Relining and Rebasing of RPD

Relining is the resurfacing of the tissue of a denture base with new material to make it fit the underlying tissue more accurately.

Rebasing is the replacement of the entire denture base with new material. The artificial teeth may need to be replaced in a rebase procedure.

Relining RPDs is a common occurrence in many dental practices; however, rebasing is not indicated as often. In either situation, a new impression is necessary and uses the existing denture base with modifications as an impression tray for a closed-mouth or an open-mouth impression procedure.

Impression materials used in relining and rebasing of RPD:

1. Metallic oxide impression paste
2. Rubber-base or silicone elastomers
3. Tissue conditioning materials
4. Mouth-temperature wax.

- With a tooth supported prosthesis, the impression method (open- or closed-mouth) is not as critical.
- In deciding between a closed-mouth and an open-mouth impression method for relining a distal extension RPD, a major consideration is the resiliency of the mucosa covering the residual ridge. As with secondary impression techniques, a firm mucosal foundation can likely accommodate a closed-mouth functional impression technique or an open mouth selective pressure technique. However, when the mucosa is easily displaced, the open-mouth selective pressure technique is preferable. Both techniques should guard against framework movement during the impression procedure.

Before relining or rebasing is undertaken, the oral tissue must be returned to an acceptable state of health.

❖ Relining Tooth-Supported Denture Bases

Tissue changes that occur beneath tooth-supported denture bases do not affect the support of the denture; therefore relining or rebasing is usually done for reasons that include

1. Unhygienic conditions and the trapping of debris between the denture base and the residual ridge.
2. An unsightly condition that results from the space that has developed

3. Patient discomfort associated with lack of tissue contact that arises from open spaces between the denture base and the tissue.
4. Anteriorly, loss of support beneath a denture base may lead to some denture movement, despite occlusal support and direct retainers located posteriorly.

- Rebasing would be the treatment of choice if the artificial teeth are to be replaced or rearranged, or if the denture base needs to be replaced for aesthetic reasons, or because it has become defective.
- Because the tooth-supported denture base cannot be depressed beyond its terminal position with the occlusal rests seated and the teeth in occlusion, and because it cannot rotate about a fulcrum, a closed-mouth impression method is used.
- Direct reline procedure is acceptable for most tooth-supported RPD bases made of a resin material, except when some tissue support may be obtained for long spans between abutment teeth. In the latter situation, a reline impression in tissue conditioning material or other suitable elastic impression material may be accomplished. The denture may then be flasked, and a processed reline may be added for optimal tissue contact and support.

Procedure for a direct reline:

1. Generously relieve the tissue side of the denture base. Lightly relieve the borders. This not only provides space for an adequate thickness of new material but also eliminates the possibility of tissue impingement caused by confinement of the material.
2. Apply lubricant or tape over the polished surfaces from the relieved border to the occlusal surfaces of the teeth to prevent new resin from adhering to the preserved bases and teeth.
3. Mix the powder and the liquid in a suitable container according to the proportions recommended by the manufacturer.
4. While the material is reaching the desired consistency have the patient rinse the mouth with cold water. At the same time, wipe the fresh surfaces of the dried denture base with a cotton pellet or small brush saturated with some of the reline resin monomer. This facilitates bonding and ensures that the surface is free of any contamination.
5. When the material has first begun to thicken, but while it is still quite fluid, apply it to the tissue side of the denture base and over the borders. Immediately place the RPD in the mouth in its terminal position, and have the patient lightly close into occlusion.

   Be sure that no material flows over the occlusal surfaces or alters the established vertical dimension of occlusion. Then, with the patient's mouth open, manipulate the cheeks to turn the excess at the border and establish harmony with bordering attachments.

   If a mandibular removable partial denture is being relined, have the patient move the tongue into each cheek and then against the anterior teeth to establish a functional lingual border. It is necessary that the direct retainers be effective to prevent displacement of the denture while

molding of the borders is accomplished. Otherwise the denture must be held in its terminal position with finger pressure on the occlusal surfaces while border molding is in progress.

6. Immediately remove the denture from the mouth and, with fine curved iris scissors, trim away gross excess material and any material that has flowed onto proximal tooth surfaces and other components of the RPD framework. While doing this, have the patient again rinse the mouth with cold water. Then replace the denture in its terminal position to bring the teeth into occlusion. Repeat the border movements with the patient's mouth open. By this time, or soon thereafter, the material will have become firm enough to maintain its form out of the mouth.
7. Remove the denture, quickly rinse it in water, and dry the relined surface with compressed air. Apply a generous coat of glycerin with a brush or cotton pellet to prevent frosting of the surface caused by evaporation of the monomer. Allow the material to polymerize in a container of cold water. This will eliminate any patient discomfort and tissue damage that could have resulted from exothermic heat or prolonged contact of the tissue with unreacted monomer. Although it is preferable for 20 to 30minutes to elapse before trimming and polishing, it may be done as soon as the material hardens. Polymerization may be expedited and made denser by placing the denture in warm water in a pressure pot for 15 minutes at 20 psi. The masking tape must be removed before trimming is done but should be replaced over the teeth and polished surfaces below the junction of the new and old materials to protect those surfaces during final polishing.

❖ Relining Distal Extension Denture Bases

It derives its major support from the tissue of the residual ridge, it requires relining much more often than does a tooth-supported denture. Because of this, distal extension bases are usually made of a resin material that can be relined to compensate for loss of support caused by tissue changes.

Indications of the need for relining a distal extension RPD:

1. Loss of occlusal contact between opposing dentures or between the denture and the opposing natural dentition. This is determined by having the patient to close on two strips of 28-gauge, soft green or blue casting wax. If occlusal contact between artificial dentition is weak or lacking while the remaining natural teeth in opposition are making firm contact, the distal extension denture needs to have occlusion re-established on the present base.
2. Loss of tissue support that causes rotation and settling of the distal extension base is obvious when alternate finger pressure is applied on either side of the fulcrum line.

Clinical and laboratory procedure for relining or rebasing:

1. Denture flanges should be corrected, and shortened by (1-2) mm
2. Tracing compound is added and molded for the correct extension (exact length, width, and thickness).

3. Any undercuts should be removed from the tissue side of the dentures, relieve any pressure area, make a space for the new impression material of about (1mm) from the whole tissue-surface of the RPD.

Sometimes tissue stoppers are needed to be positioned in the cuspid or molar areas. When the RPD is containing anterior teeth and in order to avoid any anterior displacement of the upper RPD, two holes are placed against the two laterals.

4. To reduce from any increase in the vertical dimension two holes are made in the palatal midline, one in the incisive papilla area, the other one is just behind it, these holes makes it easy for the escape of the excess impression material.
5. Mix the impression material, load it and distribute it evenly on to the tissue surface of the RPD. In case of a closed mouth technique, the patient should close in centric relation till the impression material is set.
6. After setting, remove the impression from the patient's mouth; check the borders for proper extension, vertical dimension, centric relation and/or occlusion and aesthetic. Then, beading and boxing of the impression and pouring with stone.
7. Flask the RPD without opening the impression from the cast, then deflask, finish and polish the finished denture.
8. Check the denture inside the patient's mouth with occlusal correction.

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