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Contraction Gap *versus* Shear Bond Strength of Dentin Adhesive in Sound and Sclerotic Dentins

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Abstract:
To evaluate the effect of a dentin adhesive on sclerotic dentin, contraction gap width and shear bond strength were measured. Dentin cavity wall was pretreated with an experimental dentin bonding system with and without a dentin primer, or with a commercial dentin bonding system. In the experimental dentin bonding groups, contraction gap width of sclerotic dentin was significantly smaller than that of sound dentin when the cavity was not primed with glyceryl mono-methacrylate. For each individual tooth, the correlation between contraction gap width and shear bond strength was insignificant. In conclusion, the bonding efficacy of dentin bonding systems to sclerotic dentin was superior to that of sound dentin. Further, it was determined that it was impossible to detect the interaction between the polymerization contraction stress of resin composites and the efficacy of dentin adhesives by measuring bond strength

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