

CASE REPORT

Digital Workflow for Full-Arch Implant Placement Using a Stackable Surgical Guide

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Objectives: Several techniques are available for guided implant placement. The purpose of the present study is to describe a technique for fully-guided full-arch immediate implant placement and immediate loading using the rehabilitation of a failing dentition using a 3D-printed stackable surgical guide.

Case presentation: In this case, a healthy, non-smoker, 65-year-old male patient was referred to restore his upper dental arch. The patient had periodontally compromised teeth (fig.1). The treatment plan included immediate implant placement and loading. Digital planning was performed as follows. Both arches were scanned, and maxillomandibular records were obtained with an intraoral scanner (Primescan). A CBCT scan of the patient was taken to obtain DICOM file. Both the DICOM and STL files were imported and superimposed into an implant planning software programme (B4D) to design the stackable surgical guide (fig.2), which consisted of three parts (for the selected implant system), and also the provisional prosthesis (fig.3). All maxillary teeth were extracted and the immediate placement of six implants (ETK Naturactis) was performed fully-guided (fig.4). The provisional PMMA full-arch screw-retained prosthesis was guided to the correct position with the use of the third part of the surgical guide, and was finished accordingly. After the appropriate occlusal adjustment and screw tightening to 20Ncm, immediate loading was performed (fig.5).

Conclusions: A stackable surgical guide derived from a digital workflow may increase the predictability of immediate implant placement and immediate loading with provisional implant-supported fixed prosthesis.



Figure 1

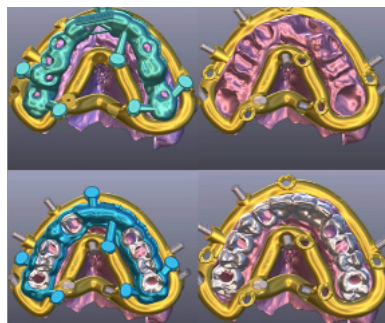


Figure 2



Figure 3



Figure 4

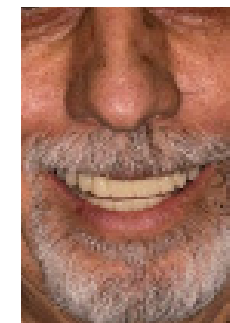


Figure 5