Bond Strength of New Self-Etching Adhesives to Enamel and Dentin

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INTRODUCTION

Advances in resin adhesives technology led to great improvement in efficiency and durability of resin bonding to both enamel and dentine. Thereby, conservation of tooth structure and minimal invasive concept could be applied successfully.[1,2]

Recently, a new trend of bonding protocol with more simplification and less sensitivity to the clinical steps has been adopted. [3]"Universal or Multi-mode Adhesives" have been developed to be customized for the most suitable condition in each clinical situation. They can be used in etch and rinse mode or self etching mode. Moreover, these bonding agents can act as silane for glass ceramics and primers for metal alloys.[4]

Proper management of dental adhesive interface is a key issue for the success of dental restorations. This raises the requirement of an operator properly understanding the adhesive material being used, the tooth tissues that act as bonding substrates, and clinical protocol that should be precisely followed. So, it is essential for the operator to learn everything about the adhesive system used, its strengths, and weaknesses, and how to maximize its performance.[5]

Evaluation of adhesion of resin-based materials to tooth substrates depends on various factors beginning from specimen configuration, chemical composition of adhesive and ending with testing method and testing conditions. In turn, proper selection of the bonding strength test, its proper execution, as well as interpretation is of specific importance.[6]