

FRACTURE RESISTANCE OF THREE DIFFERENT ALL- CERAMIC CROWN SYSTEMS

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ABSTRACT

New dental ceramic materials and techniques have been introduced in the past few years to fabricate all-ceramic restorations, but their strength is still an important issue. The purpose of this study was to evaluate the fracture resistance and the mode of fracture of three different dentin bonded all-ceramic crown systems constructed by different techniques and materials. The ceramic materials used were Dicor (castable ceramic), JPS Empress (Pressable ceramic) and Hi-Ceram -conventional (powder-slurry) reinforced ceramic. Twenty -one teeth were prepared with minimal crown preparation for all-ceramic crowns, and randomly assigned into three groups. All-ceramic crowns were constructed from the three ceramic systems according to the manufacturer's instructions of each system. The internal surfaces of all the ceramic crowns were etched and silanated prior to cementation with dual polymerising resin cement. The cemented crowns were loaded to fracture and the modes of fracture were also recorded. Results were analyzed using ANOVA test.