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The Angle Orthodontist: Vol. 68, No. 4, pp. 351–356.

A 5-year clinical review of bond failure with a light-cured resin adhesive

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ABSTRACT

The purpose of this study was to investigate the time to first failure of stainless steel orthodontic brackets (Ormco Corp, Glendora, Calif) bonded with a light-cured resin adhesive (Transbond, 3M Unitek, Monrovia, Calif) and assess whether time to failure was related to the patient's age at the start of treatment or sex, the proficiency of the individual placing the brackets, or the presenting malocclusion. Data on 548 patients with 7118 bonded brackets were analyzed. Survival analysis was carried out on a single bracket per patient. In each patient, the first bracket to fail was studied. In cases where no brackets failed, the bracket with the shortest follow-up time was analyzed and handled as a censored observation in the formal analysis. Median time until first bracket failure was 442 days, and an overall failure rate of 6% was recorded. There were no significant differences in time to first failure of brackets with respect to the sex or age of the patient at the start of treatment ($p=0.168$, and $p=0.261$, respectively), operator proficiency in placing brackets ($p=0.189$), or presenting malocclusion ($p=0.052$). Performance of brackets bonded with Transbond does not appear to vary significantly according to the variables examined.

KEY WORDS: Clinical review, Bond failure, Survival analysis.

Submitted: March 1997
Accepted: July 1997.

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