



Prosthodontics III



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Hand Out

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Relining and Rebasing of the Complete Dentures "Refitting process"

- We will talk about this process for the partial dentures later on in this semester, hoping that we had done some of partial denture cases.
- So we will start with complete denture relining and rebasing processes since we have done it before, and some of the students "allah yfta7a 3alyhum" started a new complete denture cases this semester too.
- Now, as a procedure, this is not a temporary one, it's a permanent, and we usually do it for a patients wearing a permanent prosthesis.
- First of all, let's have a look at the meaning of each word; relining and rebasing.
- For **Relining**, it is a process which by we will change the tissue surface of the denture only.

Flash back: the denture has three surfaces; **Fitting "tissue" surface** "which is the surface facing the mucosal tissue that covers the crest of the ridge as well as the palate for the upper denture", **Occlusal surface** "which is the occlusal surface of the teeth", and **Polished surface** "which is the surface facing the buccal mucosa as well as the tongue".

- So here, the object of this procedure is to change only one surface, which is the tissue surface, because the denture has undergone some certain conditions, and become no more retentive, or it become tilted because of non balanced distribution of forces which were applied on it, and it lead to lose of some of its supportive features, and the problem arises between the fitting surface and the soft tissue beneath it.
- In cases like this, we really need to replace the fitting surface be a good new one, which will be constructed out of a new impression, so here we are aiming to regain and improve the stability of the denture.
- Again, with this procedure we will make a new fitting surface relined by a thick layer of new heat curing poly-methyl meth-acrylate denture base material.
- Now, what about **Rebasing**! Here we are talking about the denture which not only the fitting surface has problems, but the whole denture undergone many problems, so here we are facing problems in **Retention, Stability**, as well as **Support**.
- Of course when we are treating our patient with complete denture we are aiming to get these three things properly, because of their important functional features of the denture, so the denture should be very **Stable** in the patient mouth during function, and it should be very

Retentive throughout the day, and it should be **Supportive** to get the proper aesthetic result from the denture.

- In cases where the denture loses one of its flanges “as a most common example”, and it is associated with patient who wear the denture for the first time, they feel like it is over extended into the sulcus or it go far posteriorly at the roof of the palate, so they start to modify it as they think it should be with glass paper, so the denture loses so important areas like the post dam area, and become no more retentive, in cases like this we need to change the entire base of the denture, Not only the fitting surface, and this is why this procedure is called **Rebasing**.
- Again, in Rebasing, we are targeting Retention, Stability, and Support.
- Now, what is the indication for refitting procedure “Relining and Rebasing”?
- First, we remember those patients whom have received an immediate replacement, as we all know bone resorption continue throughout patient life, and the peak of this process is reached within the period of four to six month from the day of extraction, after that it inter a plateau phase, and the amount of bone resorption during that period is significant clinically, so the denture will have some looseness after this period, due to the space created underneath it from alveolar bone resorption, so the patient has lost the interface between the fitting surface of the denture and the soft tissue, and there is no more molecular forces “ Adhesion and Cohesion”, as well as there is no good support for the denture.
- So for these patients with immediate denture, they should come back to the clinic during this critical period, so we can check if the fitting surface of the denture has been compromised due to bone resorption.
- Second, old dentures, which become loose because of any reason, “bone resorption, modification done by the patient ...etc”, so we need to remake the fitting surface of the denture.
- Third, sometimes the patients can't afford paying to make a new denture, so we can enhance some properties of the denture they already have.
- Fourth, for elderly people, we are talking about people older than 80 years, over the years they become very adapted and attached to their denture, even if the denture is faulty one, they simply refuse any clinician to do any change to it, psychologically speaking, it is very difficult for them to accept any change, or to re-adapt for a new situation to take place inside their mouth, those patient can't tolerate any new denture for them, even if the new one was with a perfect features.

- So what you can do for them, is that we can manage their old denture, by giving them a new fitting surface, or a new base, and restore what we can restore, instead of making a new denture.
- Some patients prefer to make a copy of their existing denture.

Q: for old patients, they have reduced vertical dimension after a long period of time of wearing the denture and they get adapted to it, how they will be comfortable when we give them the proper vertical dimension?

A: as a matter of fact, we can do that, but we move toward the correct vertical dimension gradually, and bring the denture back to the normal values in small steps, not in one step, for example, we may increase the vertical dimension 1mm for the upper denture and 1mm for the lower denture "by placing a small flat piece of acrylic over the first molars" and send the patient back home for a week, or two, or even may be a month, depending old is the patient, to adapt to the new extra 2mm, then we increase it again when they come back, until we reach the normal values, and this is kind of therapy is called **Habituation and Modification Therapy**, and it take long period of time to be finished.

- Now, in general what we are doing in cases of relining the denture, here we are only changing the fitting surface of the denture, assuming that the other surfaces are satisfactory, and the patient occlusion, as well as the vertical dimension too, these aspects should not be changed when we finish our procedure.
- Another thing, the harmony between the centric occlusion and centric relation should always be present, we know that for every degree of separation between the upper and lower jaws, there is a new position for the condyle, when the patient open his mouth wide, the condyle rotate at the first portion of movement at its place, then it translate along the articular eminence in a downward forward direction, so the mandible is no more in the protrusive position, what we need to do to keep the vertical dimension of occlusion stable "we should not change it by the procedure we are doing", so we have to preserve the same vertical dimension and it should continue to be the same after the procedure.
- So vertical dimension of occlusion and occlusion relation "cusp inter-digitation, cusp-fossa relation" should be present when the mandible goes back to its place.
- Now, what about Free Way Space, which is the degree of separation between the maxillary and mandibular teeth when the patient is relaxed, this should never be zero "just to let you know the period when the maxillary teeth come in contact with the mandibular teeth approximately equals 20 minutes, and the rest of the day they are separated" so we need to provide this for our patients, in case we forget this, and send the patient with a denture which have no free way

space at all, they will suffer a TMJ problem, and the stability of the lower denture will be compromised, so they will remove the lower denture and stay without it during the day even when they eat.

- We have to make sure that the free way space is always present.
- Other thing we should look at is that the aesthetic and the function of the denture, these should be acceptable.
- Now, let's check the flanges, to start with the flanges should always be extended to the functional depth, the optimum limit, even if we are going to reduce them during our procedure "at the time when we need to create some space for the green stick to flow at the borders of the denture when we make the impression with the denture".
- All the point and aspect we have mentioned before should be present for the patients whom are indicated for refitting procedure.
- Now, what about the Final Impression itself! Here we will use the denture as a special tray, so now we need to make sure that our special tray "i.e. old denture" has no undercuts, has to be short enough at the peripheries for the green stick to go and occupy these areas "we need to do border molding using the green stick at the peripheries and the junction between the hard and soft palate, and the reason why we cross to other side at this junction, is that it's the only place where the tissue can be compressed by green stick" "remember, the green stick material has a high density, and low flow ability, so it will compress the tissue in order to get the proper peripheral seal", and if there is a minor occlusal adjustment we should make them, until we are satisfied with the way the patient occlude, and the last but not the least, we need to make a room for the material we are going to use as an impression material.
- Now, the next step is to record the denture bearing area, and here we need to be aware about the amount of impression material we are going to use, and it should be measured carefully, and in order to get rid of any excess material that could be accidentally loaded over the denture, we will introduce an Escaping Wholes, so only the proper amount of material will remain and record the tissues for us.
- What about the technique by which we will make the final impression! Here we need to be aware of making the impression, and the vertical dimension stays still at the same time, and this means that we need our material to flow under the patient's own functional forces, which is the right environment to make the impression at, we are not allowed to use our finger pressure to make the impression, and this is achieved by asking the patient to occlude while the denture has been

loaded and placed in his mouth, and this is called the **Close Mouth Technique**, the patient should stay in occlusion until the impression material is set.

- this technique is very essential, and we should use it in cases of refitting procedures “relining or rebasing”, most of the clinician don't pay attention to this one, and end up with having the denture compressed by their own fingers, which is totally wrong, and getting some areas with excessive pressure, while the other don't receive any, and they continue with the process of refitting until the day of insertion, and they will get surprised by the way the patient occlude, so please do not forget to make the impression using the close mouth technique “be smart, be safe, don't try it in your clinic”.
- And this technique is called Static impression, as well as functional one, and here is the explanation of each; static because the patient stay still throughout the impression, functional because the patient is applying his occlusal forces.
- With this technique we record the tissues in state resembles the same state during the use of the denture.
- Just to remind you about the escaping wholes, that we already made, we need to inform the patient that if he feels something falls down on the dorsum of the tongue this is the excess of the impression material, so he stays still during the required time for the full setting of the material, and don't open or move his jaws during the impression.
- A second technique we can use to make the final impression, is **Dynamic Impression**, it is the same as the close mouth technique in the first step, but here we will use a different material, which is Soft Liner Material “Tissue Conditioner” “this material made up from a copolymer, and plasticizer”, at the stage of mixing it will for a gel like material, which will get its initial set in short period of time, which is the time we ask the patient to perform the close mouth technique, then we get the impression out and remove the excess material over the polish surface, and replace it in the patient's mouth, and send him back home for one day, during this period the material still recording details while the patient is using the denture in his routine daily life, when the patient comes back, we take the impression out and pour it immediately.
- The impression should not be separated from the cast for any reason, and then we go for flasking, at the time of opening the flask we can see the model, and if we need any further carving for the post dam area, and clean the old denture we can do it.
- We need to trim another 0.5mm from the denture, and the reasons for this; to get rid of the oils from the impression material we have used, and to expose the layer which is very reactive, so the newly mixed dough of PMMA can go and react with.

- If we are aiming for rebasing, we will remove the whole denture base, and leave a small layer of acrylic over the teeth to hold them together, then we place the newly mixed dough, and continue the process to the end.
- Using this steps from the beginning to the end, we will make sure that the vertical dimension and the occlusion of teeth have not been changed at all, and the feature will continue to be satisfactory the same as the day of insertion.

This lecture is done, if you have any question or correction, do not hesitate and contact me.

Ali I. Al-Shara