

LABORATORY PROCEDURES COMPLETE DENTURE PROSTHODONTICS

SECTION XIII. RELINE OR REBASE OF DENTURES

Rationale

A denture reline is the procedure used to resurface the tissue side of a denture with new base material, thereby producing an accurate re-adaptation to the patient's tissues. A denture rebase is the procedure for replacing most or all of the denture base material on an existing prosthesis.

As stated above, a reline is the method to correct the tissue side of a denture. Prior to initiating this process, a thorough evaluation of the polished side and the occlusal side should also be undertaken. There is no cause for a reline if the occlusion is inadequate (or uncorrectable) or if the polished side presents an unsatisfactory contour for esthetics, phonetics and function.

Materials and Equipment

1. denture with reline/rebase impression
2. denture flasks and press; laboratory knife; Bard Parker knife
3. Alcote; heat-polymerizing acrylic resin; cellophane; curing tank
4. Hanau-mate Articulator (or "duplicator"); Vaseline;
5. assorted acrylic burs; dental handpiece; student polishing kit.

A. RELINE.

1. Preparatory steps.

The reline procedure begins with making the reline impression. Prior to this, the surface of the tissue side should be lightly adjusted to remove debris and to present a fresh surface for the reline resin. Undercut areas that would prevent the removal of the denture from the master cast during the packing of the resin must also be relieved.

The master impression must be made in a manner that will preserve the interocclusal relationship of the denture, ordinarily a "closed mouth" procedure. Excess impression material that covers the denture base and/or prosthetic teeth should be trimmed away, but a 3-4 mm. border over the peripheral roll must be retained.

2. Investment of the denture.

The denture is invested in the denture flask in much the same manner as described for investing a new denture, with two major differences:

- a. the reline impression is not poured prior to beginning the investment.
- b. the denture is invested first in the upper half of the flask!

The upper half and the lid of the flask is assembled and placed upside down on the laboratory bench. It is filled with a well-mixed batch of plaster of Paris and, while still soft, the denture seated into it with the impression side up. Quickly trim the plaster even with the rim of the flask and up to within 2 mm. of the denture border (slightly covering the impression material that was left on the border, but not inside the tissue surface itself). After the plaster has set, undercut areas are removed, the surface smoothed with sandpaper, and lubricated with a light layer of Vaseline.

After the knockout ring has been removed, the lower half of the flask is positioned securely on top of the upper half. This leaves a hole through which a vacuumed mix of

dental stone is poured to fill the impression surface and the remainder of the flask. The knockout ring is now placed over the outside of the hole and the stone allowed to set.

The denture flask is placed in a boil-out tank for 5 minutes, then opened. The denture should remain in the upper half of the flask, while the lower half will contain the master cast. The investment should be cleaned and prepared with separating medium in the same manner as described for a new denture. The tissue surface of the denture itself must be thoroughly cleaned of impression material and debris. Sufficient old denture base material should be removed to provide a thickness of 2 mm. of new resin and the border prepared to a "butt joint."

3. Polymerization of the relined resin.

The mold must be allowed to return to room temperature before packing of the resin is begun. A small amount of monomer should be painted on the surface of the denture to facilitate bonding of the new resin. Packing is the same as for a new denture, including trial closures. Before the final closure, the master cast should be painted with two coats of separating medium. Curing of the denture base must be accomplished with the long cure, 165 degrees for 9 hours since higher temperatures may adversely affect the dimension of the old denture base.

4. Finish of the relined.

Finishing the denture is accomplished in the same manner as described for a new denture. Most often a "patient remount" is necessary to finalize the delivery of the occlusal surface.

B. REBASE.

The rebase is a procedure to replace the entire denture base. The same criteria apply to initiating the rebase that are required for the relined, except that correction of the polished side of the denture is desired as well as the tissue side. The occlusal side must be adequate, or correctable.

1. Preparatory steps.

Preparatory steps for a rebase are the same as those required for a relined (Section A.)

2. Preparation of the master cast and occlusal stint.

Contrary to the relined procedure, the master cast for a rebase is poured in the same manner as for all complete denture master impressions (beading and boxing). Do not remove the denture or impression from the master cast after it is poured.

An occlusal stint must be prepared before the denture rebase is invested in the flask. This is accomplished in much the same manner as described for the "remount index" (Section VIII, C.). In the case of the maxillary denture rebase, the master cast and denture containing the impression are mounted onto the upper member of the articulator, arbitrarily in the middle. It is extremely important to place orientation grooves in the master cast so that it may be removed and later repositioned into the articulator.

A paper cup is fitted onto the lower member, filled with plaster of Paris, and the articulator closed until the prosthetic teeth just indent into it before the plaster sets (the incisal pin must touch the guide table at this position). The same procedure may be accomplished by using a "duplicator" (a device made specifically for rebases) instead of an articulator.

3. Contour of the new denture base.

The master cast and denture are removed from the occlusal stint, and then the denture itself removed from the master cast. All impression material and debris are removed. The old denture base is ground away leaving only the prosthetic teeth and enough denture base to retain the teeth in one piece.

The prosthetic teeth are replaced into the occlusal stint and secured with a small amount of sticky wax. The master cast is replaced onto the plaster mounting on the upper member of the articulator and secured. The upper member of the articulator is closed until the incisal pin contacts the guide table. The prosthetic teeth are luted to the master cast with sufficient pink wax to assure their stable position. The master cast and prosthetic teeth may then be removed from the occlusal stint and the new denture base contoured with pink wax in the normal manner.

4. Fabrication of the new denture base.

The remaining steps in fabrication of the rebase are now the same as described for a new denture (Sections VII and VIII). The long cure must be used, 165 degrees for 9 hours. A "patient remount" is ordinarily required for delivery the occlusal side.

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SECTION VII. POSTERIOR PALATAL SEAL; POLYMERIZATION OF DENTURE BASE RESIN.

Rationale

The posterior palatal seal is a structure placed along the posterior border of the maxillary denture. It is designed to compensate for the shrinkage of acrylic resin that occurs during polymerization that would result in loss of contact of the denture base with the palate (peripheral seal/retention).

Investment or "flasking" is the process of placing the wax trial denture and master cast in a sectional container or "flask" to obtain a mold. The wax and record base is then eliminated and replaced with the acrylic resin base.

Polymerization of the resin denture base may be accomplished in any one of several manners, the compression molding method in this laboratory.

Materials and Equipment

1. master casts with wax contoured maxillary and mandibular trial dentures
2. carving instruments; pink wax; red handle knife; lab knife; Vaseline
3. denture flasks; denture press with handle and wrench;
4. rubber bowl and spatula; Alcote (separating medium); paint brush
5. acrylic resin (powder and liquid); cellophane sheets; glass mixing jar

A. POSTERIOR PALATAL SEAL.

When treating the edentulous patient, the location and configuration of the posterior palatal seal is determined intraorally by the method described in the manual, Clinical Procedures in Complete Denture Prosthodontics. For this laboratory exercise, the location will be determined arbitrarily and the configuration made to conform with average measurements.

An instructor will locate the posterior border of the maxillary denture on the maxillary master cast for each student. Following this, the student will draw with lead pencil a posterior palatal seal conforming with average measurements described in the manual, Lectures in Complete Denture Prosthodontics.

INSTRUCTOR CHECK

After the drawing of the posterior palatal seal has been approved, a bur and/or carving instruments are used to engrave the posterior palatal seal relief in the maxillary master cast. The posterior border of the seal must be distinct, that is, fairly sharp in detail. The remainder is rounded and smooth, exhibiting no scratches or indentations which may irritate the soft tissues or into which debris may collect. The anterior border of the seal in the glandular area must be carved in such a manner that it gradually "fades" into the contour of the palate. It should be remembered that the configuration and measurements described in the manual are consistent with average values and vary widely for individual patients (Figure 38).