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Ultraconservative Composite Veneers

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Several factors can make providing truly lifelike cosmetic restorations challenging for many general dentists. High-quality porcelain veneers can create beautiful smiles, but their lab cost can force dentists to charge fees that many of their patients are not willing to pay. The reduction of teeth, while even minimal, is also unwanted by most patients. Composite restorations are a viable alternative to porcelain restorations, but the traditional composite systems lack the ability to be polished to mimic porcelain and require a great deal of skill to make them undetectable. Even if a dentist has the clinical skills, the time required to create beautiful restorations with composite will also necessitate higher fees.

This article presents a case in which a composite system that eliminates most—if not all—of these challenges is used to create natural restorations that not only far exceed the patient's expectations, but can be completed at a moderate fee level.

CASE REPORT



Figure 1. Preoperative facial view.



Figure 2. Silicone stint.

My patient presented with a desire to improve her smile but had some concerns about her choice of treatment options. She was a former Miss Black USA, recently appeared on the television show Fear Factor, and had a job in sales. She wanted her teeth even in length and was happy with the color of her teeth. She did not want to have her teeth "filed back" if at all possible. She wanted her restored teeth to look as natural as possible and not have a bulky appearance. She had some decalcification areas that she was not concerned about covering up. She had a moderate amount of translucency to her enamel and a prominent incisal halo that she liked (Figure 1).

We discussed the option of veneers made of porcelain versus composite, and we agreed that composite veneers would be her best treatment option, particularly since her main concern was not to cut back her teeth.

The first step in restoring her smile was to take very accurate impressions of her teeth (StatusBlue alginate impression material [Zenith/DMG]) and to wax-up her incisal edges. This would give me an idea of where I would be adding composite. A silicone stint (Exafast Putty [GC America]) was then made from the wax-up and cut back to expose the facial aspect of the 8 anterior teeth that I would be restoring (Figure 2).

At the start of her appointment I determined we would be using bleach shades (Artiste Nano Composite System [Pentron Clinical Technologies]). The Artiste Composite System is a nano-composite that polishes to a very high luster. It has a unique shading system that matches the color of dentin and the opacity of enamel. This simplified system allows for color-matching that is all but foolproof.

Topical anesthetic (Kolorz Topical Anesthetic [Zenith Dental]) was placed along her gum tissue to reduce discomfort when cleaning up the restorations, but no injections were given. I first removed the existing composite on tooth No. 9 using an electric high-speed drill (Ti-Max Ti95L [Brassler NSK]) and a coarse diamond bur (856L 014F [Axis Dental]). The remaining incisors, Nos. 7, 8, and 10, were then lightly roughened with the same diamond bur (Figure 3).



Figure 3. Removal of old composite.



Figure 4. Verifying fit of silicone stint.





Figure 5. Isolation with Teflon tape.



Figure 6. Application of etchant.



Figure 7. Application of bonding agent.



Figure 8. Loading the stint.



Figure 9. Formation of lingual and incisal aspects.



Figure 10. Application of the dentin layer.

The silicone stint was then tried on to verify its fit and to ensure that it would remain stable during the procedure. I started restoring tooth No. 7 first, as it needed the most composite to establish its proper length. Teflon tape was then placed between the adjacent teeth and folded back. Phosphoric acid (Ultra-Etch [Ultradent Products]) was then placed on the facial and lingual surface for 15 seconds and rinsed off. A fifth-generation primer/adhesive agent (Bond-1 [Pentron Clinical Technologies]) was then placed on the entire facial and lingual surface and light-cured with an LED curing light (bluephase 16i [Ivoclar Viva-dent]) for 5 seconds (Figures 4 to 7).

Bleach Enamel composite (Artiste Composite System) was placed onto the lingual slope of the stint using a metal hand instrument (TINIPC/6 [Brasseler]). No lubrication of the stint was used. The stint was then firmly seated onto the teeth, with care taken to ensure that the stint was seated correctly but not overly compressed on the teeth. Pressing the stint too hard could cause distortion and affect the shape of the restoration. Once seated correctly, the composite was pushed back to form the lingual and incisal enamel aspects of the restoration. The composite was then light-cured for 20 seconds (Figures 8 and 9).

Extra Bleach Dentin/Body composite (Artiste Nano Composite System) was then sculpted with a metal hand instrument (TINIPC/6) into the facial aspect of the restoration. The dentin layer was feathered onto the facial surface to mask out the existing halo of the tooth. Care was given to leave adequate space for the enamel layer, which would cover this dentin layer. It is okay if this layer is not perfectly smooth. The irregularities will actually add to the natural look of the composite restoration. The dentin layer was then light-cured for 20 seconds (Figure 10).

White tint composite (Opaque White Maverick Tint [Pentron Clinical Technologies]) was applied to the dentin layer with an endodontic file. The tint will replicate the decalcification spots of the teeth and help mask the junction of the composite and the tooth. Care was given not to use too much, however. If too much is applied, it is easy to wipe off with a micro tip brush. The tint was cured for 10 seconds (Figure 11).

Bleach Enamel composite was then layered onto the facial surface and feathered down to the cervical third.



Figure 11. Application of tint.



Figure 12. Application of facial enamel layer.



Figure 13. Refining the shape.



Figure 14. Initial restoration of teeth Nos. 7 to 10.



Figure 15. Beginning to restore the canine.



Figure 16. Application of incisal layer.



Figure 17. Refining incisal edges.



Figure 18. Facial smoothing.



Figure 19. Final polish.



Figure 20. Final restorations.

I over-bulk the layer just slightly to ensure the restoration is built out adequately. The layer was then light-cured for 20 seconds (Figure 12). The restoration was then trimmed and shaped with the same diamond I originally used to prepare and roughen the teeth. This was followed by a slim-shaped diamond (859 010F [Axis Dental]) to shape the interproximal and to begin to place anatomy in the facial surface. Teeth Nos. 8, 9, and 10 were then restored in the same manner as tooth No. 7. At this point, we were about 1 hour into the appointment where teeth Nos. 7 to 10 were being restored (Figures 13 and 14).

The restorations were then further shaped with diamond burs. At this stage I was shaping the facial planes and incisal edge positions. This was easily done by viewing the restorations from an incisal view as they are being shaped. The canines and first premolars were then restored in the same manner (Figure 15).

A layer of Milky White Incisal composite (Artiste Nano Composite System) was then added to the incisal edges of each restoration. The layer was placed 0.5- to 1-mm thick and carried just over the incisal edge to 0.5 mm interproximally. I find it easier to make the incisal edge just slightly longer than I want, and then trim it back. This will create an incisal halo to match the original halo of the anterior teeth. The layer was then cured for 20 seconds (Figure 16).

The edges were then shaped with slow-speed electric drills (Ti-Max Ti25L [Brasseler NSK]) and sand paper disks (EP Esthetic Polishing System [Brasseler]) to their correct position. Silicone cups and points (Jiffy HiShine Polishing System [Ultradent Products]) were then used to pre-polish the restorations and create texture and anatomy. The occlusion was then checked. No adjustments were necessary due to the use of the wax-up. I then had my patient approve of the shape and length of the restorations at this point. Once the patient was more than satisfied with the result, the final polish was done with a felt disk and diamond polishing paste (Universal Polishing Paste [CPR]; Figures 17 to 19).

The composite restorations were rinsed and wiped clean. The entire appointment took just less than 2 hours. I had the patient come back within one week for a follow-up appointment to ensure the restorations met the patient's approval and to evaluate the occlusion for a second time (Figure 20).

CONCLUSION

Having a composite system like Artiste Nano Composite gives a general dentist the ability to create natural restorations that far exceed the patient's expectations at a moderate fee level. With minimal training with Artiste, every general dentist can become an artist, as well as a clinician.

Dr. Soileau is a general dentist from Lafayette, La. His practice focuses on restorative rehabilitation and cosmetic enhancements. He

lectures nationally and internationally on the use of digital photography and computer assistance for diagnosing, treatment planning, and performing comprehensive dental procedures. He is a consultant for several technologies-based dental manufacturers and beta tests many of their products. Dr. Soileau is co-director of digital photography for GenR8TNext Digital Photography Courses and has taught digital photography at the Institute of Oral Art and Design (IOAD) in Tampa, Fla, and the Pacific Aesthetic Continuum (PAC-Live) in San Francisco. His dental and photography skills can be seen at smilesbysoileau.com, and he can be reached at (337) 234-3551 or tony@smilesbysoileau.com.

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