

HOW TO

PREVENT SUBGINGIVAL MARGINS WITH RESIN TEMPORARY CEMENT

How a new cement from VOCO can help you avoid problems in partial coverage restorations.

Information provided by VOCO America.



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ONE OF THE BIGGEST REASONS

dentists avoid partial coverage restorations like onlays and veneers is problems related to how to temporize or provisionalize preparations without mechanical retention or axial walls. A new cement from VOCO, Bifix Temp, could be a great help in overcoming this obstacle.

Crown preparation with subgingival margins is part of the history and fabric of dentistry. Crowns are often preferred to partial coverage restorations because of their perceived simplicity. Many times, it's just because crowns are easier to temporize!

With the proper use of new materials like Bifix Temp (VOCO) and supragingival adhesive restorative techniques, crowns with subgingival margins should be the exception and not the rule. Utilizing supragingival, minimally invasive adhesive restorative techniques to intentionally keep restorative margins supragingival can render traditional mechanically retained restorations like full crowns virtually obsolete. The greatest benefit adhesive dentistry can bring to a patient is periodontal health, in addition to many other attributes, as well as making dentistry easier and more predictable.

Disadvantages of axial walls and mechanical retention

The lack of trust in adhesion, the perceived need for mechanical retention and the need for an axial wall with minimum heights of 3 to 4 mm often leads to placing the margins subgingivally as we frequently run out of tooth structure after occlusal reduction and caries removal, especially on short teeth like second molars. Reitemeier concluded in a clinical research study that subgingival crown margins double the chance of periodontal bleeding upon probing. It is well-known that calculus and root surface roughness have a very damaging effect on our patients' periodontal health, and we are swift to eradicate such periodontal enemies.

Nevertheless, it is at least as damaging, if not more, to have overhangs, open margins or any subgingival restorative margin as it is permanent tartar. Additionally, axial wall preparation has the significant negative side effect of allowing the diamond rotary cutting instruments close proximity to the pulp thus increasing the temperature and irritating it.

Preventing subgingival margins

The location of the restorative margins should not be left to luck. Using a supragingival protocol, like the five principles of supragingival restorative dentistry, helps prevent or minimize subgingival restorative

margins. The second principle is to avoid boxes, axial wall reduction or any other mechanical feature that is counterproductive to staying supragingival or to adhesive dentistry. Following this principle means that even after caries removal, old restoration removal and occlusal reduction we end up with a tooth that is flat just above the gum (Fig 1). No effort will be made to create axial walls, boxes or any retentive feature as any of this would lead to subgingival margins and would be counterproductive. We must trust in adhesion. In fact, unretentive flat preparations are better suited for adhesive dentistry (Fig. 2). They are better mechanically and easier to cement, as well as to prepare. One large problem with unretentive preparations is how to retain temporaries or provisional restorations.

Making temporaries for preparations without mechanical retention

Predictable provisional restorations for onlays and veneers are indispensable although many find



them difficult. Many choose to do leave-in or shrink wrap provisionals because they lock into place. Leave-ins have the disadvantage of usually leaving too much flash in the gums. This often causes inflammation and bleeding upon provisional removal, which increases the difficulty of resin

AT A GLANCE

1. After caries removal, old restoration removal and occlusal reduction, the tooth is flat just above the gum.
2. Unretentive flat preparations are better suited for adhesive dentistry.

3. Bifix Temp is strong and stiff, and locks onto any undercuts, interproximal spaces, etc.

4. Bifix Temp's translucency allows for excellent blending of the temporary restoration.

cementation. Additionally, leave-in temporaries become a mostly doctor procedure as all the cleanup of the excess provisional material has to be done with a handpiece or a 12 blade, both of which are doctor-only procedures. In my practice, provisionals are mostly performed by assistants. I prefer they remove the provisionals, trim margins and adjust occlusion extra-orally, then cement. This technique gives me cleaner margins, which means during cementation, the gums will be less inflamed, leading to less potential bleeding and making cementation a snap. It also has the advantage of being mostly assistant work, thereby freeing me up to see other patients.

For an onlay temporary, take a preoperative impression of the tooth using a hydrophilic alginate substitute like Silginate (Kettenbach). For veneers, make a silicone putty matrix of a suitable wax-up. After tooth preparation, fill the silicone matrix with some type of bis-acryl temporary material. One of the best



Bifix Temp

- ▶ Dual-cure resin-based temporary cement
- ▶ White translucent shade provides high esthetics
- ▶ Secures long-term temporaries with strong adhesion

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on the market is Structur 3 (VOCO). It has excellent translucency and strength and a top surface so smooth it makes polishing unnecessary. Removal of flash can be done in seconds using a SoftFlex Disk (3M).

The problem has always been that most provisional cements are too weak to support flat preparations without mechanical retention. Enter Bifix Temp (VOCO), a resin-based temporary cement that shrinks like any composite while curing. It is strong and stiff so it locks on to any undercuts, interproximal spaces, etc. (Fig. 3). If necessary, I may spot etch and bond; Bifix Temp (VOCO), being a resin-based temporary cement, will adhere to the bonded spot very well. I have used resin temporary cements for many years, but I find Bifix Temp (VOCO) superior because it is dual-cure, making the procedure much faster. It also has great translucency, allowing for excellent blending of the temporary restoration (Fig. 4), which is very important for veneer cases, and cleanup is easy. It is important to mention Bifix Temp (VOCO) as a resin cement can bond to resin buildups so a layer of Vaseline should be placed over the buildup before cementation to avoid complications.

Using Bifix Temp can take away one of the biggest excuses to cut full crowns, and hopefully will encourage more dentists to start using supra-gingival minimally invasive adhesively retained restorations like veneers and onlays more often. ●

ABOUT THE AUTHOR

Dr. Ruiz is director of the Los Angeles Institute of Clinical Dentistry and former director of USC's Esthetic Dentistry Continuum. He has published many research and technique papers and has been named one of the "Top Leaders in Continuing Education" by Dentistry Today for the past eight years.



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