

## 2243 Wet And Dry Bonding Ultrastructural Comparison Of Three Dental Adhesives

Friday, July 16, 2010: 3 p.m. - 4:15 p.m.

Location: Exhibit Hall (CCIB)

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Objective: to compare the ultrastructure of resin-infiltrated dentine following the application of three different total-etch single-bottle dental adhesives in wet or dry conditions after etching. Methods: (30) human molar teeth were cut to expose a flat dentinal surface then divided into three groups of 10 teeth each (G1: XP Bond, G2: Excite, G3: Prime & Bond NT) teeth in each group were subdivided into moist dentin (GM) and dry dentin, (GD). The total-etch single-bottle adhesives were used with each moisture variation then composite (Tetric Ceram) buildups were incrementally applied according to manufacturer's instructions. The specimens were sectioned transversally in two halves, demineralized (6 Mol HCl, 30 seconds), deproteinized (5% NaOCl, 5 minutes), left to air dry for 24 hours in a desiccator under low vacuum pressure, gold sputter coated and examined under SEM at 5000X magnification. SEM micrographs were taken from the interface every 300 microns up to five pictures per sample to observe the bonding interface and analyzed by three calibrated examiners, using a four-step scale method. Each micrograph was blindly classified as follows 0=no tag penetration, 1=  $\leq$  10 tag/field, 2=  $\geq$  10 tags/field and 3= 2+abundant inter-tag ramifications. Results: All adhesive systems gave similar results in terms of interface morphology. There was no substantial difference in morphology of the dentine/resin interface between the adhesives studied (P= 0.685) (Kruskal-Wallis test). There was no statistically significant difference between wet and dry-bonding technique at the interface ( $p > 0.187$ ) (Mann-Whitney U-test, Wilcoxon W, Z). Conclusions: There was no substantial difference in dentine/resin interface morphology between the adhesives studied. Our results suggest that the hybrid layer of all three adhesives might be of similar quality.

See more of: [Ultrastructure and Morphology](#)

See more of: [Dental Materials 2: Adhesion - Leakage/Margin Assessments](#)