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Thesis Title	Pushout bond strength of different obturation systems (an in vitro study)		
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Abstract	<p>Background: The bond strength of the root canal sealers to dentin seems to be a very important property for maintaining the integrity and the seal of root canal filling. The aim of this study was to evaluate the shear bond strength of four different obturation systems using push-out test.</p> <p>Materials and methods: Forty straight palatal roots of the maxillary first molars teeth were used in this study, these roots were instrumented using crown down technique and ProTaper system, instrumentation were done with copious irrigation of 2.5% sodium hypochlorite and 17% buffered solution of EDTA was used as final irrigant followed by distilled water, roots were randomly divided into four groups according to the obturation system (ten teeth for each group):</p> <p>Group I: AH26 sealer and lateral condensation technique, Group II: AH26 sealer and single cone obturation technique, Group III: AH26 sealer and thermafil obturation technique and Group IV: RealSeal SE sealer and lateral condensation technique, the roots then stored in moist environment at 37°C for one week The roots were embedded in clear acrylic resin and each root sectioned into three levels apical, middle and cervical. The measurement of each section was taken to prepare the supporting jig for the sections and the punch used in push-out test, the bond strength was measured using computerized universal testing machine each section fixed in the machine so that the load applied from apical to cervical direction at 0.5mm/min. speed and the computer drew curve to show the higher bond force before dislodgment of the filling material. These forces were divided by the surface area to obtain the bond strength in MPa.</p> <p>Results: Statistical analysis was performed and the result showed a very highly significant differences between the four obturation systems at each level and there were non significant differences between all level apical, middle and cervical within each obturation system except a significant difference found between cervical and apical level in single cone obturation system.</p> <p>Conclusion: This study showed that the shear bond strength of AH26 sealer was higher than RealSeal SE sealer when the same obturation technique was used. The shear bond strength was affected by the obturation technique and lateral condensation technique showed higher bond strength than thermafil and single cone obturation technique when the same type of sealer was used and the bond strength was not or little affected by the tooth level.</p>		