A Semi-Permanent Restoration Option for Patients with Health or Financial Challenges

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CASE OVERVIEW

We have had issues in our practice with female patients who are taking bisphosphonates for osteoporosis. Because one of the side effects of bisphosphonates can be osteonecrosis of the jaw, these patients are warned not to have any extensive dental work such as extractions, periodontal surgery or implants. While a crown restoration is often the recommended course of treatment, many of these patients – most of whom are elderly – are reluctant or unable to spend the money required for a permanent crown. Fortunately, a much more affordable option is now available to these patients in the form of DMG's LuxaCrown, a semi-permanent crown material that lasts up to five years. LuxaCrown exhibits excellent fracture toughness, flexural strength, optimal mechanical properties, polishability and versatility. Importantly, LuxaCrown restorations are manufactured chairside and thus generate significant time savings as well as cost savings for the patient.

Figure 1: Recurrent decay revealed clinically

Figure 2: Decay visible after crown removal

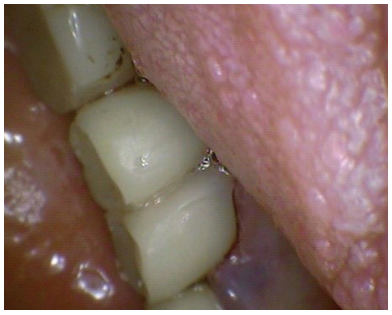

Figure 3: After cleaning tissue and removing caries

CLINICAL CASE

A 67-year-old female patient presented to our office with a loose tooth. Clinical examination revealed recurrent decay under a 30-year-old crown on tooth #30 as well as mobility of the crown (Figure 1). On removal of the crown, decay was noted throughout the pulpal floor of the tooth (Figure 2). Because the patient is on bisphosphonates, I ruled out extraction and an implant as a course of treatment. We took a periapical of the tooth to determine full decay and root length (Figure 3) and concluded that the root length was adequate.

I came up with a plan to bi-cuspidize the molar and rebuild using 2 posts and LuxaCrown. I describe LuxaCrown to patients as a semi-permanent material. I took a VPS impression using a matrix material and temporary tray to fabricate the restoration. I anesthetized the area with a fast-onset anesthetic. Using a CO2 laser, I gently finished the sectioning the roots where the decay had started to penetrate. I also cleaned up the tissue around the roots and removed the remaining caries (Figure 3). The canals were prepared with a suitable reamer, rinsed with water and dried with a paper point. I cemented two glass fiber-reinforced composite posts (LuxaPost, DMG America) with a self-etch, self-adhesive resin cement. Using a dual-curing universal

adhesive and a core build-up material made with zirconia (LuxaCore Z Dual, DMG), we then rebuilt the cores (Figure 4). We were careful to prepare the roots with adequate ferrule on clean tooth structure. The trick to using a matrix impression is to remove a small amount of the impression material. It is always easier to start with excess material and then trim back than to add material in case of a deficit.

Figure 4: Rebuilt cores

I injected a semi-permanent crown and bridge material (LuxaCrown, DMG) from the bottom of the impression and filled without raising the syringe to prevent voids. The crowns were shaped using a double-sided diamond disc and carbide finishing burrs. I then polished them using a polishing system. I tried to make the splinted crowns as cleansable as possible. When trimming the semi-permanent crown, it is denser and stronger than a methyl-methacylate temp material. The final restoration (Figures 5 and 6), was cemented in with a self-adhesive resin cement. The patient was very pleased with the fit, aesthetics, cost and time required to place the restoration.

Figure 5: Final restoration

Adding LuxaCrown to my armamentarium has given me a new option to offer not only patients suffering from osteoporosis, but any patient who needs a durable restoration but whose health or financial issues make a permanent restoration infeasible.

Figure 6: Final restoration, secondary view