

Simultaneous sinus augmentation with implant placement: histomorphometric comparison of two different grafting materials. A multicenter double-blind prospective randomized controlled clinical trial

ABSTRACT

In many implant treatments, xenogenic biomaterials of different biologic origin are considered to be valid and predictable alternatives to autogenous bone, also for the sinus elevation via the lateral approach for implant rehabilitation of atrophic posterior maxillae.

The aim of the present experimental randomized clinical trial was to evaluate the histologic behavior of two different xenogenic bone substitutes used in sinus floor augmentation procedures via the lateral approach. With a double-blind design, the two bone substitutes tested were a deproteinated particulated bovine bone (DPBB) (Bio-Oss®, Geistlich) and a new grafting material consisting in a particulated cortical porcine bone (PCPB) (OsteoBiol® mp3®, Tecnos®, Giaveno, Italy). In particular, this material has a granulometry ranging from 600 to 1000 µm and the prehydrated form is supplemented with collagen. All patients included in the study were treated with maxillary sinus floor elevation via a lateral approach and one of the two xenografts was used as the sole grafting material. Root-form implants were placed simultaneously. Stage-two surgery was performed at 6 months: all the implants were uncovered and the biopsy specimens harvested from each site, and histomorphometric analyses were performed.

CONCLUSIONS

42 specimen were analyzed histomorphometrically and the results showed no significant differences in total bone volume (PCPB 37.43%, DPBB 37.52%) or residual grafting material (PCPB 13.55%, DPBB 16.44%). As the histomorphometric data presented in the present experimental randomized clinical trial suggest that particulated cortical porcine bone has excellent osteoconductive properties, the Authors concluded that *"in this study, PCPB compared well with DPBB as a grafting material for lateral sinus elevation"*.

LATERAL ACCESS SINUS LIFT

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