



A New Semi-Permanent Crown & Bridge Material Bridges an Age-Old Gap

by Richard S. Bernstein, DDS - November 2019

From time immemorial, children engaged in playful activities have experienced accidents causing injuries to the oral cavity. These injuries can range from something as minor as a slight chip to something as catastrophic as an avulsed permanent tooth. Many minor injuries to children's teeth can be treated relatively easily and affordably with a composite filling. However, in the event the child needs something more invasive, such as endodontic treatment, forced eruptions, flippers, a porcelain crown or another permanent restoration, treatment can be costly. These expensive and invasive restorative solutions have always been far from ideal, since they need to be replaced within a few years as the child matures into adulthood. Fortunately, LuxaCrown, a new crown and bridge material from DMG, makes it possible to bridge this gap by creating affordable long-term restorations that can last up to five years.

Clinical Case

A ten-year-old girl referred to my office by a local pediatric dentist presented with an extensive fracture of the left central incisor #9. Part of the fracture extended down the lingual subgingival to bone level, and the pulpal chamber was exposed. Additionally, due to severe spacing, the patient would need orthodontic treatment in the future. After consulting with the endodontist and the parents, it was decided to save the tooth with a root canal treatment followed by a crown build-up. Had I not recently added LuxaCrown to my crown and bridge material armamentarium, it is very possible that a different – and more invasive – course of treatment would have been pursued.

Based on the endodontic consultation, my first step was to perform a root canal treatment. An impression was created with a lab-fabricated, all-porcelain post/core using a leucite glass-ceramic (IPS Empress, Ivoclar Vivadent). I then created a build-up of #9 as a mirror image of #8 on the hard model.



Figure 1: Fractured maxillary left central (mirror image of #8)



Figure 2: Ideal mock-up of left central incisor impression of mock-up



Figure 3: Using the poly vinyl impression of the mockup, the luxacrown restoration was fabricated



Next, I bonded the post/core into the root of #9 using a core build-up material (LuxaCore Z Dual, DMG), after which I prepped the existing tooth to the gingival level with a chamfer finish line.

I then took a polyvinyl matrix (Honigum, DMG) of the mock-up, expressed a long-term crown and bridge material (LuxaCrown shade A1, DMG) into the impression, and placed it in the mouth over the dentition. After one minute, I removed, trimmed and polished the LuxaCrown restoration. Various burs (ET, Brasseler), polishing discs and rubber points were used to finish the restoration just as I would if it were a permanent composite restoration. The margins were finished, trimmed, smoothed and polished. Finally, a varnish (LuxaGlaze, DMG) was placed and light-cured. The LuxaCrown long-term crown was bonded over the tooth with a resin cement (Theracem, BISCO).

At the one-month follow-up, the patient was very pleased with the esthetics, durability and fit of the LuxaCrown long-term crown.



Figure 4: Prepped tooth after all-porcelain post/core was bonded



Figure 5: Semi-permanent crown bonded in place; margins finished, final polished and glazed



Figure 6: Crown at one-month follow-up