

Gold Inlay Procedures for Extensive Cervical Lesions

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This clinical technique article presents a design and procedure for Class V inlays that simplify the operation. Operating time is minimal. Both preparation and impression combined require less than an hour to complete, and the time required for seating and finishing is approximately the same. The inlays shown below were prepared from 9:00 AM to 10:00 AM (including time for intraoral photography), and seating/finishing was done from 4:00 PM to 5:00 PM on the same day (laboratory work was done in-house).



Figure 1. *Prototype of the inlay preparation on an Ivorine tooth.*

The preparation has an outline similar to a Class V gold foil (Ferrier design) but can produce extremely durable restorations for extensive carious lesions

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that would be too large for direct gold application. Gingival margins are rounded to follow the gingival tissue contour, and retention is derived from the incisal wall paralleling the opposing gingival wall. The proximal walls offer resistance form, but the flair of these walls does not contribute to the retentive form.

These inlays are subjected to minimal displacement forces and are not in a functional area of the tooth, which may help provide the long-term success of this restoration. Type I gold is recommended to facilitate finishing.

Conflict of Interest

The authors of this manuscript certify that they have no proprietary, financial, or other personal interest of any nature or kind in any product, service, and/or company that is presented in this article.

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Figure 2. *Extensive erosion and caries at the gingival area of the mandibular right first and second premolars.*



Figure 3. The gingival tissues are retracted with a double cord (Gingipak, Belpoint Co, Camarillo, CA, USA) saturated with aluminum chloride. (Hemodent, PremierDental, Plymouth Meeting, PA, USA)



Figure 6. A #56 bur is used to round the proximal and gingival walls and to flatten the axial wall.



Figure 4. The occlusal wall is prepared with a small diamond disk and is cut parallel to the occlusal plane of the rest of the arch.



Figure 7. A fine cuttle disk is used to smooth the incisal walls that were left slightly roughened by the diamond disk.



Figure 5. Margins are exposed as cords are removed. (Note: No rubber dam is placed.)



Figure 8. Cavity preparations are finished (note that the incisal point angles were slightly rounded by the #56 bur). The gingival tissues are retracted with a single strand of packing cord (or two strands if the depth of the sulcus allows it).

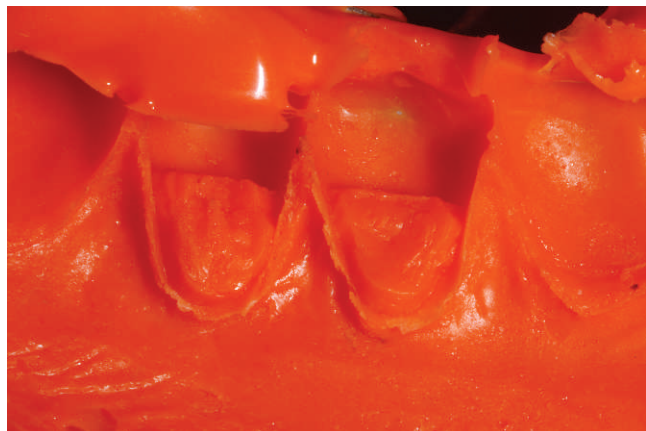


Figure 9. The impression material is injected into the open sulcus and cavity using an impression tray that can be easily removed. Cavities are temporized with a soft plastic provisional material. (Fermit, Ivoclar Vivadent, Amherst, NY, USA)



Figure 10. Impression is poured with die stone.



Figure 11. Wax patterns are formed on the dies.



Figure 12. Patterns are sprued and placed on the sprue former.



Figure 13. Patterns are invested in the casting ring using 15 cc of water and 50 g of investment (Novacast, Whip-Mix Co, Exeter, KY, USA) for maximum expansion. Castings are cut from the sprue but not finished. The sprue remnant is reduced with a small diamond point after cementation when the cement is set.



Figure 14. One half-inch disks of medium garnet, fine sand, and fine cuttle are used to finish the inlays (including the margins).



Figure 15. *Finishing is completed with a rubber cup (ribbed, not webbed) and fine flour of pumice, followed by 15- μ m and 1- μ m aluminum oxide. (Micro Abrasives Co, Westfield, MA, USA) (Note that the inlays are not pre-finished prior to cementation but are only cut from the sprue.)*



Figure 16. *A similar inlay and gold foil have served more than 30 years.*