

Clinical, Radiographic and histological assessment of MTA and calcium hydroxide apexification materials (Human and Animal study). Cairo Dental Journal, 19 (2): 185-191, May, 2003.

*Abstract:*

Mineral trioxide aggregate (MTA) has been established for the last few years as a material for providing the appropriate chemical stimulation for tissue healing in various Endodontic situations where formation of calcific barrier is necessary. It is recently used for direct pulp capping, pulpotomy, and apexification. A total of 8 children with bilateral traumatized young maxillary permanent central incisors were included in the present work. Apexification procedures with MTA, was applied on the right central incisor while, calcium hydroxide paste, was applied on the left central incisors in each patient. Also, 4 dogs about 18 months old were used. In each dog, the third and fourth premolar of both the right and left sides of the mandible were selected. Intentional perforation in the furcation area was performed, MTA apexification material was applied to the right premolar whereas, calcium hydroxide apexification material was applied to the left premolars in each dog. The examination was carried out using Digora system for assessment of bone density changes at apical area in human study and using histological examination to evaluate the response of tissues in animal study. The human clinical and intraoral direct digital radiographic results showed that, no significant difference between the two studied groups was detected; the experimental study showed that the healing of the perforation was detected earlier in the MTA group than the calcium hydroxide group.