ABSTRACT

Thermal transfer properties of dental insulating materials under restoration to protect of the pulp against "thermal shock". Often this involve the placement of thick lining materials. The purpose of this in vitro study was to access the heat transfer and determination of thermal conductivity of six different types of dental filling and dental base materials including dental amalgam, zinc polycarboxylate cement, light cured glass ionomer cement, composites, extra posterior glass ionomer cement and giomer were studied analyzed and compared with each other in order to determine the best dental filling and base materials. Eight discs of varying thicknesses ranged from 0.25mm-2mm were prepared of each material and noted the value of the conductance for each disc on Ehtesham's machine. Data obtained was analyzed graphically, correlation and one-way Anova with single factor was applied to determine the significant or insignificant factor. It came out that amalgam has higher thermal conductivity than composites and zinc polycarboxylate has lower thermal conductivity than light cured GIC and composite has greater thermal conductivity than extra posterior GIC.