THE EFFECT OF TECHNICAL SURFACE ROUGHNESS OF PORCELAIN ON THE SHEAR BOND STRENGTH TO PORCELAIN OF VISIBLE LIGHT-CURED COMPOSITE (Laboratory Research)

ABSTRACT
Background: To repair porcelain tooth restoration using visible light composite resin needs bond strength. Adhesion of porcelain to composite resin can be obtained mechanically and chemically. Mechanically attachment was obtained of Acid etching with hydrofluoric acid 9 % and roughening the porcelain surface by means of grinding use a diamond bur with lowspeed. Whereas the use of silane coupling agent cause to chemically attachment of porcelain to composite resin.
Purpose: The purpose of this laboratory research is to study the shear strength of composite resin on porcelain surface by acid etching with hydrofluoric acid 9 % and roughening use a diamond bur with lowspeed.
Material and Method: Twenty porcelain disks without glazing with 4 mm in diameter and 2 mm in thickns were divided into 2 groups. Each group consisted of ten samples. Group A was etched with hydrofluoric acid 9 %, group B was roughed use a diamond bur with lowspeed. The visible light-cured composite resin was attached to each group of specimens and bonding agent contains a silane applied porcelain surface, and then light polymerized for 40 seconds. The specimens were stored in 37° C of aquades for 24 hours before determination of shear bond strength.
Result: The average shear bond strength in group A is 11.39 Mpa, whereas that group B is 9.58 Mpa.
Conclusion: The shear bond strength of composite resin to porcelain surface that was etched with hydrofluoric acid 9 % is higher than was roughed use a diamond bur with lowspeed.

Key words: porcelain, composite resin, hydrofluoric acid 9 %, diamond bur.