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Thesis Title	A study of microleakage between different filling materials and tooth structure (in vitro)		
Year	1992		
Abstract	<p>Reinforced glass ionomer cement is a new material still under research. This vitro study is designed to see the extent of microleakage between reinforced glass-ionomer cement /tooth structure to compare with composite /tooth structure and composite/reinforced glass ionomer interface, both with and without thermo-cycling, Amalgam/tooth structure , amalgam and composite interface with and without thermo-cycling.</p> <p>1- Therefore 40 sound human premolar teeth from orthodontic department were used and class II MOD were prepared , the teeth were divided in 4 groups: A/ One of the boxes of the cavities filled with non-gamma 2 amalgam to the level of pulpal floor composite on top of it. B/ The same treatment for group A but with thermo-cycling. C/ One of the boxes of the cavities filled with reinforced glass-ionomer to the level of pulpal floor , composite on top of it. D/ The same treatment for group C but with thermo-cycling.</p> <p>2- All the samples coated with 2 layers of varnish and tin foil away 2mm from restoration.</p> <p>3- Then immersed in the dye basic fuchsin 0.5% for 7 days.</p> <p>4- Each tooth was embedded in cold cure acrylic then sectioning of the teeth were done longitudinally.</p> <p>5- Then examined and measured under vernier microscope.</p> <p>The result showed that the highest leakage was at the amalgam/tooth structure and the least was at the composite /tooth structure , also the composite/amalgam interface , and composite/glass-ionomer cement interface showed no leakage with or without thermo-cycling.</p> <p>It is suggested to study the use of composite over the amalgam after improvement of compressive strength or reinforced the composite, in order to have ideal restorative material both esthetically and functionally.</p>		