

Histomorphometric analysis of bone formation after maxillary sinus floor augmentation using a ground cortical bone allograft .

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Background: Grafting of the maxillary Sinus floor has become a common procedure for increasing alveolar bone height. Demineralized freeze dried bone allograft (DFDBA) has limited effectiveness for such procedures. (AO sinus graft consensus conference 1996).

Aims: To evaluate clinically, histologically and histomorphometrically the efficiency of a Freeze Dried Bone Allograft (FDBA) in sinus lift procedures.

Materials and methods:

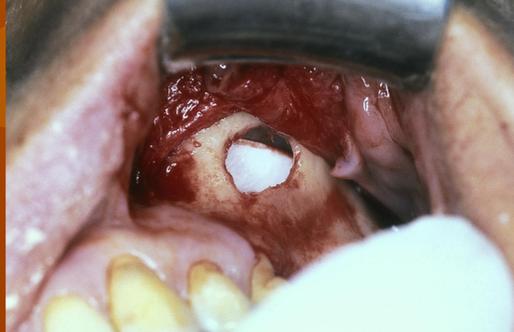
The lateral antrostomy technique with FDBA (Oragraft® Life-Net) allograft and collagen membrane was used. A double (internal-external) collagen membrane was used in 16 cases. Core biopsies were harvested 9 months after sinus floor augmentation. Biopsies were stained with H&E and Mallory. Histomorphometrical measurements were made using the point-counting procedure. Each section was examined using a projection microscope. The percentage fraction of each of the following tissues: newly formed bone, residual graft material, bone marrow and connective tissue) was calculated for each section.

Results: Graft particles were observed in all specimens surrounded by newly formed bone in direct connection or by soft tissue marrow. The histometrical analysis of the sections showed an average new bone formation of 37%, residual graft particles of 18% and connective tissue of 45%.

1. K.L 50 years female.



2. Collagen membrane beneath the Schneiderian membrane



3. ORAGRAFT (FDBA)



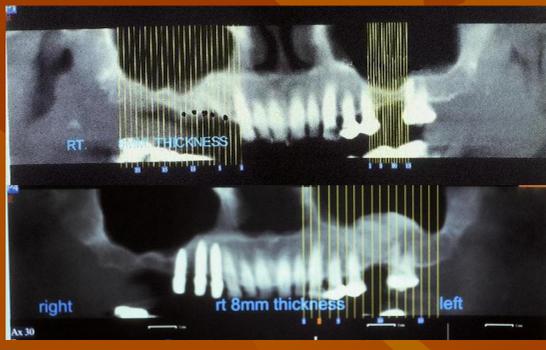
4. Collagen Membrane (Bio-Gide)



5. Allograft in sinus cavity



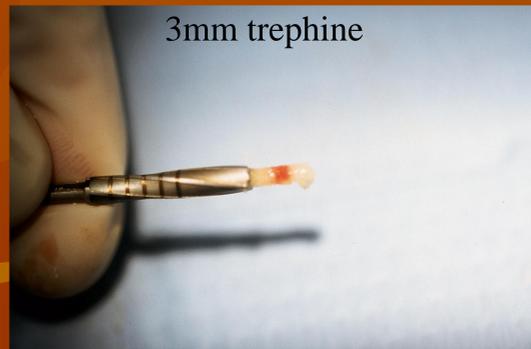
6. C.T scan time 0 & 9 months



7. Osteotomy with a 3mm trephine



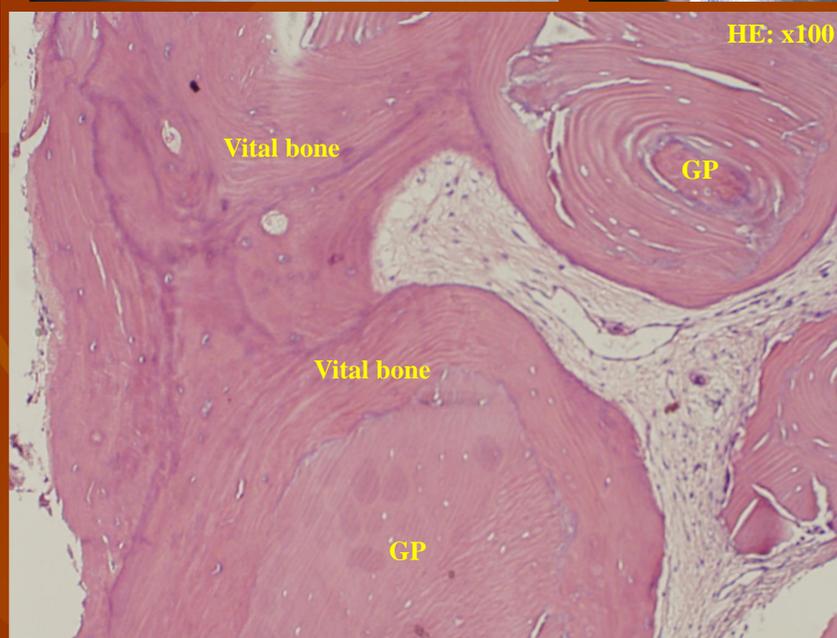
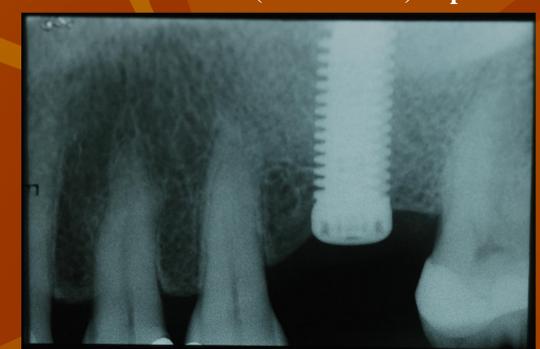
8. 3mm trephine with 2mm bone core



9. 15/5 MAESTRO (BioHorizons) implant



10. 15/5 MAESTRO (BioHorizons) implant



12. Final PFM crown



11. Histology 9 months. Vital bone in close contact with graft particles

Conclusion: FDBA (Oragraft®) is comparable to DFDBA Allografts or Deproteinized Bovine Bone Mineral Xenograft for sinus lift augmentation

