

CAD/CAM Fabrication of Maxillary Anterior Crowns to Improve Aesthetics and Contour

The patient's existing PFM restorations lacked aesthetics, had compromised gingival contours, and were to be replaced.

DentalDesigner software (GC America, Alsip, IL) was used to plan four full-coverage crowns. Its intuitive interface enabled rapid, efficient design of zirconia copings that would be conventionally layered with porcelain.

Full-contour layering of Initial Porcelain (GC America, Alsip, IL) was completed using several ceramic powders, modifiers, and translucencies to enhance the aesthetic appearance of the crowns.



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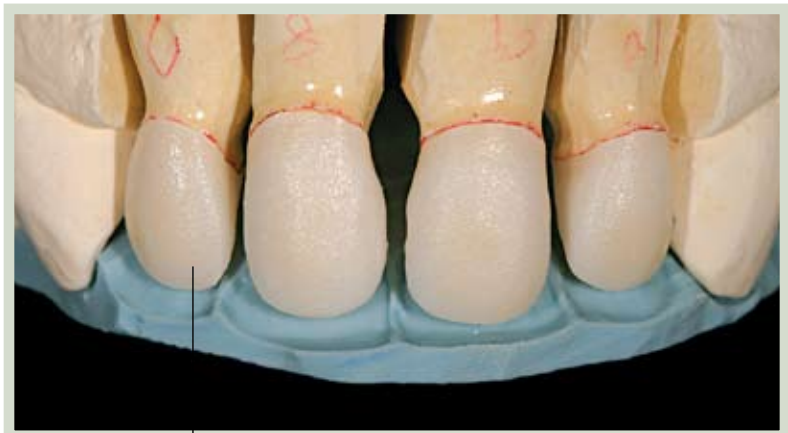
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1. Monochromatic crowns, dark gingival margins, and black triangles compromised the patient's aesthetics.

2. A stent was created from the wax-up to check height, depth, and incisal length.

3. DentalDesigner software (GC America, Alsip, IL) was used to plan the full-coverage crown restorations.

4. Tooth preparation consisted of chamfer margins for the incisor teeth.



5. Following CAD/CAM production, zirconia copings were seated on the model.

6. An opaque layer of dentin (Initial, GC America, Alsip, IL) was applied.



7. The appearance of the substructures following initial firing was evaluated to ensure sufficient opacity.



8. GC Initial C-1 dentin (GC America, Alsip, IL) was applied with cervical translucency.



9. Enamel Opal 3 and 4 were applied over the dentin and translucency.



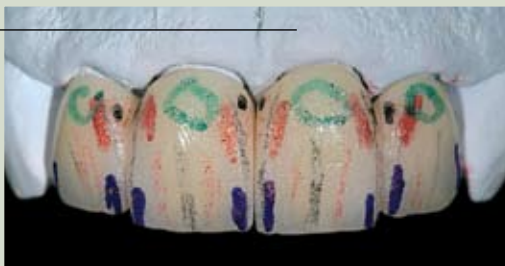
10. Mamelon was placed on top of the Enamel Opal.



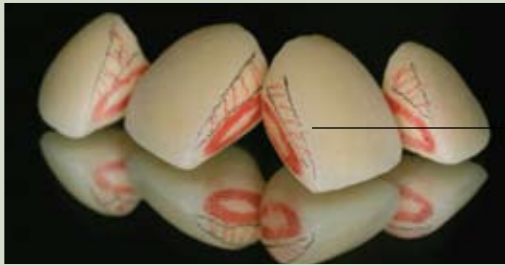
11. Translucency Opal and Enamel Effective 12 were applied.



12. The desired surface texture was marked on the surface of the restorations.



13. The crowns were placed under UV lighting to promote fluorescence.



14. The contact points and line angles of the definitive restorations were marked.

15. Try-in of the bisque bake restorations prior to final glazing.



16. Definitive aesthetic result achieved following cementation of the CAD/CAM-fabricated crowns.



17. Full smile shows natural tooth harmony.

Dentistry by Rick Alwan, DDS, Naperville, IL.