

## C 665357 : MAJOR PERIODONTICS

KEY WORD: GLASS IONOMER CEMENT / FURCATION INVOLVEMENT / HISTOLOGICAL CHARACTERISTICS / GINGIVAL ATTACHMENT  
 APICHART SILPARCHA : THE USE OF GLASS IONOMER CEMENT TO FILL FURCATION INVOLVEMENT AND HISTOLOGICAL CHARACTERISTICS OF THE GINGIVAL ATTACHMENT ON GLASS IONOMER CEMENT.  
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Glass ionomer cement is a material that has low tissue response. It can be used to restore the tooth surface near the gingival margin without causing gingival inflammation. The purpose of this study is to investigate the response of periodontal tissues to the glass ionomer cement - restored root surfaces and furcation. The study was divided into two parts.

Part I was a clinical study of using glass ionomer cement to fill class II and class III furcation. The study was performed in five molars. Before surgical procedures, all teeth were cleaned and the plaque index, gingival index, gingival recession and probing depth were recorded. The full thickness flap was opened during the surgical procedure. The teeth were cleaned and filled the furcation with glass ionomer cement. The filling material was polished to blend to the root surface and the bone. Then the flap was sutured. Eight weeks after surgery, plaque index, gingival index, gingival recession and probing depth were recorded again. Comparative study of the indices and values between before and after surgery by using McNemar test and 95 % of confidence, the result showed that there was no statistical difference between these two sets of data. Radiographic study, there were radiolucent areas under glass ionomer cement fillings indicating bone resorption. Clinical study by reopening the flaps, the resorption of bone indicating under the fillings was clearly seen.

Part II was a histological study of gingival tissues in contact with glass ionomer cement. The study was performed in four teeth which were committed to be extracted. The teeth were divided into experimental group and control group. Under the surgical procedure, the teeth in both groups were cleaned and cavities were prepared in the root surfaces above the margin of alveolar bone. The cavities in the experimental group were filled with glass ionomer cement in the normal contour shape whereas the cavities in the control group were left unfilled. Eight weeks after surgery, the tooth with a small piece of gingival tissue was removed and prepared for histological study. In control group, the result showed that there was resorption of alveolar bone and junctional epithelium proliferation to the lower border of the notch. Between junctional epithelium and bone, there was connective tissue attachment between root surface and the gingival tissue. In experimental group, there was also bone resorption and elongation of the junctional epithelium beyond the lower border of restoration.

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