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Influence of filling technique and curing mode on the bond strengths of composite cores to pulpal floor dentin

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Abstract:
This study evaluated the influence of filling technique and curing mode on the microtensile bond strengths (MTBS) of composite cores to pulpal floor dentin. Access cavities of human molars with pulpal floor dentin were restored with a two-step self-etch adhesive system, Clearfil Liner Bond 2V and a composite core, Clearfil DC Core Automix, using different filling techniques and curing strategies. A flowable resin composite, Clearfil Flow FX was placed on the cured adhesive resin prior to restoration with a composite core. Packing the composite in the access cavity was performed in bulk with or without light curing or using an incremental technique with light curing. Microtensile bond strengths to pulpal floor dentin were measured after 24 hours storage in water. Light curing and incremental technique had positive effects on the MTBSs. Lining with a flowable resin composite did not significantly improve the MTBSs, however, influenced the failure mode after debonding. Non-lining and bulk filling with chemical curing strategy provided the lowest MTBS.

Key words:
Composite resin core, Filling technique, Pulpal floor dentin

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