Cervical Restoration – Fast, Easy and Long Lasting

By: Dr. Joe Pelerin

In the following case I am going to restore three cervical abfracture lesions on teeth 20, 21 & 22. (Fig. 1) A mounting body of evidence suggests that these lesions are largely caused by clenching & grinding of teeth & flexural and stress forces imparted to these areas.


Fig. 1

If these lesions are not carious and are not sensitive to air, the procedure can generally be done without anesthesia. Using a long, thin-pointed diamond to bevel the enamel just above the cervical abfracture lesion allows me to later blend the composite both into the abfracture lesion and the enamel above. (Fig. 2) Typically I will extend this bevel two to three millimeters.


Fig. 2

After completing the bevel, use air abrasion and completely remove the smear layer from the entire abfracture lesion and then also air abrade the bevel area. (Fig. 3) I prefer the strength and durability of a total etch technique. Next, etch all three teeth for 15 seconds with phosphoric acid and then rinse the etch away. (Fig. 4)


Fig. 3

After isolating, apply Hemaseal & Cide to the cervical dentin cementum area. Wick away the excess leaving it slightly moist. (Fig. 5) I use Hemaseal & Cide under everything I do including endo teeth because it is the best antimicrobial ever tested, reduces micro-leakage and increases bond strength unlike some desensitizers and antimicrobials that actually can affect the bond strength unfavorably. Next, apply OptiBond Solo Plus, with a separate primer and resin, first, applying the primer to the entire lesion and also to the enamel and air thin, then cure it. Then place the resin and scrub it in and air thin and cure as well. (Fig. 6)


Fig. 4

Fig. 5

In this case I am going to use NanoCeram Bright, by DMP. (Fig. 7) I use a few different composites in my office and I found NanoCeram to be a proven, cost effective nano hybrid composite that yields excellent results in any application. Because these lesions are relatively shallow, a bulk buildup is not necessary. Take a composite instrument, apply it to one tooth at a time and contour it to the mesial and the distal (Fig. 8) and then bring it up into the enamel bevel and sometimes I like to use 'digital' technology taking my finger with a little of the resin helping to spread and blend this in. (Fig. 9) As you blend this from the abfracture lesion extending a couple millimeters into the enamel, you will find that the restoration blends in and becomes a lot less visible and more natural. Also, as you are extending this composite bonding into the enamel, the bond strength is enhanced and these restorations will last longer and have less micro leakage. NanoCeram Bright composite helps a great deal in the sculpting since it is not sticky and easy to use.


Fig. 6

Fig. 7

During the sculpting I like to take an instrument of choice, sometimes I use an explorer, and just go right at the gingival margin trying to be sure the composite does not have a ledge or overhang. This will diminish the trimming I will have to do after the restoration is cured. After shaping and curing all three restorations, come back with the same tapered diamond that was used to bevel the enamel. Blend each of the restorations to make sure there is not any excess, the contour is uniform and particularly go over the cervical area to make sure there is no ledge or overhang in that area. (Fig. 10)


Fig. 8


Fig. 9

After working all three restorations with the diamond, come back with a very thin pointed carbide and go over these restorations from the enamel surface down to the gingival surface and not so much contour, but smooth the roughness that the diamond imparts. (Fig. 11) After finishing with the diamond and the carbide, use a polishing cup alone. I like to use Axis polishing cups which are self-disintegrating and find these to be fast, effective and yield great results. (Fig. 12) After polishing alone with the cup, place some diamond polishing paste into the cup and go over these restorations again to give them a nice finish. (Fig. 13) DMP NanoCeram has the highest polishing gloss and seems to maintain the gloss better over time than many composites.


Fig. 10


Fig. 11


Fig. 12


Fig. 13

Patients are very pleased with both the appearance of the teeth as well as the ease of the clinical procedure. NanoCeram composite's low shrinkage rate and also low water sorption rate is ideal for this or any application. This procedure should at least be offered to the patient to help prevent secondary decay that can happen more easily at these exposed abfracture lesions and also in many cases can keep the patient more comfortable.

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