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Laboratory and clinical evaluation of uncomplicated fragment re-attachment using pinholes

Talat Mohammed Beltagy
Kafr El-Sheikh University, Egypt

Both dental material properties and technique have a significant influence on fragment reattachment success. The purpose of this study was to evaluate laboratory and clinically the uncomplicated fragment re-attachment using pinholes. A total of 40 extracted human intact upper permanent central incisors with close similarity were selected and randomly divided into 4 groups (n=10). The incisal third of 30 specimens were sectioned horizontally. Group I: pinholes, group II: internal dentinal groove, group III: simple reattachment, and group IV (control group): intact teeth. Each fragment was reattached to its sectioned tooth using adhesive bond and resin cement. All specimens were tested for fracture strength under standard conditions in Instron testing machine. Force was applied to each specimen in a labiolabial direction using a small stainless steel rod. The clinical study was performed on twenty patients, aged 8-16 years, presented with uncomplicated fragments of fractured upper central incisors, and divided into two groups (10 patients each). Group I: pinholes and group II: internal dentinal groove. All patients were followed-up clinically and radiographically 3, 6, 12, and 18 months. Data were analyzed using ANOVA and post hoc test with the significant level at $p < 0.05$. *In-vitro* results showed that the control group recorded the high strength value followed by pinholes, internal groove, and simple reattachment and the difference was statistically significant ($P < 0.05$). However, the clinical results showed no significant differences between the two techniques ($P > 0.05$). It was concluded that pinholes technique has a significant effect on fragment reattachment success.

Biography

Talaat Mohamed Beltagy has completed his PhD in Paedodontics in 2001. Since 2013, he is an Associate Professor in Paedodontics, Oral Health and Preventive Dentistry Department, Faculty of Dentistry, Tanta University, Egypt. He has published more than 20 papers in reputed journals and has been invited as a speaker in many international conferences.

tallatbeltagy@yahoo.com

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