Cosmetic Bonding of Fractured Teeth with Composite Resin

This is an elegant and conservative restoration of fractured anterior teeth. Once again, one great case leads others to share similar cases. Log on to the message boards of Dentaltown.com today to participate in this discussion and thousands more.

It has been a while since I have posted any cases. Here are some cases that we used composite to repair fractures of anterior teeth. I love the conservative dentistry as an alternative to porcelain. Also with less prep and composite it can be easier to get a match better than porcelain in some cases. Any comments critiques or questions welcome!

Note: occlusion was addressed in the case below on the right!

[Posted: 11/23/2008]
Hi guys my main materials are mostly from Cosmedent.
Renamel MicroFill, Renamel MicroHybrid, tints and opaquers from Renamel
Optibond Solo.

Technique wise the simplest way to do these types of cases is to use a silicone matrix from a wax-up. The matrix should be made from an accurate impression capturing the incisal and lingual anatomy of the wax-up.

If you search out Newton Fahl’s bonding technique you can find more information on how to fabricate a matrix.

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Having a matrix in the mouth when building up the first layers of composite takes out a lot of the guesswork. In a nutshell my technique follows Newton Fahl's Prep involves judicial beveling out to infinity. Layering technique is as simple or complex as you want to make it depending how polychromatic the adjacent tooth is. The first layer must be as opaque as possible to block out light transmission through the composite. Sometimes a thin layer of opaquer spread over the tooth composite junction will help to camouflage this area. Next steps involve building up mamelons and internal anatomy to match adjacent tooth. Internal tins as needed. Finish with proper shade of microfills and incisal shades as needed. Texture and tint surface as needed. Hope this helps.

These look awesome but I'm very skeptical that they will last. How do you address incisal edges with in relation to technique? What is the longevity of an incisal edge like an incisor?

This one is still in after four years. Sure, four years isn't a long time, but if it's lasted four years, I have no reason to believe it won't keep going for a long time. If it was going to fail (because of the size), it would have failed by now. I've posted this case before; patient is about 12 years old. He still comes to see me for regular recalls. Saw him a month ago, or so. I'll have to try to remember to take a follow-up photo.

Figure 1: Traumatically fractured tooth. "Dazzle camouflage" bevel aka "bevel bomb."

Figure 2: Teflon tape placed on adjacent tooth. Dentin shade build-up with "developmental lobes."

Figure 3: Stain placed over dentin (under enamel layers).

Figure 4: Adding enamel layers.

Figure 5 & 6 (p. 22): Teflon tape removed. Shaping with carbides. That bluish thing on the mesial gingiva is retraction cord.
Figure 7: More incisal shaping with carbide and then fill with clear enamel composite.

Figure 8: Up close and personal! Not bad, I think! A hair too much of clear enamel on the mesial-incisal angle, though.

Good questions about longevity. Occlusion definitely needs to be addressed in cases like these. I have redone enough of my own cases to know! If needed, I perform mandibular enameloplasty to achieve proper anterior guidance and protect these restorations. When anterior guidance is correct I rarely see any problems. When they do chip, it’s an easy fix.
Mike, beautiful result! Can you fill in the voids with my questions here? So, you place cord and Teflon tape (like plumbers tape from a hardware store?) on the adjacent tooth. Then do you place some opaque composite on the lingual of the tooth and cure? After that do you essentially have a wall to pack the remaining composite against to get a contact? After removing the Teflon and finishing can you get a contact without a wedge? Could you clarify this description a bit for me because these are the most challenging aspect of restorative for me and I want to improve my embrasure and contacts in these Class IVs. Thanks!

No wedge used in this case. No doubt, it’s a challenge to free-hand a case like this, but I find if I use a wedge and mylar strip, I get a rather straight mesial profile and it just doesn’t look right.

[Posted: 11/23/2008]

Ha! Just found out I did take a recall photo on that case, last August. Original treatment was June 2006.
Very very nice Mike.

Don't egg me on, Bruce!

One more composite case! Young girl, previous trauma had been previously restored (with pins!).

Would anyone here have done crowns here?

Not my best work, but girl and mom were very happy!

Edit... If I recall, I think I re-bonded the original tooth fragments back on (after removing the pins). I'm pretty sure I couldn't achieve such perfect incisal translucency and halos with composite.

This is an excerpt from the Dentaltown message boards. To read the complete thread or to join in the conversation please visit www.towniecentral.com, type in “Cosmetic Bonding” in the search box and click, “Search.”