

Perfecting Class V restorations

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Introduction

Class V restorations target cervical lesions in the gingival third of the buccal or lingual surfaces of teeth, resulting from caries, cervical abrasion, erosion, or abfraction. Restoring these lesions is crucial for reinforcing tooth structure, managing hypersensitivity, and preventing progression.

The challenges in Class V restorations stem from the need to bond to both enamel and dentin. Composite resins are the preferred material due to their esthetic qualities and strong adhesion when using modern adhesive systems. Selective etching improves bond durability by enhancing mechanical interlocking with enamel and forming a stable hybrid layer with dentin.

Employing incremental layering techniques can reduce polymerization shrinkage and internal stress on bonded interfaces. Overall, successful Class V restorations rely on meticulous attention to bonding techniques and material handling, leading to long-term esthetic and functional outcomes tailored to the cervical region.



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1. Initial situation

The patient presents with cervical wear lesions on teeth 14 and 15. The absence of clear boundaries between healthy tissue and the lesion, lack of occlusal wear facets, and striations at the lesion's base suggest a mixed origin of erosion and abrasion.



2. Isolation*

For good isolation, an alternative techniques involve using a mouth retractor, a Teflon cord slipped into the sulcus, and liquid damming in interdental spaces was used here



3. Preparation

The cervical wear lesion exposes sclerotic dentin, which has a hypermineralized layer that is acid-resistant and hinders quality bonding. To enhance adhesion, mechanically reduce the thickness of this hypermineralized layer using a fine-grain round bur.



4. Beveling

Creating a long enamel bevel with a coarse flame bur improves the optical transition between the natural tooth structure and the composite resin.

5. Sand-blasting

Sand-blasting with aluminum oxide, whether dry or wet, cleans surfaces and smooths sharp angles, thereby improving adhesion without compromising bond strength.



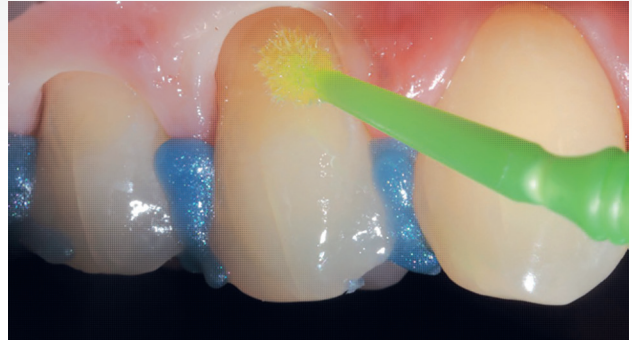
• Rubber dam isolation: the gold standard

When rubber dam isolation can be placed in a correct manner, it's the most effective and practical way to isolate. It offers the highest level of security in moisture control and it makes the rest of the procedure more comfortable. When its placement becomes extremely challenging, other methods, as shown in this case, offer a good alternative.



6. Etching enamel

Selective etching with 37% phosphoric acid around the enamel margin of the lesion enhances restoration longevity by reducing bacterial percolation.



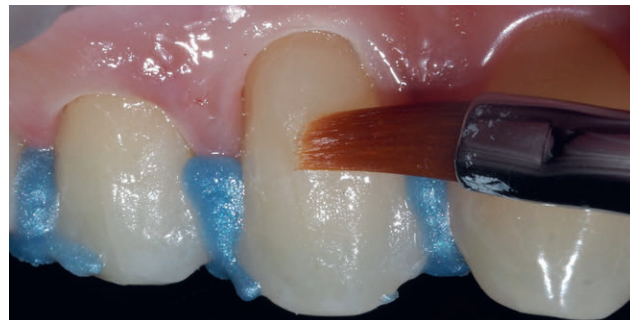
7. Adhesive system

Since sclerotic dentin is more mineralized than healthy dentin, it has a higher hydroxyapatite content, making acid etching unnecessary and preserving the hydroxyapatite for stronger bonding. In this case, G-Premio BOND by GC is used. The adhesive is applied by vigorously rubbing a microbrush on the lesion surface for 10 seconds, followed by drying for 10 seconds and light curing for another 10-20 seconds.



8. Restoring Dentin

For older patients with translucent teeth, a warm shade with low opacity, like A3.5 from the G-ænial Anterior range, is ideal. The everX Dentine can also be used when the patient presents with a mid-opacity A2 shade.



9. Restoring Enamel

If the lesion is small; it can be fully restored with dentin. For larger lesions, a stratified approach is necessary. The final layer, made of enamel composite, provides the restoration's brightness. For gray teeth, the G-ænial Anterior TE will yield excellent results, while for brighter teeth, the G-ænial Anterior JE is recommended.



10. Polishing

Light Cure with Glycerin Gel – Prevents the oxygen-inhibited layer and keeps polishing tools clean. Release Teflon Cord – Use a fine diamond flame bur; leaves sulcus open for easier gingival polishing. Abrasive Disc Polish – Discs (e.g. Pop 3M™ Sof-Lex™) refine proximal contours and polish the facial margin. Final Polish – Use silicone cups, then finish with a brush and paste or modern wheels (e.g. Spiral Sof-Lex™ Diamond Polishing Spiral).