

The Back-to-Back Dilemma, Which Matrix System Should I Use?



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Dr. Mario Romero is a 1995 graduate from the University of Guayaquil School of Dentistry in his native country of Ecuador. He completed a two-year Advanced Education in General Dentistry Program at the University of Rochester, Eastman Institute for Oral Health where he was granted the Handleman Award for Excellence. More recently, Dr. Romero spent nine years at the Dental College of Georgia, where he was the Advanced Education in General Dentistry Program Director. While in this role Dr. Romero was awarded the Augusta University and the American College of Dentists Outstanding Faculty award for his achievements in scholarly, research and service; the Excellence in Dental Education Award from the Pierre Fauchard Academy, and the Teaching Excellence Award from the Dental College of Georgia which is the highest recognition for a faculty within the dental school. He has lectured extensively in over 20 countries, has numerous publications in national and international peer reviewed journals and is the author of the textbook "Minimally invasive esthetic dentistry, No drill techniques" published by Quintessence. Currently he is the owner of Dentistry180, a comprehensive restorative practice in Sarasota Florida..

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Background

A 34-year-old female patient in good general health presented to my practice with interproximal carious lesions affecting teeth #12 on the distal-occlusal (DO) surface and #13 on the mesial-occlusal-distal (MOD) surface.

Procedure

After profound anesthesia was accomplished using a carpule of OraBloc Articaine 4% with epinephrine 1:100,000 via infiltration, rubber dam isolation was completed (Black Hysolate-Coltene) (Image 1).

Caries was removed using a minimal intervention approach which helped with keeping the central groove area intact on tooth #13 (Image 2). Once the infected dentin was completely removed and a clean peripheral seal zone obtained, we cleaned the preparations using 23-micron aluminum oxide combined with distilled water (AquaCare) and then moved forward with selecting the ideal matrix system for this case. Garrision's Quad matrix system has quickly become my preferred due to its "split" wedge systems that helps with "pushing" the band mesial, distal or both (in back-to-back cases) (Image 3).

The Restorative procedure was initiated with #13 DO. After placing the matrix system, selective enamel etching for 15 seconds was completed, rinsed and dried (Image 4).

A two-step SE adhesive system was applied (OptiBond Extra Universal- Kerr) and light cured. We then restore the proximal wall using Brilliant EverGlow A2 dentin shade (Coltene) (Image 5) and continued with a single horizontal layer (2mm) to replace the dentin, followed by two oblique layers (buccal and lingual) to replace the enamel layer (Image 6). Each of these increments were cured individually.

We remove the sectional matrix system and place it in between teeth #12-13 to restore both preparations simultaneously (Image 7). See how the Quad wedge split tip contours the bands even prior to placing the ring.

Make sure that the black arrow is always placed towards the lingual and that it pushes each end of the split wedge towards the mesial and distal as seen on Image 8.

After completing the same adhesive steps as before we built both proximal walls between #12-13 (Image 9) and continued to restore the occlusal surface (Image 10).

This is followed by removal of the rubber dam, adjusting occlusion, finishing and polishing using a combination of multifluted carbide burs, enhance points and sofex disc (Image 11). Images 12 and 13 show the fifteen days post-op follow up and the verification of ideal interproximal contact tightness

Summary

A common reason why Class II preparations fail is due to lack of ideal proximal contours and contact tightness. In this case report we have highlighted how the selection of an ideal matrix system can help avoid these issues and prolong the lifespan of our restorations.

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Image 1: Rubber dam isolation was completed after anesthesia.



Image 2: Caries was removed using a minimal intervention approach, keeping central groove area intact on tooth #13.



Image 3: After cleaning and preparation was completed, the Garrison Quad matrix system was selected to help with pushing the band mesial, distal or both.

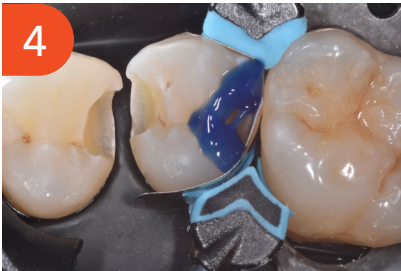


Image 4: After placing the matrix system, selective enamel etching for 15 seconds was completed, rinsed and dried.



Image 5: A two-step SE adhesive system was applied and light cured. We then restored the proximal wall using Brilliant EverGlow A2 dentin shade (Coltene).

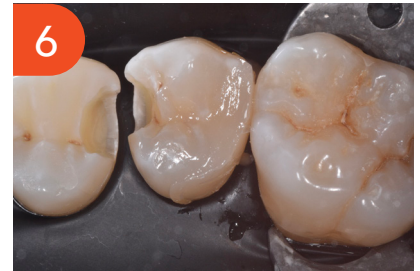


Image 6: Continued with a single horizontal layer (2mm) to replace the dentin, followed by two oblique layers (buccal and lingual) to replace the enamel layer. Each were cured individually.



Image 7: Removed the sectional matrix system and placed it in between teeth #12-#13 to restore both preparations simultaneously.



Image 8: The black arrow was placed towards the lingual and pushed each end of the split wedge towards the mesial and distal.



Image 9: Repeated the adhesive steps as before and built both proximal walls between #12-#13.



Image 10: Continued resotation on the occlusal surface.



Image 11: The rubber dam was removed, adjusted occlusion, finished and polished using a combination of multifluted carbide burs, enhanced points and soflex disc.

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Images 12-13: Fifteen days post-op follow up and the verification of ideal interproximal contact tightness shown.