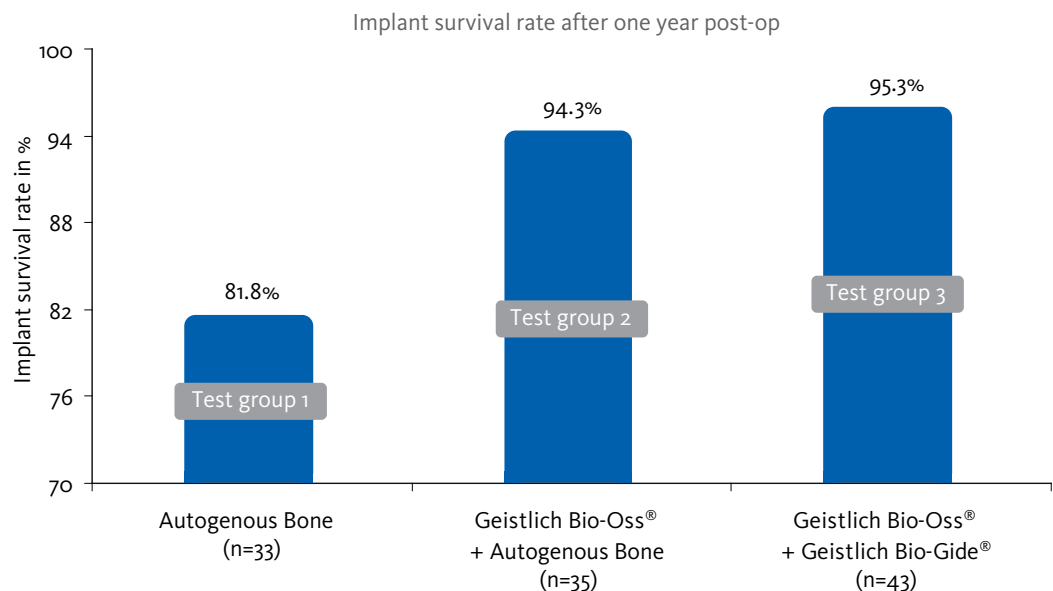


Increase in implant survival rate through the use of Geistlich Bio-Oss® and Geistlich Bio-Gide®

Excerpt from Hallman M., Sennerby L., Lundgren S. A Clinical and Histologic Evaluation of Implant Integration in the Posterior Maxilla After Sinus Floor Augmentation with Autogenous Bone, Bovine Hydroxyapatite, or a 20:80 Mixture. Int. J. Oral Maxillofac. Implants. 2002; 17(5): 635-43.

Results

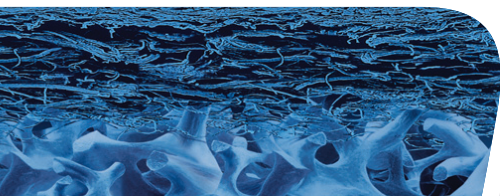


Conclusion

If test groups 2 and 3 are compared, no significant differences with regard to the implant survival rate can be identified. This indicates that use of autogenous bone can be completely omitted in sinus floor augmentation if the combination of Geistlich Bio-Oss® and Geistlich Bio-Gide® is used.

Study design

- 21 patients, total of 36 sinus floor augmentations
- Two-stage procedure: 33 implants with purely autogenous bone, 35 with Geistlich Bio-Oss® + autogenous bone (80:20) and 43 with the Geistlich Bio-Oss® and Geistlich Bio-Gide® system solution
- Measurement and comparison of the implant survival rates in the above 3 groups after 1 year
- Evaluation of histology/drill cores was performed



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A Clinical and Histologic Evaluation of Implant Integration in the Posterior Maxilla After Sinus Floor Augmentation with Autogenous Bone, Bovine Hydroxyapatite, or a 20:80 Mixture

Hallman M., Sennerby L., Lundgren S. A Clinical and Histologic Evaluation of Implant Integration in the Posterior Maxilla After Sinus Floor Augmentation with Autogenous Bone, Bovine Hydroxyapatite, or a 20:80 Mixture. *Int. J. Oral Maxillofac. Implants.* 2002; 17(5): 635-43.

Abstract

Purpose: This study was designed to clinically and histologically evaluate the integration of titanium implants in different grafting materials used for maxillary sinus augmentation procedures.

Materials and Methods: A total of 21 patients and 36 maxillary sinuses were augmented with (1) autogenous particulated bone from the mandibular ramus, (2) bovine hydroxyapatite (BH) with membrane coverage, or (3) an 80/20 mixture of BH and autogenous bone. The grafts were allowed to heal for 6 to 9 months prior to placement of microimplants for histology and standard implants for prosthetic rehabilitation. After another 6 months of healing, when abutments were connected, the microimplants were retrieved for histologic and morphometric analyses. The outcome of the standard implants was clinically evaluated after 1 year of loading.

Results: The mean bone-implant contact was $34.6 \pm 9.5\%$, $54.3 \pm 33.1\%$, and $31.6 \pm 19.1\%$ for autogenous bone, mixture of 20% autogenous bone/80% BH, and 100% BH, respectively. The corresponding values for the bone area parameter were $37.7 \pm 31.3\%$, $39.9 \pm 8\%$, and $41.7 \pm 26.6\%$. The BH area was found to be $12.3 \pm 8.5\%$ and $11.8 \pm 3.6\%$ for 20% autogenous bone/80% BH and 100% BH, respectively. There were no statistically significant differences for any parameter between any of the groups. After 1 year of loading, 6 of the 33 implants placed in autogenous bone grafts, 2 of the 35 implants placed in the BH/autogenous bone mixture, and 2 of 43 implants placed in BH were lost. There were no statistically significant differences between any of the groups.

Discussion: The histomorphometric analysis showed no differences between the 3 groups, indicating that autogenous bone graft can be substituted with bovine hydroxyapatite to 80% or 100% when used for maxillary sinus floor augmentation. The effect of adding autogenous bone remains unclear but may allow for a reduction of the healing time.

Conclusions: The results from this clinical and histologic study indicate that similar short-term results can be expected when using autogenous bone, BH, or a mixture of them for maxillary sinus floor augmentation and delayed placement of dental implants.