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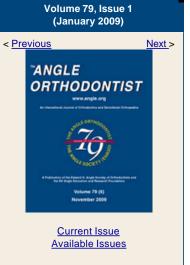
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Volume 79, Issue 1 (January 2009)

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Original Articles

Pain Experience during Initial Alignment with a Self-Ligating and a Conventional Fixed Orthodontic Appliance System

A Randomized Controlled Clinical Trial

P. S. Fleming^a, A. T. DiBiase^b, G. Sarri^c, and R. T. Lee^d

Abstract

Objectives: To test the hypotheses that (1) there is no difference in the pain experience during the week following initial placement of two orthodontic appliances (SmartClip™ and Victory™; 3M Unitek, Monrovia, Calif); and (2) there is no difference in the pain experience during removal and insertion of orthodontic archwires with these brackets.

Materials and Methods: Sixty-six consecutive patients were treated with a self-ligating bracket system (SmartClip[™]) or a conventional appliance (Victory[™]) on the basis of computǥenerated random allocation. After appliance placement and engagement of a 0.016" nickel-titanium archwire, pain experience was recorded after 4, 24, and 72 hours and after 7 days with the use of a visual analog system (VAS) questionnaire. At a subsequent visit, participants documented pain experiences during removal and insertion of 0.019 × 0.025" archwires on an additional 100 mm VAS questionnaire. Independent t-tests and analyses of covariance were used to analyze normally distributed data; the Mann-Whitney U-test was used for skewed distributions.

Results: Forty-eight (72.2%) and fifty-one (77.3%) subjects completed the first and second parts of the study, respectively. Bracket type had no influence on pain experience at 4 hours (P = .958), 24 hours (P = .289), 72 hours (P = .569), and 7 days (P = .756) following appliance placement. However, bracket type significantly influenced pain experience during archwire removal (P = .001) and insertion (P = .013).

Conclusions: Hypothesis 1 cannot be rejected. The bracket type had no effect on subjective pain experience during the first week after initial placement of two preadjusted orthodontic appliances. Hypothesis 2 was rejected. Significantly greater discomfort was experienced during archwire insertion and removal with the SmartClip™ appliance.

Keywords: Pain, Orthodontic, Self-ligating, Appliance

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