Clinical And Radiographic Study To Evaluate The Use Of Bioresorbable Guided tissue membrane and Bone graft Material In Bone Healing Of Large Periapical Osseous Defects

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Abstract

The purpose of this study was to compare the capacity of bioactive bone graft material (tri calcium phosphate) alone or its combination with bioabsorbable Guided tissue regeneration barrier membrane (collagen membrane) or open flap debridement only techniques to fill osseous defects resulted from endodontic, or endo-perio origin in human beings. A total of 30 patients, with large periapical radiolucency of at least 10 mm in diameter related to 2 teeth at least were divided equally into 3 groups according to the material placed in the osseous defect. Group A: Filling osseous defect with bone graft material only (BG). Group B: Filling osseous defect with bone graft material and Membrane (BG+GTR). Group C: Control group (OFD). On the day of the surgery, Pre-operative radiograph was taken using the direct digital imaging system to ensure the size of the lesion and to record the pre-operative bone density. Then, root canal and periapical surgical procedures were done, including root-end cavity preparation using ultrasonic technique and retrograde filling with MTA. Healing of the osseous defect was evaluated by the densitometric analysis of the periapical lesions using direct imaging system (Digora) immediately postoperative, at 2 weeks, 1 month and 6 months after the surgery to assume the density of the bone formed with that pre-operatively. The statistical results showed that the use of bone graft material alone or with membrane accelerated the healing of the peridontium apparatus and bone. Also it was found that group (B) was the best among the other 2 groups, where it accelerated significantly. MTA approved its biocompatibility and sealing ability, where radiographically the peridontium apparatus was reattached to the root surface.
KEY WORDS: Tri-calcium phosphate, Collagen membrane, MTA, Ultrasonic Technique.

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