

Marginal adaptation of three self-adhesive resin cements vs. a well-tried adhesive luting agent.

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This in vitro study compared the marginal adaptation of three self-adhesive composite cements with the clinically well-tried dentin adhesive system Panavia F 2.0. A total of 32 Empress 2 all-ceramic MOD-inlays (eight in each group) were luted using the self-adhesive composite cements Maxcem, Multilink Sprint, and RelyX Unicem Clicker; Panavia F 2.0 served as a clinically well-tried control. Each luted inlay underwent long-term water storage of 90 days as well as additional mechanical and thermal loading to simulate oral service. Marginal integrity was evaluated in both dentin and enamel finishing lines using scanning electron microscopy (SEM) and dye penetration tests. Dye penetration was lowest for Panavia followed by RelyX Unicem. Maxcem and Multilink showed a considerable dye penetration of up to 60%. After aging, SEM analysis revealed a reduction of "perfect margin" areas for Multilink Sprint and RelyX Unicem in enamel and for Maxcem and Multilink in dentin. Compared with the well-tried system Panavia- which was assumed as the golden standard of adhesive luting systems-only the self-adhesive luting agent RelyX Unicem showed similar results of marginal adaptation after long-term water storage.

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