

ABSTRACT

BACKGROUND:

Ideal laminate veneer preparations are supposed to be in enamel which provides excellent bond strength and ensures the longevity of the restorations. But certain clinical situations like dental caries extending to dentin, old restorations require the preparation to be extended into the dentin; wherein the bond strength gets compromised. Hard tissue lasers like Er,Cr:YSGG laser has the potential to prepare dentinal surface for adhesion.

AIM:

The purpose of this study is to compare the bond strength of the conventional acid etch technique and the laser treated dentinal surface bonded to porcelain laminate veneer restorations.

MATERIALS AND METHODS:

Hundred extracted human maxillary central incisors with approximately 10 mm anatomic crown length and 8 mm mesio-distal width are selected. The crown portion of tooth is cut and embedded in the clear acrylic resin. The labial surface is prepared flat to receive the porcelain laminates. 50 teeth treated with 37 % phosphoric acid (acid etching) and the other 50 teeth are treated with laser etching. Then the laminate veneers bonded to both these groups. This is kept in distilled water for 24 hours and shear bond strengths are tested with Universal testing machine. Then the results are statistically analysed.

RESULTS:

The mean and standard deviation value of Group A (Acid) is 8.5180 and .22829 with a maximum value of 8.9 and a minimum value of 8.1. The mean and standard deviation value of Group B (Laser) is 8.4980 and .11156 respectively with a maximum value of 8.7 and a minimum value of 8.3 .

CONCLUSION:

Within the limitations of this study, 37% ortho-phosphoric acid (8.5 Mpa) and laser (8.49 Mpa) treated dentin surfaces showed similar bond strength values. The differences are not statistically significant. But the results of the Laser etched bond strength were more consistent than Acid etched bond strength.

(Key words : Porcelain laminate veneers, Acid etching, Laser etching.)