

- **Shear Bond Strength of Two Restorative Materials and the Degree of Conversion of Two Bonding Agents. *Egypt. Dent. J. Jan. 2008.***

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Abstract

Objectives: This study evaluated the shear bond strength values of two indirect tooth coloured restorative materials (In Ceram and composite resin inlays) and the degree of conversion of two bonding systems (Excite and One Up Bond F).

Materials and Methods: A total of twenty extracted human third molars were cleaned with hand scalers. Each tooth was embedded in fast setting epoxy resin, up to the cervical region. The occlusal enamel and dentin was ground flat to expose a dentin (0.8 mm in diameter). The specimens were divided equally into 2 Gps (I & II) related to the inlay type (10 each). Then each group was subdivided into two subgroups (A & B) according to the tested adhesive system used which was applied to the flat dentin surface following manufacturer's instruction. The laboratory fabricated inlays were bonded to the treated dentin teeth structure using Rely X Unicem luting cement. The specimens were subjected to shear stress and the values of bond failure were calculated. In addition the degree of conversion of the 2 adhesive systems used was analyzed using Fourier Transform Infrared Spectrometer. The data were tabulated and statistically analyzed at ($P \leq 0.05$).

Results: Shear bond strength values of ceramic restoration were higher than those of composite resin. In addition, One Up Bond adhesive recorded higher values with both ceramic and composite V.S. that of Excite. On the other hand, Excite bonding agents recorded high degree of conversion compared to One Up Bond.

Conclusion: From the results of this study it can be concluded that: 1-The material types affected the shear bond strength of the restorative material to the tooth structure. 2-The filler content of the adhesive system affected significantly both bond strength values and the degree of conversion.

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