The Online
ANGLE ORTHODONTIST
An International Journal of Orthodontics and Dentofacial Orthopedics
79th Anniversary 1930-2009

The Angle Orthodontist: **Vol. 63, No. 3, pp. 213–220.**

Bond strength of aged composites found in brackets placed by an indirect technique

Jing-Yi Shiau, DDS, MS; Stephen T. Rasmussen, PhD;[a] Arthur E. Phelps, DDS, MS; Donald H. Enlow, PhD; Gary R. Wolf, DDS, MS

[a]Dept. of Biologic and Materials Sciences, School of Dentistry, The University of Michigan, Ann Arbor, MI 48109-1078

ABSTRACT

The “Thomas” indirect technique for bracket attachment produces an interface not present in direct techniques, that is, an aged composite-sealant interface. Our primary goal was to determine if a weakened interface was produced by a modified (sealant was mixed prior to placement of brackets) Thomas indirect technique when the composite was aged for 7 days. The enamel-bracket system was investigated in vitro by comparison of shear bond strengths for metal and ceramic brackets bonded to bovine teeth by a direct and indirect method. Nearly all specimens failed at the bracket-composite interface and, subsequently, no difference was found between specimens placed by direct or indirect methods. No evidence was found to suggest that an aged composite would predispose the enamel-bracket system to fail at the sealant-composite interface. The ceramic brackets used in this investigation had lower bond strengths then metal ones, but the breaking loads were similar.

J.Y. Shiau is a graduate of the orthodontic program at Case Western Reserve Uniuersity and is now in private practice in San Diego, California

S.T. Rasmussen is a Senior Fellow at the Department of Biologic and Materials Sciences at the School of Dentistry, The University of Michigan

A.E. Phelps is a Clinical Professor of Orthodontics at Case Western Reserve University

D.H. Enlow is an Emeritus Professor of Orthodontics at Case Western Reserve University

G.R. Wolf is a Clinical Instructor of Orthodontics at Case Western Reserve University

KEY WORDS: Ceramic and metal brackets, Shear bond strength, Interfacial fracture, Aged composite.