

3D SURGICAL GUIDES IN ORAL IMPLANTOLOGY

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ABSTRACT. A new concept in oral implantology. If until now the management was open and see what is the bone offer and insert implants where we can and the final prosthetic will be somehow. The current concept are backwards planning. Guided prosthetic planning is one that is gaining ground and soon will become the only correct approach to insert an implant and an predictable prosthetic rehabilitation .

INTRODUCTION

Making the template for surgical guide, using CBCT, CAD-CAM and 3D Printer. Prosthetician has a role in determining the position of implants for rehabilitation functions in different maxillary edentations , with the help of implants. The template for surgical guide are the vector in communication between prosthetician and surgeon, the final achieving the implant insertion, the insertion position enabling ADM function rehabilitation as close to ideal template guide is communication needs set by prothe- location of the implants, the surgeon asked, achieving implant insertion position enabling ADM functions rehabilitation as close to ideal.

Guide templates are needed even in the case of the solitary implant. After Misch, surgical template surgeon gives information on the optimal positioning of the implant in order to better satisfy the following considerations: optimum support for the forces of occlusal repetitive , aesthetic, enhance prevention and

A template guide, well designed and manufactured will shortens time of surgery, increases the accuracy of implant application, increases the parallelism between implants, reducing angled abutments and predictable aesthetic results .

There are a variety of templates guide, which differ both in terms of complexity and cost, from simple trays to systems derived from information obtained through examination of Cone Beam Computer Tomography.

Surgical guide templates can indicate the shape of the future prosthetic restoration, but

their main purpose is to direct the future osteotomy (position and angulation of the implant to be inserted), are based on information obtained from CBCT scan , design and computer aided manufacturing the CAD –CAM (Computer Asisted Design - Computer Assisted Manufacture). Guided surgery is planned using data obtained by CBCT and through computer processing of such data is obtained axial location and depth of information in the future implant bone. Surgical templates may be manufactured by two processes: CAD-CAM milling and stereolithography (3D Printing)

The advantages of using surgical templates include the predictable result of the insertion of implants(like location and alignment arch prosthetic restoration and future), avoiding damage to adjacent structures(teeth, sinuses, mandibular canal, bone cortices)and reducing the duration of surgery and consequently an improvement in post-operative recovery.

The disadvantages of using surgical templates are higher startup costs (software) and need for significant investments of time deciphering CBCT and optimal use of simulation programs for achieving a correct treatment plan . Also , there may be hesitation from physicians in the use of surgical templates due to the additional costs these entail , especially for cases with reduce difficulty .

Items required for obtaining surgical templates are diagnostic model, diagnostic waxup CBCT examination with or without radiological templates, software processing of information obtained from

CBCT + design surgical templates and the method of materializing the design.

The templates can be fixed on teeth or with osteosynthesis screw, the implant site can be made transmucosal or classic.



Fig. 1 Initial panoramic pre op



Fig. 2 CBCT Analysis and planing

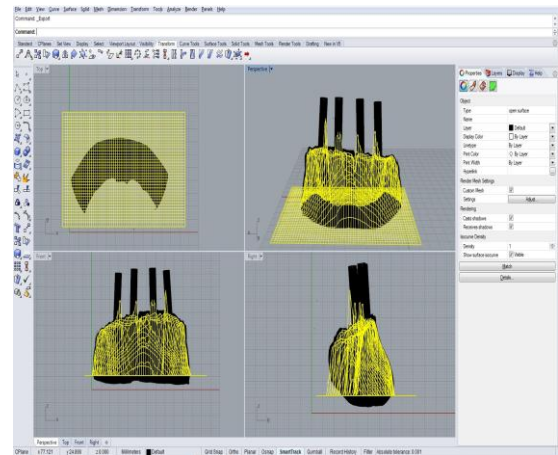
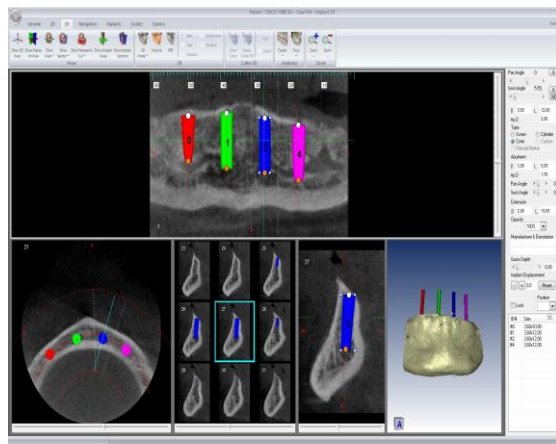


Fig. 3,4 CBCT volume import in 3D printer software, implant axis simulation



Fig. 5,6 Template of the surgical guide, on 3D print model

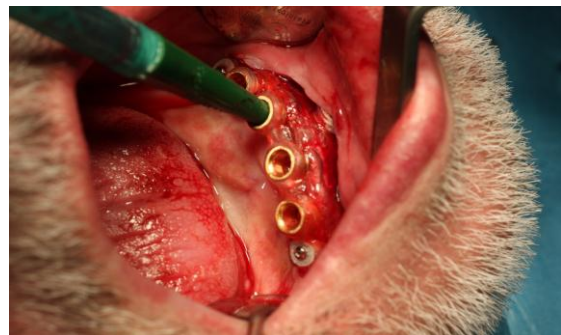




Fig. 7,8 Surgical aspects and final implant in place

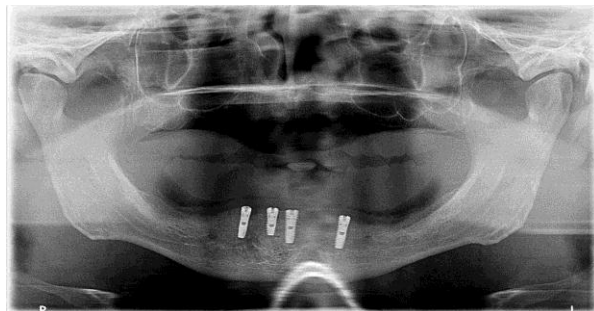


Fig. 9 Post. Op. panoramic

CONCLUSIONS

3D navigation main advantages are aesthetic, safety, precision (less than surgical templates), predictable results and the main disadvantages are while more work, higher costs,

lack of accurate guides for milling, total dependence on technology.

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