



**Dr. Benoit Philippe, France**

**AUTOLOGOUS BONE GRAFTS AND COMPUTER AND STEREOGRAPHIC GUIDE-ASSISTED PRE-IMPLANT OSTEOTOMIES. 10 YEAR REVIEW AND NEW DEVELOPMENTS.**

**Introduction**

Autologous bone grafts and total or segmental peri-implant osteotomies are used to correct skeletal atrophy whether or not associated with vertical dimension abnormalities. The quality of rehabilitation depends as much on the surgical strategy chosen as on following the treatment plan. The aim of this presentation is to show the role of computer and stereolithographic guide-assistance in the diagnosis, surgical simulation and control of the surgical procedure.

**Materials and Methods**

Our presentation is based on 250 patients treated over 10 years. Each patient underwent a CT scan with acquisitions treated using Siplant-OMS<sup>R</sup> software.

All of the patients in this series received autologous membranous (mandibular or parietal) or enchondral (tibial or iliac) bone grafts. 20% also underwent simultaneous, total or segmental osteotomies. All of our patients had full computerised simulation: prosthetic implant and maxillo-facial surgery (Siplant-OMS<sup>R</sup>) and control of the procedure using stereolithographic guides for osteotomy cases.

**Results and discussion**

In cases with skeletal atrophy the autologous bone grafts reconstituted a skeletal volume which was appropriate to receive the implants. Computerised assistance enabled the loss of skeletal material to be quantified and the most appropriate donor site to be selected.

The total or segmental osteotomies were used to correct extensive vertical dimension abnormalities. The reason for less than perfect prosthetic results was inappropriate displacement of the skeletal base released by the osteotomy procedures rather than gum retraction. Full computerised prosthetic and surgical simulation can quantify the displacements providing a set of facial and aesthetic criteria in order to obtain anatomical rehabilitation without false gum. The guides enable us to monitor the surgical procedure.

**Conclusion**

Assistance from computer software and stereolithographic guides combined with our clinical experience now enables us to provide reconstructions which are as close as possible to the initial state before the loss of dental organs.