

Direct Pulp Capping With Gray Versus White Mineral Trioxide Aggregate In Primary Molars

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Abstract

Purpose: This study was performed to assess clinical and radiographic success of direct pulp capping in primary molars, and to evaluate the pulpal response of dogs' primary teeth to mineral trioxide aggregate versus calcium hydroxide cement after mechanic exposure of the pulp

Method: A total of 40 children were treated .Twenty molars received gray MTA and 20 received white MTA as direct pulp capping .The patients were assessed clinically and radiographically after 1,6,12,and 18 months . Also, three mongrel dogs were treated, and six class V were prepared in their teeth .It was followed by direct pulp capping with either grey MTA (2 teeth), white MTA (2 teeth) or calcium hydroxide (2 teeth).The animals were killed after one month later and blocks of the teeth and surrounding were submitted to histological processing and evaluation. The results were analyzed by Cochran's Q test, Chi square and test of proportions. The critical value of statistical significance was 5%.

Results: After 18 months follow up period ,35 molars (17 gray MTA,18 white MTA)were available for clinical and radiographic examination .Two teeth (white MTA)failed due to abscess .The remaining 33 teeth appeared to be clinically and radiographically successful. Pulp chamber narrowing was a radiographic finding in 5 teeth treated with gray MTA and 3teeth treated with white MTA .In the histological study, both types of MTA successfully induced thick dentin bridge formation at the

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exposure site .Samples of calcium hydroxide group showed deposition of thin layer of secondary dentin with areas of internal resorption.

Conclusion: Grey and White MTA direct pulp capping is a successful technique and can be a suitable replacement for calcium hydroxide in treatment of primary teeth with vital pulp exposure.