



Title	The effect of dentine surface preparation and reduced application time of adhesive on bond strength [an abstract of entire text]
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Citation	北海道大学. 博士(歯学) 甲第13045号
Issue Date	2018-03-22
Doc URL	http://hdl.handle.net/2115/70704
Type	theses (doctoral - abstract of entire text)
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学位論文内容の要約

学位論文題目

The effect of dentine surface preparation and reduced application time of adhesive on bond strength
(切削方法の違いと接着材処理時間の短縮が象牙質の接着強さに与える影響についての検討)

博士の専攻分野名称 博士 (歯学) 氏名 Saikaew Pipop

This study evaluated the effects of surface preparation and the application time of adhesives on resin-dentine bond strength with universal adhesives.

Sixty molars were cut to exposed mid-coronal dentine and divided into 12 groups (N=5) based on three factors; (1) adhesives: G-Premio Bond, Clearfil Universal Bond and Scotchbond Universal Adhesive; (2) smear layer preparation: SiC paper ground dentine or bur-cut dentine; (3) application time: shortened time or as manufacturer's instruction. Fifteen resin-dentine ticks per group were processed for microtensile bond strength test after storage in distilled water (37°C) for 24 h. Data were analyzed by three-way ANOVA and Dunnett T3 tests ($\alpha=0.05$). Fractured surfaces were observed under scanning electron microscope (SEM). Another 12 teeth were prepared and cut into slices for SEM examination of bonded interfaces.

μ TBS were higher when bonded to SiC-ground dentine according to manufacturer's instruction. Bonding to bur-cut dentine resulted in significantly lower bond strength for CU on SiC and GP on bur-cut dentine. SEM of fractured surfaces revealed area with a large amount of porosities at the adhesive-resin interface. This was more pronounced when adhesives were bonded with a reduced application time and on bur-cut dentine.

From the result of current study, it might be concluded that the performance of universal adhesives can be compromised on bur-cut dentine and when applied with a reduced application time.