



## Repair of furcal perforation with mineral trioxide aggregate in dogs

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### I. Objectives

The purpose of this study was to investigate, histologically, healing in the periodontal tissue after mechanical furcation perforations using Mineral Trioxide Aggregate (*PRO ROOT*MTA).

### II. Material and methods

These experiments were carried out on mandibular and maxilla premolars and molars obtained from 12 dogs more than one year old and which had clinically healthy periodontia. A total of 34 perforations were made. These were divided into Control (9), MTA (25) groups respectively. A sterile round bur (1mm in diameter) was used to create a mechanical perforation in the furcal floor. The control group received no treatment. The rest of the cavity was filled with IRM®. At periods 2, 8, 16 and 52 weeks (2, 8, and 12 weeks in control group) after the operation, the animals were sacrificed. Longitudinal sections were stained with hematoxyline-eosin. And these were examined under the light microscope.

### III. Results

Control group, no hard tissue formation was observed in any case in this group. On the other hand, compensation for granulation tissue was observed in 12 weeks.

*MTA group*, inflammatory responses around the wound were mild in all cases; however, new hard tissue attached to the MTA closed the perforation at 8, 16 and 52 weeks after operation. Regeneration of periodontal ligament was observed between the new hard tissue and the cementum.

### IV. Conclusions

From these results, it was thought that effective in MTA alike furcation perforation treatment. Moreover, there is the ability to make a new hard tissue and periodontal ligament regeneration in MTA.

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