COMMENTARY

EFFECT OF FINISHING INSTRUMENTATION ON THE MARGINAL INTEGRITY OF RESIN-BASED COMPOSITE RESTORATIONS

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Finishing composite resin restorations can be difficult or relatively simple to achieve. The quality of the finished product can depend upon the technique used to restore the preparation as well as the techniques used to finalize the surface.

In this interesting study dealing with the effects of various finishing techniques on the marginal integrity, the authors identified a numbers of relationships. The negative control, which consisted of surfacing the composite resins with a coarse diamond, produced the greatest amount of marginal gaps. It is interesting to note that coarse finishing instruments can also have a negative effect on the surface of the restoration. In a clinical finding (unpublished data) at the University of North Carolina, it was shown that, during this routine removal of the excess composite resin (contouring and finishing), a sensitized loss of the restorative material was often absorbed. Examination of baseline die stone replicas of the finished restoration demonstrated approximately a 25 μm loss of composite at the composite resin–margin interface. There also is concern on my part that finishing with coarse diamond instruments may result in a crazing or cracking of the composite resin surface.

The authors also demonstrated that the use of fine finishing diamonds produced the best marginal integrity as opposed to straight fluted burs. While the fine, extra-fine and ultra-fine finishing diamonds produced the best results, the smallest incidence of defective margins occurred when all three type of finishing diamonds were employed. The results of the study have direct clinical applications. Regardless of the means for eliminating the excess composite resin, it is suggested that a series of fine finishing diamonds be employed during the final surfacing of the restorations.

Since only one type of restorative material was used, it could be suggested that the use of fine finishing diamonds be used to surface other composite resins with different edge strengths.

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