

THE INFLUENCE OF THE DEPTH OF SUBSTRATE DENTIN SURFACE AND THICKNESS OF THE CURRENT RESTORATIVE SAMPLES ON BOND STRENGTH

ABSTRACT :

The effect of sample thickness and dentin depth on bond strength of composite, compomer and resin modified glass ionomer have been investigated. The occlusal surfaces of 84 non carious human third molars were used for bonding. 4 subgroups were tested, superficial dentin with sample thickness 1 and 2 mm and deep dentin with sample thickness 1 and 2 mm respectively. SBMP + /z100 composite showed 26 ± 3.2 , 22.3 ± 4.5 , 17 ± 3.2 and 21.8 ± 4.2 MPa shear bond strength to S.dentin 1 mm, Deep dentin 1 and 2 mm and S. dentin 2 mm respectively. Compoglass reported 10.4 ± 1.57 , 9.1 ± 2.3 , 5.0 ± 0.6 and 9.24 ± 3.1 MPa while, vitremer achieved 4.7 ± 0.49 , 3.2 ± 0.39 , 3.0 ± 0.53 MPa. It is concluded that the highest bond strength can be achieved to superficial dentin in thickness or increments not more than 1 mm. and that both dentin depth and sample thickness might influence the quality of the bond to dentin with an effect that varies from one material to another depending upon the mechanism of bond of each material and its chemical composition.