Bio-oss combined with fibrin glue and bone morphogenetic protein-2 to repair mandibular defects. [Chinese]

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Abstract:

Background: Bio-oss granular structure is normally used for hole-shaped defects in the form of filling transplantation, but it is difficult to forming for more than three-wall defects. Objective: To evaluate the osteogenic activities of Bio-oss after combination with fibrin glue and bone morphogenetic protein-2 in the repair of canine mandibular defects. Methods: The second and fourth premolar teeth and the second molar teeth were extracted bilaterally in nine hybrid canines, resulting in 1 cm x 1 cm bone defect. Bio-oss, Bio-oss+fibrin glue and Bio-oss+fibrin glue+bone morphogenetic protein-2 were implanted into bone defects of the second, fourth premolar teeth and the second molar teeth, respectively.Results and Conclusion: Stage I healing of soft tissues was achieved in all animals. Bio-oss was closely combined with fibrin glue, which was difficult to be separated. The proportion of new bone was higher in the Bio-oss+fibrin glue+bone morphogenetic protein-2 group than in the other two groups at 4, 8, and 12 weeks after extraction ($P < 0.05$). It shows that fibrin glue can solve the difficulty in Bio-oss formation, and Bio-oss combined with bone morphogenetic protein-2 can promote osteogenic activities.