

Is there a single matrix band system I could use for wide and deep Class II's?



Dr. Mario Romero

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 38-year-old female patient in good general health presented to my practice with interproximal carious lesions affecting tooth #2 (MO). From the BW image I could tell it had extended axially into the dentin. After profound anesthesia was accomplished using a carpule of OraBloc Articaine 4% with epinephrine 1:100,000 via infiltration, I initiated my access using a #2 round diamond bur. In Image 1 you can observe the demineralization beyond the DEJ.

Procedure

After initial caries removal, rubber dam isolation was completed using a black Hysolate dam which helps with contrast, allowing for better view of the operative field (Image 2). Caries detection dye was used for us to determine that complete caries excavation was accomplished and a clean peripheral seal zone obtained (Images 3-4).

We then cleaned the preparations using 23-micron aluminum oxide combined with distilled water (AquaCare) (Image 5) and moved forward with selecting the ideal matrix system for this case. Garrison's Quad matrix system combined with a green 3D Fusion matrix band is my preferred choice when it comes to wide a deep proximal box (Image 6). The reason behind this is that if I were to use a separate system to elevate the deep margin first, this will create a "transition" line from the deep margin composite layer to the subsequent layer that recreates the proximal wall. This transition line is hard to polish due to its location and can become a source of plaque accumulation. On the other hand, by using a single step matrix system these layers will blend in seemingly, not requiring additional polishing.

The Restorative procedure was initiated with selective enamel etching for 15 seconds, followed by rinsing and drying (Image 7).

A two-step SE adhesive system was applied (OptiBond Extra Universal- Kerr) and light cured. We then elevated the deep margin with a continued single horizontal layer (2mm) of Harmonize A2 dentin shade (Kerr) composite and light cured it for 20 seconds (Image 8).

This was followed by building the proximal wall (centripetal technique) using the same composite (Image 9).

Prior to adding composite to the occlusal surface, we removed the Quad ring, wedge and matrix band to make sure we had obtained a smooth transition from gingival to occlusal, as well as to verify the contact tightness (Image 10).

One horizontal and two oblique layers (buccal and lingual) to replace the enamel layer were placed and cure individually as the final layers (Image 11).

This is followed by removal of the rubber dam, adjusting occlusion, finishing and polishing using a combination of multifluted carbide burs, enhance points and soflect disc (Image 12).

Summary

A common reason why deep and wide Class II preparations fail is due to the technique sensitivity of the procedure. We are used to using multiple bands which not only create transition lines within our restoration that are difficult to get rid of, but we also risk tearing our rubber dam in the process of going from one band to the other, thus potentially contaminating the operative field. By implementing the recommended technique the goal is to simplify and already complex procedure.

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Image 1: Using a #2 round diamond bur, demineralization beyond the DEJ can be observed.



Image 2: After initial caries removal, rubber dam isolation was completed using a black Hysolate dam.



Image 3: Caries detection die was used to determine that complete caries excavation was accomplished and a clean peripheral seal zone obtained.



Image 4: Caries detection die was used to determine that complete caries excavation was accomplished and a clean peripheral seal zone obtained.



Image 5: The preparation was cleaned using 23-micron aluminum oxide combined with distilled water (AquaCare).



Image 6: Garrison's Quad matrix system combined with 3D Fusion matrix band is my preferred choice for wide and deep proximal box.



Image 7: Restorative procedure was initiated with selective enamel etching for 15 seconds, followed by rinsing and drying.



Image 8: A two-step SE adhesive system was applied and light cured. We then elevated the deep margin with a continued single horizontal layer of Harmonize A2.



Image 9: Followed by building the proximal wall using the same composite.



Image 10: Before removing Quad ring, wedge and matrix band, we made sure a smooth transition from gingival to occlusal was obtained.



Image 11: One horizontal and two oblique layers to replace the enamel layer were placed and cured individually.



Image 12: Finally, we removed the rubber dam, adjusted occlusion, finished and polished using a combination of multifluted carbide burs, enhance points and soflex disc.