Success of Pulpotomy with MTA in Permanent Human Molar Teeth

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Abstract

Statement of Problem: Preservation and maintenance of pulpal vitality is the main objective in endodontics. A recently developed material, mineral trioxide aggregate (MTA), is recommended for vital pulp therapy because of its physical characteristics and bioactive properties. Although the majority of these studies have been performed on the teeth with open apices, further evaluation of the teeth with closed apices seems to be necessary.

Purpose: The purpose of this study was to evaluate the pulpal reaction to MTA after pulpotomy in permanent molar teeth with caries.

Methods and Material: In this clinical case series study, 17 permanent molar teeth of 16 patients with a carious exposure were treated, using a partial pulpotomy technique. The age of the patients ranged from 20 to 30 years with an average of 25.2 years. Clinical and radiographic examination revealed a pulpal response within normal limits and normal appearance of the periradicular area respectively. After isolation, caries removal and pulpal exposure, access cavity was prepared using a sterile diamond bur with cooling system. After hemostasis, 2 to 4 mm of MTA (Angelus) paste was placed on the fresh wound. The teeth were restored 5-7 days later with amalgam or composite. The patients were scheduled for follow-up at an interval of 2, 6 and 12 months, and clinical and radiographic findings were established.

Result: An overview of the data with respect to the clinical and radiographic findings at 2, 6 and 12 months of follow-up showed 100% success rate.

Conclusion: Pulpotomy therapy, if the teeth are appropriately selected and MTA is used in suitable conditions especially when conventional treatment is not possible, gives a chance to the pulp to recover and could be the treatment of choice. In case the treatment fails, retreatment thereafter is possible. Nevertheless, further investigations with more samples are recommended for final judgment.

Key words: Mineral trioxide aggregate, permanent human molars, Pulpitis, Pulpotomy