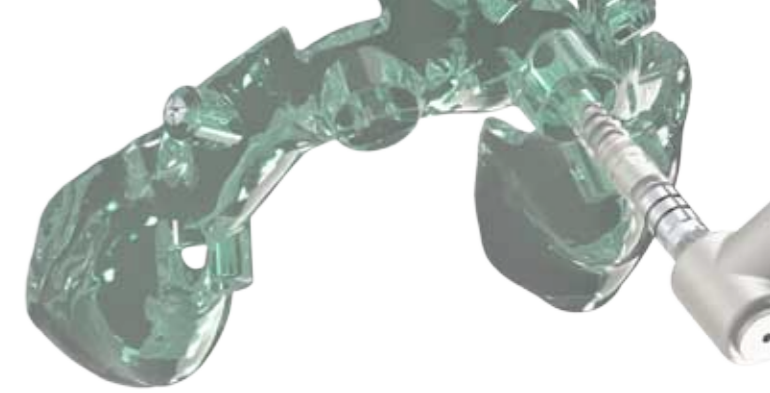




EasyLineImplant Guided Surgery





Guided surgery

Guided Surgery represents an improvement in the traditional surgery, increasing the advantages for clinicians and patients. The guided procedure allows reaching a high accuracy in implant insertion with flapless surgery, using a surgical guide manufactured according to the surgery virtual planning for a specific patient. This allows a complete work in only one appointment. Flapless technique, avoiding the gingival incision and the subsequent suture, permits a faster mucosa healing, lower bone reabsorption and a higher implant stability. Moreover, the surgery time is reduced, as well as the intraoperative bleed, swelling and pain for the patient who can resume faster his normal life.

Work flow

Dental visit

A customized healing treatment plan should be agreed with the patient according to his needs. It is essential to evaluate the patient's oral opening, in order to assess if adequate vertical space is available to accommodate the surgical guide and related components.



Radiological exam

A radiological template is fabricated to evaluate, by CT scan, the correct position of the teeth to be replaced and the soft tissue thickness around the implant. The patient should perform the 3D Scan with the radiological template fixed in his mouth.



Planning of the Clinical Case

The CT scan should be acquired by the 3D software to develop the clinical case. The 3D software allows the planning of different surgical aspects to have a complete and safe surgery: implant position and prosthetic components simulation, prevision of maxillary sinus elevation and localization of mandibular nerve.

The virtual planning's informations are then exported in STL format for the manufacturing of the surgical guide.



Surgery

Surgical guide is produced by 3D high resolution printer or by milling, according to the performed clinical case planning and to the surgical kit that will be used. During the same surgery session implants and prosthetic structure can be inserted.



Overmed Guided Surgery

Radiological template

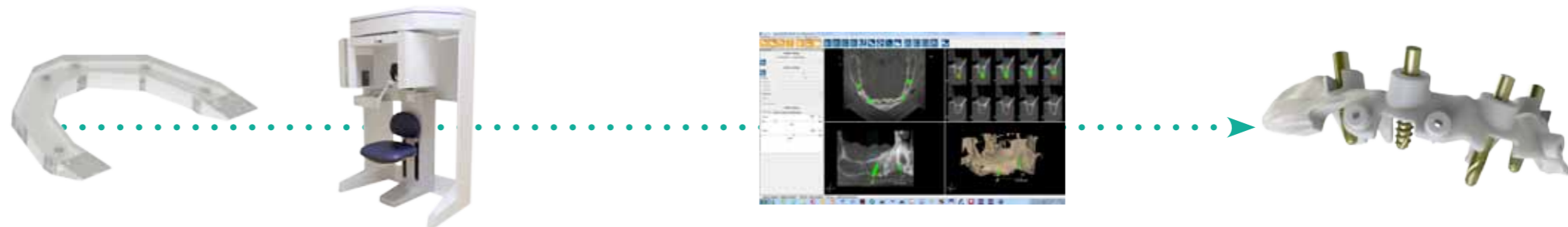
It is fixed in the patient's mouth according to his clinical condition and the medical studios' availability of diagnostic equipment. Overmed standard radiological template has five radiopaque landmarks, in order to correctly define and recreate the dental arch position. The standard arch can be modified, however, to fit properly in the mouth of partially edentulous people or people equipped with removable prosthesis, for an ideal positioning during the examination even if the CT Scan is executed elsewhere from the doctor's surgery where the patient is in care.

Clinical Case Planning

Overmed offers to dentists, the experience of professionals who have long worked in guided surgery, and who are able, for this, to plan CAD clinical cases on the basis of informations provided to them by the same dentist (number and position of the implants in the dental arch to be restored, diameter and length of the implants to insert, prosthetic solution to be realized). The doctor, after the approval of the case planned by Overmed specialists, could therefore perform a guided surgery with no need to buy the software, maximizing times and costs.

Surgical Guide

The surgical guide is designed according to implants position and inclination. Overmed surgical guide, virtually created with CAD software, is machined with the sleeves directly integrated at the correct height and position for the chosen implant diameter and length. An innovative fixing technique, based on semi-implantable pins, ensures optimal repositioning during the entire surgery, leaving to dentist the maximum maneuvering possibilities with minimal disturbance.



Fastening of the surgical guides

Fixing of the radiological template

Partially edentulous patient:



1 Custom-made radiological template with stable support on teeth.



2 In case CT Scan could be performed directly in the clinical studios, the standard surgical template can be fixed on the teeth with a resin.

Fully edentulous patient:



1 Radiological template fixed with a resin on the patient removable prosthesis.



2 Fastening with resin to a wax rim standardized on the patient's mouth.

Overmed solution:

Attachment on semi-implantable pins, which fix the radiological template with dedicated retention components, therefore during CT Scan the patient can manage independently the template in his mouth, without mistakes or imprecisions.



The fastening pins are inserted into the bone before the radiological exam and remain in the patient's mouth until the surgery, acting as a support also for the surgical template.

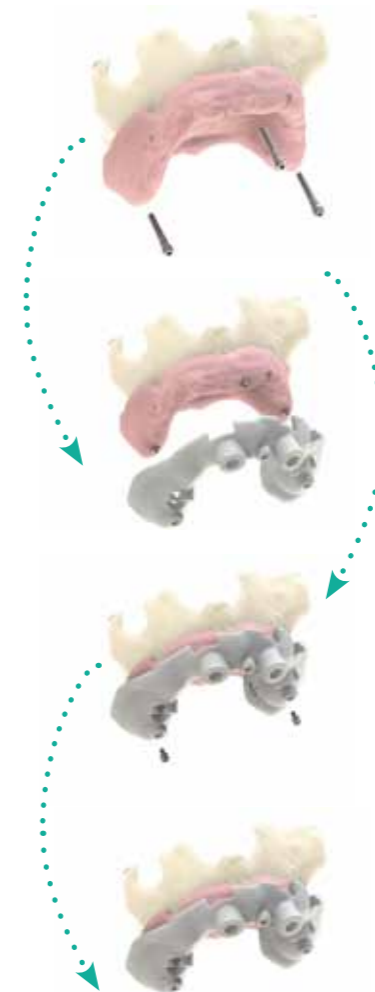


Fixing of the surgical guide

Overmed solution:

The surgical guide is fixed with dedicated screws to the semi-implantable fastening pins, guaranteeing stability during the surgical procedure and a precise repositioning for an even more reliable surgery. The pins can be inserted in vestibular, palatal or lingual zone, using the free bone portions.

This solution represents an efficient innovation especially for complete edentulous cases, solving problems related to soft tissues remodeling and the absence of references in the placement of surgical template during surgery.



As an alternative, fixing of the surgical guide can be performed at the time of the surgery, before the implant insertion. In this case, tiny osteosynthesis screws are inserted through smaller sleeves of the surgical guide, whose position is virtually planned with the 3D software, too.



Kit for variable height template: EasyGuide

EasyGuide kit is divided in two sides according to the implant length: on the left side the instruments dedicated to implants long 8 or 10 mm, identified with an "A" at the end of their code, whereas on the right side those instruments for implants long 11.5 or 13 mm, indicated by a "B". With the EasyGuide kit the drill's correct distance from the bone is defined by the surgical guide design according to the implant chosen. Clinician should only know from which side pick up the instruments (left or right).

Enjoying Overmed service, a detailed report of the correct instruments and the sequence to be used will be given.



Circular punch
Circular scalpel to realize the gingival hole in flapless surgery.



Crestal bone drill
To level the bone in order to remove any crests not visible without opening the gingival flap.



Pilot drill and reamers
They have integrated stops: the correct implant depth is defined by the height of the surgical guide sleeves. They should be used in combination with the corresponding drill handles. According to implant length, type A or B drill will be chosen.

Type «A» drill for implants 8 and 10 mm long Type «B» drill for implants 11,5 and 13 mm long



Drill handles

Drills should be used together with these diameter adaptors that guide the reamers through the surgical guide's sleeves avoiding any deviation during bone drilling.



Bone taps
The correct bone tap, according to the implant family (A or B) to be inserted, should be chosen. They are designed with integrated stops and are directly guided throughout the sleeves without the use of drill handles.



Countersink drill
The correct countersink drill, according to the implant family (A or B) to be inserted, should be chosen. Integrated stops were not provided so it is fundamental referring to the laser marking on the instruments itself.



Implant driver
The correct implant driver, according to the implant family (A or B) to be inserted, should be chosen. Integrated stops were not provided but laser markings on the instruments. The drivers report on the external side an octagon correspondent to the internal implant connection, allowing the desired connection position during drilling.

It is possible to insert implants until 4,75 mm diameter and 13 mm length

EasyGuide surgical procedure

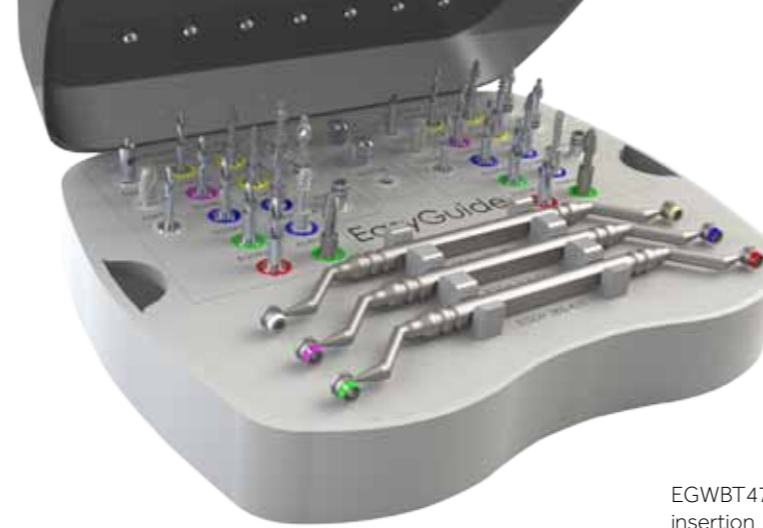
VARIABLE template

EDW47510 implant insertion

In the following, as an example, the surgical procedure for an EDW47510 implant insertion is reported. With this procedure, being an implant long 10 mm, the left side of the kit should be used, where all instruments are identified with an "A" letter, at the end of their code.

Warnings! It is recommended not to exceed the 50 Ncm torque value during mechanical implant insertion with the contra-angle. To avoid bone damage (necrosis and fragmentation) or mounter deformation, once a torque value of 50 Ncm is reached,

remove the surgical guide and proceed manually the implant insertion, with the torque ratchet.



Circular punch 1

Circular punch EGCM insertion



Gingival hole



Crestal Bone drill 2

Crestal bone drill EGPC insertion



Crestal bone leveling



Pilot drill 3

Drill handle EGDHPD insertion



EGPDA reamer insertion



Bone drilling



Reamer ø 2.9 4

Drill handle EGDH29 insertion



EGDR29A reamer insertion



Bone drilling



Reamer ø 3.4 5

Drill handle EGDH34 insertion



EGDR34A reamer insertion



Bone drilling



Bone tap ø 4.75 wide thread 6

EGWBT475A bone tap insertion



Bone tapping



Countersink drill for Ø4.8 platform 7

EGPS48A countersink drill insertion



Cortical countersink



Implant driver 8

Implant extraction with EGKCA driver



Implant insertion with EGKCA driver



Implant inserted



Surgical guide and mounter removal 9

EGKCA driver removal



Surgical guide removal



Mounter removal



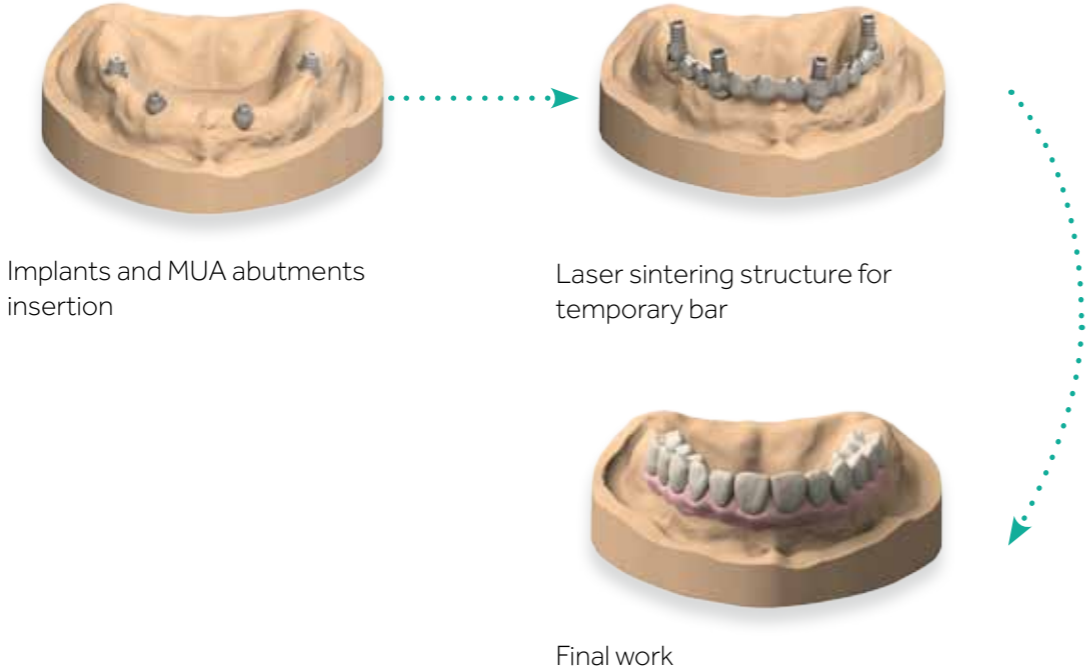
Bone level implant



Prosthetic structures

In the same surgical session, when conditions allow, it is possible to connect to implants the prosthetic solution designed before, using CAD modeling software, and thus fabricated through CAM technology with molding or milling processes. Examples of totally milled structures made of titanium or chrome-cobalt are given below.

All on four:



Prosthesis

Implant Bridge Premium with separated Crowns (Version 2) achievable in Cr-Co or in zirconia with cementable metal connectioni



Toronto Bridge achievable in Ti Gr5, Cr-Co or zirconia with cementable metal connection but only on specific request



Lamellar bar with equator attachment –to be positioned- and counterpart milled or in SLS achievable in Cr-Co or suggested in Ti Gr5

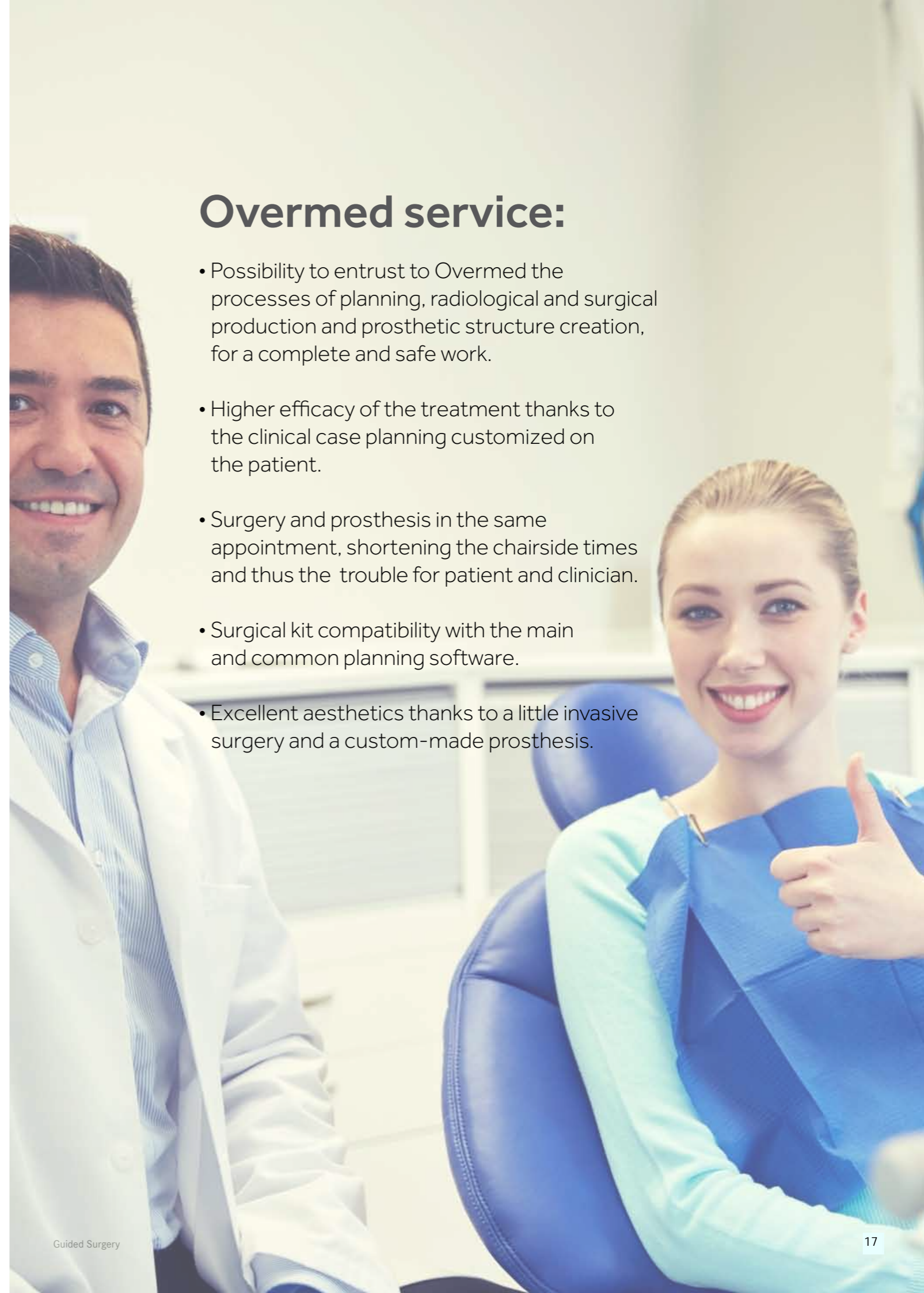


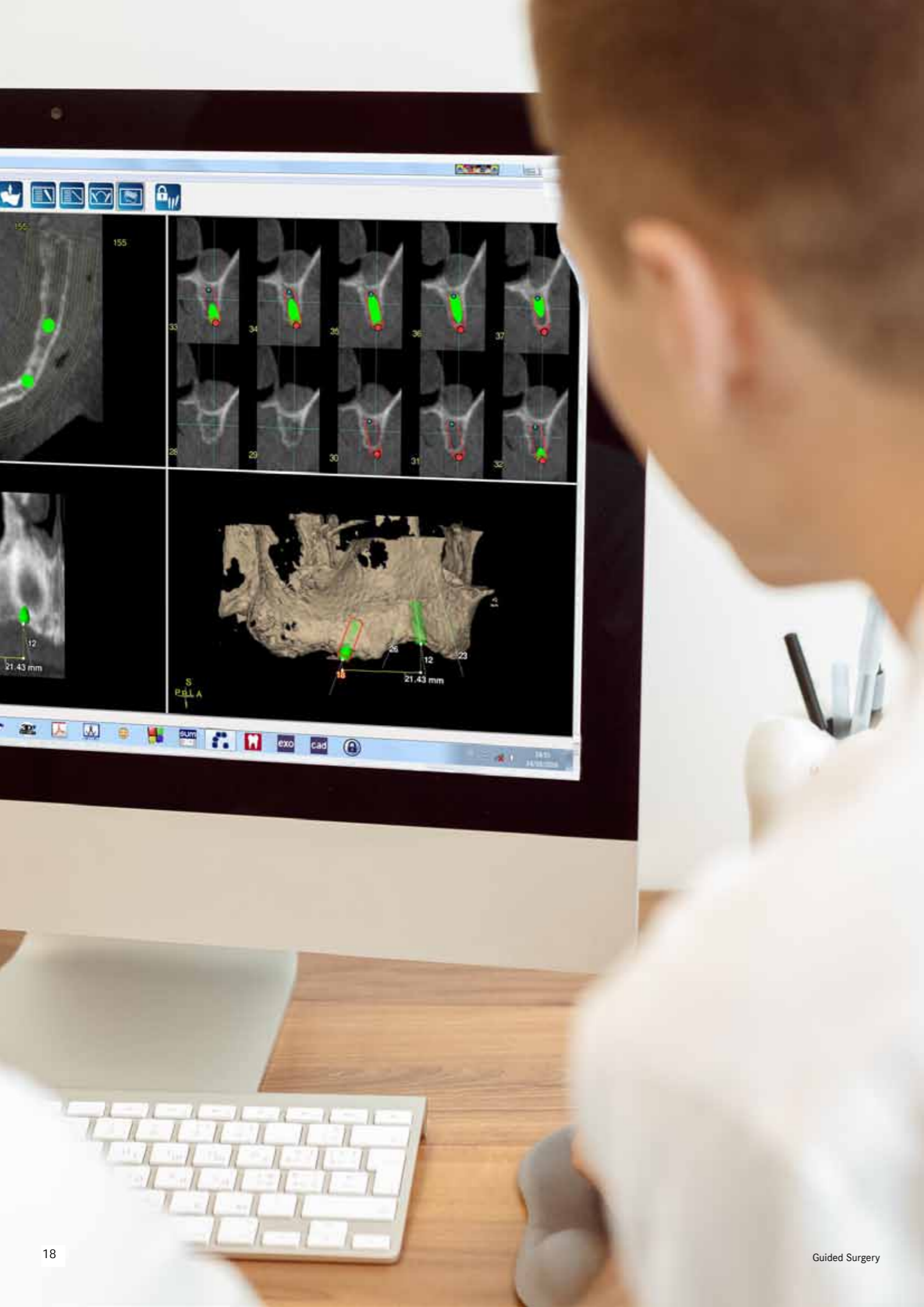
Toronto bar in monolytic zirconia with ceramic covering of the frontal group vestibular portion and cementable metal connection



Overmed service:

- Possibility to entrust to Overmed the processes of planning, radiological and surgical production and prosthetic structure creation, for a complete and safe work.
- Higher efficacy of the treatment thanks to the clinical case planning customized on the patient.
- Surgery and prosthesis in the same appointment, shortening the chairside times and thus the trouble for patient and clinician.
- Surgical kit compatibility with the main and common planning software.
- Excellent aesthetics thanks to a little invasive surgery and a custom-made prosthesis.





Dedicated training to the dental Surgeon and the Laboratory

For the dental Surgeon:

- use of planning software visualizer and surgical simulation on models at the clinician studio
- OVERMED specialist assistance at the first surgery case
- participation to discussion forum performed on clinical cases

For the Laboratory:

- theoretical and practical training on the procedures necessary for a guided surgery case management with EasyGuide and/or EasySurgery system
- participation to discussion forum performed on clinical cases



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