Title of the lecture : **Altered cast technique, Jaw relation registration, Occlusion and setting of artificial teeth**.
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Last lecture #10, **refer to the slides.**

We have talked about metal try in last lecture, and Today we're going to talk about alter cast technique(corrected or modified cast technique) .
We use it only in distal extension; class I and class II, the goal of this technique is to compensate the difference in compressibility between the denture bearing mucosa and the periodontal ligament of the abutment teeth.

The displacement of soft tissues is 25 times the displacement of abutment teeth, that means more sinking and more resorption of soft tissue, huge differences as we see, and if we apply an occlusal force , the denture is going to move toward the tissue and there will be a torque on the abutment that's why we have to minimize the force cause it's about preserving what we already have more than replacing what's missing.

The Purposes for altered cast technique :

**-** Reduces the support differential between ridge and abutments by obtaining a compressive impression mimicking functional loading.

- Provides a more accurate relationship between abutments & ridge

- Improves load distribution and denture stability

- Corrects peripheral adaptation

Indications for altered cast technique:

- Class I & II RPDs

- Framework most likely to be adjusted in the future (need for relining and rebasing)

- Extensive Class III & IV cases

- Tooth mobility + compressible mucosa

- Less necessary in maxilla

What do we do after metal framework try in ?

we fabricate a tray ( mini tray ) , we have to make sure that the metal frame work is well seated on the cast and intraorally, after we put the metal frame work we put our fingers on the rest seat to make sure it's well seated through applying pressure on the rest seats. Now we do border molding as in the complete denture on the free saddle area, then we remove the wax spacer and add our impression material ZnO euganol or any other type but defiantly not alginate, we call it semi functional impression it's like the patient is doing function and the posterior part is slightly compressed to compensate the differences.

Then we cut the distal extension with a dental saw, pour a different color of stone , why different color ?? so we can easy notice if there's a step between the two sections, after that we do beading and boxing to preserve the land area, make indices for retention, and put it on the vibrator, now we have our new cast ( the modified one) and we have our metal frame work on it, next step is bite registration; we don't do bite registration if we have bounded saddle area, we skip it and go to jaw relation directly.

**Jaw Relation Records**

•Vertical Jaw Relations:

•Horizontal Jaw Relations:

•Face bow Registration

**Vertical Jaw Relations**

Rest Vertical Dimension ‘RVD’

Occlusion Vertical Dimension ‘OVD’

Inter-occlusal Distance / Free way Space , the average = 2-4 mm ( we measured it at premolars at rest )

this is in complete denture, how about RPD ? it really depends on the case.

|  |  |
| --- | --- |
| **RPD** | **Complete denture**  |
| Occlusion is dependent on residual ridge structures and remain dental structure  | Occlusion is totally dependent on residual anatomy  |
| Malocclusion results in instability and torquing of abutment teeth  | Malocclusion results in instability  |

RPD occlusal harmony : -


**Occlusal scheme :** it's about canine guidance, group function, and balanced occlusion, we took that in Occlusion. **Maintenance of VDO :** we have to make sure that wehave equal amount of contact, for further explanation , natural teeth wear less than acrylic teeth so when wear happens on acrylic teeth the forces on natural teeth (abutment) will increase [overload], that's why we must keep checking the equality.

what's the solution ?

if there is a slightly wear we just add some acrylic but if there is a severe wear we trim the teeth off and do new set up.

**Frame work design** :we have to make sure that clasp assemblies and rests don't interfere with the occlusion.

We have 3 scenarios :

Stable occlusal contacts provided from the existing natural dentition

Stable occlusal contacts not provided from the existing natural dentition

Partially dentate jaw opposed by completely edentulous one

general rule : we have to find 3 separated points, 2 posteriorly and 1 anteriorly ,those points could be tooth to tooth or tooth to inter occlusal recording materials, if we have them naturally this is actually very good, but if we don't we have to make those points by ourselves , anyhow we have many ways but the most accurate one is hand articulating.

**hand articulating** means putting upper and lower casts on each other by our hands without wax registration, however we can't always do that ex. if we have only one contact anteriorly I need to do wax rim and deal with the patient as if he's a complete denture patient and we put him/her on centric relation not occlusion.

**Interocclusal Records**

The most accurate method requires use of stabilized occlusal rims, rims should be placed just out of contact. Occlusal registration can then be made in Wax, bite registration, or autopolymerizing resin.

note : the length of the wax rim on upper is according to the remaining teeth and on the lower is according to the rules of complete denture dimension that we took, we should have bilateral and posterior contacts, more contact, more chewing efficiency, and less potential wear.

-Clinical Procedure:

1. The framework with the attached record block is first tried in the mouth for reconfirming the fit of framework.

2. The height of the wax occlusion rims are so adjusted intra-orally that 1mm of space exists between the

opposing teeth & the rims.

we have what's called squash bite, we just heat the wax and roll it, this is definitely a wrong method, we are covering the ant. and the post. teeth, hence no references.

**Q : How about for a partial denture that is opposed by a complete denture?**

We deal with the patient as if he's a complete denture patient cause we don't have references, i put my pt in CR, OVD has to be measured as follows, RVD – OVD = 3 - 4 mm. The only difference is having opposing teeth so we use wax and now we have 3 contact points; post. wax, ant. wax on the lower and teeth from the upper.

note : we must have even distribution on all post. teeth.

**Objectives for an Occlusal Scheme**

If a physiologic state exists, maintain maximum intercuspation.

Bilateral simultaneous contacts should be established in the restored occlusion.

Multiple points of posterior occlusal contact improve chewing efficiency & decrease the potential for wear.

Do not alter existing occlusal scheme except to remove a pathologic process.

If lateral guidance is needed, strive for **canine guidance.** 

Select if canines are present and SOUND, no canine guidance on weak tooth.

Helps to reduce lateral forces ( protection)

Promotes a more vertical chewing cycle

Allows for greater selection of occlusal morphologies

Establish group function or unilateral balanced occlusion if canines are missing or week.

Do not permit Nonworking contacts on natural teeth unless they oppose a CD in balanced occlusion.

note: No single occlusal scheme will work for every patient, it's according to the case that we have.

**Conclusions** same as the last slide.

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Sorry for any mistake