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**Effect of Dichloromethane Treatment on Adhesion With Additive Manufacturing Resin**

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**Objectives** Although autopolymerizing resin is often used to repair removable dentures fabricated using the additive manufacturing method (AM), appropriate surface treatments for fracture surfaces have not been established. This study aimed to clarify the effect of primer agents containing dichloromethane on the shear bond strength of autopolymerizing resin with specimens fabricated using the additive manufacturing method.

**Methods** Denture base resin for AM and conventional denture base resin (D) specimens were fabricated. One of the following dichloromethane-containing primer agents was used for surface treatment: Primer-S (Denture Liner Adhesive, Shofu) or Primer-G (Resin Primer, GC). No surface treatment on AM was assigned as the control group. After surface treatment, the autopolymerizing resin (Provinice, Shofu) was bonded in a 5.0-mm diameter area on specimens and the shear bond strength was measured.

**Results** The shear bond strength (median of 10 specimens in each group) was 8.87 MPa for AM with Primer-S, 14.0 MPa for AM with Primer-G, 19.4 MPa for D with Primer-S, and 5.77 MPa for AM without Primer. Significant differences were observed among all groups, except between AM with Primer-S and AM without Primer (Mann–Whitney’s U test with Bonferroni correction after Kruskal–Wallis test,  $\alpha = 0.05$ ).

**Conclusions** The shear bond strength of AM with Primer G was superior compared to that of AM without Primer and with Primer S, however, it was not higher than that of primer with conventional resin. The results may be due to the effect of dichloromethane on resin used for AM, which is different from that on conventional resin. Other components were also suggested to have an effect on bonding strength. The findings suggest the need for a more effective surface treatment for additive manufacturing resin to increase the bond strength. Primer containing dichloromethane could also be used although it’s not strong enough.