Lecture 6
Removable Prosthesis Maintenance Treatment: Reline, Repair, and Rebase

Ting-Ling Chang, DDS
Clinical Professor
Division of Advanced Prosthodontics
UCLA School of Dentistry
Outline of Today’s Lecture

1. Diagnosis and trouble shooting
2. Indications for reline
3. Repair: acrylic base repair vs. prosthetic tooth/or wire repair
4. Indications for rebase
Diagnosis and Trouble Shoot of a Loose Prosthesis

1. Listen to our patient
2. Ask questions
3. Objective assessment of the prosthesis and soft tissue
4. Patient’s expectation

Retention, stability, and support of a CD

Retention, stability, and support of a RPD
Determine Cause of Looseness for Complete Dentures

• **Occlusion related**: occlusal or VDO interferences
  - Tactile, clinical remount and occlusal equilibration

• **Denture Base related**:
  1. **Pivoting** on bony structures: PIP
  2. **Over-extension**: Disclosing wax
  3. **Under-extension**: eg, Inadequate posterior palatal seal
  - Pull upward & outward on lingual of canines
  - Compound stick
Examples of overextended flange as the cause of a loose prosthesis

These flanges are too thick

These flanges are too long
Rule out CD Looseness resulted from over-extension

• **Coronoid interferences**
  – Side to side movements
  – Disclosing wax

• **Flanges overextensions**
  – Pull on the cheeks, lips, patient move tongue
  – Disclosing wax

• **Tight pterygomandibular raphe**
  - mouth open wide, disclosing wax

Temp the disclosing wax in the water bath before insertion!
Reline can only solve retention problems related to inadequate denture base adaptation. Retention problems must be accurately diagnosed as to their true cause before prescribe the reline treatment.
How about RPD looseness?

- Retention of RPD: provided by active retainers and parallel proximal plates; retainer can be reactivated with cautions.
- Active retainer is designed to engage 0.01”-0.02” retention and stay within the physiologic limit.

Patient education and communication
- Reline will improve mucosal support of RPD, not retention.
Reline

• the procedures used to resurface the tissue side of a removable prosthesis. With new base material, thus producing an accurate adaptation to the denture foundation area.

• Lab reline (today’s focus) vs. Chair-side reline

• Must have healthy soft tissue first before the reline impression appointment
Reline

Record the proper VDO before reline

Maintain the same VDO during the reline impression

If both maxillary and mandibular CD require reline...
Reline

Provide border relief (2 mm) and general tissue surface relief (1 mm) on denture base

Preparation for CD reline

Preparation for RPD reline

Image from McCracken’s Removable Partial Prosthodontics 11th edition Alan B. Carr et al.
Reline

Border molding with compound stick
Reline

Slightly cut back the compound with scalpel. Apply adhesive. Reline impression with polysulfide rubber base material (or ZOE or PVS)

Image from McCracken’s Removable Partial Prosthodontics 11th edition Alan B. Carr et al.
Reline

Open mouth technique or close mouth technique during the reline impression

**Close mouth** is recommended for CD to maintain proper occlusion and VDO

**Open mouth** is recommended for RPD. Fingers on rests and major connectors to fully seat the framework like altered cast impression.

Careful control to apply a thin layer of impression material!
Positioning the Complete Denture during reline impression

Maintain proper OVD & Occlusion
Metal reline jig is used to reserve vertical and occlusal relationship. Stone cast is made to record reline impression portion. For RPD the stone cast also contact sufficient parts of framework to ensure stable cast base. Stone cast is mounted to one member of the jig. Plaster is added to the other member of the jig to contact the occlusal surfaces of the prosthetic teeth.
Reline (CD)

Prosthesis is removed from the cast
PPS is marked and scored on the cast

All reline impression and compound is removed.
The clean prosthesis is placed back to the reline jig on the plaster occlusal member.

Cold cure acrylic resin is mixed and applied to the prosthesis and the cast.
Members of jig are realigned and tightened to complete closure.
Reline (RPD)

All reline impression and compound is removed from RPD.

The clean tissue surface of RPD before adding the auto-polymerization acrylic resin.

RPD is placed back to the occlusal plaster member. Cold cure acrylic resin is mixed and applied to the RPD and the cast. Members of jig will be realigned and tightened to complete closure.
Insertion of Reline Prosthesis

1. Fitting and seating: PIP
2. Border extensions: disclosing wax
3. Clinical remount and occlusal refinement

Image from McCracken’s Removable Partial Prosthodontics 11th edition Alan B. Carr et al.
Repair

#22, 23, 27, and 28 are planned for extraction.
Repair Goal: to convert the existing RPD to interim CD

Alginate pickup impression is made and a stone cast is poured up.
Notice the reposition indices are created on the cast base.

Silicone **matrix** is made to preserve # 22, 23, 27, 28 facial contour and incisal edge position.
Notice the reposition indices are created on the silicone **matrix**.
Repair

#22, 23, 27, and 28 are planned for extraction.
Repair Goal: to convert the existing RPD to interim CD

RPD is removed from the cast and stone teeth #22, 23, 27, 28 are trimmed away.
Apply separating medium.

Mix and apply thin layer of cold cure acrylic to extraction sites and RPD is placed back to the cast. Lower part of silicone matrix is repositioned back to form the proper acrylic base labial contour during polymerization.

Tooth-color acrylic is mixed and apply to the extraction sites and upper part of the silicone matrix to recreate the tooth forms of #22, 23, 27, 28.
Repair

#22, 23, 27, and 28 are planned for extraction.
Repair Goal: to convert the existing RPD to interim CD

Repairs prosthesis to serve as the interim CD

RPD on the cast before repair
Repair
Repair a retainer

#6 retainer broke off from RPD.
Pickup impression and cast are made.
Red line indicates the repair wire retainer location.

RPD acrylic base and denture tooth #5 are carefully trimmed to accommodate the wire.

#6 repair wire retainer is well adapted to #6 and cold cure acrylic is added to secure the wire to RPD acrylic base.

Repair wire retainer is bended as desired location. Notice the tip is below the height of contour to provide retention.
Prosthetic Tooth Repair/Replacement

Prosthetic tooth #25 fracture

Prosthetic tooth #3/8 broke off

This procedure can also be considered to resolve localized esthetics or occlusion issues.

Remove prosthetic tooth remnant and Maintain the integrity of acrylic gingival outline.
Prosthetic Tooth Repair

Create a socket and fit the new prosthetic tooth within.

Create a plaster index.

Retention hole is drilled on the prosthetic tooth to increase mechanical retention with acrylic base.
Prosthetic tooth/plaster index is repositioned back to the prosthesis.

Cold cure acrylic is mixed and brushed onto the tooth and prosthesis socket.

Tooth/plaster index assembly is readapted back to the prosthesis during polymerization. Remove excess acrylic.
Occlusal contacts must be carefully marked and refined during insertion of repaired prosthesis to ensure no hyper contact on the new prosthetic tooth.
Rebase

• Replacing most, if not all, of a denture base
• Indicated when the denture base is significantly under-extend to cover the denture bearing area/or denture base has become irreparable discolored.

• Flasking, heat-cured acrylic
• For complete dentures, remake may be preferred instead of rebase.

• For RPDs, rebase can be a good option if the RPD framework still fills well. Only the acrylic base and denture teeth need to be reconstructed.
Rebase of RPD:
Recycle the RPD metal framework and
Reconstruct the acrylic base and prosthetic teeth

Trouble Shooting Goal:
The most cost-effective solution that
requires the least amount of appointments
to resolve the problems.

Old acrylic base and prosthetic teeth are removed
from the RPD framework.
Two Narrated Self-study Lectures

1. Review of RPD Design Principles/Dr. John Beumer
2. Occlusal Considerations for CD and RPD/Dr. Michael Hamada

Questions?