

Comparison of Mineral Trioxide Aggregate and Calcium Hydroxide as Pulpotomy Agents in Young Permanent Teeth (Apexogenesis)

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Abstract

Purpose: This study was designed to compare mineral trioxide aggregate (MTA) with calcium hydroxide [$\text{Ca}(\text{OH})_2$] clinically and radiographically as a pulpotomy agent in immature permanent teeth (apexogenesis).

Methods: Fifteen children, each with at least 2 immature permanent teeth requiring pulpotomy (apexogenesis) were selected for this study. All selected teeth were evenly divided into 2 test groups. In group 1, the conventional calcium hydroxide pulpotomy (control) was performed, whereas in group 2, the MTA pulpotomy (experimental) was done. The children were recalled for clinical and radiographic evaluations after 3, 6, and 12 months.

Results: The follow-up evaluations revealed failure due to pain and swelling detected at 6 and 12 months postoperative evaluation in only 2 teeth treated with calcium hydroxide. The remaining 28 teeth appeared to be clinically and radiographically successful 12 months postoperatively. Calcific metamorphosis was a radiographic finding in 2 teeth treated with $\text{Ca}(\text{OH})_2$ and 4 teeth treated with MTA.

Conclusions: MTA showed clinical and radiographic success as a pulpotomy agent in immature permanent teeth (apexogenesis) and seems to be a suitable alternative to calcium hydroxide.