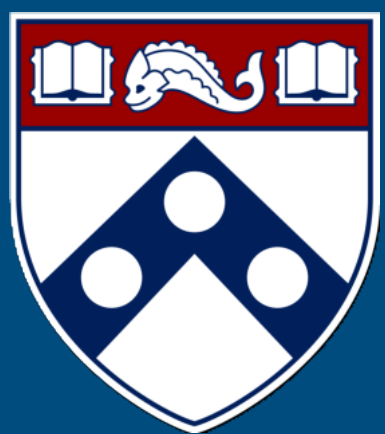




“From an Impediment for Prosthodontics, to a Benefit for a Full Mouth Implant Rehabilitation. How Digital Workflow Can Transform the Role of Specific Anatomical Structures to Crucial Allies.”

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Background

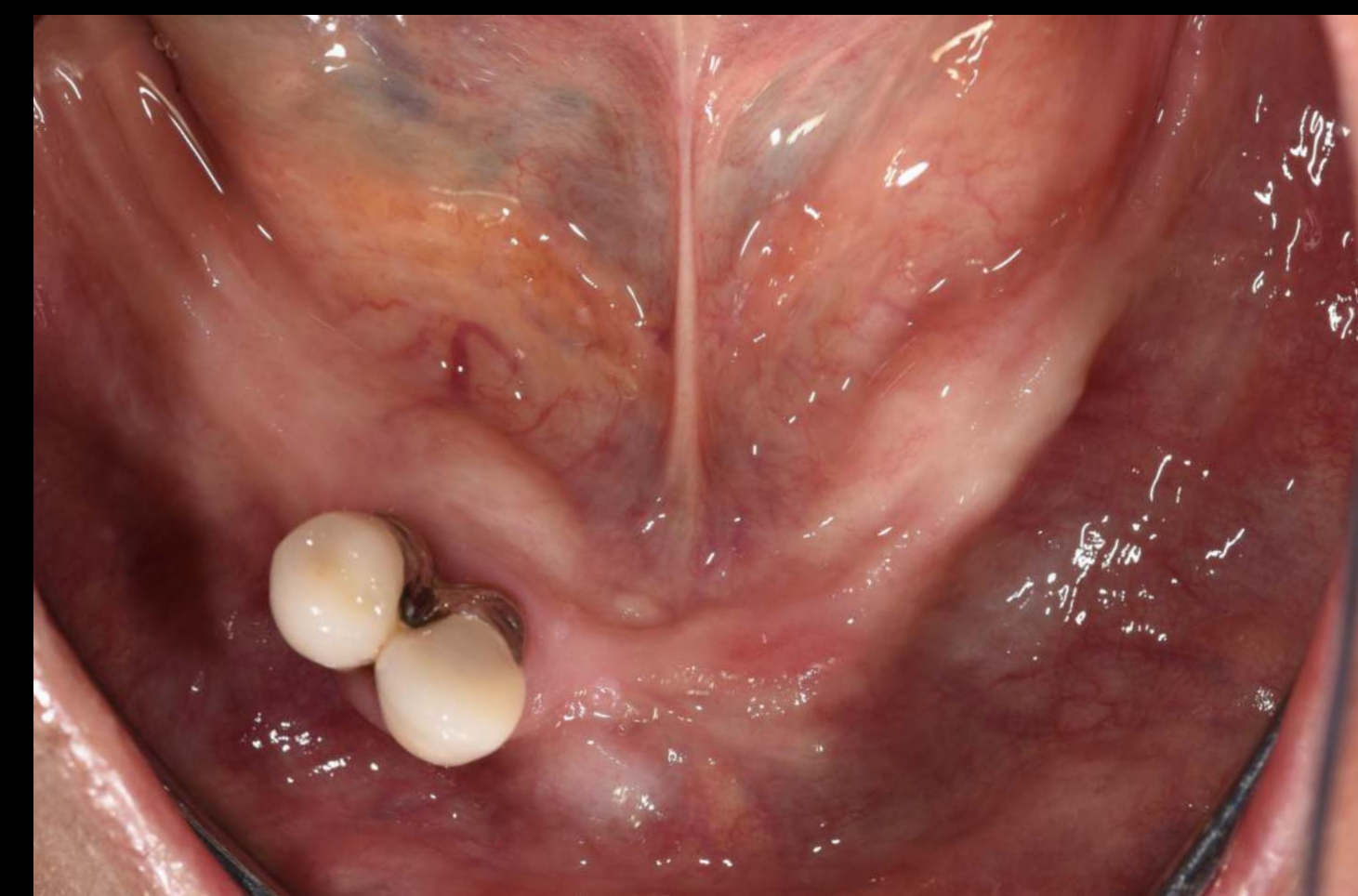
Mandibular tori are an impediment when it comes to a prosthodontic plan including either partial or full dentures. Hence the choice of pre- prosthetic surgery, often in such cases. The described approach on the other hand shall use the torus mandibularis in its favor, since this anatomical area will facilitate the placement of a distal / terminal implant, at a heavily atrophic mandible for an implant supported restoration.

Materials and Methods

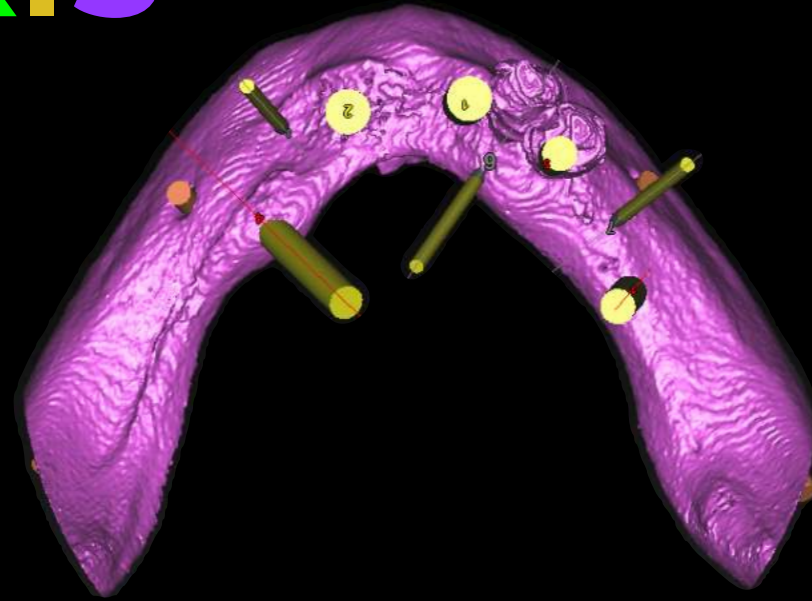
A 65 yo partially edentulous patient suffering from poor adaptation of her partial dentures, discomfort due to the presence of torus in the mandible, collapse of VDO, phonetic difficulty, social discomfort and dietary issues was treated. Her wish was a fixed restoration. The heavily atrophic mandible especially at the lower left side, presented insufficient minimal height for an implant placement and inspired the approach of using the torus. Applying a fully digital workflow, a strategic placement of a terminal implant at the left torus mandibularis, avoiding crucial anatomical structures, while enabling for an adequate prosthodontic restoration was considered. While digital implant placement and sCAIP guides are an established protocol, the fabrication of the final restoration on a fully digital workflow modus was questioned. Thus an analog impression for gypsum models was taken as well, only to be compared with the printed models after the restoration was completed.

Results - Conclusions

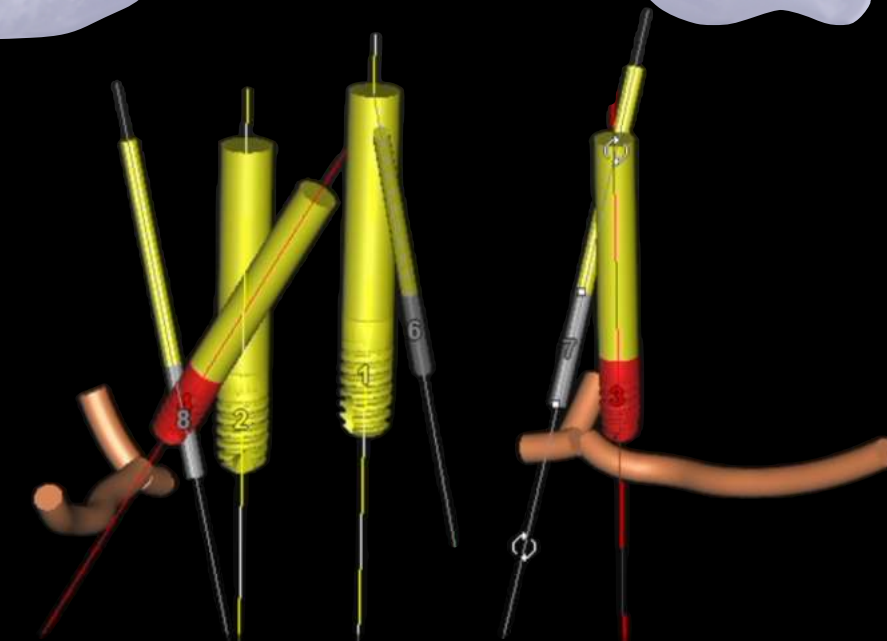
The implant was placed in the torus giving the patient the solution of fixed rehabilitation whereas the fully digitally constructed restoration presented 1:1 fit on both digital and analog models. The digital workflow including the CBCT analysis, intra-oral scanning and digital platforms for designing prosthodontic restorations on virtual models, proved to be a significant and reliable tool in the quiver of the contemporary dentist.



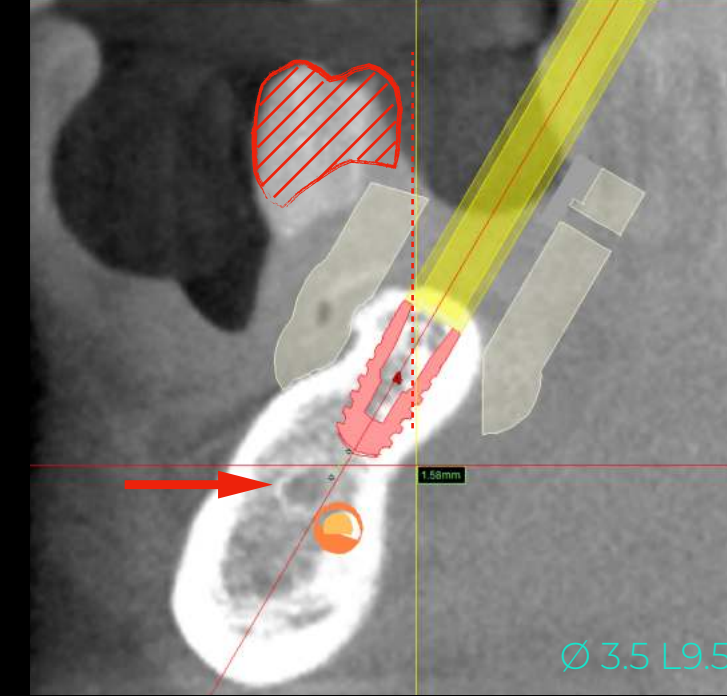
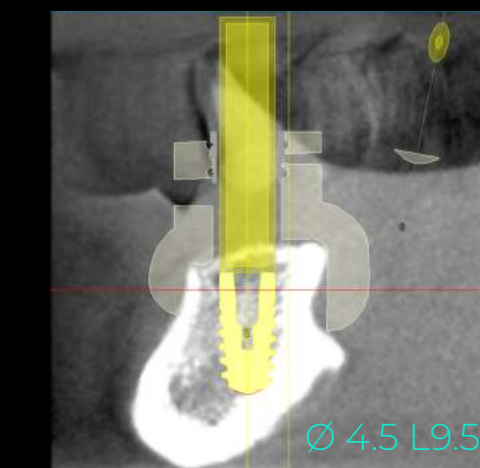
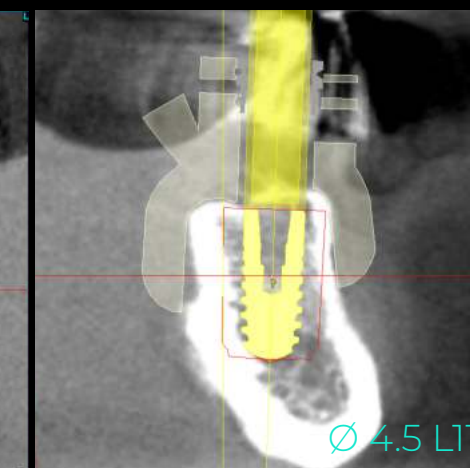
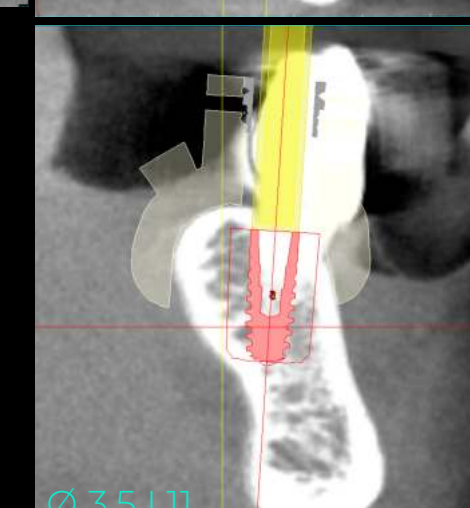
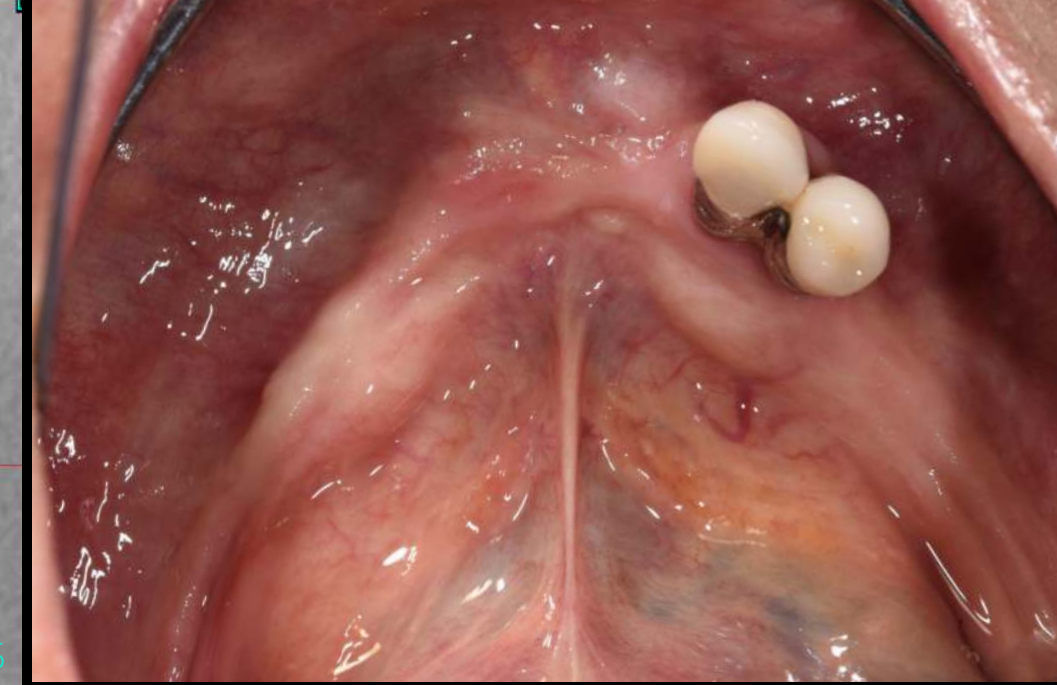
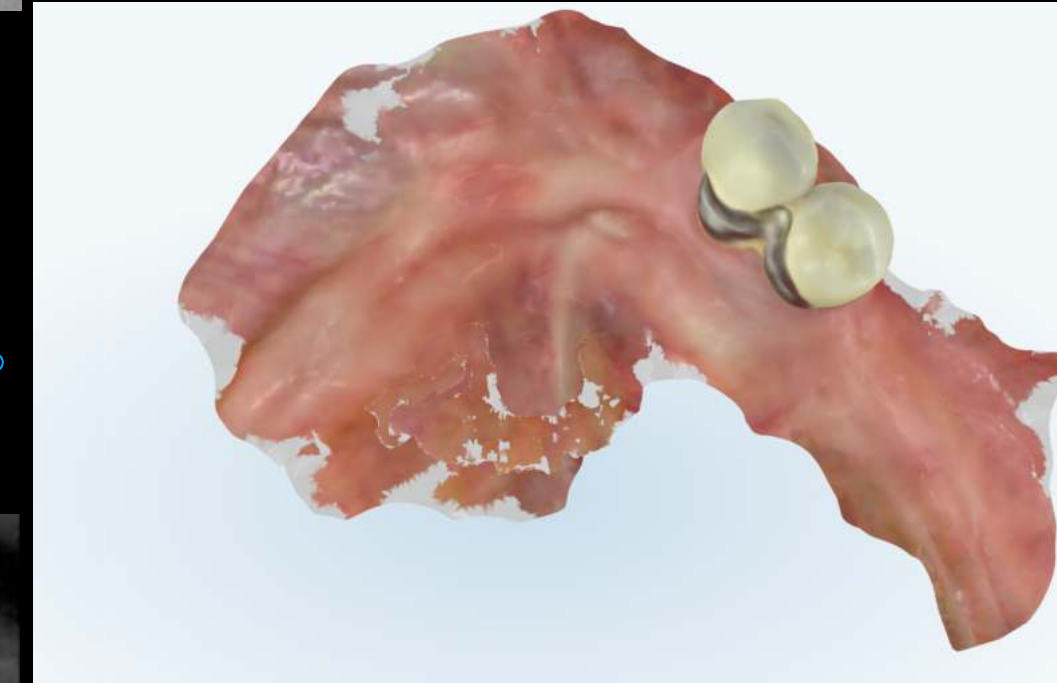
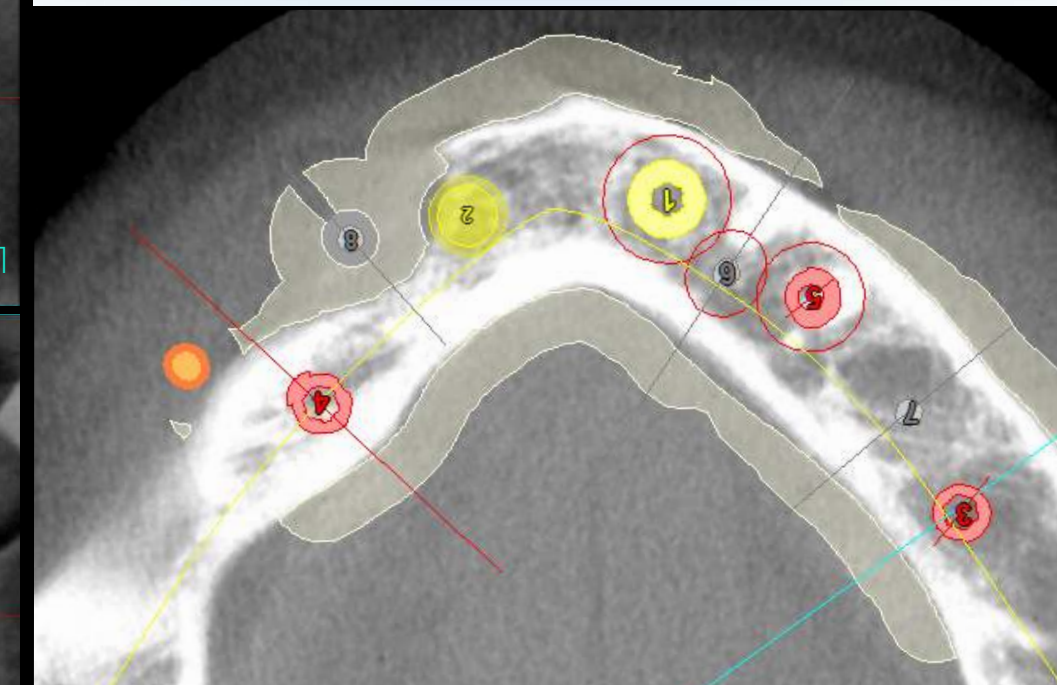
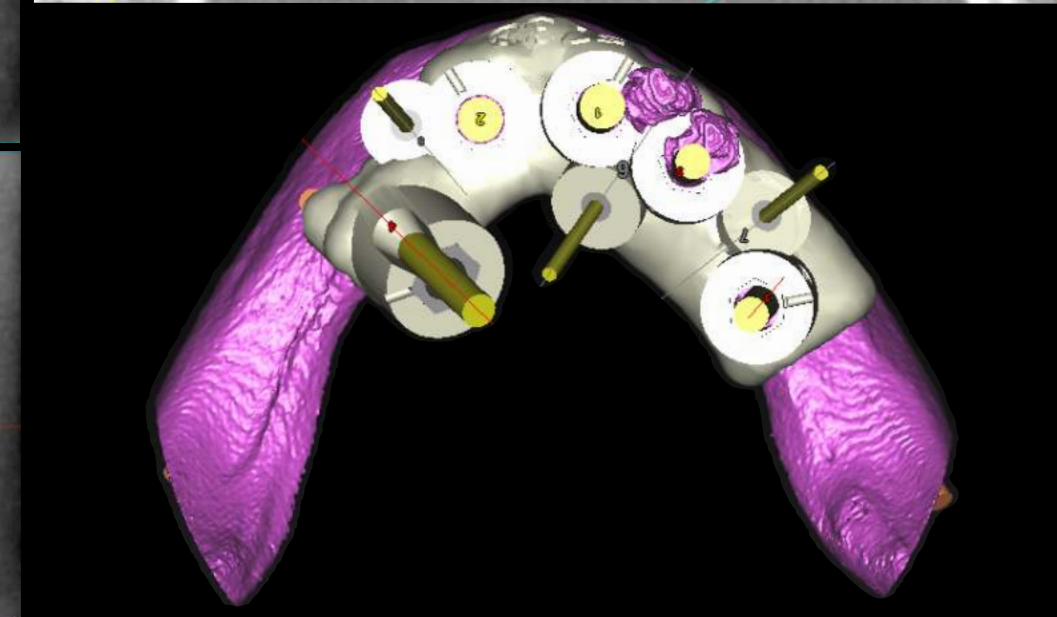
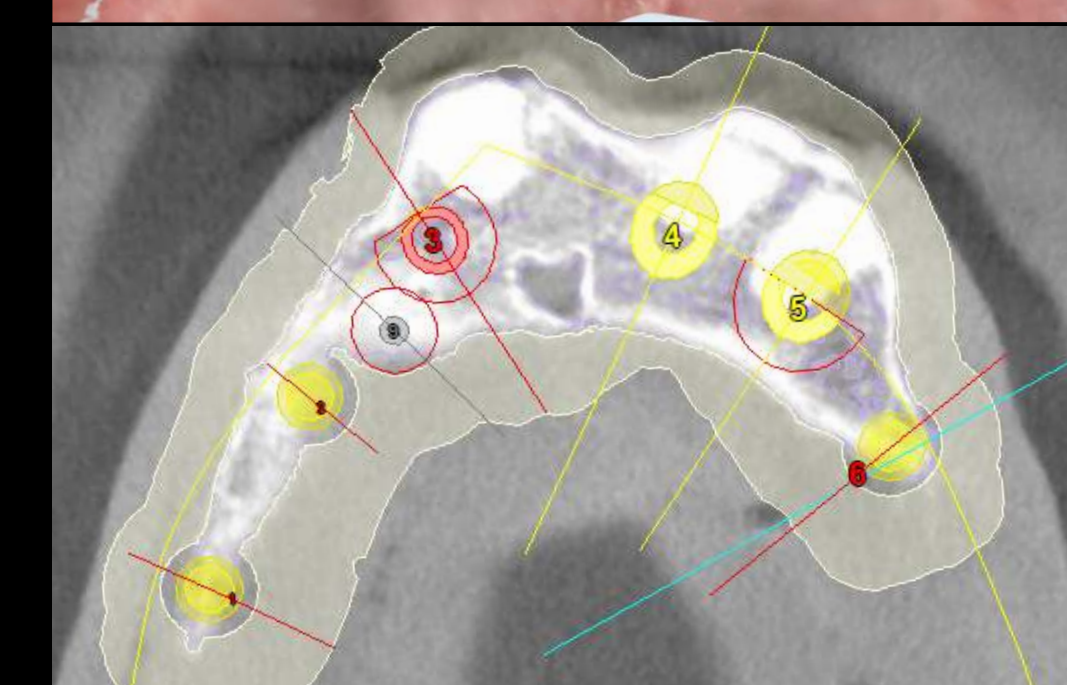
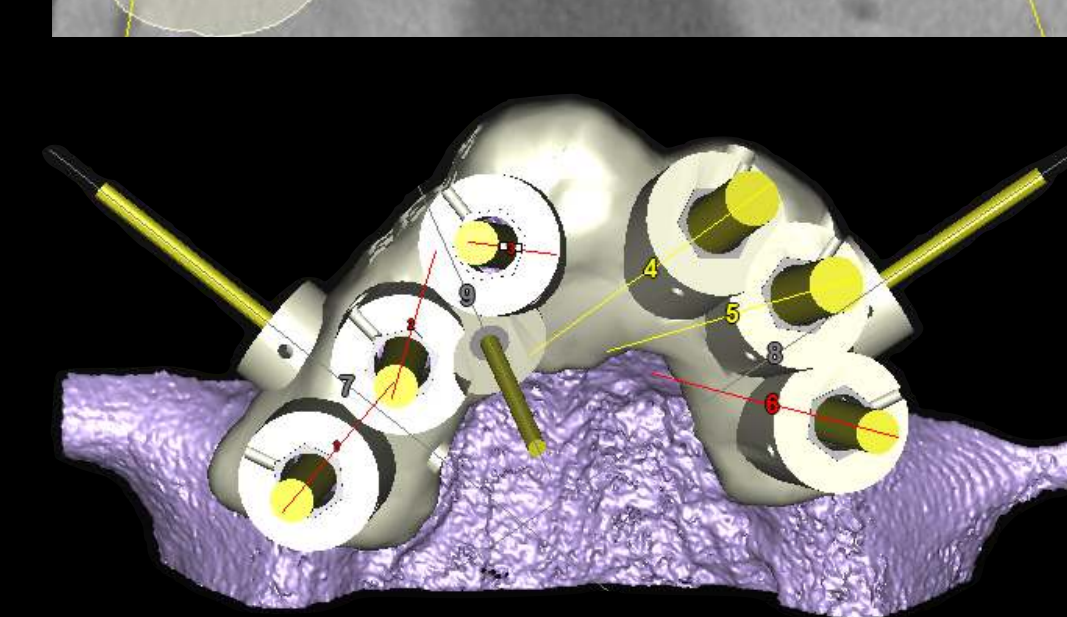
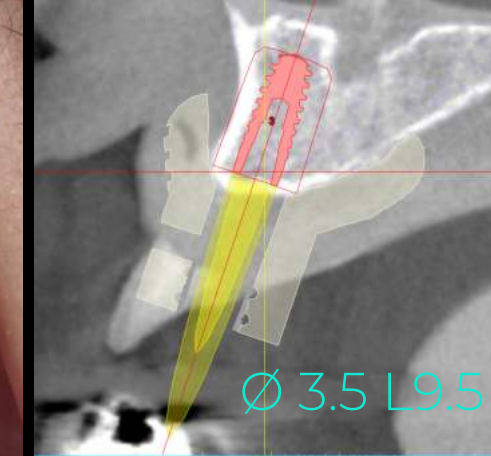
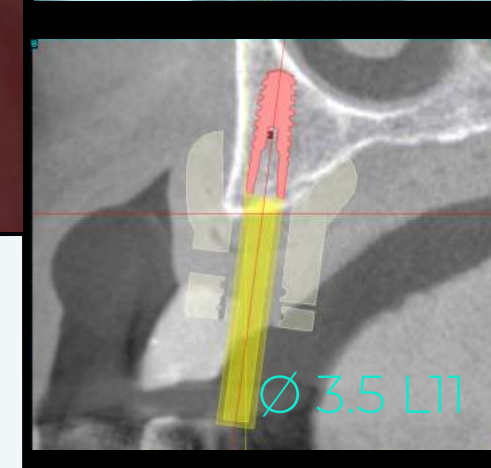
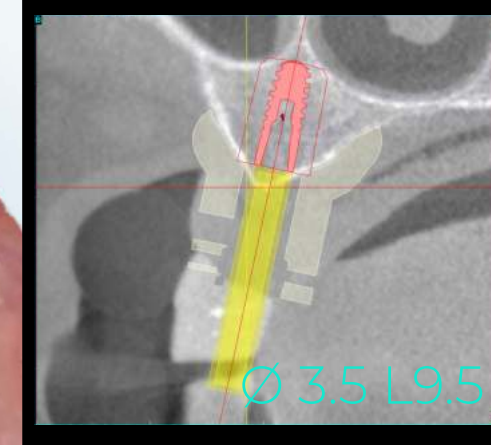
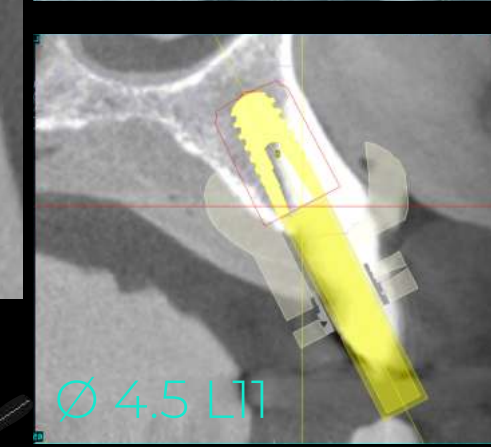
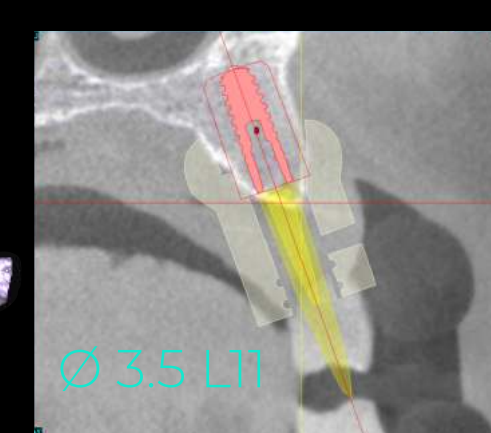
COMPROMISED AXIS

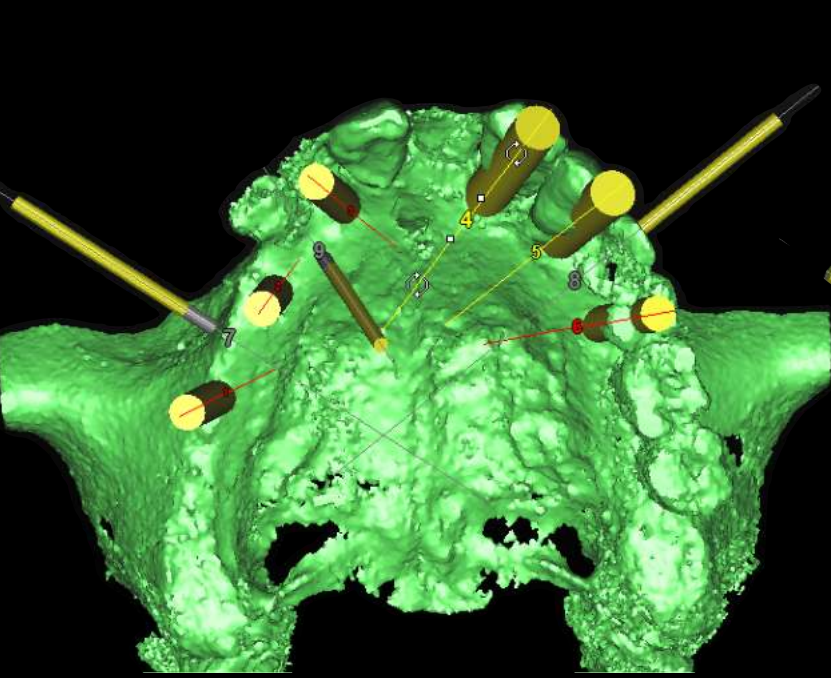
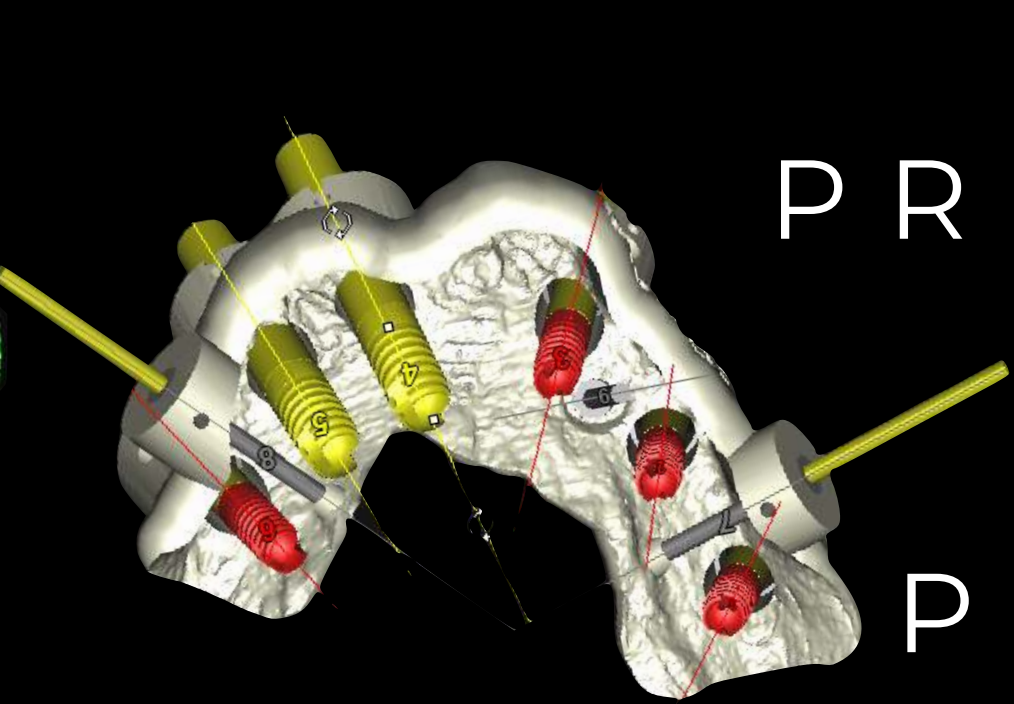


STL Mandible Model with Surgical Guide

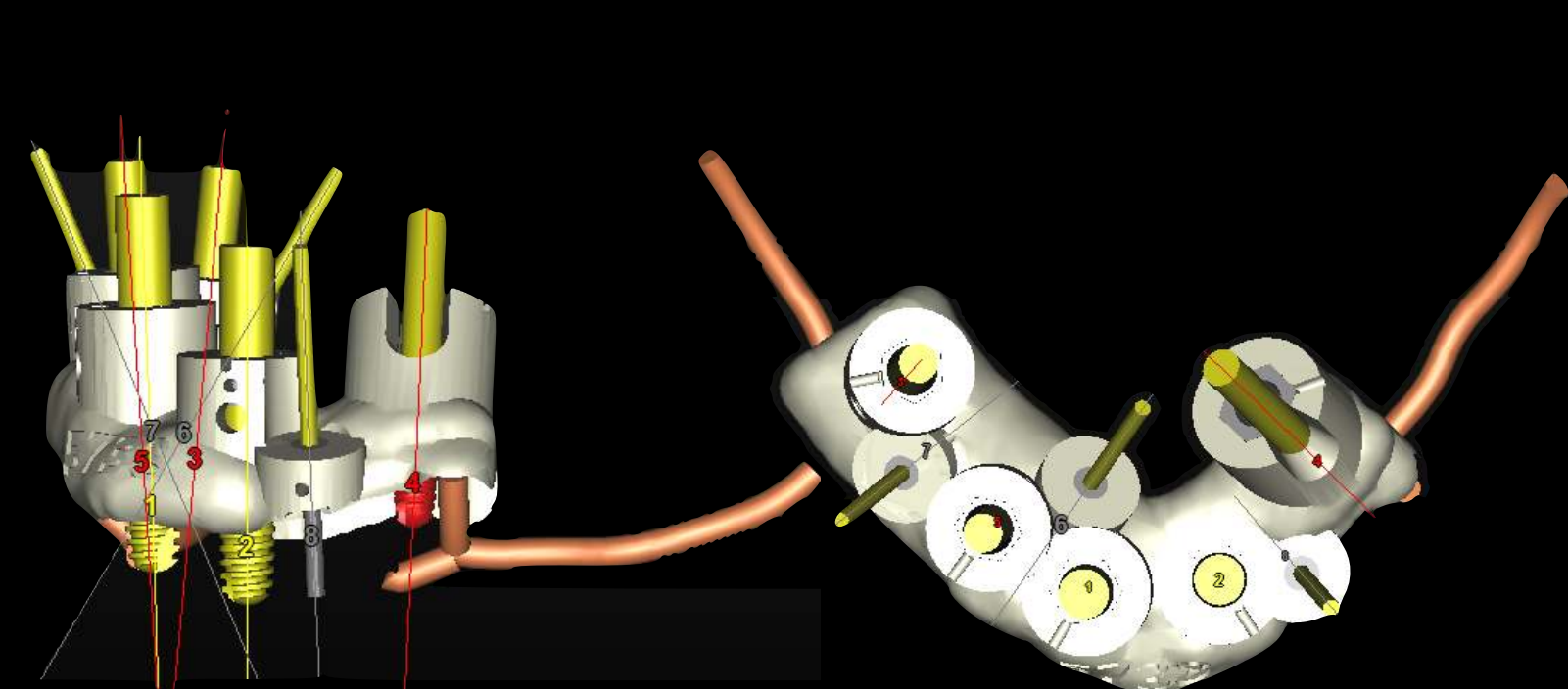
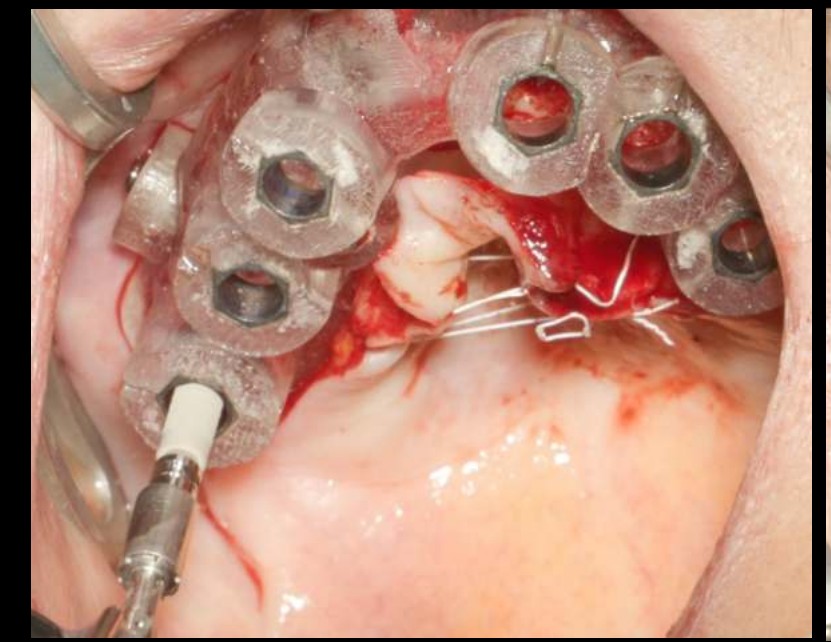
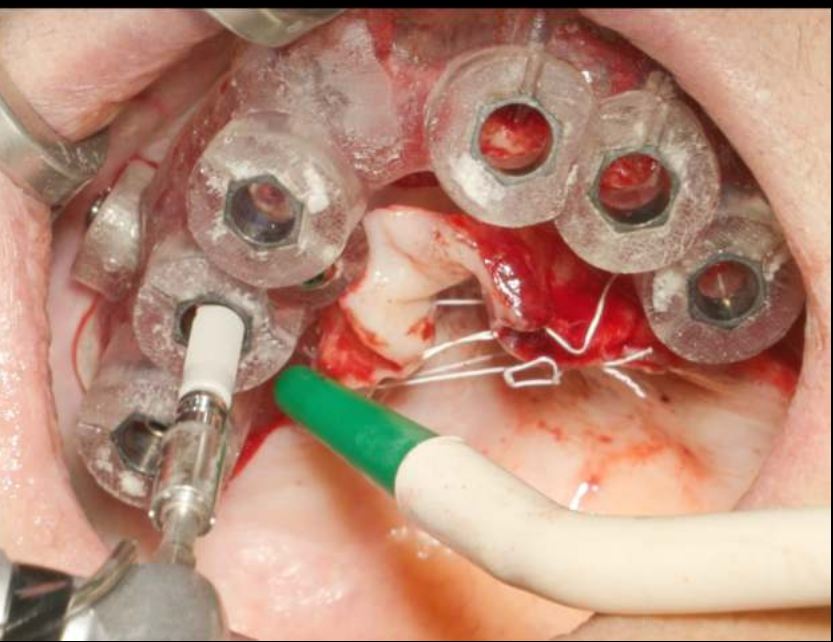
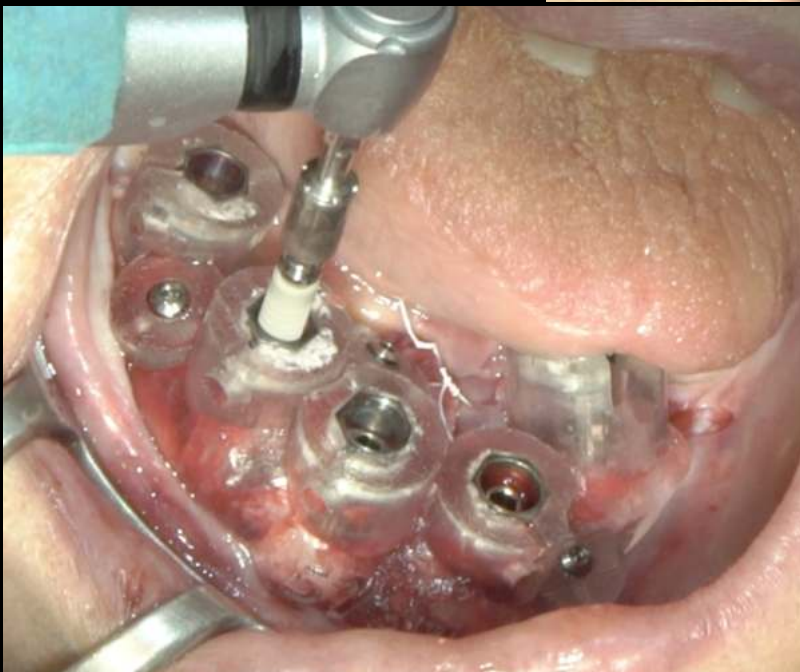
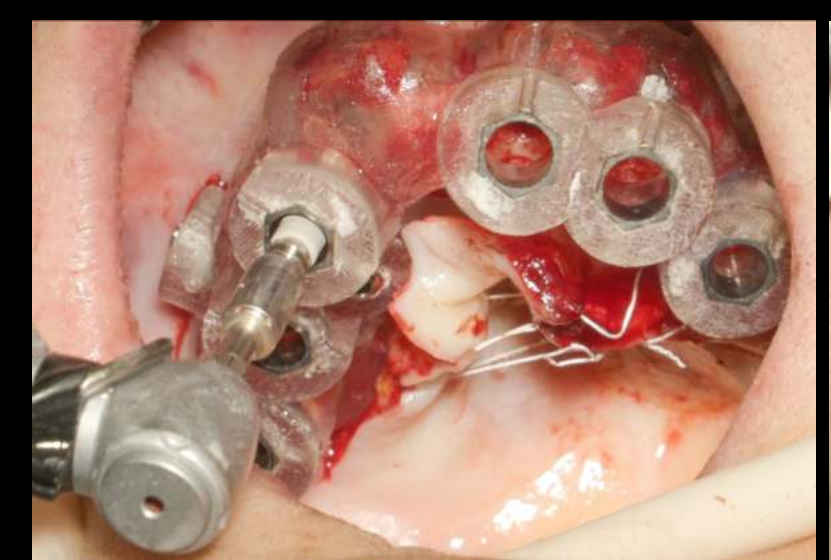


Strategic use of torus at quad III avoiding anatomical structures while in accordance with the digital mock up

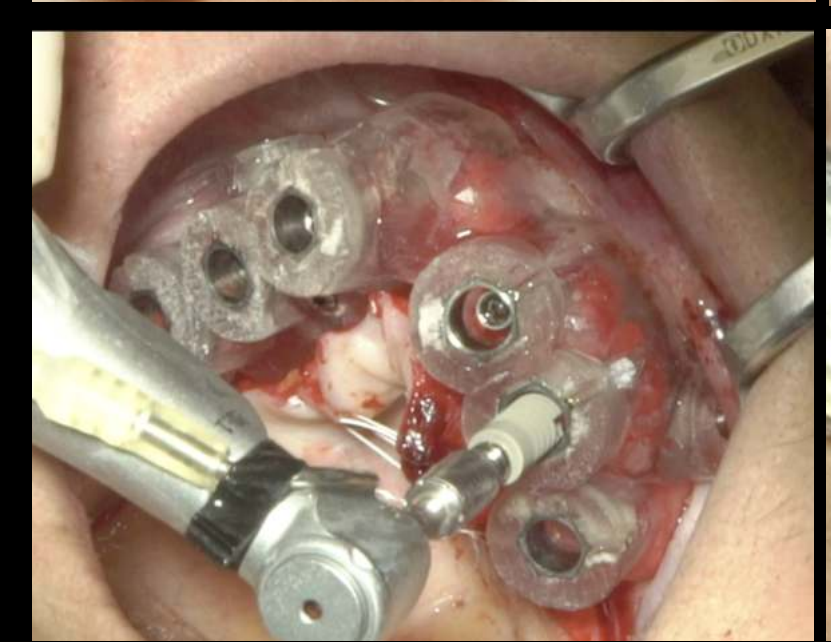
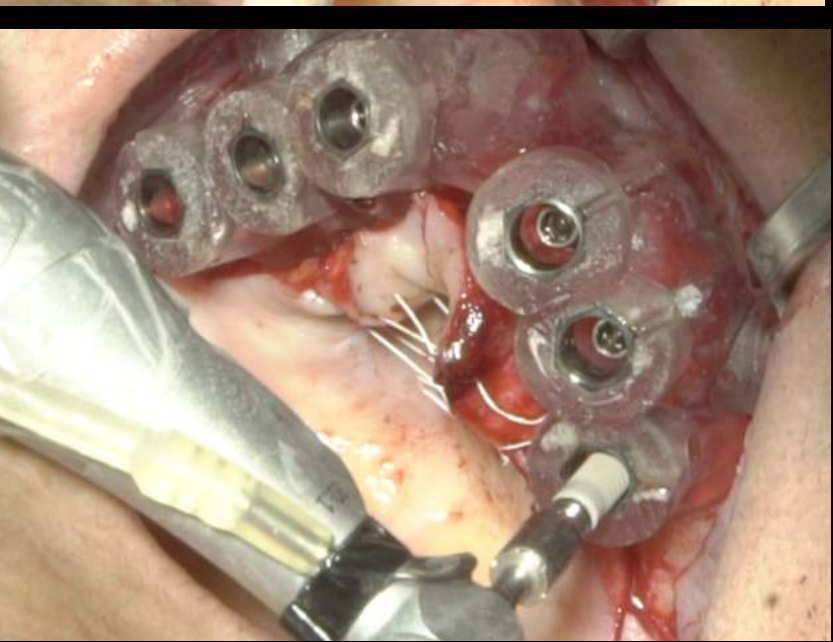
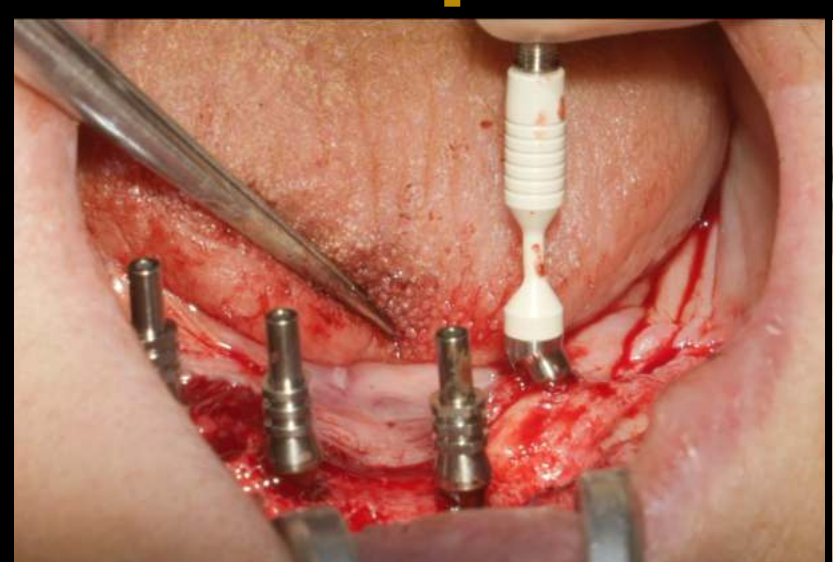
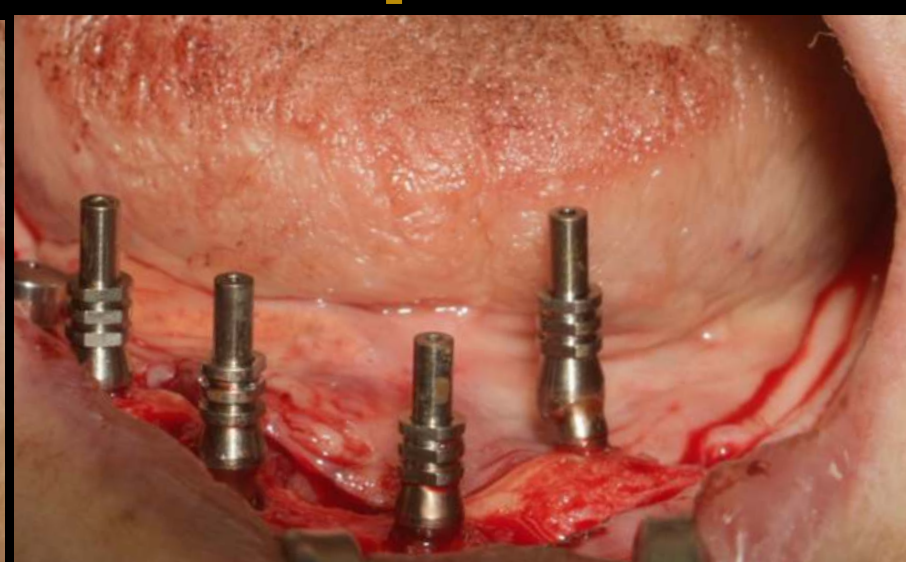
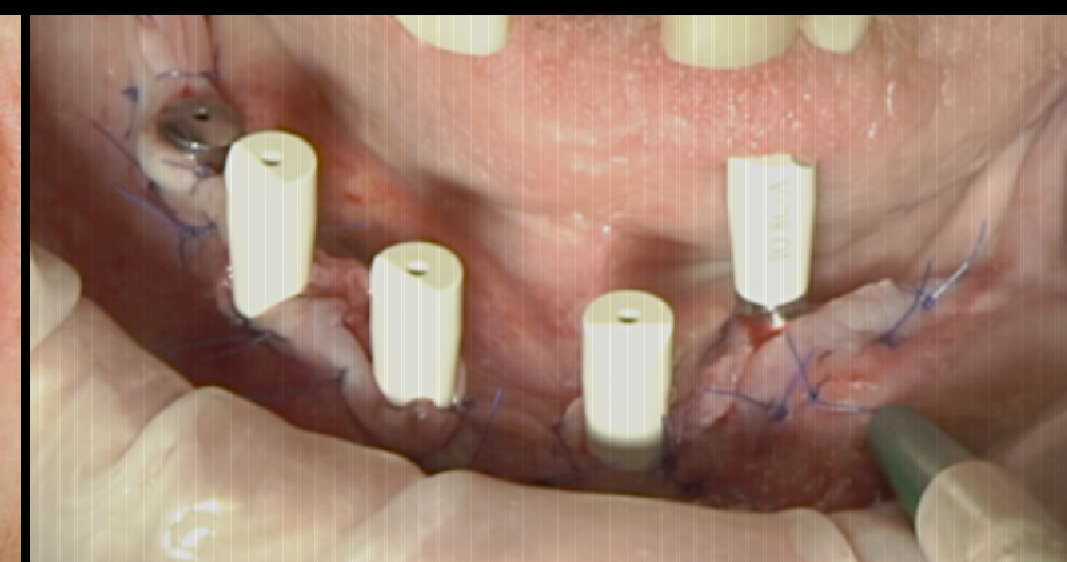




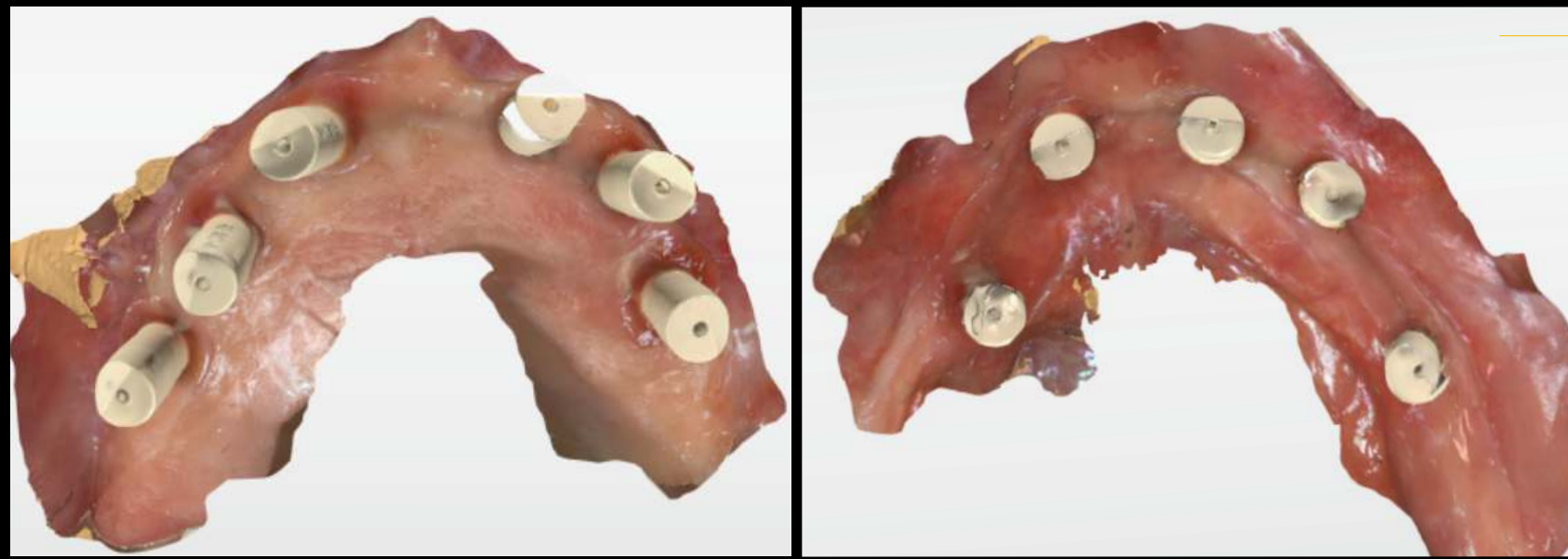
P R E S I C I O N DELIVERED via D I G I T A L P L A N N I N G



Immediate intra operative parallelism, by the use of a 30° non- indexed multi unit abutment.
Secured passive fit of the restoration.



Intra Oral Scanning for immediate loading on the day of the surgery.

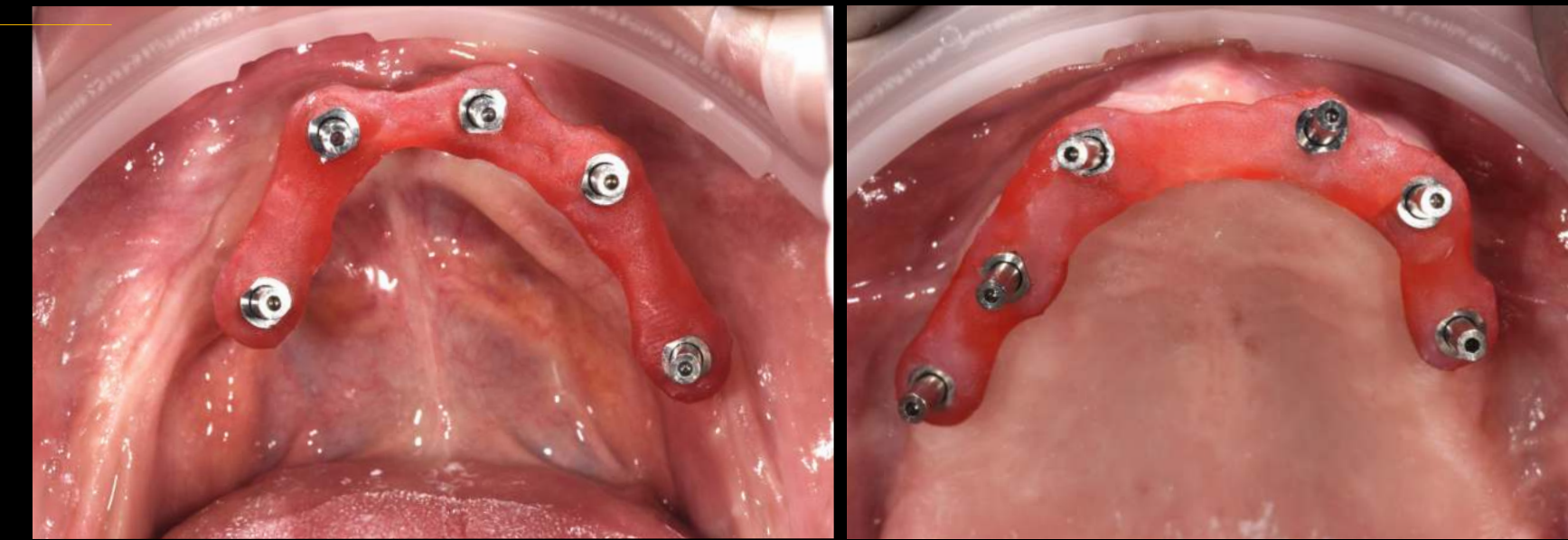
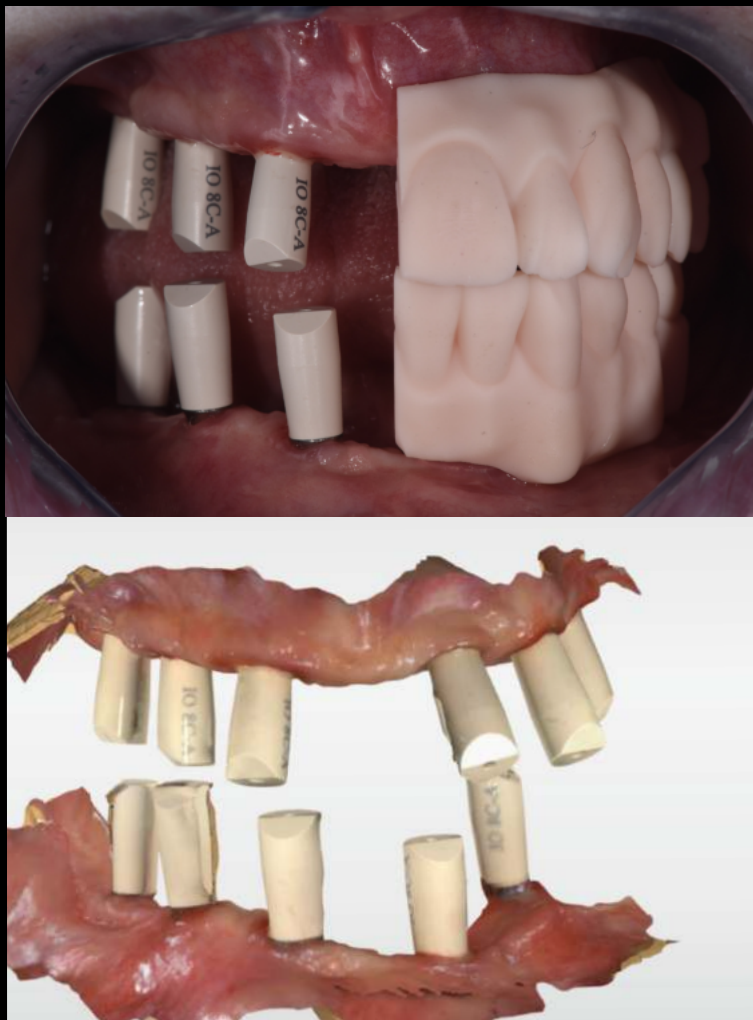


DIGITAL IMPRESSION

- ✓ direct data transfer
- ✓ time efficient
- ✓ accuracy
- ✓ comfort

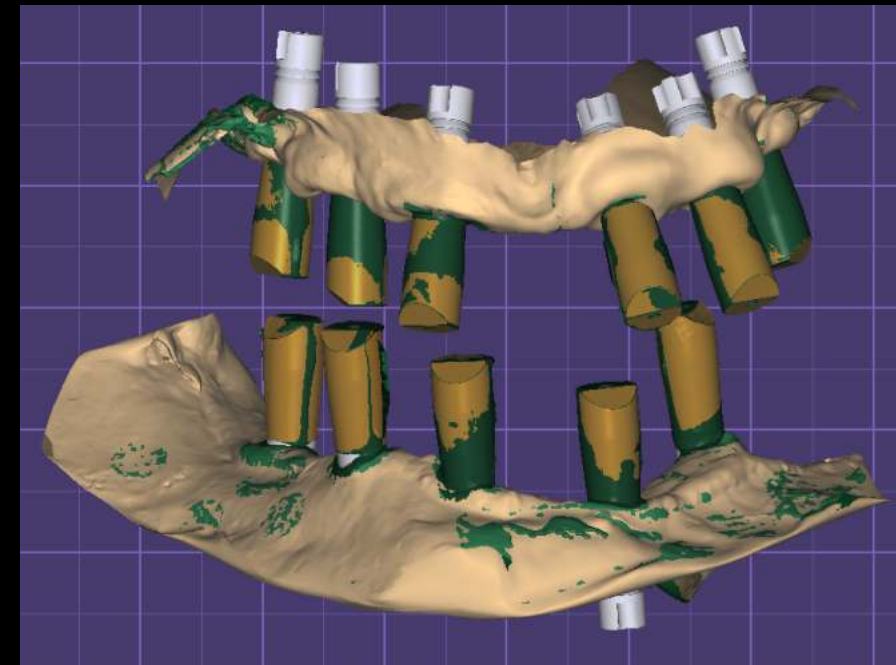
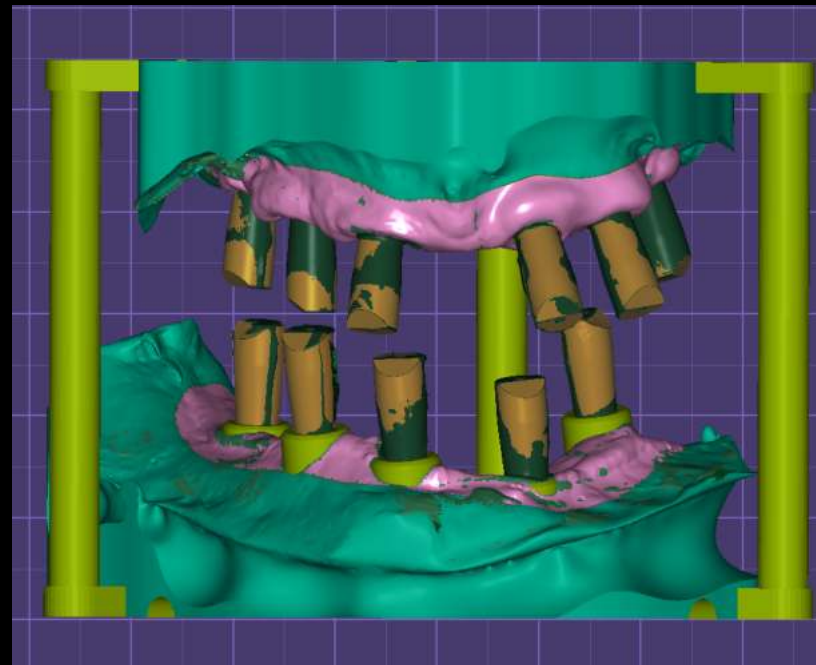
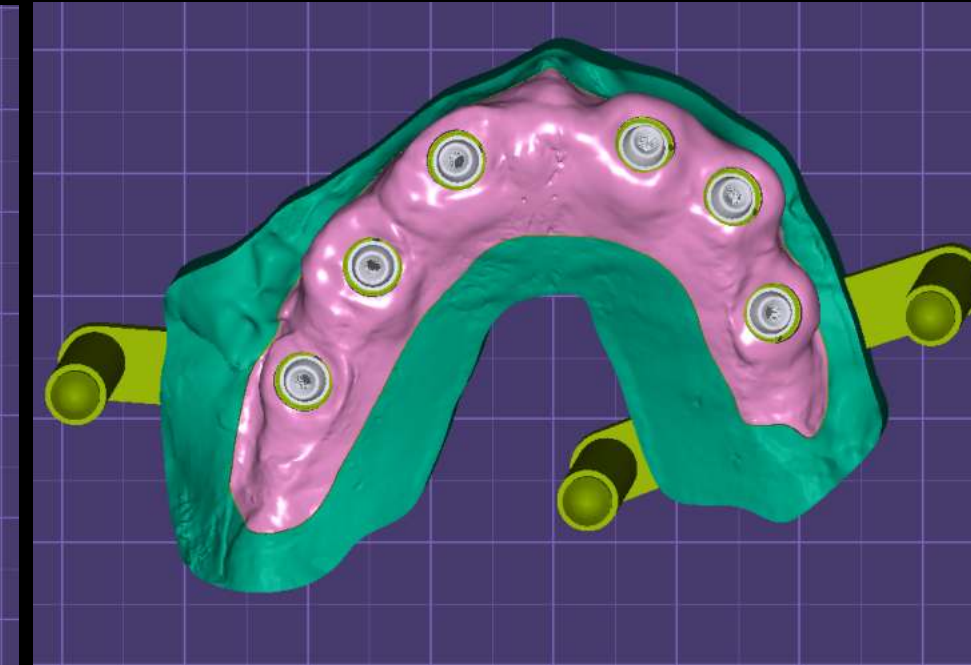
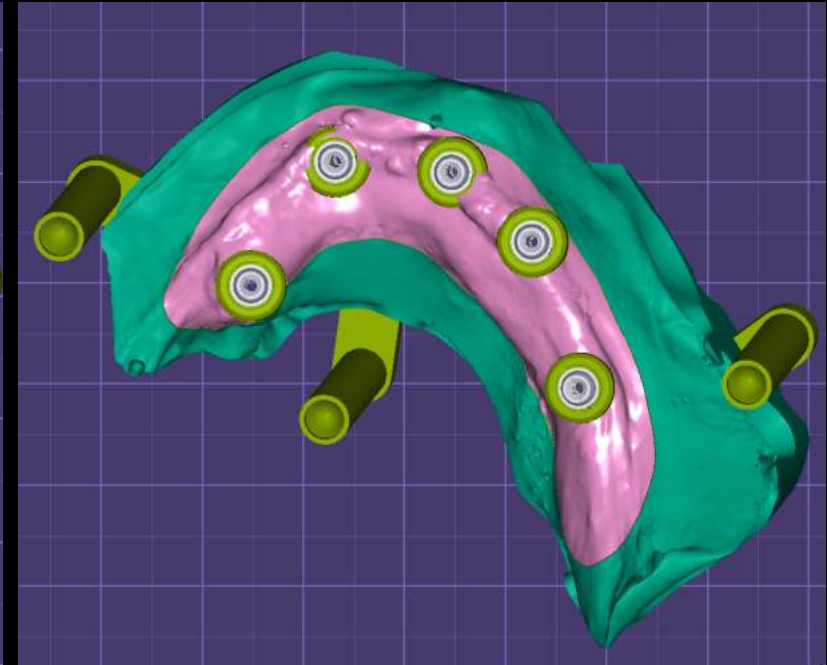
ANALOG IMPRESSION

- ✓ delay data transfer
- ✓ time consuming
- ✓ accuracy
- ✓ discomfort

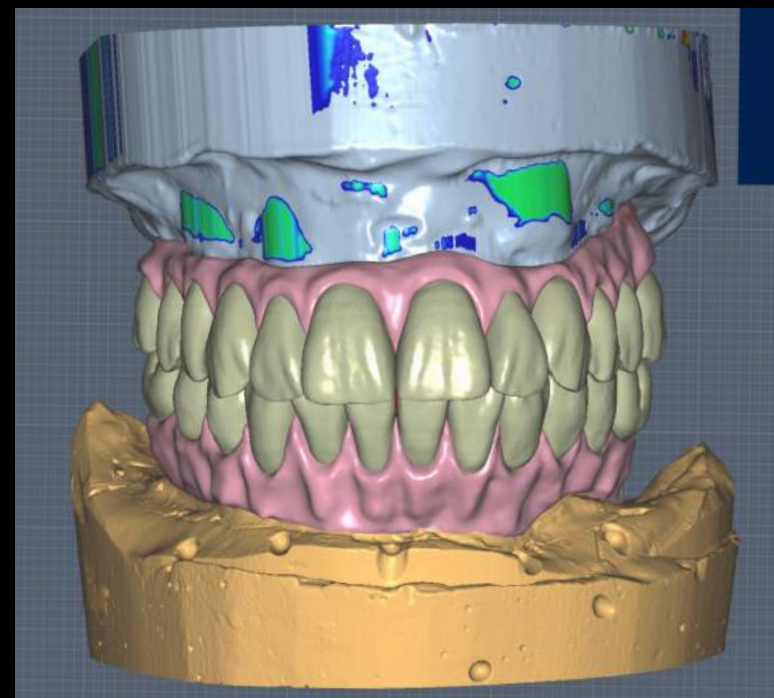
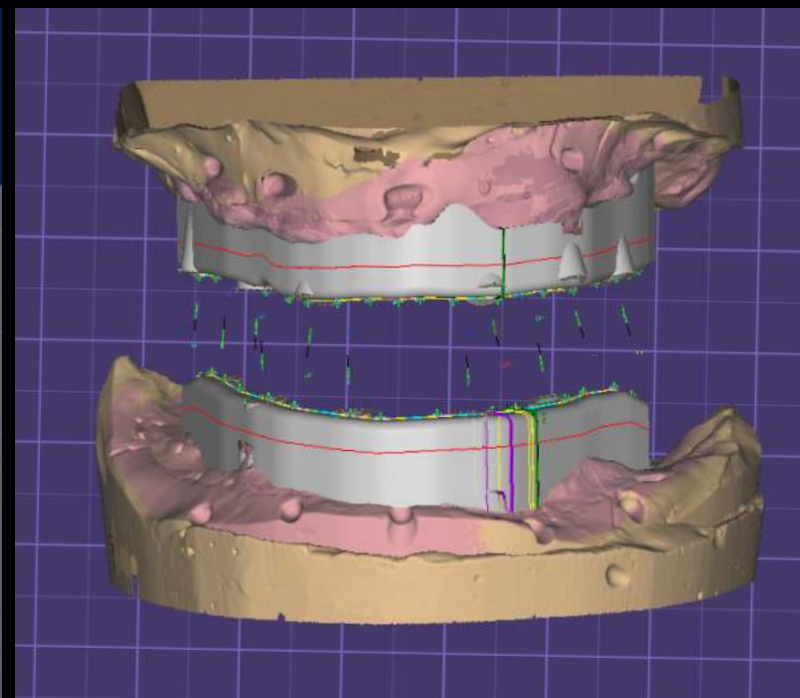
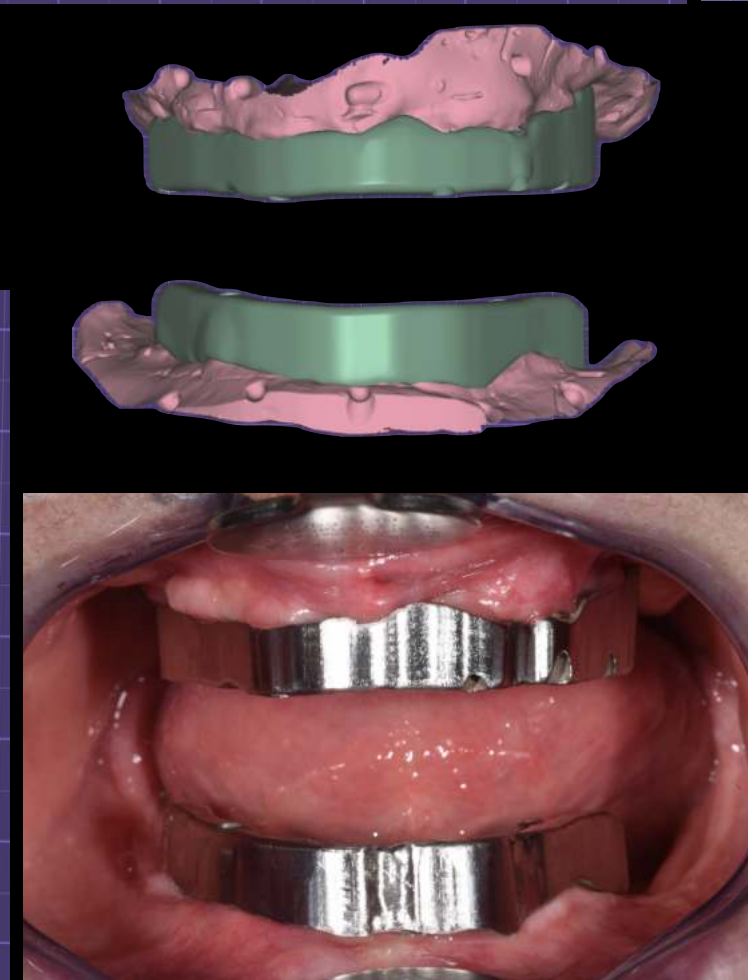
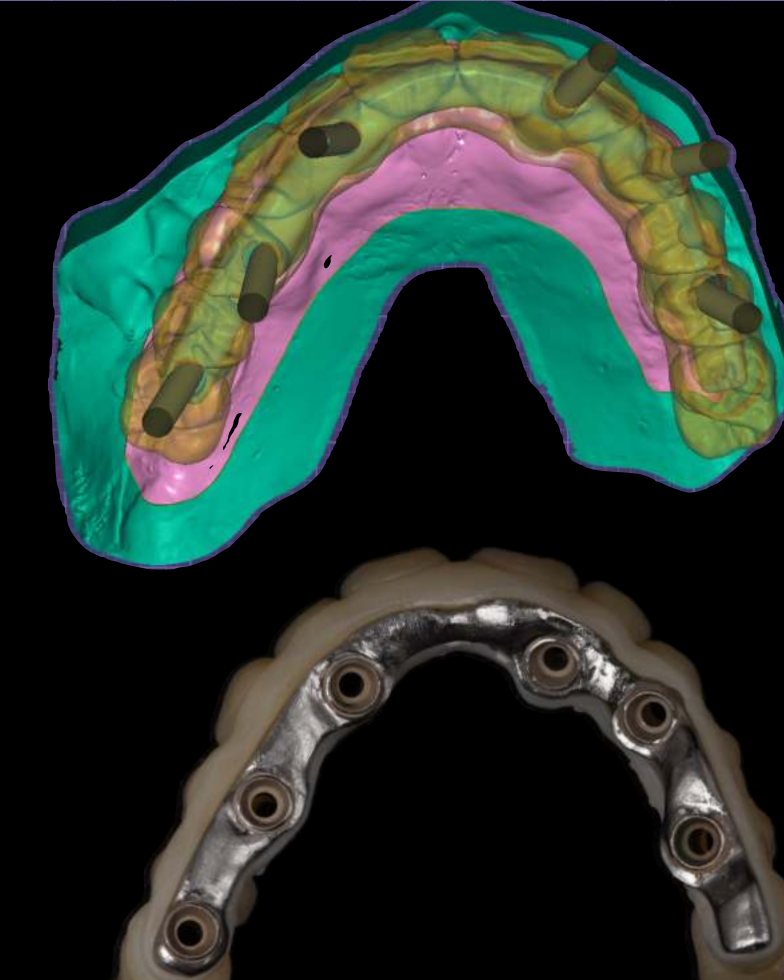
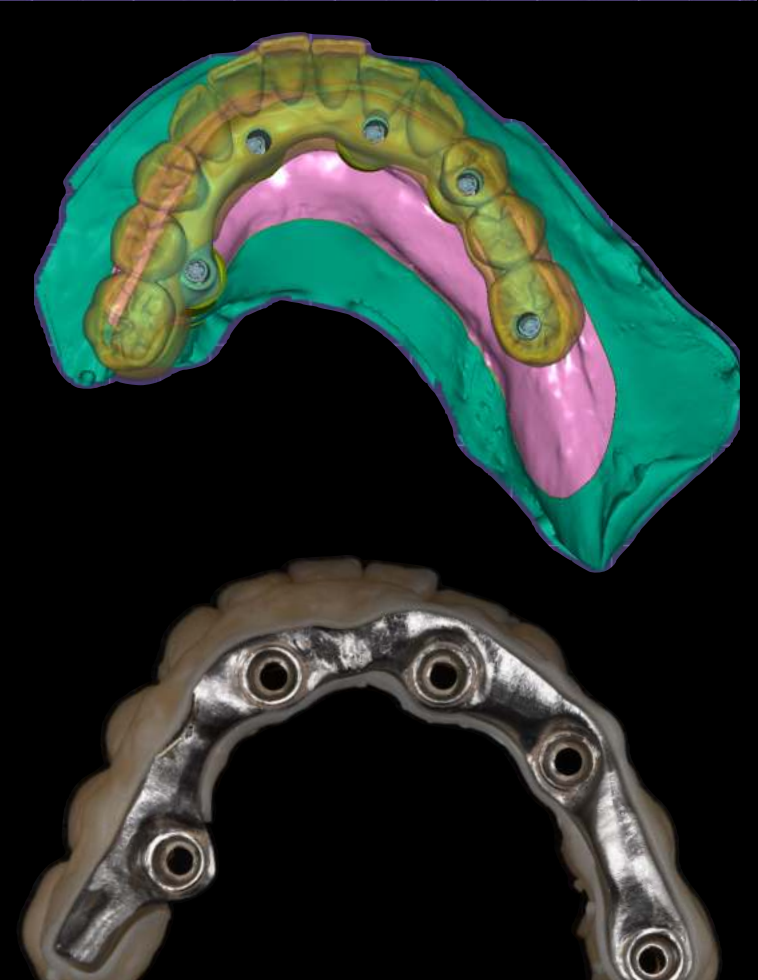


OCCCLUSION DATA

A printed "key" copy of the provisional was used to set the final Vertical Dimension digitally.

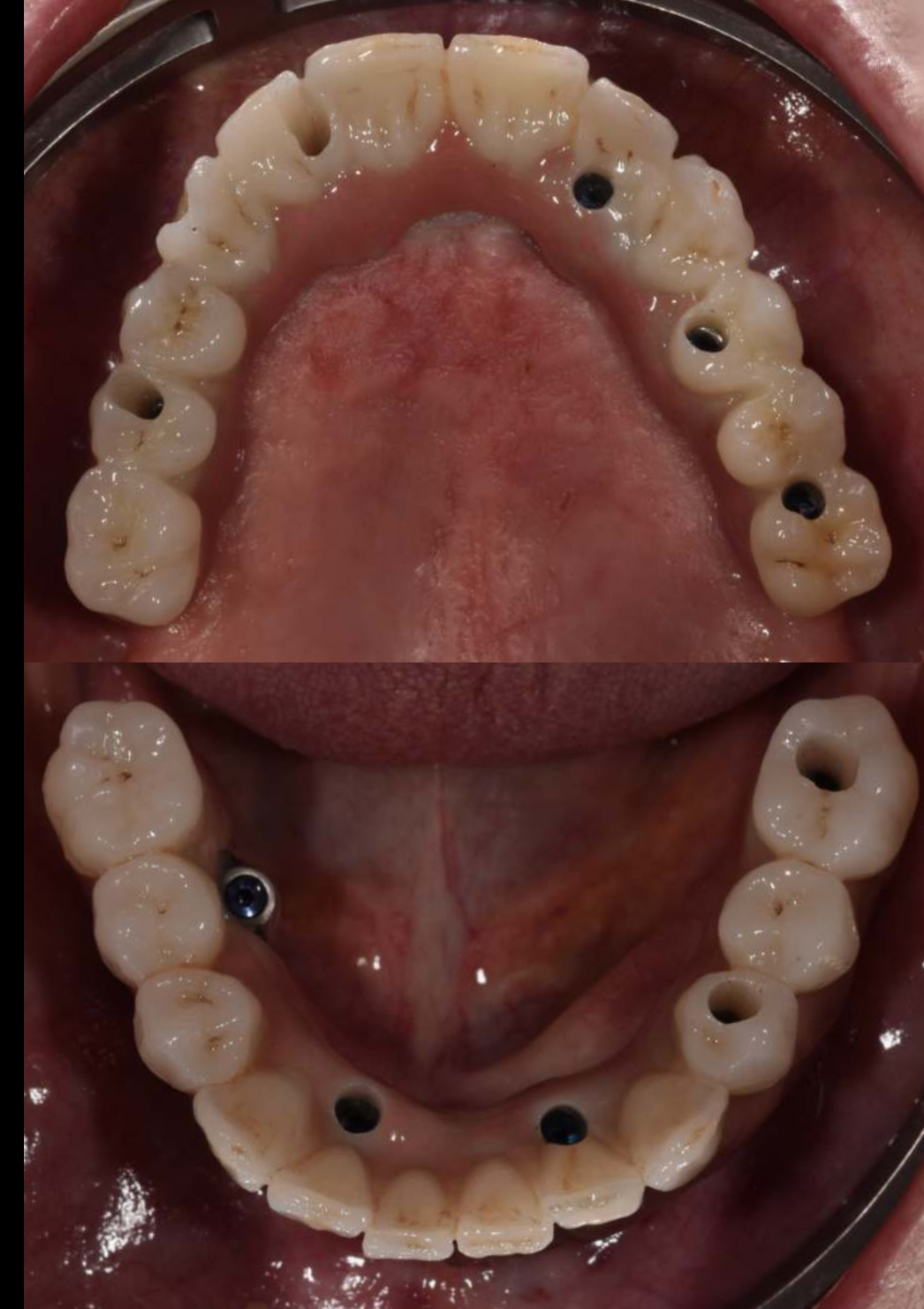


Fabrication of a Ti Bar screw retained on the MU to encapsulate the Zirconia restoration. A PMMA copy of the final design is luted on the bar for an in situ try in.



OCCLUSION SESSION

A PMMA duplicate was used to optimise the occlusion and the morphology of the final restoration.
An STL file of the modified PMMA was used to design the final Zirconia restoration.
Final restoration shall be full contour posterior and "cut back" philosophy anterior teeth.



2mm depth
cleaning
access channel

