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## Ultrastructural Comparison between Wet and Dry Bonding Techniques of Two Different Solvent-Based Adhesives (Article)

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### Abstract

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The techniques of wet and dry bonding have been well accepted to facilitate clinicians under certain circumstances during bonding of composite restoration. Recent universal adhesive system with different solvent types have the ability to overcome excessive moist phenomena or dessication on the dentin surface and played an important role in bonding to dentin. To investigate and compare the ultra-structure characteristics of resin-dentin interfaces among two (2) different solvent-based adhesives using wet and dry bonding technique. Twenty (20) human molar teeth were cut to produce a flat dentinal surface then divided into two groups of 10 teeth each (G1: Tetric N Bond Universal, G2: Sprectrum Bond). Each group was subdivided into wet bonding (WD) and dry bonding (DB). Composite (Diafil) buildups were incrementally applied with 4mm in height. All specimens were viewed under SEM at 2000x magnification. SEM pictomicrographs were taken from the interface to observe the bonding interface and analyzed by three calibrated examiners. Each micrograph was classified as follows 0=absence of resin tag, 1= 10 ≤ resin tag/field, 2= 10 ≥ tags/field and 3= 2+abundant inter-tag complex. There was a significance increase of resin tags morphology of the dentine/resin interface in G1 under wet bonding technique, revealing higher numbers of tag penetration as compared to G2 ( $P < 0.01$ ) (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, ). Acetone based adhesive produce a better water chasing ability as compared to ethanol-water based adhesive, thereby this factor had affected the quality pattern of resin tags. The results of this study suggested that morphology of resin tags depended on the types of solvent of the adhesive used. © 2021, Journal of International Dental and Medical Research. All rights reserved.

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