Composite Case
Rebuilding a bulimic patient’s devastated dentition using direct composite

This 33-year-old patient’s bulimia had devastated her dentition; her upper posterior teeth were missing a ton of tooth structure. She had seen several dentists in her home state of Florida but the treatment plans ran up to $80,000, which she couldn’t afford. (Who could?!) Many of the treatment plans included root canal treatments (RCTs) on most of her upper teeth, and crowns on all her teeth.

The patient had already undergone typical rehab treatment (RCTs and crowns) on her four front teeth, and because she could not afford more of this conventional treatment, she used the internet to research dentists who use direct composite to restore badly wrecked dentitions. One was in Italy, another in Poland; because I was (relatively) nearby in Canada, she called and we talked about her teeth. She sent photos and X-rays, and after multiple discussions, I decided that I could restore her teeth with direct composite. She flew up to Perth-Andover, New Brunswick, and stayed for four days while I worked on her teeth. The procedure took two days and about 15 hours. She requested no anesthetic, so I didn’t use any. Tough lady!

by Dr. Terry Shaw

Fig. 1: Her upper teeth were badly eroded; she told me she had been bulimic for more than 12 to 15 years; she’s 5 foot 4 and less than 100 pounds. Not sure she is cured now, but she eats only organic food and is somewhat of a vegan.

Fig. 2: I sandblasted her dentin surfaces to remove stains and any crud. No way I would put a bur to the dentin!

Fig. 3: You can see the outline of where the pulps were, but secondary dentin has formed and pulps have shrunk a ton.

Fig. 4: Palatal gingiva was higher than the remaining tooth structure.
Fig. 5: The lower molar teeth were restored a few months ago but, in my opinion, the restorations had been overfinished and ground down too much. I restored the molars and right premolars to provide more occlusal function and level the bite.

Fig. 6 and 7: To restore these teeth I sand-blasted the occlusal surfaces, then etched the whole occlusal surface, applied bonding resin and composite, and cured the composite. Then, I adjusted as needed to get more occlusal contact and restorations that weren’t as overcontoured or hollowed out.

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Fig. 8: Panorex. Her upper first molars were extracted when she was young; as you can see, the second molars have drifted mesially.

Fig. 9: Maxillary teeth were missing lots of tooth structure. They were basically buccal walls of enamel.

Fig. 10: Some decay deep between #15 and #16. It was difficult getting good interproximal contact relationships with the depth of the decay.

Fig. 11: I used ConveXi-T contoured thin metal matrix bands while restoring molars, including this upper right second one. The patient’s first permanent molars were extracted when she was young.

Fig. 12: Right canine with Premier Cure-Thru Clear Cervical Matrix, with a wedge used to seal the matrix at the gingival margin. I place composite and wedge tighter afterward, and sometimes use the tip of my explorer to push between the matrix and wedge to get a better marginal seal with the composite at the gingival margin.

Fig. 13: Lower teeth were chipped and eroded as well. I etched, primed and applied bonding resin to these seven teeth all at the same time, restoring #21–#27.

Figs. 14 and 15: Two teeth left to restore. When I restored these remaining ones, I added more composite to the lateral teeth that already had been restored, to help lengthen them more.

Fig. 16: Left upper second premolar with contoured thin metal matrix in place.

Fig. 17: Outline of pulp is evident. No pulp protection was used, except for that provided by forming a hybrid layer by etching, priming and bonding resin (which is all you need anyway).
Fig. 18: Upper teeth in occlusion. At this point I had restored the left lateral (which previously had been a porcelain crown) and left central (a composite crown; more information on this will follow at Fig. 27.) I used 7901, 7408 and 7404 carbides to finish and shape composite, and superfine Sof-Lex contouring and polishing disks from 3M to polish the labial surfaces. (The 7408 carbide has 30 flutes and leaves a beautifully polished surface on the occlusal that requires no additional polishing.) In all, 24 teeth were restored.

Figs. 19 and 20: Right upper side.

Figs. 21 and 22: Left upper side.

Figs. 23–26: The patient’s right lateral and central teeth were crowns that had been done a few years back. When she first came in, the only occlusion she had was on these crowns and some light occlusion on the stumps of what was left of her upper teeth. (In my haste to get her fixed up, I forgot to take photos from the front—the first ones any normal dentist would take!)

Fig. 27: Her left central was a composite crown with a metal post. It wasn’t great, so I removed some labial and palatal composite, sandblasted the composite and restored the palatal with Z250 A2 and the labial with Renamel Microfill dental composite A1. The left lateral was a crown that the patient wanted lengthened, so I used hydrofluoric acid around the crown for a couple of minutes, then applied silane for one minute and dried. I then added bonding resin and Renamel A1.5 to the labial surface, cured, and treated the palatal surface with Z250 A2. I’ve performed similar treatments many times, so I’m not concerned about the longevity of this treatment—it’s basically a composite “crown” over and around a porcelain one. Sandblasting, contraction shrinkage of the composite and hydrofluoric acid etching will give this strength and longevity.

Fig. 28: Restored upper teeth.

Fig. 29: Restored lower teeth.

Fig. 30: Pan showing the amount of composite that was used. Lab fee was zero, and I used one $50 syringe of composite. (No night guard necessary, in my opinion; the composite will wear and protect itself.)

Figs. 31 and 32: You can see the depth of restorations on #17 and #18. These were hard restorations to do, especially the ones where most of the tooth was missing. Hard to isolate and keep matrix bands in place. I earned my pay on these teeth.
Fig. 37: The only teeth I didn’t restore were the patient’s right central and lateral, and her lower left first and second premolars. They were not badly eroded, and the restorations would have been too thin, and therefore prone to fracture. You need some bulk for composite to be strong.

Fig. 38: Right side view

Fig. 39: Left side view.

Fig. 40: Patient was excited with her new teeth. Hopefully most of her dentin has been covered with composite to help negate any future acid attacks and to allow her to maintain her teeth for years to come.

Products used

- **ConveXi-T** contoured matrix bands, from Clinician’s Choice (U.S.) and Clinical Research Dental (Canada)
- **Cure-Thru** Clear Cervical Matrix, from Premier
- **Filtek Z250** universal restorative, from 3M ESPE
- **Renamel** Microfill dental composite, from Cosmedent.

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