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Brux Crown Technical Update

Preparation Requirements

- Shoulder preparation not needed, feather edge is okay. It is a conservative preparation similar to full-cast gold, so any preparation with at least 0.5 mm of occlusal space is accepted.
- Minimum occlusal reduction of 0.5 mm; 1 mm is ideal.

Instructions for Adjusting and Polishing Brux Crowns & Bridges

- Adjust Brux Solid Zirconia restorations using a fine-grit diamond with light pressure to avoid potential microfractures.
 - A football-shaped bur is most effective for adjusting the occlusal surfaces of posterior teeth and lingual surfaces of anterior teeth.
 - A tapered bur is most effective for adjusting proximal contacts.
 - A round bur is used to adjust a cusp or fossa and for creating endodontic access.

Cementation Recommendations

- Ceramir® Crown & Bridge (Doxa Dental; Newport Beach, Calif.) or a resin-reinforced glass ionomer cement such as RelyX™ Luting Cement (3M ESPE; St. Paul, Minn.) or GC Fuji Plus™ (GC America; Alsip, Ill.)
- For short or over-tapered preparations, use a resin cement such as RelyX™ Unicem (3M ESPE) or Panavia™ F2.0 (Kuraray; New York, N.Y.)

Instructions for Seating Brux and Other Zirconia-Based Crowns & Bridges

Brux restorations are fabricated from solid zirconia oxide material, much like the zirconia oxide coping found in restorations such as PrismaTik Clinical Zirconia™, Lava™ Zirconia (3M ESPE; St. Paul, Minn.), and NobelProcera™ (Nobel Biocare; Yorba Linda, Calif.). Like most metals, zirconia exhibits a strong affinity for phosphate groups, and zirconia oxide is no different. We can take advantage of this fact with phosphate-containing primers, such as Monobond Plus (Ivoclar Vivadent; Amherst, N.Y.) and Z-Prime™ Plus (Bisco; Schaumburg, Ill.), or cements such as Ceramir® Crown & Bridge (Doxa Dental; Newport Beach, Calif.). Unfortunately, saliva also contains phosphates in the form of phospholipids, so when a BruxZir crown or bridge is tried in the patient's mouth and comes in contact with saliva, the phosphate groups in the saliva bind to the zirconia oxide and cannot be rinsed out with water. Attempting to use phosphoric acid (which is full of phosphate groups) to "clean" the saliva out only makes the problem worse.

The only way we have found to successfully remove these phosphate groups from the interior of a Brux restoration is with the use of Ivoclean (Ivoclar Vivadent). This is a zirconia oxide solution placed inside the restoration for 20 seconds and then rinsed out. Due to the large concentration of free zirconia oxide in the Ivoclean, it acts as a sponge and binds to the phosphate groups that were previously bound to the Brux restoration. Once the Ivoclean is rinsed out, you will have a fresh bonding surface for the Monobond Plus, Z-Prime Plus or Ceramir to bond to.

The protocol would be:

1. Try in Brux or zirconia-based restoration.
2. Rinse saliva out of restoration.
3. Place Ivoclean in restoration for 20 seconds and rinse.
4. Cement restoration with Ceramir –or– place Monobond Plus/Z-Prime Plus and place with cement of your choice.

ADA Codes

- D2740 Crown - Porcelain/Ceramic Substrate
- D6245 Pontic Porcelain/Ceramic
- D6740 Abutment Crown Porcelain/Ceramic