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## Laboratory evaluation of a compomer and a resin-modified glass ionomer cement for orthodontic bonding

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### ABSTRACT

The mean shear debonding force of stainless steel orthodontic brackets with microetched bases bonded with either a compomer or a resin-modified glass ionomer cement was assessed. In addition, the amount of cement remaining on the enamel surface following bracket removal was evaluated. Finally, survival time of orthodontic brackets bonded with these materials was assessed following simulated mechanical stress in a ball mill. Debonding force and survival time data were compared with those obtained for brackets bonded with a chemically cured resin adhesive, a light-cured resin adhesive, and a conventional glass ionomer cement. There were no significant differences in mean shear debonding force of brackets bonded with the compomer, resin-modified glass ionomer, chemically cured resin adhesive, or the light-cured resin adhesive. Brackets bonded with a conventional glass ionomer cement had a significantly lower mean shear debonding force than that recorded for the other materials. The Adhesive Remnant Index (ARI) mode score indicated that significantly less cement remained on the enamel following debonding of brackets cemented with resin-modified or conventional glass ionomers compared with other adhesives. The median survival time for brackets cemented with the compomer, resin-modified glass ionomer, chemically cured resin, or light-cured resin were significantly longer than for brackets cemented with conventional glass ionomer. The compomer and the resin-modified glass ionomer adhesive appear to offer viable alternatives to the more commonly used resin adhesives for bracket bonding.

**KEY WORDS:** Compomer, Resin-modified glass ionomer, Ball mill.

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