Effects of Glass Ionomer Sealant on Occlusal Surface to the Changes of Proximal Enamel Lesion

Picharat Dechachart* Araya Phonghanyudh Chontacha Harnirattisai*** Siriruk Nakornchai****

Objective: To compare the changes of proximal enamel lesion depth between applying fluoride varnish and using GIC as a sealant on occlusal surface, both with exposure to a fluoridated toothpaste:

Methods: Two enamel lesions size 2 mm in diameter were created at the proximal surface of 72 permanent molars and randomly separated into 2 groups. All teeth were cut mesio-distally to separate each tooth to control and treatment halves. Treatment halves of first group were applied glass ionomer cement as a sealant on occlusal surface and treatment halves of another group were applied fluoride varnish (FV) on occlusal surface. All specimens were pH-cycled and brushed twice daily with fluoridated toothpaste for 14 days except treatment halves in FV group which left unbrushed in the first 24 hr. Lesion depth of all specimens were compared under polarized light microscope and measured with Image-Pro Plus®.

Results: The mean lesion depth of both treatment halves (GIC and F-Varnish) were significantly less than their control halves. Percentage of lesion reduction in GIC group (26.55%) was significantly higher than fluoride varnish group (18.30%).

Conclusions: With fluoridated toothpaste exposure, Glass ionomer cement as an occlusal sealant should be a better approach to reduce the enamel lesion depth at proximal surface on the same tooth when compared with applying fluoride varnish.

Keywords: Glass ionomer cement, Occlusal sealand, Proximal enamel lesion, Lesion depth, Non-invasive technique

**Post-graduated Student, Department of Pediatric Dentistry, Mahidol University.*

***Associate Professor, Department of Pediatric Dentistry, Mahidol University*

****Associate Professor, Department of Operative Dentistry and Endodontics, Mahidol University*