

PROSTHODONTICS

Lec: 16

المرحلة الرابعة

د محمد رياض

Trial Denture

While still on the articulator, the upper trial denture should be removed from the cast and lower teeth compared with the upper cast to see if the relationships are logical. The lower is removed and the upper trial denture is checked against the lower cast.

After the preliminary arrangement of the artificial teeth on the occlusion rims, it is essential that the accuracy of the jaw relation records made with the occlusion rims be tested, perfected if incorrect, and then verified to be correct. Patient should be advised to leave existing dentures if present out of the mouth about 4 hours before the jaw relation records are perfected and verified at the trying appointment. If they are not willing to take them out, then an acceptable alteration is to have the existing dentures relined with a soft temporary materials to rest the soft tissue of the basal seat area in the same form as they were when the final impression were made . If this is not followed, the distorted condition of the soft tissue can prevent the registration of accurate inter occlusal records.

The lower denture should now be checked in the mouth and the patient is instructed to let the tongue lightly touch the inside of the denture to maintain lingual seal and also to train the tongue to be less active , when

first learning to chew. The fit and extension of the lower should be checked. The trial denture should have good stability and the dorsum of the tongue should be slightly above the occlusal surface of the posterior teeth. Both bases should fit the casts accurately and they must be stable in the mouth otherwise the jaw relation records cannot be checked. We insert the lower first and then the upper because there is less chance of having the upper drop down.

Verifying The vertical Dimension:

The vertical dimension of occlusion and of rest must be tested, because the final position of the anterior and posterior teeth will depend to a great extent on the amount of space available vertically. Factors that govern the final determination of vertical relation depends on careful consideration of:

- 1- Pre extraction records.
- 2- The amount of inter occlusal distance to which the patient was accustomed, either before the loss of natural teeth or with old dentures .
- 3- Phonetic and esthetics .
- 4- The amount of inter occlusal distance between the teeth when the mandible is in its rest position .
- 5- A study of facial dimensions and facial expression .
- 6- Lip length in relation to the teeth .
- 7- The inter arch distance and the parallelism of the ridges as observed from the mounted casts .
- 8- The condition and amount of shrinkage of the ridges .

A combination of these factors may be used to determine an acceptable vertical dimension.

Verifying Centric Relation:

CR can be verified by intraoral observation of the intercuspation or by an external method on the articulator .

Intraoral observation of intercuspation :

The preliminary CR record is tested by observing the intercuspation when the mandible is pulled back by the patient as far as it will go and closure is stopped at the first tooth contact. The patient is guided into CR by a thumb placed on the antero-inferior portion of the chin and the index fingers bilaterally on the buccal flanges of the lower trial denture. The patient closes until the back teeth make a feather touch, Then the patient closes tightly. Any error in CR will be apparent when the teeth slide over each other , especially if anatomical teeth are used. A second closure is again made to permit visual observation of any error .

The vertical overlap of the anterior teeth is carefully noted , this is important because the amount of vertical overlap will be a guide to the amount of closure permitted when next inter occlusal record is made .

Intra oral inter occlusal records :

The posterior teeth are removed from the lower occlusion rim and both occlusion rims are placed on the mouth. Impression plaster or any selected recording medium is placed on both sides of the lower occlusion rims. The

patient is instructed to pull the jaw back and close slowly until requested to stop and hold that position . The closure stopped when the anterior teeth have the same vertical overlap as they had before the posterior teeth were removed, when the plaster is set the new record is removed with the two occlusion rims and the lower cast is remounted on the articulator .

The occlusion rims with the teeth in good tight centric occlusion, are returned to the mouth , and the same tests are made as before . If the teeth occlude perfectly and uniformly when the lower jaw is drawn back , the CR mounting is correct . There should be uniform simultaneous contact on both sides of the mouth in the front and back and without any detectable touch and slide .

Extra oral articulator method :

Impression material eig . two pieces of aluwax is placed over the posterior mandibular teeth. The wax is sealed with warm spatula, then the upper trial denture is inserted in the mouth and the wax portion on the lower teeth is immersed in warm water bath at 54c⁰ for 30 seconds , then seated in the mouth and the patient is guided to close in CR , until a good index is made. The patient should not penetrate the wax. The trial dentures are chilled in ice water, and returned to the patient mouth to check the accuracy of the record. Then the trial dentures after chilling the wax are placed on their casts and the articulator is closed in CR. The opposing teeth should fit into the indentations in every way . When the original CR

interocclusal record and the check are both correct, these teeth will fit into the indentations .

If the opposing teeth do not fit exactly into the indentations in the new record , it means that the original mounting was incorrect or that the patient did not bite clearly into the interocclusal wax . To evaluate this , the chilled trial dentures and the wax record be returned to the mouth and their accuracy

Reevaluated as previously done . If the record still appears to be correct in the patients mouth , then the original CR registration and / or mounting were incorrect . In these cases the mandibular cast should be separated from the mounting ring and the cast remounted by means of the last interocclusal wax record . The new mounting is again checked to prove or disprove its correctness .

It is important that the same recording medium (whether plaster or bite registration paste) should be used in the initial registration and in the verification record of the mounting on the articulator.

The Posterior Palatal Seal:

Definition: The posterior palatal seal area. The soft tissue area at or beyond the junction of the hard and soft palates on which pressure , within physiologic limits, can be applied by complete removable denture prosthesis to aid in its retention .

The posterior border of the denture is determined in the mouth and its location is transferred into the cast. On the posterior angle of the tuberosity deep into the pterygomaxillary (hamular) notch, these locations on both sides marked with indelible pencil. The vibrating line of the soft palate which is a guide to the ideal posterior border of the denture is located anterior to the foveae palatinae. It could also be on or slightly posterior to the foveae palatinae. This line can be decided by asking the patient to say (ah) which lead to vibrating the soft palate. We then join with this line the two pterygomaxillary notch markings, by indelible pencil. The upper trial denture is inserted now so that this line is transferred from the soft palate to the denture base.

The excess portion of the denture base is reduces to this line. The trial denture is placed on the cast and with a knife or a pencil, the line following the posterior limit of the denture is marked. This line is marked laterally to appoint 3mm beyond the crest of the hamular notch.

The anterior line that indicate the location of the posterior palatal seal is drawn on the cast in front of the line indicating the end of the denture. The width of the posterior palatal seal is 1-1.5 mm high and 1.5 mm broad. Hence a groove of 1-1.5 mm in depth is curved in the cast having a v-shaped groove through the hamular notch and across the palate of the cast. The narrow and sharp bead that will be present in the denture will sink easily into the soft tissue providing a seal against air being forced under the denture.