convex contours of the interdental papillae. Define the gingival line on the entire arch before proceeding.

3) Suitable instrument, is then used to reduce the ledge formed around the tooth in the previous step to a width of one to one-and-one-half millimeters. The narrow ledge carved around the teeth extend around the entire dental arch. The combinationof proper instrument angulation and narrowing of the ledge produces interdental papillae of the proper contour.

4) Smoothening the surface with torch.

Stippling: It is a method of making a waxed surface finely pitted so that light is notevenly reflected from the surface.

Stippling from Dutch word stip, stipple= small point or dot. This can be done by:

First lightly flaming the surface of the wax, the wax base is then struck repeatedlywith stiff tooth - brush and produce many smalls indentation in the wax.

Note: The wax denture base should be stippling only where the base will showwhen the patient talks and smiles this area should be in indicated by dentist.

Disadvantage of stippling

1-Produces a denture which is more liable to contamination by calculus deposits; if itdone it should be confined to the area of the denture which can be seen when the patient grains broadly.

2-A stippling denture base is not as hygienic as a polished base, and there for shouldbe avoided when not necessary or if the patient does not have good oral hygiene habits.

Post dam

posterior palatal seal area (post dam): is defined as an area of soft tissue along the junction of the hard and soft palate on which pressure, within the physiologic limit of the tissues, can be applied by a denture to aid in its retention.

functions of post dam

(1) retention
(2) seal out air and prevent food entrapment under denture base
(3) to reduce gag reflex
(4) Decrease patient discomfort of tongue with posterior part of denture
(5) to compensate denture shrinkage.

Position

The vibrating line (the posterior part of the posterior palatal seal area) normally used as a guide to the ideal posterior border of the denture, it may be slightly anterior to the fovea palatinae.

Techniques of post damming

1. Conventional method
2. Scraping of master cast
3. Post damming during try-in stage

Conventional method

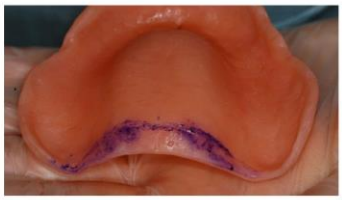
A strip of low fusing compound is traced on the impression over the vibrating line and through the hamular notches. The compound is heated and seated in the mouth under pressure. The added material will spread out on both sides of the vibrating line and form a raised strip across the distal end of the impression

Scraping of master cast

mark the anterior and posterior vibrating line and scrape about 1-1.5 mm. It is the least accurate methods used to mark the posterior palatal seal.

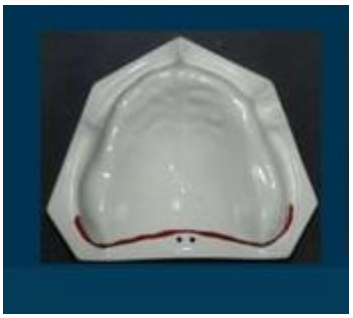
Post damming during try-in stage

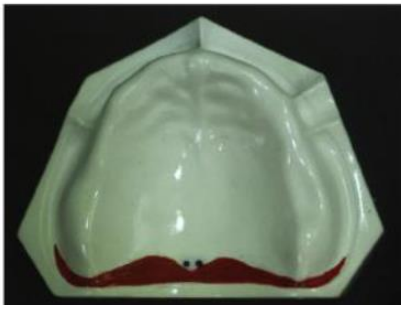
The trial denture base is inserted so the indelible pencil line marked on vibrating line of the soft palate will be transferred from the soft palate to the trial denture base. And the excess base plate is reduced to this line. The trial denture base is placed on the cast and a knife or pencil is used to mark a line following the posterior limits of the base plate.



Types of posterior palatal seal

1) A bead posterior palatal seal
2) A double bead posterior palatal seal
3) A butterfly posterior palatal seal





Error in recording post dam

1. Under extension.
2. Under post damming.
3. Over post damming.
4. Over extension.