Relining and Rebasing of Complete Denture

Relining:- Is the process which used to resurface the tissue side of a denture with new base material, thus producing an accurate adaptation to the denture foundation area.

Rebasing:- Is the process of replacing the entire denture base material on an existing prosthesis. Only the original teeth and their arrangement remain.

Objectives:- The main objectives of relining or rebasing are:

1. Reestablish the correct relation of the denture to basal tissue.

2. Restore lost occlusal and maxillomandibular relationship.

3. Restore stability and retention.

Indications for relining or rebasing:-

1. When the residual alveolar ridges have resorbed and the adaptation of the denture bases to the ridges is poor.

2. 3-6 months following the placement of an immediate denture.

3. For geriatric or chronically ill patient because of the long or several appointments required for the construction of a new denture.

4. If the patient cannot afford the cost of having new dentures.

5. Rebasing is additionally required in cases of:

a) Porous denture base.

b) Discolored or contaminated denture base.

Contraindications:-

1. If the dentures have poor esthetics or unsatisfactory jaw relationship.

2. If the dentures create a major speech problem.

3. When an excessive amount of resorption has taken place making it difficult to position the denture properly on the ridge.

4. When abused soft tissues are present. The relining is delayed until the tissues recover and return as closely as possible to normal form.

Clinical procedures:

The clinical procedures for both relining and rebasing can be achieved by the use of one of the following methods:

1. The static impression technique.

2. The functional impression technique.

In the functional impression procedure, tissue conditioning is used for recording the impression. Patient is instructed to close in occlusion with light pressure and he is allowed to wear the denture for 24 hours. The denture with tissue conditioning material is used to pour a cast followed by flasking and packing as in for laboratory procedure in conventional complete dentures.

In the static impression procedure, the denture is kept out of the mouth for 24 hours then Zinc oxide eugenol or rubber base impression materials are used for recording the impression.

In relining and rebasing static impression is more advantageous compared to the functional impression because of the following reasons:-

1. Impression is better controlled using selective pressure technique.

2. Impression is not affected by the occlusion of remaining teeth.

The clinical procedures of relining and rebasing includes both tissue and denture preparations.

1. Tissue preparation

a) Tissue Rest:

- Instruct the patient to leave the old dentures out of the mouth at least 8 out of 24 hours preferably at night.

- The dentures should be left out of the mouth at least two to three days before making the final impression.

- Massage of the soft tissues two or three times a day to stimulate the blood supply and aid recovery.

b) Use of a tissue conditioner:

- When the tissue abuse is extensive and the patient cannot leave the dentures out of the mouth for tissue recovery, treatment with a tissue conditioner is instituted, the transmission of masticatory forces to the supporting mucosa are equalized, thereby eliminating isolated pressure spots typical of a loose, ill-fitting denture.

The material is renewed periodically every 3 to 7 days. When the tissues had returned to a clinically discernible healthy state, the patient is scheduled for making the impression.

- The occlusion of the denture is balanced to ensure that when the impression is made uneven contact does not bring about a bodily shift or tilt of the denture when the patient is asked to close together.

- Reduction of sharp and overextended borders as manifested by tissue hyperplasia and/or hypertrophy and the formation of artificial clefts and fissures in the vestibular mucosa (epulis fissuratum).

- Pressure areas in the tissue surface of the dentures should be relieved.

c) Surgical management:

Excessive hypertrophic tissue should be surgically removed. The denture can be used as a surgical splint.

2. Denture preparation

1. The occlusion must be balanced to ensure that when the impression is made, uneven contact does not bring about a bodily shift or tilt of the denture when the patient is asked to close together.

2. Undercuts within the impression surface must be eliminated so that the denture may be removed from the cast.

3. The borders of the denture should be reduced approximately 2 mm to ensure clearance from interference with the reflected tissues about the periphery of the denture except the posterior border of the upper denture.

4. With a pencil, three tissue stops are out-lined in the tissue surface of the denture base.

5. The tissue surface of the denture base must be relieved 1.5 mm in all areas covering the stress bearing mucosa with an acrylic bur except:

a. Post dam (never relieved).

b. Outlined stops in the denture base.

When a denture needs to be relined or rebased the following steps are followed:

1. The denture is checked intraorally to assess the need for peripheral reduction or extension. If they are overextended denture flanges should be shortened until they are of the correct length and thickness. If they are short, they may be extended to the correct length with modeling compound. Should the patient be expected to wear the denture for an extended period with this alteration, It is good procedure to replace the modeling compound.

2. All undercuts on the fitting surface of the denture bases must be removed. In addition, any pressure spots are relieved, and the entire fitting surface of the denture base is reduced approximately 1.5 mm to allow room for the impression material. The denture borders should be reduced approximately 2 mm for the same reason.

3. Occasionally three compound stops may be required on the impression surface of the denture to re-establish a proper vertical dimension or improved occlusal plane orientation.

4. The tissue conditioning material is then mixed, and placed inside the denture. The material should flow evenly to cover the whole impression surface and the borders of the denture with a thin layer of the material.

5. The denture is inserted in the patient's mouth and border molding can then be accomplished both manually and functionally. The patient's mandible is guided into a retruded position, to stabilize the denture while the material is setting.

6. After approximately five minutes the denture is removed from the mouth. The impression should be free of imperfection, and shows an accurate reproduction of the denture bearing area.

7. After removing the excess tissue conditioning material with a hot scalpel, the patient may be allowed to wear the denture from four to twenty-four hours. Following this time the

patient should return for re-evaluation of the impression. If it is deemed acceptable the impression is boxed and a cast is poured.

Laboratory Procedures:

Relining:

- Direct Method

The relining procedure can be done directly in the patient's mouth using self-cure acrylic resin. Petroleum jelly is applied to the tissue surface and acrylic is lined on the tissue surface of the denture and stabilized in the mouth. The denture with the relining acrylic material is retrieved before the acrylic completely sets in order to prevent the damage to the oral tissues due to heat generated. The relined denture is trimmed to remove any excess material followed by finishing and polishing of the borders. This procedure is, however, proved to be a failure for the following reasons:

- The relining material often produces a chemical burn.
- The resulting reline is often porous and subsequently produces a bad odor.
- If the denture is not positioned correctly, the material cannot be easily removed in order to start again.

Since the denture with the relining material is retrieved from the surface before the complete curing of the acrylic, the denture may be distorted.

- In Direct Method

The in direct relining procedures consist of the static impression technique or functional impression technique.

Rebasing:

The clinical procedures for denture rebasing are essentially the same as those for relining. However the laboratory procedures are as follows:

1. Bead, box, and pour the impression in artificial stone to form a cast.

2. The denture and the cast are not separated at this point, but any excess impression material on the teeth or facial surface of the base is removed.

3. Mount he cast and denture on the upper member of a hooper duplicator.

4. Mix quick-setting plaster and apply a layer of plaster mix on the lower member of the duplicator, and the upper member with its mounted upper denture is closed into the soft plaster mix. The teeth should penetrate the plaster mix to a depth of 1 to 2 mm.

5. When the plaster sets a key or an occlusal index is formed into which the teeth can be repeatedly set to maintain a fixed distance and relation between the cast and the occlusal surfaces.

6. When the plaster occlusal index has completely set separate the top and bottom members of the duplicator then remove the denture from the cast.

7. Remove all the denture base material from the teeth if they are porcelain.

However when the denture teeth are made of acrylic resin, trim away most of the denture base material at an angle around the necks of the teeth, leaving only enough of the old denture base to hold the teeth together. Retaining this material will facilitate positioning the teeth in the occlusal index and keep the teeth together during waxing. The retained material will be completely covered when new acrylic resin is packed.

8. Clean the teeth and the remaining denture base material and reposition them into their respective positions in the occlusal index. Replace the top member of the Hooper Duplicator in position and wax the original teeth in their previous positions to the cast.

9. Modify the posterior palatal seal on the maxillary cast.

10. Remove the cast from the Hooper Duplicator and complete the wax contouring in the same manner as for a new denture.

11. After careful checking of the occlusal relationships on the Hooper Duplicator, the denture is processed and finished in the usual manner.