

From the minimal Invasive Carota Technique to Khoury Bone Augmentation Shell Technique.

Fouad Khoury, DMD, PhD, Prof. Dr. med. dent, Olsberg/ Münster

The reconstruction of bony defects with autogenous bone grafts is still today the gold standard in oral rehabilitation with dental implants. The reconstruction of limited bony defects with locally harvested bone chips usually requires the addition of biomaterial and membranes to stabilize the bone graft. An alternative to this technique is the use of a stable bone core harvested locally with a trephine from the implant site during implant bed preparation. This avoids the use of biomaterials and membrane and the morbidity of other harvesting sites. Bone harvesting from the future implant bed using a special trephine drill offers possibilities for a minimal invasive bone augmentation simultaneously with the implant insertion. Lateral bone augmentation with coverage of exposed implant threads up to 10mm can be successfully treated with this minimal invasive approach. The harvested bone core is stabilized on the top of the defect through compression with micro screws. The remaining gap is covered with local harvested autogenous bone chips. As an autogenous augmentation technique, the carrot method is characterized by high biologic potentials such as osteogenesis, osteoinduction and osteoconduction. Advantages include, in addition to the reduction of the treatment time, low morbidity without the need of membranes or other foreign materials and a very low material fee.

For the reconstruction of severe bony defects, bone blocks can be harvested very in a safe way from the mandibular retro molar area and used following the split Bone block (Khoury shell) technique. Splitting the thick cortical block to 2 or 3 thin blocks is augmenting the number of blocks allowing the reconstruction of larger atrophic crest and giving a better adaptation to the recipient site with individual determination of the width and the volume of the grafted area. Filling the space and gaps between the thin block and the remaining crest with particulate bone chips is reducing the time needed for revascularization of the graft improving its vitality compared to the original thick block.

Learning objectives:

This Workshop describes practical aspects and results of those techniques that make possible long-term esthetic and functional implant restorations:

- Diagnostic, alternatives and decision
- Minimal invasive augmentation with the Bone Core Technique
- Technique of safe harvesting of bone blocks
- Technique of block grafting (SBB technique and biological concept)
- 3D reconstructions.
- Soft tissue management for graft protection and soft tissue augmentation