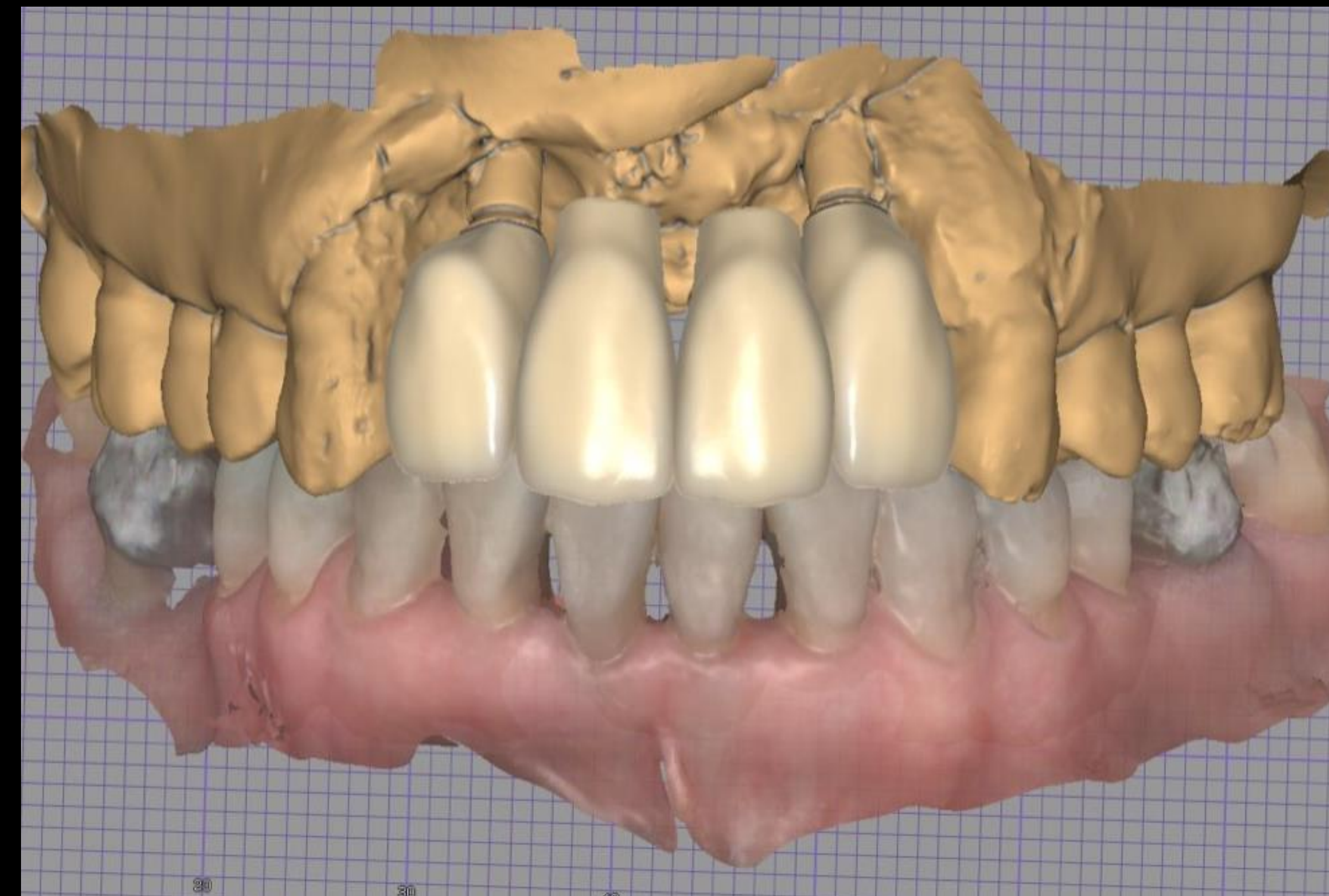




# Digital workflow for implant prosthetic rehabilitation in aesthetic zone: A case report



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# INTRODUCTION

The objective of this case report is to show the digital workflow for implant placement, temporaries and future final dental restauration. Combining digital imaging, intraoral scanning, and CAD/CAM is used to deliver an aesthetic provisional.

## CASE REPORT



Figure 1. Preoperative intraoral photographs. (A) Right lateral view, (B) Frontal view, (C) Left lateral view

A 67-year old female patient presented to the Department of Periodontics and the Prosthetic and Implantology program, UNAM, for a maxillary anterior dental rehabilitation. At examination a spam or the 4 anterior upper incisors was observed for a Kennedy class IV. The treatment plan is a 4 unit dental fixed prosthetic over 2 implants on the laterals was proposed; it includes a digital workflow for the implant placement templete, a CAD-CAM temporaries and final prosthetic rehabilitation.



Figure 2. Preoperative intraoral scan with provisionals. (A) Right lateral view, (B) Frontal view, (C) Left lateral view

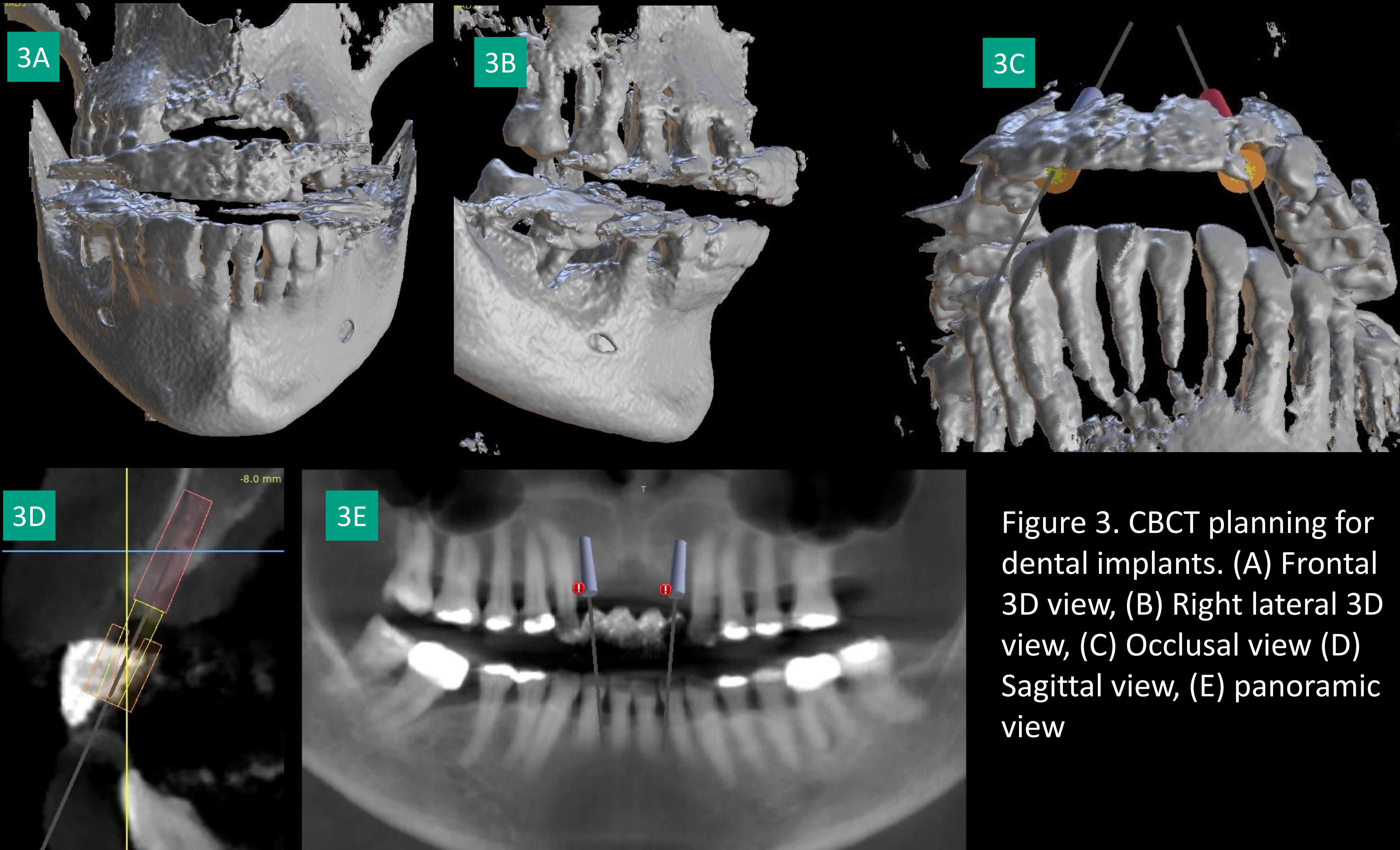


Figure 3. CBCT planning for dental implants. (A) Frontal 3D view, (B) Right lateral 3D view, (C) Occlusal view (D) Sagittal view, (E) panoramic view

For digital treatment planning a Cone Beam Computer Tomography (CBCT) was taken for fabricating the surgical stent for implant placement along with extra and intra oral scanning for temporaries and final restoration.

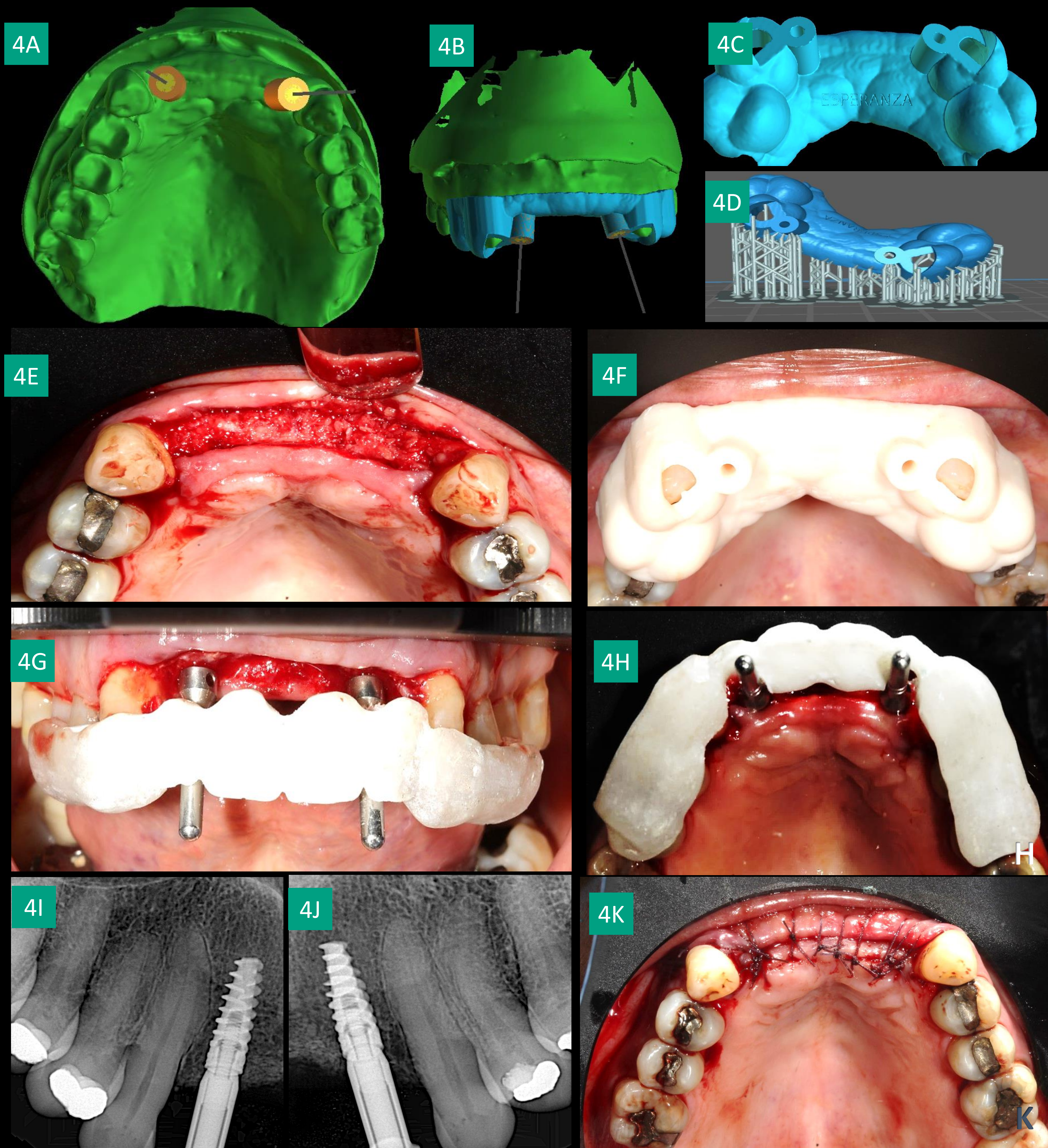


Figure 4. Implant surgery with implant stent. (A, D) Design surgical guide, (E) full thickness flap, (F) Adaptation of surgical stent, (G,H) Implants were installed, (I,J) Periapical radiography, (K) suture.

## Implant Surgery

The implants were placed using the implant surgical guide designed by merging the DICOM file generated from CBCT and the STL file generated from model scanning. A full thickness flap was elevated. 2 implants on the laterals was collocated.

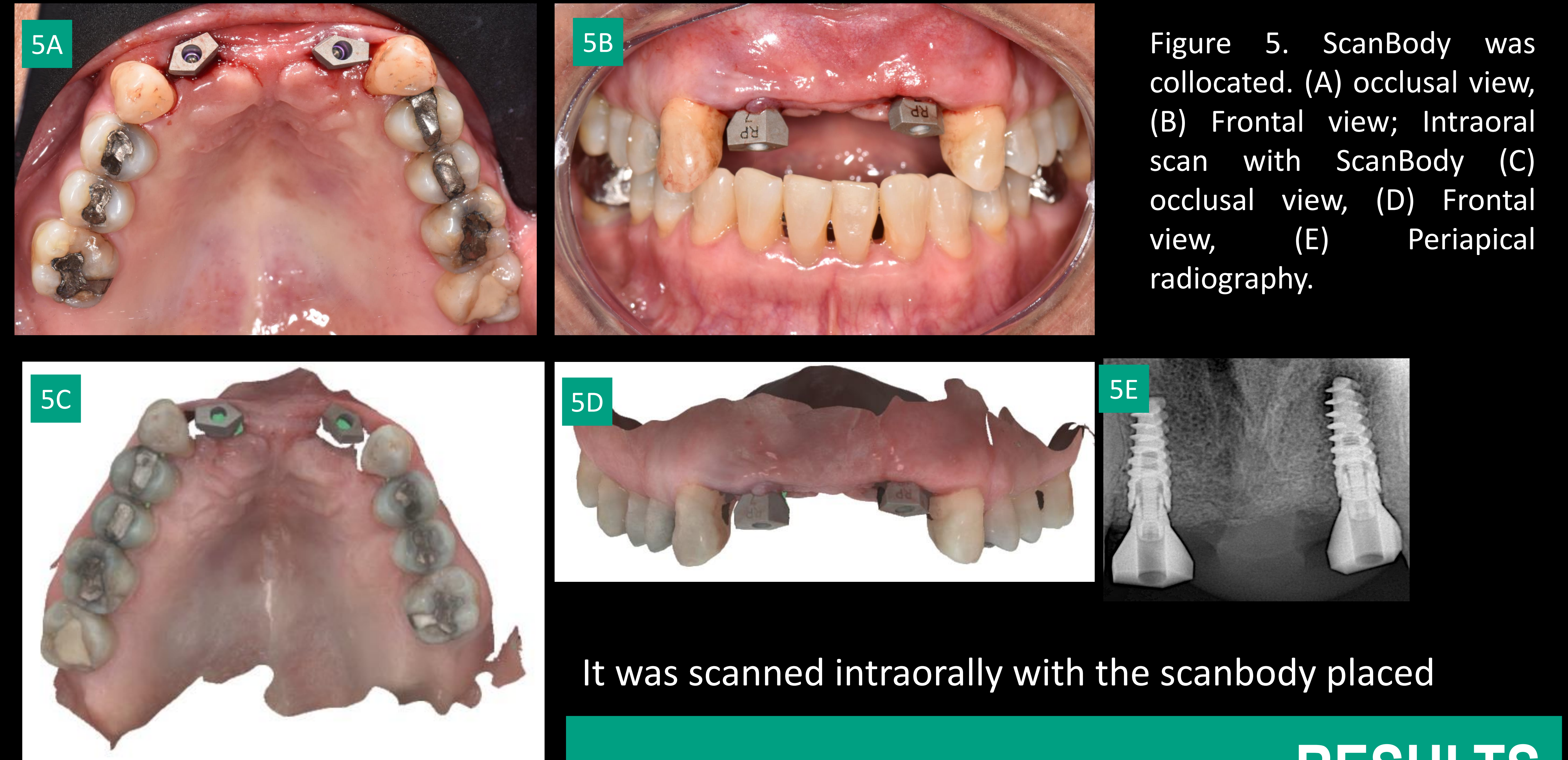


Figure 5. ScanBody was collocated. (A) occlusal view, (B) Frontal view; Intraoral scan with ScanBody (C) occlusal view, (D) Frontal view, (E) Periapical radiography.

It was scanned intraorally with the scanbody placed

## RESULTS

The placement of implants in the desired three-dimensional position is achieved. No biological and mechanical complications were recorded. Digital prosthetic implant workflow protocol provided a treatment alternative without complications and effective over time to the conventional procedure.

# Provisionalization

Fixed provisional restorations were fabricated. Provisional restorations made by milling PMMA block were fabricated by using the CAD-CAM double-scanning method. The anterior provisional restoration was carefully adjusted for esthetic treatment results. To improve the width of the keratinized gingiva around the pontics, the coronally advanced flap technique and the connective tissue graft technique were performed.

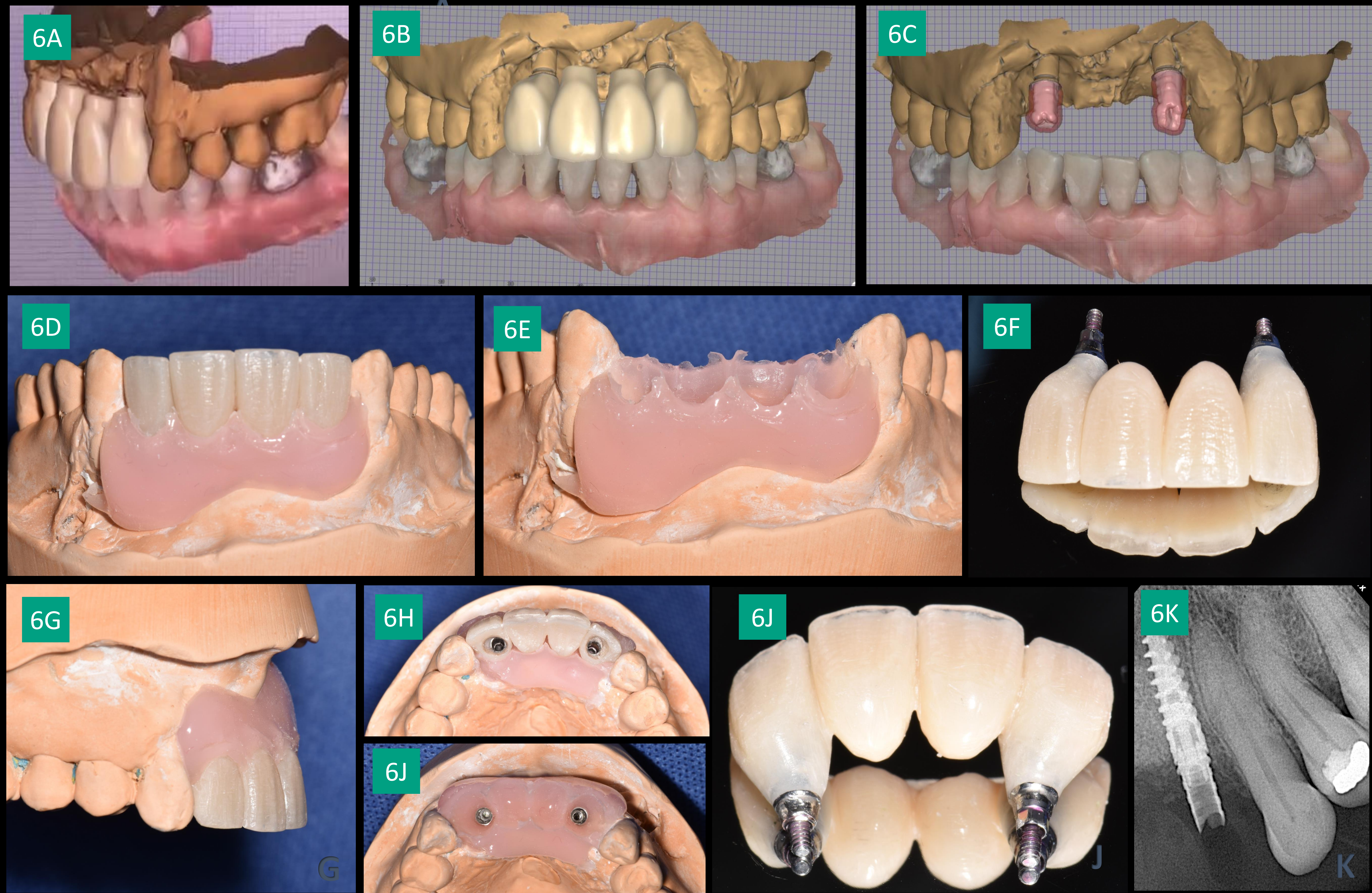


Figure 6. (A,B,C) Computer-Aided Design of provisionals, (D, E) Computer-Aided Manufacturing frontal view, (G) lateral view, (H,I) oclusal view (F,J) provisionals in PMMA (K) Periapical radiography with provisional.



Figure 7. (A) Preoperative frontal view. (B) Lateral view, (C) Provisional restorations was collocated frontal view, (D) Connective tissue graft was collocated in pontics, (E) Lateral view, (F, G) occlusal view, (H) occlusal view with suture, (I) lateral view with suture, (J) Postoperative 20 days

## CONCLUSION

The use of digital workflow is recommended for dental implant planning and prosthetic rehabilitation, providing predictability and comfort to patients.

