MODB ACR Adhesive Composite Reconstruction

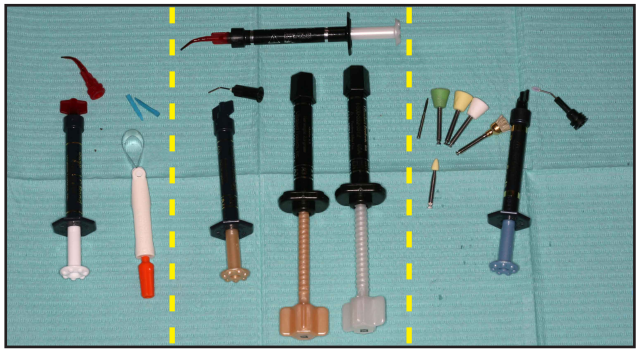
Large MOD restorations, most often amalgams, are related quite often to the fracture of cusps, especially buccal cusps of upper bicuspids and first molars. An alternative, “less invasive,” economical – yet esthetic – solution is shared following:

Note figures A and B. Also note strong mesial concavity in the cervical, characteristic to upper first bicuspids.

fig. A

fig. B

Instruments for this exercise.



The materials we will use:

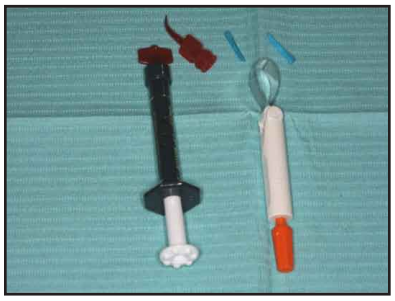
Phase I - Bonding agent, matrix and wedges (etchant or self etch will not be used for this “table top” exercise)

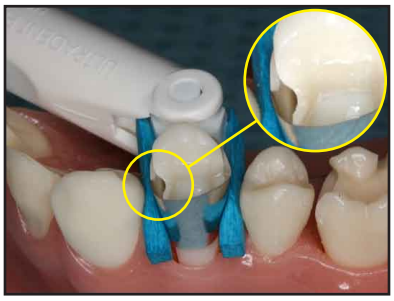
Phase II A&B - Flowable and paste composites. Composite wetting resin only if needed or desired.

Phase III - Finishing burs Jiffy Coarse, Medium and Fine rubber abrasives and Jiffy diamond polishing brush and surface sealer, PermaSeal.

- **NOTE:** “Light cure times” (LC) times are based on using a quality curing light.

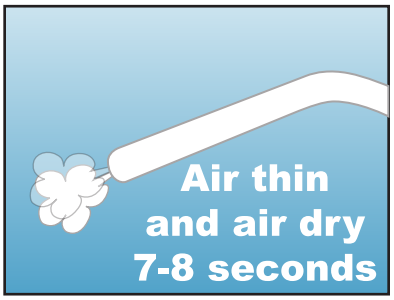
Phase I Place Tofflemire (disposable Omni-Matrix shown here). Tighten snugly and wedge — Don't worry now about proximal contacts. **Note gap where the cervical mesial concavity occurs.**

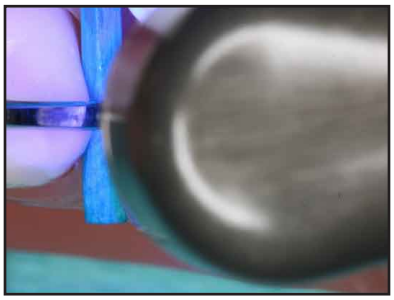




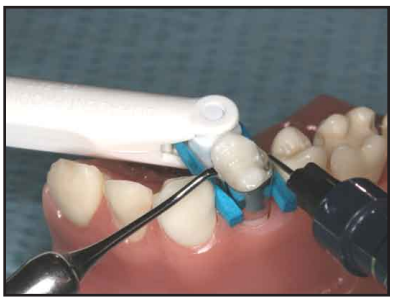
- **It** is critical that an instrument or small wedge be placed between the initial wedge and the matrix to drive the matrix into the mesial concavity. A ledge of polymer here is virtually impossible to remove. The IPC instrument is used here for this purpose. It will be held in place through to step 13 following. The assistant or doctor may need to support it.

The preparation has been conditioned with phosphoric acid or a quality "self-etch" primer (not used in this excersise). Following same, the bonding resin is applied: Here, Peak LC with the Inspiral Brush tip. Air thin, then air dry 7-8 seconds minimum and LC 10 seconds. Matrix is held into mesial concavity during curing.





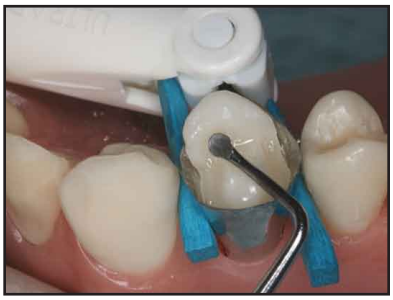
Phase II A PermaFlo with Black Micro 20 gauge is delivered .5mm thick to mesial and distal gingival margins against matrix and LC 10 seconds.



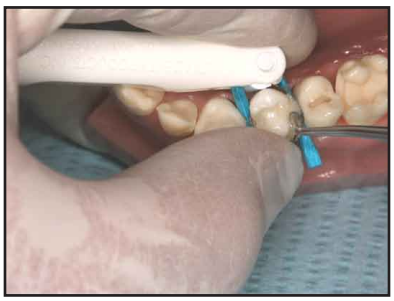
- **Amelogen** plus Enamel shade is placed about 1 mm thick to mesial and distal proximal with smooth cylindrical “condenser” and LC 10 seconds.



- **Matrix** screw is loosened a couple revolutions to enable proximal contacts to be burnished to proximal contact area (back of excavator 1st choice. Carefully use large end of “condenser” for this exercise).


- **Compress** the matrix towards and/or against the labial aspect of the preparation as shown here. Validate that mesial and distal spread of matrix is adequate for proximal contact. If not, loosen and/or burnish more. While compressing the matrix, gently tap enamel shade of composite with “condenser” in mesial and distal up to proximal contact height and LC

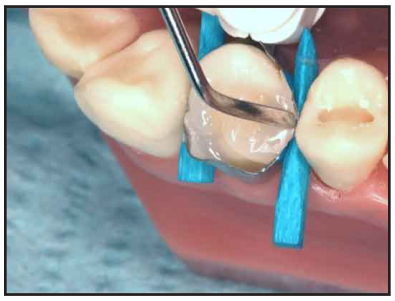
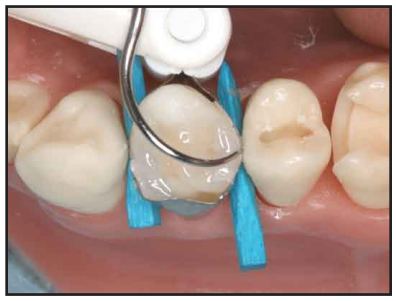


- **Place** and shape central occlusal A-3 shade. Remember to leave enough space for occlusal enamel shade to follow. LC


- **Develop** "MOD" occlusal. Enamel Neutral is shaped using either edge of smooth "condenser" or acorn-shaped instrument.



- **Round** marginal ridge with IPC, sliding it against proximal matrix. Some prefer a "cow horn" explorer. LC


Phase II B "Un-turn"/counter-rotate Omni-Matrix screw until a click is felt. Then pull the Tofflemire free. Note resultant "MOD" construction.


- **With** IPC instrument, develop dentin shade (A-3 here) and shape for both labial and cuspal dentin. Remember to leave space for enamel shade to follow. LC labial and occlusal.



- **With** IPC, develop labial enamel and cusp contours. LC.




- **Good** anatomy can often be obtained without using mechanical burs, etc. Note mesial concavity contours with no gingival margin overhang! If proximal trimming is required, we'd recommend a new #12A scalpel blade followed by finishing strips e.g. Jiffy metal and plastic finishing strips, (not included in this excersise).

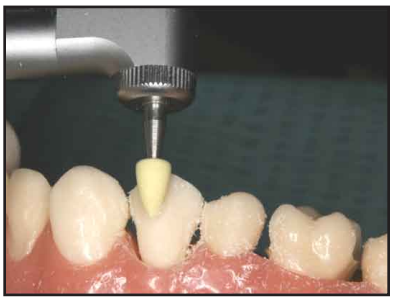

Phase III

Mechanical shaping and finishing if/as needed:

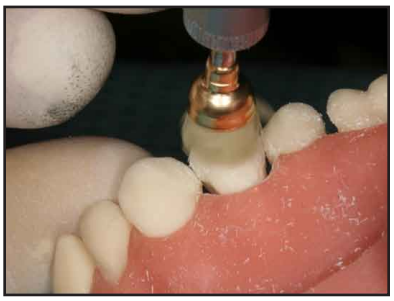
With moderate to low RPM, use twelve bladed burs to contour labial. A dull 56 or twelve bladed cylinder of same size is recommended for the occlusal. Alternatively, the acorn shaped “Raptor” burs can be used, (not included in this excercise).



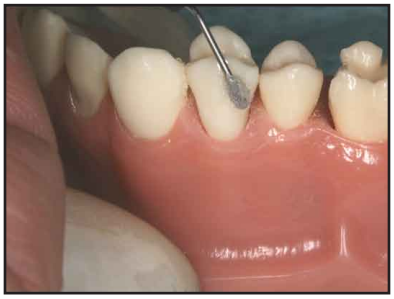
- **Be** careful not to “overuse” the Jiffy coarse (green) or it will destroy micro anatomy. Follow with medium (yellow) cup. The yellow point is nice for subtle labial depressions (such as labial mamelon valleys of anterior teeth) and at higher RPM to finesse occlusal grooves.

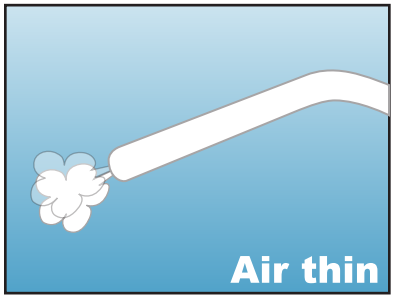




- **Use** the Jiffy brush at high RPM to shine. Note resultant finish and contours. Make sure complete polymerization has occurred to achieve highest shine.


- **Rub** the PermaSeal firmly against the surface, air thin and LC 20 seconds. (Clinically, one would first etch 5-10 seconds, wash and dry; this step is omitted for this “table top” exercise.) Finished restoration.



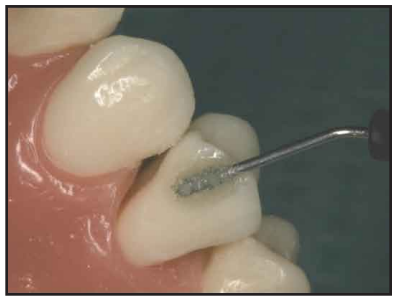


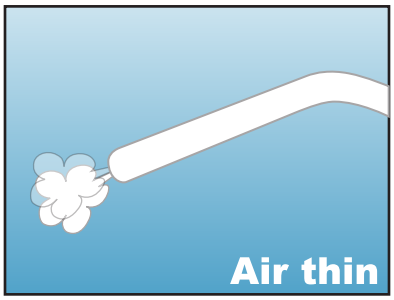
Repair (time permitting):

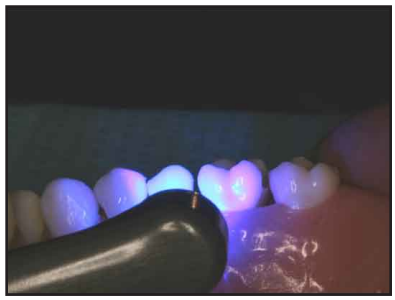
1. Purposely over-cut (gouge) as seen here on mesial labial 1st bicuspid restoration

2-3 Apply PermaSeal (now as a composite-to-composite bonding resin) and air thin.

4-6. Using IPC, replace enamel shade to desired contour and LC. Finish as above.





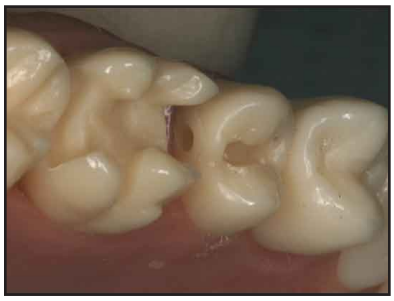
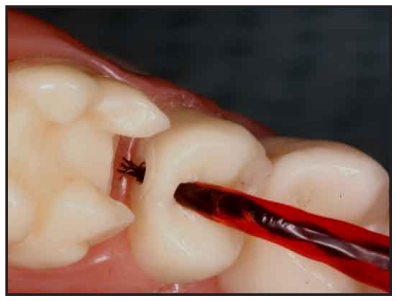


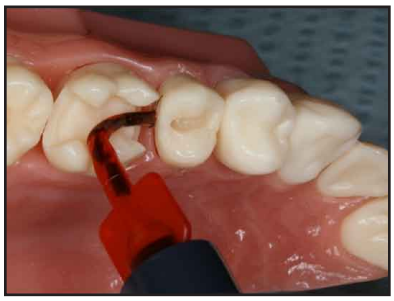
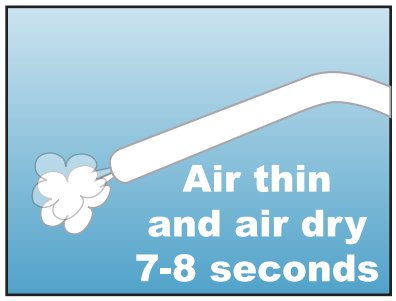
Tunnel Preparation (time permitting):

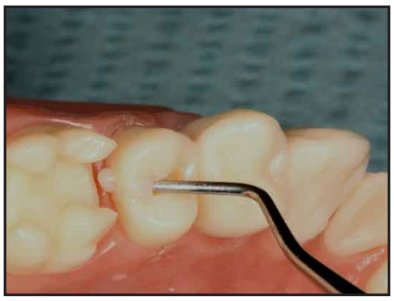
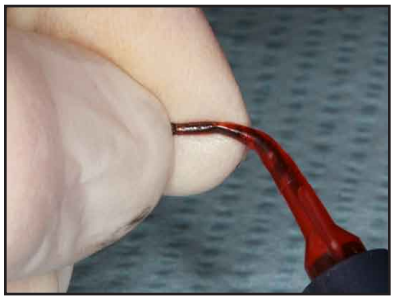
1. Tunnel Preparation followed by conditioning with etch or SE (not done here for this table exercise).

2-5. Apply Peak LC with Inspiral Brush. Custom bend Inspiral as needed so to facilitate entering from the distal. Air thin, then air dry 7-8 seconds at a minimum.

6. After LC, press paste composite into and through tunnel.

Note: One can also customize the length of the fibers by grasping them between thumb and finger and pulling or pushing them in or out.

7. Use IPC to finish distal surface. LC. Fill in occlusal. Finish/smooth distal surface before restoring distal preparation. Alternative: Place matrix and after bond resin, use flowable to adapt well where tunnel margin meets matrix.
LC and construct occlusal.