Histomorphometrical Analysis of Bone formed after Maxillary Sinus Floor Augmentation using different Non-Autogenous Graft Material.

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Background: Various grafting materials have been successfully used to augment the maxillary sinus : autogenous bone, DFDBA,FDBA, xenografts, hydroxyapatite, bioglass, calcium sulfate and growth factors.

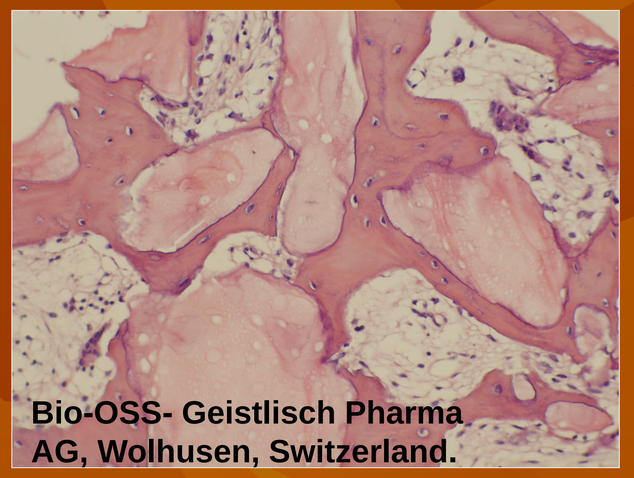
Aims: This study was undertaken to compare different non-autogenous graft materials in sinus augmentation procedures using the lateral window technique and a double (internal-external) collagen membrane.

Materials: Bio-Oss, Cerasorb (β-TCP), Oragraft (mineralized allograft), Bio-osteitic (TCP+HA) and 4Bone (TCP+HA)were grafted in 76 Sinuses. Core-biopsies were harvested 9 months after sinus floor augmentation using a trephine and were stained with H&E.

methods:
Histomorphometrical measurements were done using a millimeter eyepiece grid in a binocular stereomicroscope at x200 magnification. The relative percentage area of newly formed bone (NB), residual graft and bone marrow, was measured in each section. Osteoconductive value was evaluated using a microscope equipped with a drawing tube, by measuring the contact area between the graft particles and the newly formed bone and dividing it by the total circumferences of the graft particles.

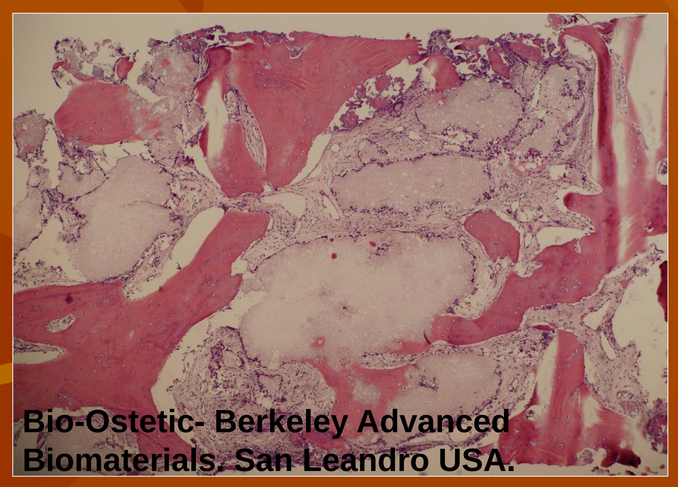
9 months biopsies from augmented sinuses with different non-autogenous graft materials and internal/external collagen membrane

Oragraft- Life net, Virginia Beach, VA, USA



Bio-OSS- Geistlisch Pharma AG, Wolhusen, Switzerland.

Cerasorb- Curasan AG, Frankfurt, Germany



Bio-Ostetic- Berkeley Advanced Biomaterials, San Leandro USA.

4Bone SBS- BIOMATLANTE SARL, France

Results:

Graft materials	Cases (no)	**Newly formed bone(%)**	Residual graft(%)	Bone marrow +c.t(%)	**Osteoconductive value(%)**
Oragraft Lifenet	30	**29.1**	19	51.9	**58.7**
Bio-Oss	14	**28.3**	23.8	47.9	**51.6**
Cerasorb	10	**26.6**		73.4	
Bio ostetic	10	**29.3**	22.5	48.2	**22.8**
4Bone SBS	12	**28**	41	31	**57.8**

Conclusions: The various grafting materials evaluated in the study are suitable for sinus floor augmentation.