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Influence of provisional restorative technique in human dentin microtensile bond strength

C.J.R. Silva[1], R.V. Carvalho[1], M.B. Lopes[1], A. Gonini-Júnior[1]

[1]University of North Parana, Londrina, Parana, BR.

Bonded indirect restorations have been widely recommended as a treatment option in dentistry[1]. In traditional restorative technique, delayed dentin sealing (DDS) is performed after provisional phase, which can reduce the potential for dentin bonding due to provisional cement contamination [2]. Immediate dentin sealing (IDS), which consists of applying a dentin bonding agent to fresh cut dentin prior to placement of provisional restorations, may avoid dentin contamination[3]. The purpose of this study was to determine whether there were differences in microtensile bond strength to human dentin using DDS and IDS with different provisional restorative techniques. Forty eight freshly extracted human molars were obtained and divided into 6 groups (n=8). A flat surface in dentin was exposed to perform microtensile testing. All specimens were restored with a 3-step etch-and-rinse dentin bonding agent (DBA) (Scotch Bond Multi Purpose) and composite resin (Filtek Z350). While control (G1) specimens were restored directly with DBA and composite resin, other specimens were previously treated with provisional restoration for 24-h: (G2) acrylic resin + calcium hydroxid cement (Dycal); (G3) acrylic resin + eugenol-free cement (Temp Bond NE); (G4) IDS with DBA + acrylic resin + calcium hydroxid cement (Dycal); (G5) light activated temporary composite resin (Clip F) and (G6) IDS with DBA + light activated temporary composite resin (Clip F). After final composite resin restoration (Filtek Z350) and after 24-h water storage, the specimens were serially sectioned in “x” and “y” directions to obtain bonded sticks of about 0.8 mm2 to be tested in a universal testing machine at 0.5mm/min. Bond test data (MPa) were analyzed with ANOVA and Tukey post hoc tests (α=0.05). The mean (standard-deviation) microtensile bond strengths were 42,18(±2,63); 40,14(±3,46); 37,77(±0,93); 34,11(±1,08); 37,16(±2,61) and 23,79(±0,49) from G1 to G6 respectively. G6 was statistically different ($p<0,05$) from the other 5 groups. Scanning electron microscope analysis indicated surface contamination before definite restoration for G6. It could be concluded that adhesion to dentin was influenced when light activated temporary composite resin was used with IDS prior to placement of the definitive restoration.

[1] P. Magne, W.H. Douglas, Int. J. Prosthod., 12, 111 (1999).

[2] E.K. Hansen, E. Asmussen, Scan. J. Dent. Res., 95, 516 (1987).

[3] M. Stavridakis, I. Kreijci, P. Magne, Oper. Dent., 30, 747 (2005).