Maxillary sinus floor augmentation using autogenous bone grafts and platelet-enriched fibrin glue with simultaneous implant placement.

Authors: Lee H.-J., Choi B.-H., Jung J.-H., Zhu S.-J., Lee S.-H., Huh J.-Y., You T.-M., Li J.

Publication Date: 2007

Abstract:

Objective: The aim of this study was to evaluate the use of autogenous bone in combination with platelet-enriched fibrin glue as a grafting material for maxillary sinus augmentation with simultaneous implant placement in dogs. Study design: The mucous membranes of 12 sinuses in 6 dogs were elevated bilaterally. In the right sinus, autogenous bone mixed with platelet-enriched fibrin glue was grafted into the space between the membrane and the sinus wall. In the left sinus, autogenous bone alone was grafted as a control. At the same time, 2 dental implants were inserted into the grafting material through the maxillary sinus floor. The animals were killed 6 months after surgery. Results: The mean bone-implant contact was 40.5% on the fibrin glue side and 32.3% on the control side ($P < .05$). The mean height of newly formed bone in the augmented area was 12.2 mm on the fibrin glue side and 10.7 mm on the control side ($P < .05$). Conclusion: The results indicate that the use of autogenous bone mixed with platelet-enriched fibrin glue can achieve results superior to those for grafts of autogenous bone alone. The specific improvements of this technique include enhanced osseointegration of dental implants and increased height of new bone.