

Bonding of a Multi Mode Adhesive To Different Enamel Prism Orientations

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Abstract

Aim or purpose: This study was carried out to investigate the microshear bond strengths of enamel. **Materials and Methods:** Enamel substrates (n=80) were categorized into two main groups (n=40) according to the enamel regions tested; either cuspal or midcoronal enamel. Each region was then prepared either in axial or tangential sections (n=20). Then enamel specimens were bonded with MMA either in self-etch (SE) or etch-and-rinse (ER) adhesion protocol (n=10). Nano-filled universal testing machine. Resin-enamel interface was assessed under environmental scanning electron microscope. Statistical analysis was carried out using SPSS. **Results:** Bond strengths of MMA on axially sectioned enamel were statistically significant (p<0.05) compared to tangentially sectioned enamel, also ER adhesion protocol recorded a statistically significant higher bond strength (p<0.05) compared to SE adhesion protocol. In all specimens the hybrid layer was clearly detected with intimate adaptation between the adhesive resin and enamel, ER specimens showed clear resin microtags, while SE specimens did not show resin microtags except in the case of the axially sectioned cuspal enamel. **Conclusions:** The bond strengths of the MMA is influenced by the direction of enamel rods. Application of MMA in ER adhesion protocol improves the resin-enamel bond strength. Powered by TCPDF (www.tcpdf.org)

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