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**Comparison of Tissue Reaction of Pulp Chamber Perforations in Dogs' Teeth Treated with MTA, Light-Cured Glass Ionomer and Amalgam**

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### Abstract:

Statement of Problem: Perforations are significant complications that can occur during root canal therapy and may result in the destruction of adjacent periodontal tissues. An ideal material for repairing a perforation should be biocompatible and have a high sealing ability. Purpose: The aim of this study was to compare histologic tissue responses of experimentally induced pulp chamber perforations in dogs' teeth repaired with amalgam, light-cured glass ionomer and Mineral Trioxide Aggregate (MTA). Materials and Methods: Fifty-four lower premolars of 9 dogs were used for this interventional study. Access cavities were prepared and perforations were created on the floors of the pulp chambers. The samples were divided into three experimental groups of 12 teeth and positive and negative control groups consisted of 12 and 6 teeth, respectively. The perforations in the study groups were sealed with amalgam, light-cured glass ionomer and MTA. All access cavities were filled with light-cured glass ionomer. Five dogs were sacrificed after seven days and 4 dogs were put to death after 28 days. The premolars along with the surrounding alveolar bone were cut in block sections and histologically evaluated for inflammation, bone formation and epithelial proliferation. The data were analyzed by Kruskal-Wallis and Mann-Whitney tests . Results: A statistically significant difference was observed in inflammation and bone regeneration, between amalgam and MTA at both time periods. Conclusion: It appears that MTA and GI are more suitable materials for perforation repair, as compared to amalgam

### Keywords:

Pulp chamber Perforation . Light-cured glass ionomer

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