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Effect of Er:YAG laser etching on shear bond strength of orthodontic bracket

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Laser induced caries resistance is advantageous in orthodontics. This study was designed to evaluate and compare the shear bond strength (SBS) of Erbium laser etched enamel to acid etched. Moreover, to detect morphological changes on laser etched enamel surface using scanning electron microscope (SEM). A total of fifty human premolars extracted for orthodontic purpose were used in this study. The samples were randomly divided into two groups of 25 each. The first group was etched using 37% phosphoric for 30 seconds. As for the second group, enamel was treated by Er:YAG laser operating at wavelength 2.94 μ m, power 1.8W and repetition rate 15Hz. Five teeth from each group were selected for scanning electron microscope (SEM) evaluation and the study was continued on 20 teeth from each group which were subjected to shear bond strength test. The results of this study showed, no significant difference between the mean of shear bond strength of the etched groups ($p=0.435$). Based on the results of this study, it was concluded that laser etched group (1.8W/15Hz) resulted in clinically accepted bond strength and could be an alternative to conventional acid etching.

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Urban smiles- e-dentistry and tele-dentistry applications: International perspectives

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The Department of Dental Hygiene at University of Tennessee HSC has operated a community dental program called Urban Smiles since 2004 to meet the preventive dental needs of young children in Memphis city schools. At Urban Smiles, traditional clinical screenings for dental caries are performed by licensed general dentists who authorize dental hygiene students to provide preventative services under the supervision of licensed dental hygienists employed by UTHSC's Department of Dental Hygiene. The Urban Smiles program is incorporating tele-dentistry screenings with traditional clinical screenings, hence the licensed dental hygienists could perform clinical screenings, capture intraoral images, and send the images electronically to off-site dentists who could screen remotely for caries and provide authorization to treat.

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