Bone formation with a biphasic calcium phosphate combined with fibrin sealant in maxillary sinus floor elevation for delayed dental implant.

Authors: Wagner W., Wiltfang J., Pistner H., Yildirim M., Ploder B., Chapman M., Schiestl N., Hantak E.

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Abstract:

Objectives: The aim of this study was to evaluate the extent and quality of new bone 6 months after sinus lift with biphasic micro- and macroporous calcium phosphate combined with fibrin sealant (MBCP-FS) and the 1-year implant success rate in the augmented site. Material and methods: MBCP-FS was applied to one sinus in 96 subjects requiring augmentation for delayed dental implant placement. In subjects who required bilateral lifts (N = 33), the MBCP-FS sinus was randomly selected; the contralateral sinus was grafted with autologous bone (mixed with Bio-Oss when harvested bone volume was insufficient. Panoramic views were taken periodically prior to and up to 18 months post-lift. Histomorphometric analysis was conducted on biopsies taken during implant placement 6 months after augmentation. Implant functionality and prosthesis success were assessed clinically 1 year after implant placement. Results: In MBCP-FS sinuses, 20.6 +/- 8.5% new, mainly lamellar bone was observed. Implants were placed as planned in 78/85 evaluable subjects (91.8%) 6 months after sinus lift. Graft heights remained stable 1 year after placement; 94.7% (142/150) of implants were functional. The amount and quality of new bone and implant success rates with MBCP-FS were similar to autologous bone graft (mixed with Bio-Oss in 30/31 evaluable subjects). MBCP-FS was safe and well-tolerated. Conclusions: MBCP-FS is safe and effective in sinus floor elevation for dental implant placement, supporting bone regeneration and with high 1-year implant success rates similar to autologous bone mixed with Bio-Oss. © 2011 John

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