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Influence of fluoride releasing light cured resin coat on enamel mineralization and survival of metallic brackets in orthodontic patients: A 12-months randomized clinical trial

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Autogenous bone still considered the gold Enamel demineralization around orthodontic brackets is a common sequel of fixed orthodontic treatment. White spot lesions can developed within 4 weeks of orthodontic treatment with 72.9% to 75.6% prevalence rates among orthodontic patients. Researches advocated use of antibacterial agents such as fluoride, chlorhexidine and cetylpyridinium chloride to prevent white spot lesion. The purpose of this study is to evaluate the effect of a fluoride releasing light cured resin coat on the mineralization and survival rate of orthodontic brackets.

Methodology: Metal brackets (n=360) were bonded to the teeth mesial to the first molars in 20 patients. A split-mouth design was used to randomly allocate diagonally opposite quadrants and Ortho-Choice Ortho-Coat was applied to half of the teeth after bonding. The bracket bond survival rate was assessed afterwards for a period of 12 months. Enamel mineralization was evaluated using Laser fluorescence (DIAGNOdent).

Findings: Ortho-Coat significantly reduced enamel demineralization. No significant difference was found in bracket bond survival rates, with and without application of Ortho-Coat. The highest survival rates were recorded on incisors (96.2% with coat and 94.6% without a coat). The lowest survival rates were recorded on premolars (91.7% with coat and 88.3% without a coat). Clinical Significance: Ortho-Coat effectively prevents enamel demineralization around orthodontic brackets over a 12-month period, but it has no pronounced effects on enhancing the bracket bond survival rate.

Biography

Essam Abdelalim Nassar received his BDS in 1992 from Mansoura University in Mansoura, Egypt and his master in orthodontics in 1998 from Mansoura University. He accomplished his Ph. D thesis at the University of Illinois, Chicago, USA and earned his Ph. D from Mansoura University. He was appointed as assistant professor of orthodontics at Mansoura University in 2011. Currently he is an associate professor at the preventive dental sciences department, Imam Abdurahman bin Faisal University, KSA. He participated in many national and international meetings and has more than 13 scientific publications.

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