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Title	Is the double-sided microtensile bond strength test appropriate to assess the performance of adhesives to dentin? [an abstract of entire text]
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学位論文内容の要約

学位論文題目

Is the double-sided microtensile bond strength test appropriate to assess the performance of adhesives to dentin?

(両側微小引張試験は象牙質歯質接着性を評価する際に妥当か?)

[Objectives] To assess the bond strength of self-etch adhesives to dentin and to verify the appropriateness of double-sided compared to the conventional microtensile bond strength test in dentin.

[Material and Methods] EXP-1: Human dentin surfaces were bonded with self-etch adhesives: Clearfil™ SE Bond2 (SE), Clearfil™ Universal Bond (CU), Scotchbond™ Universal (SB) and G-Premio Bond (GP) for conventional μ TBS test. EXP-2: Different dentin discs thicknesses (0.5, 1.0, 1.5, 2.0 mm) were bonded with SE and CU for the double-sided μ TBS test. Both adhesives were tested simultaneously in the same beam. EXP-3: 1-mm dentin discs were used for double-sided μ TBS test and bonded with CU, SB and GP (six combinations) either on coronal or pulpal side of dentin disc. Samples were stored in distilled water (24 h, 37°C), sectioned into 1×1 mm beam, and μ TBS test was performed. Failure mode was observed using stereoscope and SEM. Data were statistically analyzed by ANOVA and post hoc tests ($p<0.05$).

[Results] EXP-1: Differences were found on μ TBS conventional test for all adhesives. EXP-2: Dentin thickness of 1 mm showed to be the most appropriate substrate for the double-sided μ TBS test of tested adhesives to dentin. EXP-3: Differences on bond strength were found for adhesive's combinations. SB-CU combinations showed the highest and no significant different μ TBS values (43.86 and 41.20 MPa).

[Conclusions] Within the limitations of this study, double-sided μ TBS test is not always applicable to assess the performance of adhesives to dentin. It will be applicable when if two different adhesives shown almost similar bond strength values on conventional μ TBS test.