Crown and bridge

Lec.7

Inter-occlusal record:

It is important to establish and transfer the relationship between the maxillary and mandibular dental arches that exists when the condylars are in the posterior superior position in the glenoid fossa to an articulator using a bite registration.

**Bite registration:** it is a technique by which the dentist transfer the relationship between the upper and lower jaw from the patient’s mouth to the articulator. Bite registration allows the dentist to observe accurately tooth contact, occlusal discrepancies and to fabricate restorative procedure for the patient without changing in patient’s occlusion.

**Requirements of material used:**

1. It should have little or no dimensional change during setting.
2. It should give accurate record of occlusal surface and incisal edges of the teeth.
3. It should not affect normal closing of the mandible.
4. The material should remain rigid after setting.

It is better to check the inter-occlusal record several times inside patient mouth.

**Centric relation:** it is an arch (mandible to maxilla) relationship when the condyles are in their terminal hinge axis (on the most superior posterior position) in the glenoid fossa irrespective of tooth contact. It is the starting point of occlusion. Centric relation is the physiologic position of the condylar head of the mandible (without stress) from which all other movement is initiated.

Centric relation is taken when no enough occlusal stops are left after teeth preparation especially in cases of full mouth rehabilitation of FPD, including distal terminal abutments uni or bilaterally.

In centric relation, it must not perforate the registration material.
**Centric occlusion:** teeth to teeth relationship, it is the maximum occlusal contact or intercuspation irrespective of condylar position. maxillary and mandibular teeth should contact in harmonious manner that allows optimum function, minimum trauma to the supporting structure and an even distribution of load through the dentition.

Centric occlusion can be taken when there are enough occlusal stops after preparation for a crown & bridge.

In recording the centric occlusion with maximum intercuspation, the record material must show perforation in area of contact teeth.

If the centric occlusion is not in harmony with centric relation, the interfering tooth contact require the condyle to be pulled out of their terminal hinge position to make the teeth fit, the final result of such disharmony between the teeth & the joint is stress, which may be manifested in several ways (problems of T.M.J articulation, maintenance of periodontal support of teeth or excessive or premature wear of tooth surface.

**Dowson's technique:** Dowson in 1974 suggest to place the dental chair in reclined position and the patient's head fixed by the dentist standing behind the patient with both thumbs on the chin & the fingers resting on the inferior border of the mandible. Then by gentle downward pressure by the thumbs & upward pressure on the finger, the patient's mandible will bring into centric & let the patient bite on the wax.

**Methods of inter-occlusal record:**

A. If enough teeth are present in both upper and lower arches to stabilize their relationship, no bite registration is needed, we can transfer the relation by hand articulation.

B. if the remaining teeth are insufficient to provid hand articulation of the cast we can use:

1. **pink base plate wax or Alu-wax (wax reinforced with AL fiber)**
   A piece of it placed on the maxillary teeth & ask the patient to close in centric relation, then the wax is removed & placed in water for cooling.
2. Registerstion past:
A zinc-oxide eugenol quick set paste is mixed and applied on a plastic bite frame with fiber glass to support B.R.P. It's a common method of taking a bite, it may be used uni or bilaterally. it has the advantage of producing accurate details & being very stable when sat.

Procedure:
1- Select the frame.
2- Mixed the z.o. Eugenol paste and apply it on both sides of fiber glass.
3- Place the frame with the paste over the prepared teeth without interference with patient closure
4- Ask the patient to close using a dowson s technique & check the key point of occlusion.
5- After setting trim the paste (wax) to a depth leaving only the tip of the cusp (both the prepared & unprepared side), so that the bite material will not interferes with complete seating of the cast into the bite taken.
6- Put the bite on its place on one cast, bring the other cast on the proper place & check the key point of occlusion mount both cast on articulater.

3. Occlusal rims:
When insufficient number of the teeth are present to stabilize the cast. A bite rim must be made using a base plate wax to replace the remaining teeth. (this rim is necessary when restoring anterior teeth and the posterior teeth are missing leaving unstable opposing cast.