

<POSTER PRESENTATION III>

Poster Viewing

10:00-17:00(In front of Room 402)

Poster Discussion(Free communication)

10:30-12:00

The effect of adhesive property on microtensile bond strength of human dentin

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I. Objectives

The purpose of this study was to evaluate the effect of adhesive property on microtensile bond strength and to determine the failure mode.

II. Materials and Methods

Flat occlusal dentin surfaces were prepared using low-speed diamond saw. The dentin was etched with 37% phosphoric acid. The following adhesives were applied to the etched dentin according to manufacturer's directions; Scotchbond Multi-Purpose in group 1, Primer&Bond NT in group 2, Scotchbond Multi-Purpose followed by Tetric-flow in group 3. After adhesive application, a cylinder of resin-based composite was built up on the occlusal surface. Each tooth was sectioned vertically to obtain the $1 \times 1\text{mm}^2$ "sticks". Microtensile bond strength(MTBS) were determined. Each specimen were observed under stereomicroscope and SEM to examine the failure mode. Data were analyzed using one way ANOVA.

III. Results

The results of this study were as follows;

1. The microtensile bond strength values were; group 1($18.98 \pm 3.01\text{MPa}$), group 2($16.01 \pm 4.82\text{MPa}$) and group 3($17.56 \pm 3.22\text{MPa}$). No significant statistical differences were observed among the groups ($p > 0.05$).
2. Most of specimens showed mixed failure. In group 3(TR), there was a higher number of specimens showing areas of cohesive failure in resin.

IV. Conclusions

From the results of this study, There were no significant differences in MTBS among the groups; unfilled adhesive, filled adhesive, and unfilled adhesive followed by lining of flowable composite. However, this study was carried out in flat dentin surface, in prepared cavity, the influence of the filled adhesive and flowable composite might be more evident.