

Bonding of Complex Amalgam Restorations (7/04)

Summitt JB, Burgess JO, Berry TG, Robbins JW, Osborne JW, Haveman CW. Six-year clinical evaluation of bonded and pin-retained complex amalgam restorations. *Oper Dent* 2004;29:261-268.

The purpose of this study was to compare the performance of complex amalgam restorations retained with self-threading pins or bonded with a filled, 4-META-based resin (Amalgambond Plus, Parkell). Twenty-eight pin-retained and thirty-two bonded amalgam restorations were placed, each replacing at least one cusp. Any retention form remaining after removal of an old restoration was left in place. After six years, eight pin-retained and three bonded restorations had failed. No statistically significant differences in any criteria (i.e., failure rate, marginal adaptation, marginal discoloration, secondary caries, tooth sensitivity, tooth vitality) were found between the two groups using Fisher's exact test. **The authors concluded that bonding with a filled, 4-META-based bonding resin appears to be a viable alternative of retaining large amalgam restorations replacing cusps.**



DIS Comment: Threaded pins have been used for many years to successfully retain complex amalgam restorations replacing cusps, but not without potential risks. This study substantiates the use of a predictable, non-invasive alternative. The authors concluded that bonding with a filled, chemically-curing bonding resin was a satisfactory method of retaining large amalgam restorations replacing entire cusps. However, there appears to be very little clinical evidence to show the advantage of bonding amalgam in smaller routine preparations with traditional mechanical undercuts.¹⁻³ Although this study found a reduction in sensitivity in bonded amalgam restorations at six months, the majority of clinical investigations have demonstrated no difference in post-operative sensitivity between teeth restored with or without bonding.¹⁻⁵

References

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