



CFAO GRADUATE STUDENT POSTERBOARD ABSTRACTS

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Shear bond strength of re-bonded orthodontic attachments using self-etching primers

Beaudet, A. *, Wiltshire, W.A., França, R., Klus, B.
University of Manitoba

The purpose of this study was to evaluate the difference in shear bond strength of bonding and re-bonding orthodontic attachments when using a conventional etching primer (CEP) compared to a self-etching primer (SEP), as well as to evaluate if re-etching is necessary prior to re-bonding a bracket with either a CEP or a SEP.

Orthodontic metal buttons were bonded to extracted human third molars according to 4 protocols. In Group A, teeth were bonded with the CEP technique for the first and second bondings. In Group B, teeth were bonded with the CEP technique for the first bonding but re-etching was omitted for the second bonding. In Group C, teeth were bonded with the SEP technique for both bondings. In Group D, teeth were bonded with the SEP technique for the first bonding but re-etching was omitted for the second bonding.

The shear bond strengths when the SEP was used for the first bonding were significantly lower ($P < 0.0001$; 10.65 ± 4.33 MPa) than when the CEP was used (14.04 ± 3.51 MPa). The second bonding omitting re-etching but using the primer and adhesive generated significantly lower bond strengths ($P < 0.0001$; 9.07 ± 4.53 MPa) than when re-etching was used (14.66 ± 3.70 MPa), but still above the “clinically acceptable” standard of 6-8 MPa for *in vitro* shear bond strength testing. The second bonding omitting re-etching and not using any primer or adhesive was very low (2.61 ± 2.34 MPa) and would definitely effect the outcome of orthodontic bonding clinically.

When rebonding a bracket, re-etching may be omitted but then a primer and adhesive must be applied to obtain a “clinically acceptable” shear bond strength.