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PATIPAT BOONPINON : A COMPARISON OF MUTANS STREPTOCOCCI AND LACTOBACILLI IN PLAQUE AROUND ORTHODONTIC BRACKETS RETAINED WITH LIGHT-CURED HYBRID GLASS IONOMER CEMENT AND COMPOSITE RESIN: A CLINICAL STUDY. THESIS ADVISORS: CHATRI KAEWSURIYATHUMRONG Ph.D., POOMPADA JAOCHAKARASIRI D.Sc.D., BOONYANIT THAWEBOON M.Sc., PASSIRI NISALAK M.S. 124 P.
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It has been known that fixed orthodontic appliances promote plaque accumulation and growth of cariogenic microorganisms, which result in increased risk of enamel carious lesions. The use of hybrid glass ionomer cement as a bracket bonding agent may be useful by its anticariogenic property. The purposes of this clinical study were to compare the proportions of mutans streptococci and lactobacilli to total viable count in plaque around brackets bonded either with light-cured hybrid glass ionomer cement or composite resin. In addition, the changes of the proportions of mutans streptococci and lactobacilli to total viable count during treatment compared with pre-treatment data were also studied. Brackets in 20 patients were bonded either with hybrid glass ionomer cement (Fuji ORTHO LC) or composite resin (System 1+) by using the split-mouth technique. Plaque samples around brackets were taken at the 1st week and every month after the onset of treatment to investigate the proportion of mutans streptococci and lactobacilli to total viable count. The observation period was 9 months. The results showed that the proportion of lactobacilli and mutans streptococci to total viable count were significantly lower ($p<0.05$) in plaque samples around brackets bonded with hybrid glass ionomer cement compared with those around composite resin-bonded brackets during the first 2 months and 4 months respectively after the onset of treatment. The proportion of mutans streptococci and lactobacilli to total viable count in plaque also tended to increase with time. The results suggest that the use of hybrid glass ionomer cement for bonding brackets without other fluoride supplementation may not be enough to prevent caries formation. Therefore, other regimens in caries prevention should also be recommended.