Session #3
PEDS 730

Primary Tooth Trauma
Intrusion vs. Avulsion

CASE #3

EVERY PROJECT IS A PATIENT

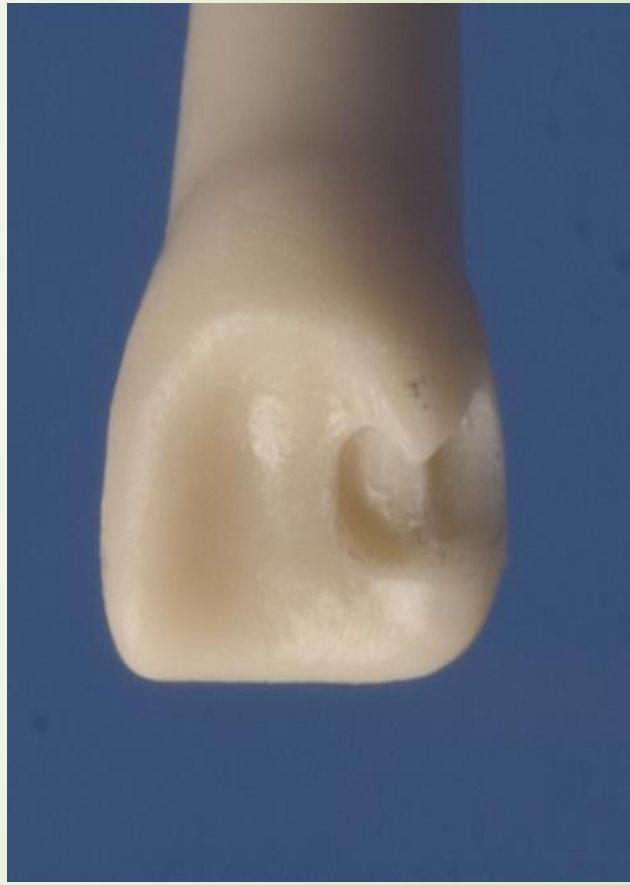
Class III Cavity Preparation and Restoration in Primary Teeth

Presented By Richard L. Grabowsky, D.D.S.

CLASS III RESIN PREPARATION
TOOTH #C – DL

Instructions: Prepare tooth C according to the following performance criteria. These preps can be very difficult preparations for some individuals, so follow these simple instructions to make it easier.

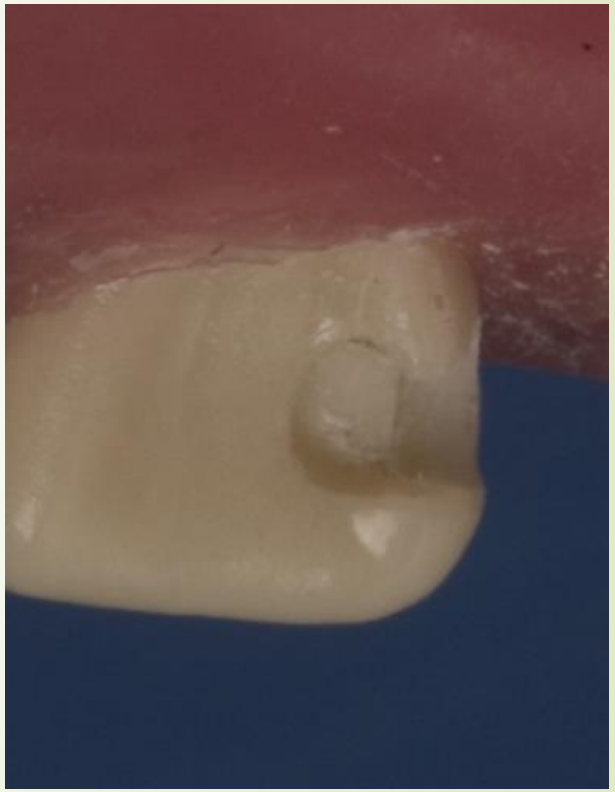
Begin by making sure that tooth C is correctly oriented in the typodont. Take a 0.5 mm mechanical pencil and place a vertical line on the lingual of tooth C that divides the tooth in half in the long axis. This separates the tooth into a mesial half and a distal half and will help you to not prepare your dovetail too wide. Take the same pencil and divide the tooth into three equal portions in the horizontal direction. You should have equal incisal, middle, and gingival thirds. Your dovetail needs to be in the middle third and this grid which will help you prep in the right spot.



Class III resin preparation viewed from lingual. [tooth #D]

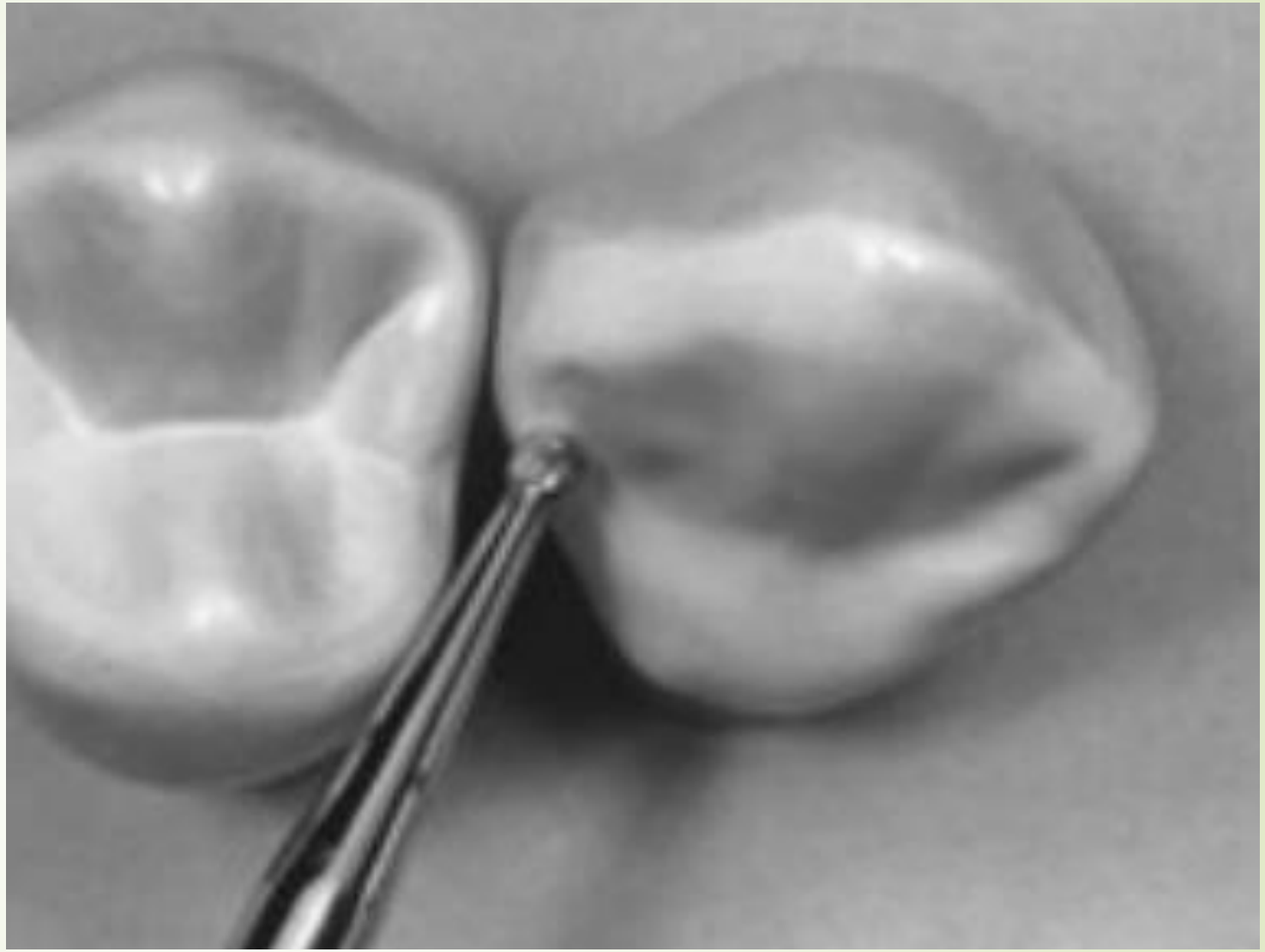
PREPARATION

- Using a 330 carbide bur at low RPM's begin to roughly prepare the box and dovetail of your Class III resin prep. Trying to use the 330 bur to do the whole prep will likely cause overpreparation and much frustration. Use the 33 1/3 or 34 inverted cone to finish the lingual and/or facial dovetail. This bur cuts a flat floor and will give a slight undercut for retention. Use the ½ and ¼ round carbide burs to define the detail of the preparation in both the interproximal box and the dovetail. The ¼ round carbide can be used to place point and groove retention. Use a very fine diamond to place a small bevel on all accessible margins. For the visually oriented dentist, the prep has an outline form like a snow ski goggle that is wrapped 90˚ around the tooth. It is important that the incisal outline of the preparation be parallel to the occlusal plane or incisal edge, the dovetail dips in a gingival direction. Primary incisor teeth have very weak enamel, and an incorrectly prepared tooth can be severely weakened by an improper preparation.



Gaining Access

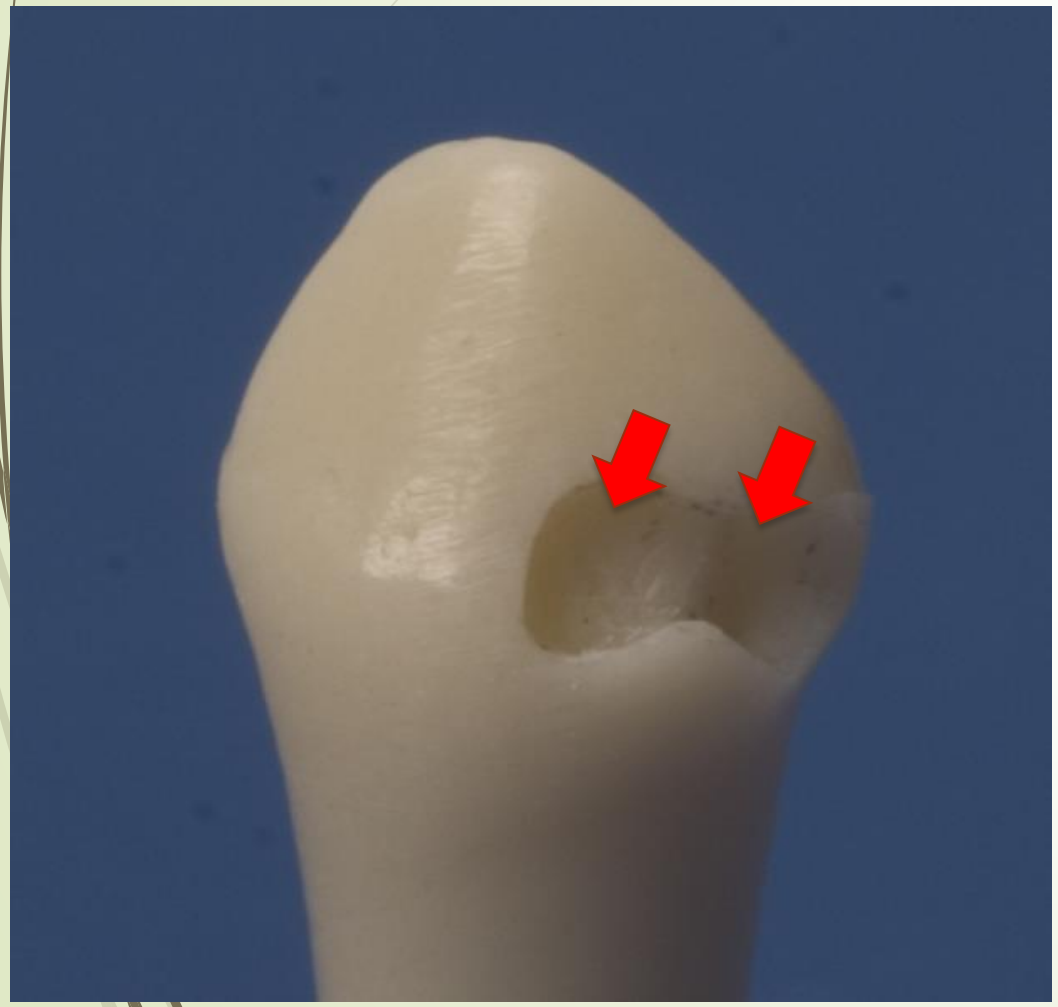
- ***Tooth in contact:***
- Access obtained from the facial or lingual, resulting in a 'slot'
- A small incipient lesion approached from
  - Lingual on maxillary tooth (esthetics)
  - Labial on mandibular tooth (concern for esthetics is not so great)



Gaining Access

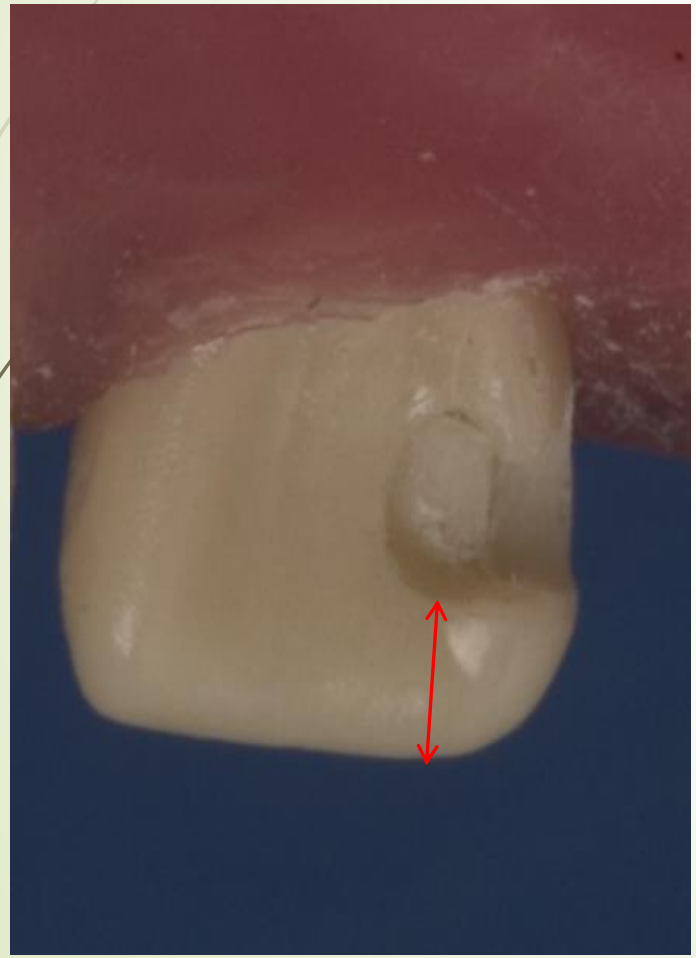
- ***Tooth in contact:***
- In a larger lesion, access should be from the surface where caries has caused the greatest destruction.

Retention



- Since there is usually no caries on the labial or lingual surface, it is not necessary to prepare the axial wall of the dovetail as deep as in the proximal portion.
- In the interest of conserving sound tooth structure, the axial wall may therefore be established just into dentin, or approximately 0.25 mm. less deep than in the proximal.

Retention



- The incisal wall must never be closer than 1.0 mm to the incisal edge of the tooth.

Placement of Splint - Post Trauma With Orthodontic Wire

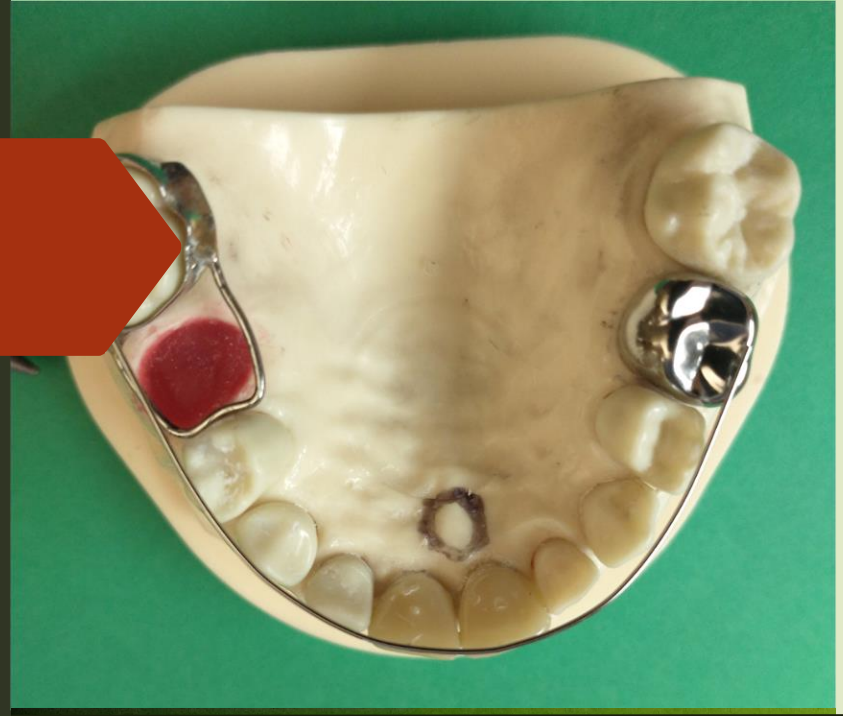
Presented By Richard L. Grabowsky, D.D.S.

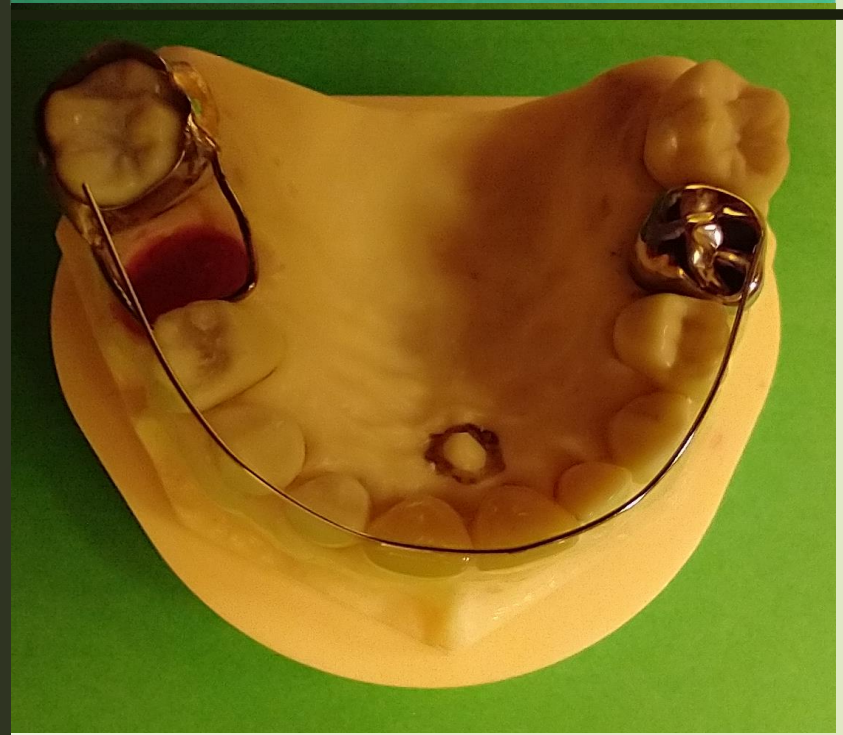
Cutting The Wire

- When placing a splint, use very light and flexible wire, if possible, even monofilament fishing line is acceptable. For this exercise, we will be using the lightest wire available for our lab exercise, .018 diameter stainless steel wire.
- Do not cut exactly the length you need, an extra inch or two will aid greatly in manipulating the wire until you have finished bending it.
- For this exercise, since the splint will go from tooth #C to tooth #H, I would recommend cutting off a piece of wire that would reach from tooth #A to tooth #J.
- Please always be careful cutting wire, hold it down low to the ground and make sure the free end is not pointed at anyone else. If you can manipulate your fingers to grasp both ends of the wire, this can often prevent both ends from shooting across the room.

Bending The Wire

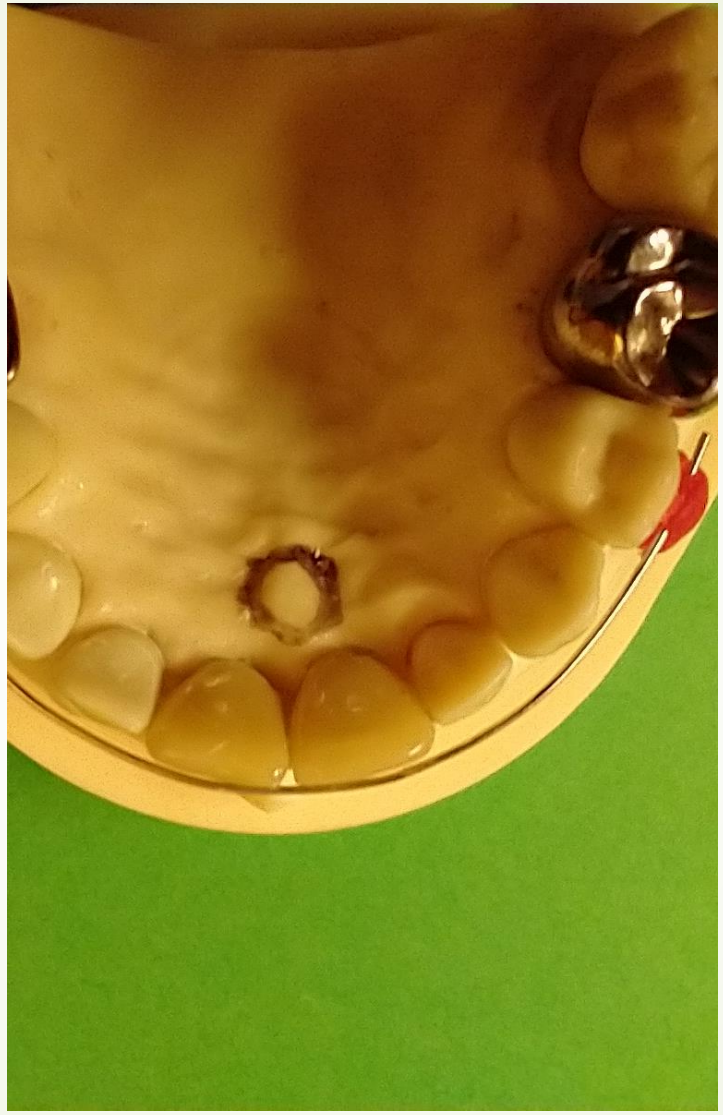
- Begin gently bending and shaping the wire to match the curvature of the arch form as shown in the pictures. If you use a plier, like the bird beak, do NOT use pliers to bend the wire, the plier is used to secure the wire while your fingers gently manipulate the wire.
- The wire must be flat in one plane of reference. In other words, if you lay it on your bench top, the entire wire will contact the surface.
- As you continue to work with the wire, if the free ends extending past the teeth you are splinting, are hitting other teeth, put a slight labial bend in the wire past #C and/or #H to prevent the interference.





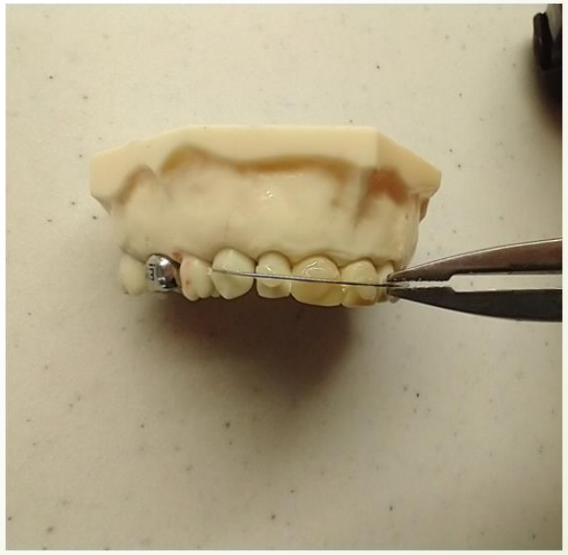
Final Fitting of the Wire

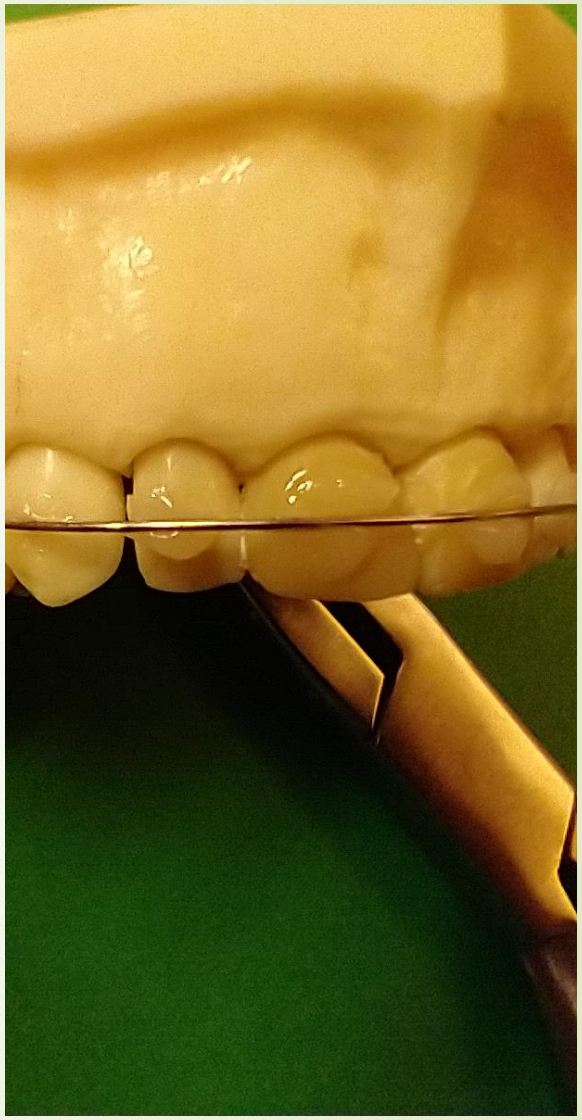
- Next, move the wire onto the labial surface of the teeth and finish your manipulations such that the wire contacts or is as close as possible to contacting all the teeth you are splinting.
- Make sure the wire is positioned in a straight line over the center of the teeth being splinted.
- Mark the wire on each end just distal to the last tooth in your splint.
- Cut the wire at each mark.
- At this point try to maintain orientation of the wire such that the portion that originally fit to the left side of the arch remains consistent. If you reverse this, it often does not adapt as well.



Placement of Composite and Wire

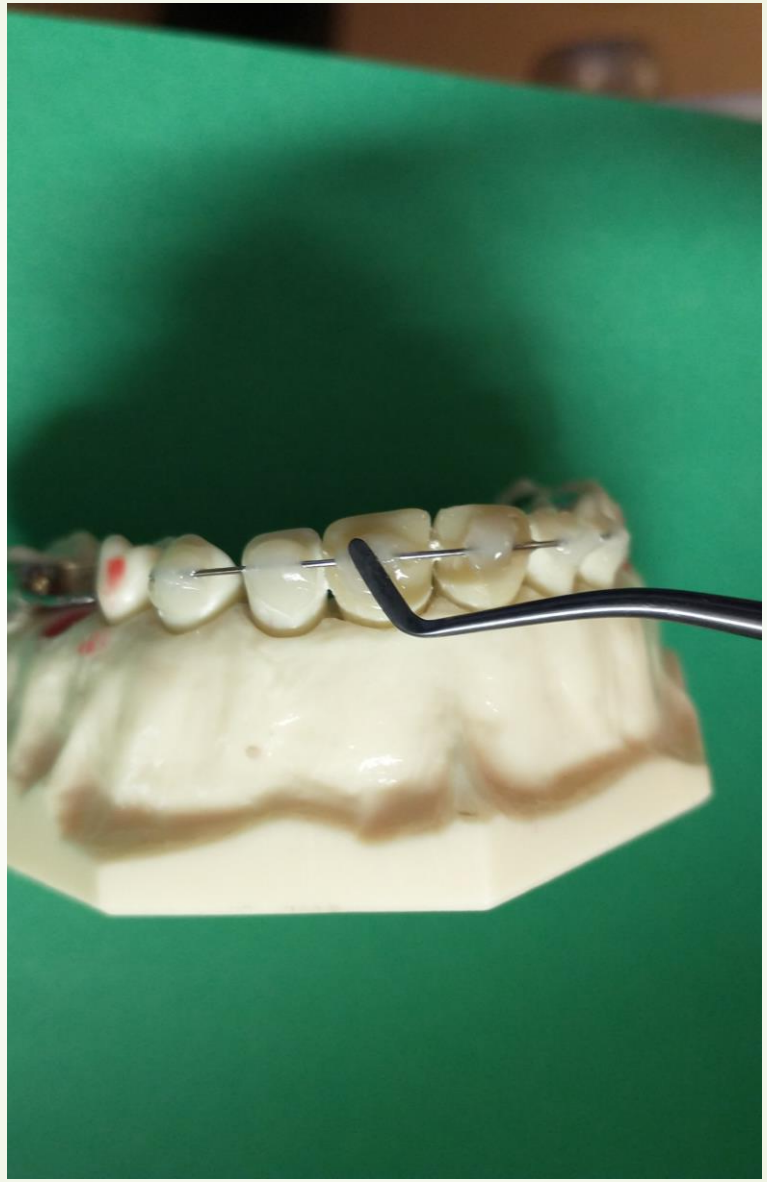
- Next place a small portion of composite on the labial surface at the **center** of the clinical crown of each tooth (see picture on right). Try not to expose the composite to excess light which will accelerate hardening.
- Do not allow composite to extend to the gingival margin or to the incisal edge.
- Using the Howe plier or something similar, pick up the wire and place it firmly into the composite.





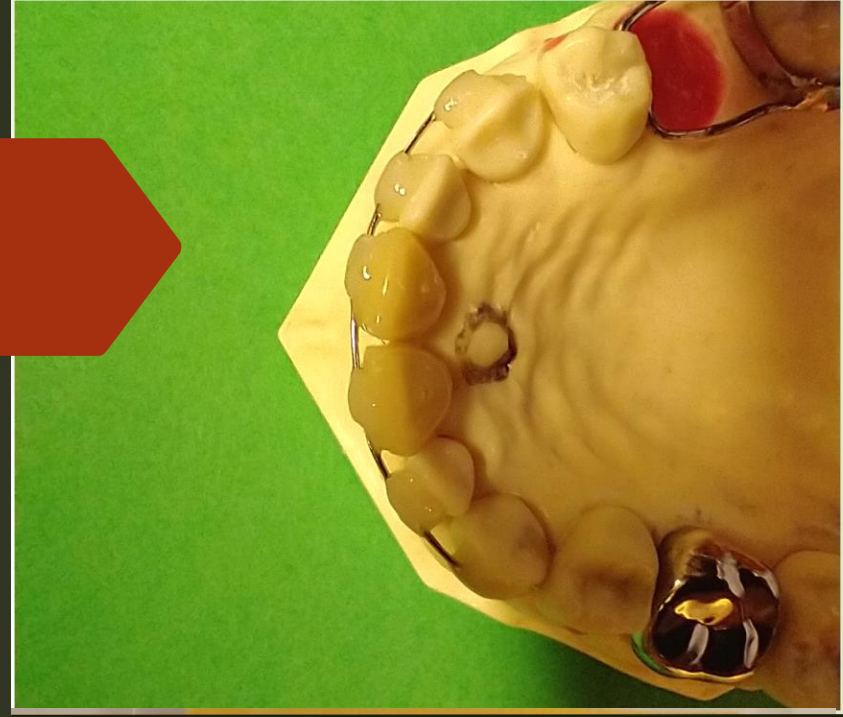
Finishing Splint

- Using a plastic instrument manipulate the composite over the wire such that it is completely covered. You often need to add additional composite during this process.
- Minimize the thickness over the wire as this will push against the upper lip and be uncomfortable to the patient.
- Cure the composite.
- Use the composite flame and football finishing burs to remove excess composite and flash.
- Polish composite so that it will be smooth against the inner surface of the upper lip with no ‘bumps’.



Removing Splint - (before next session)

- When removing the splint, use a football composite finishing bur or a diamond to remove all the composite on the labial surface of the wire.
- Using the Howe plier or Bird Beak, firmly grasp the wire and lift it from each tooth. Sometimes you need to remove additional composite from the side of the wire with the flame composite finishing bur to facilitate its release from the composite.
- Carefully remove the remaining composite from the tooth structure using the composite finishing burs to aid in not damaging the enamel.
- Preformed arch wires (bottom right) greatly aid in constructing splints.



LET'S GET STARTED!