Saving a Cracked Tooth Using Geristore®

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Saving and restoring a cracked tooth presents a unique challenge to dentists and patients alike. Often more challenging to the dentist is performing a quality, cost effective, esthetic repair for the patient.

The case described below concerns an adult female patient who, after being offered a remedy of extraction only by two different dentists, sought other options to meet her requirements. The solution subsequently offered provided her a conservative, pain-free, injection-free solution that allowed her to retain the root structure.

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Two clinically superior restorative materials, Core Paste and Geristore®, combined with the Tenure® adhesive system, were used to seal, bond, and build up the root. A Cerinate® Full-Porcelain Crown completed the restoration. Tenure was used to provide a leak-free, strong-as-enamel bond to root and restorative material. Geristore stabilized and sealed the split in the root. Geristore is a fine-particle, hydrophilic, non-aqueous, resin-based ionomer with a structurally unique fluoride-releasing glass formulation. Enamel-shaded Core Paste, with a 28-year clinical success history, was bonded to the Geristore-Tenure treated exposed root surfaces and provided a solid, natural implant and core on which to build out the restoration and strengthen the root foundation.

The advantages provided to the patient through this combination of materials include:

- Insolubility in the oral environment
- Leak-free bonding to root and restorative interface
- Complete cure utilizing patented dual-cure technology
- Matched thermal expansion to existing tooth structure
- Extended fluoride release from the Geristore restorative to the remaining root.
- Clinically and histologically proven bio-compatibility
- Strongest core composite buildup available
- Virtually pain-free alternative
- Cost effective and quality dental result acceptable to the patient

Case Report

An adult female patient presented to the office with a cracked tooth No. 7, (Fig. 1). The cracked tooth seemed to be the result of a large metal post attached to a jacket crown that was dislodged from the root. The patient visited two separate dental offices receiving the same treatment recommendation—extraction. An alternative treatment was offered after a clinical assessment with a consideration to the materials that could be utilized. The patient accepted the following treatment.

Procedural Overview

1. The fractured lingual portion of the root was cleaned with a disinfectant (NaOC1-25%) solution.
2. After a water rinse, the root was etched for ten seconds with Etch'N'Seal®.
3. The area was rinsed again with water and dried.
4. A mixture of Tenure® A/B was applied **(**Fig. 2).
5. The Tenure A/B mixture was gently blown down the split root to ensure that the mixture covered as much inner root structure as possible.
6. Geristore was syringed into root crack area.
7. A Tenure S soaked sponge (Dab-Eze®) was used to fill and adapt the Geristore restorative to the cracked area.
8. Prior to Geristore beginning to set, Core Paste-Enamel shade was syringed into the root leaving extra Core Paste extruding from the root to form the core buildup (Fig. 3).

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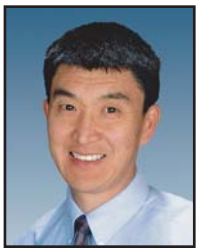
9. Core Paste was cured for six (6) seconds using the Rembrandt Sapphire® Xenon Power Arc Light.
10. The Core Paste buildup was carved in preparation for a full porcelain crown (Fig. 4).
11. A Cerinate Full-Porcelain Crown finishes the case. A four-week recall appointment confirms the symptom-free, esthetic result.

Case Summary

Traditionally, treatment for similar cases has been extraction. The procedure described above, in addition to providing a clinically acceptable and problem-solving alternative, has the additional benefit of relieving the patient of an extraction and thus saving the root. By providing a fluoride-releasing restoration with Geristore and strengthening by utilizing Core Paste as a natural implant, this and other "hopeless tooth" situations can be easily and beautifully resolved.

Geristore has been the choice for discerning dentists for over a decade. It has proven itself clinically in a wide variety of dental applications including repair of erosive lesions in geriatric patients, cementation of cast gold crowns and other fixed prosthodontics, bonding amalgam, and restorative repairs. Additional applications include: sub-gingival and periodontal applications including root perforation repair, root retro-fillings, root resorption restoration, furcation lesion restoration and even guided tissue regeneration. The versatility of Geristore continues to "open doors" to new and exciting procedures.



Dr. Yu is a native of China and holds dental degrees in both the US and his homeland. He has published more than 60 clinical and research-related papers in the area of adhesive dentistry. Currently, he is Vice President of Clinical Affairs for Den-Mat Corporation.

If you have questions about the Den-Mat Corp. products used in this clinical, please call Den-Mat at (800) 445-0345.