An Esthetic Solution for Missing Anterior Teeth: The Procera® AllCeram Bridge

Despite the many recent advances in esthetic dentistry techniques and materials, certain cases remain difficult to restore. Specifically, many dentists have complained about the lack of an esthetic replacement for missing anterior teeth and, as a result, have placed ceramometal bridges lacking the premium esthetics of all-ceramic restorations. The Procera® AllCeram bridge (Nobel Biocare) represents a significant step forward in the esthetic replacement of missing teeth. Dentists can now confidently prescribe all-ceramic bridges, regardless of whether the adjacent teeth are natural or all-ceramic restorations.

The ability to fabricate three-unit bridges with the Procera® system fills a gap that has always existed in esthetic treatment.

The Procera® system for creating single-tooth restorations has proven to be durable while achieving excellent marginal fit. Most dentists say that, in addition to the esthetics of Procera® crowns, the ability to cement them conventionally is their favorite feature (personal communication during seminars, 1996-2001). To understand the importance of this feature, the author's opinion, conventional cementation with a resin-reinforced glass ionomer (Rebyx Luting Cement, 3M ESPE) performs much better in subgingival situations than do resin cements.

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**Procedure**

This case was selected because it was one in which the achievement of optimum esthetics would have been very difficult before the introduction of the Procera® AllCeram bridge. The patient was a 25-year-old man who requested the replacement of two missing teeth, as well as the replacement of some esthetic anterior PFM crowns with visible metal margins. Teeth Nos. 3 and 7 were both missing, and the patient was dissatisfied with the grayish-black microleakage at the margins.

This is the perfect situation for a Procera® crown, because, in the author's opinion, conventional cementation with a resin-reinforced glass ionomer (Rebyx Luting Cement, 3M ESPE) performs much better in subgingival situations than do resin cements.

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Figure 1—Preoperative view of the maxillary arch showing a missing right lateral incisor and a missing right first molar. Several esthetic ceramometal crowns also needed replacement.

Figure 2—A diagnostic wax-up was used to help determine esthetic and functional requirements.
Our practice has yet to see a patient who is given this choice request a PFM restoration.

Procera® is dentist-friendly as a standard PFM preparation is used. For anterior preparations, Procera requires 1.5 mm to 2.0 mm of reduction on the facial and incisal surfaces, while the lingual surface requires 1 mm to 1.5 mm of reduction. A 1-mm to 1.5-mm chamfer preparation is the preferred margin. For posterior teeth, 1.5 mm to 2 mm of occlusal reduction is necessary while 1.5 mm is standard for buccal and lingual surfaces. A 1-mm to 1.5-mm chamfer preparation is the preferred margin and, as with any all-ceramic system, rounded internal line angles are indicated (Figures 3 through 6).

Many dentists mistakenly think they need to prepare a shoulder for Procera® restorations, which is a much more difficult margin to cut, and is actually contraindicated for scanning purposes. Use of a diamond kit developed specifically for Procera® crowns, such as the All Ceramic Preparation Set LS-7514 (Axis Dental Corp.), help to ensure optimal reduction, taper, and marginal shape.

Final impressions and bite registrations were made, in addition to a horizontal stick bite and clinical photographs for the laboratory.
For all cases exceeding three units, laboratory-fabricated provisional restorations should be used (BioTemps™, Glidewell Laboratories), which are refined with a methyl-methacrylate to achieve optimum fit (Figure 7). The provisionals were designed from the diagnostic wax-up so that both the patient and practitioner could preview the final result. Any esthetic changes made to the provisionals were communicated to the laboratory for use in the final restorations.

The final restorations were examined for proper esthetics after return from the laboratory (Figure 8). Note the excellent esthetics, both on the inner and outer surfaces. The restorations were then tried on both the master model and the solid model to confirm fit (Figures 9 and 10).

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The restorations were placed in the mouth, first as individual units to check the marginal fit of each of the restorations, and then collectively to verify contacts and occlusion (Figure 11). Unlike many all-ceramic restorations, the strength of Procera® allowed the checking and adjustment of the occlusion before permanent cementing. All of the porcelain polishing could therefore be accomplished extraorally, which was much quicker and cleaner than intraoral polishing.

One of strengths of the Procera® system is its ability to be conventionally cemented;
delivering Procera® restorations is as quick and easy as delivering FFMIs, although the same cannot be said of bonding other all-ceramic restorations. The provisionals were removed and the preparations were cleaned with Consensus® Scrub (Ultradent Products, Inc.). The prepared teeth were then rinsed and lightly dried. Hemaseur & Cide (Advantage Dental Products) was painted on the preparations, and a light stream of oil- and moisture-free air was blown on the teeth. The restorations were then cemented with RelyX™ Luting Cement. Clean-up of excess cement was simple and straightforward and, unlike most bonded cases, only one or two areas were slightly traumatized during clean-up (Figure 12).

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Summary

Figure 13 shows a close-up of the final restorations on this difficult combination case, calling for the use of both crowns and bridges. Avoiding the use of ceramometal restorations on the anterior teeth and bicuspids made this type of case challenging to treat. The strength, durability, and esthetics of the Procera® AllCeram bridge make it a win-win restoration for dentists and patients alike.