



Implant Rehabilitation in the Aesthetic Zone With Digital Workflow: A Clinical Case Report

Karla González Izalde¹

Rodrigo Neria Maguey²

¹ DDS, Periodontics and Oral Implantology Postgrad Resident at Universidad Nacional Autónoma de México UNAM

² DDS-MS, Director Periodontics and Oral Implantology Postgrad Resident at Universidad Nacional Autónoma de México UNAM



Implant Rehabilitation in the Aesthetic Zone With Digital Workflow: A Clinical Case Report



Introduction

Digital workflows have transformed dental implant rehabilitation: improving precision, reducing treatment time and enhancing patient outcomes^{1,2}. The integration of digital tools like CAD/CAM systems and oral scanning allows for more predictable results³. These technologies help clinicians achieve superior functional and aesthetic outcomes with efficiency and greater patient satisfaction.

Objective

To report a case of anterior dental implant rehabilitation using a fully digital workflow, focusing on its benefits in terms of efficiency, precision, aesthetic results and treatment time.

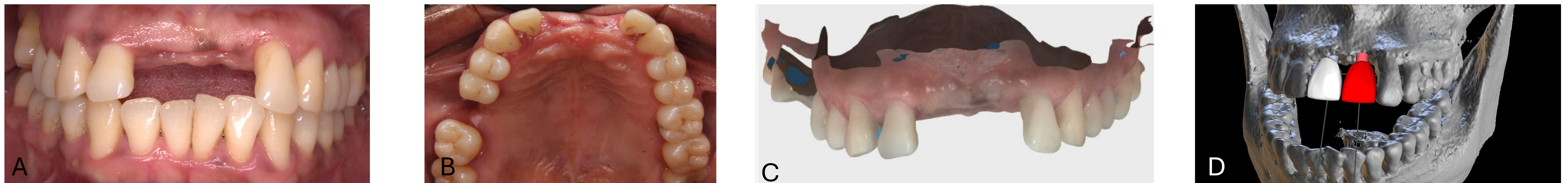


Figure 1. A) Initial frontal photo. B) Initial occlusal photo. C) First intraoral scan. D) Digital wax-up of the teeth on a tomographic model.



Implant Rehabilitation in the Aesthetic Zone With Digital Workflow: A Clinical Case Report



Case report

A 44-year-old female with no comorbidities presented with stage III, grade C, generalized periodontitis, leading to the loss of the upper central incisors (teeth 8 and 9). Following successful periodontal treatment, a digital workflow was used for diagnosis, planning, and implant rehabilitation. Upper and lower impressions were taken and digitized through oral scanning. The resulting STL files, combined with DICOM files from a full-mouth CBCT, were used for virtual planning. A surgical guide was fabricated, followed by the placement of implants. Digital technology was also employed to design and fabricate provisional restorations. Six months later, final digital impressions were taken for the definitive prostheses, which were fabricated using advanced CAD/CAM systems for optimal fit and aesthetics. The final crowns were placed, achieving excellent functional and aesthetic outcomes within a shortened treatment period.

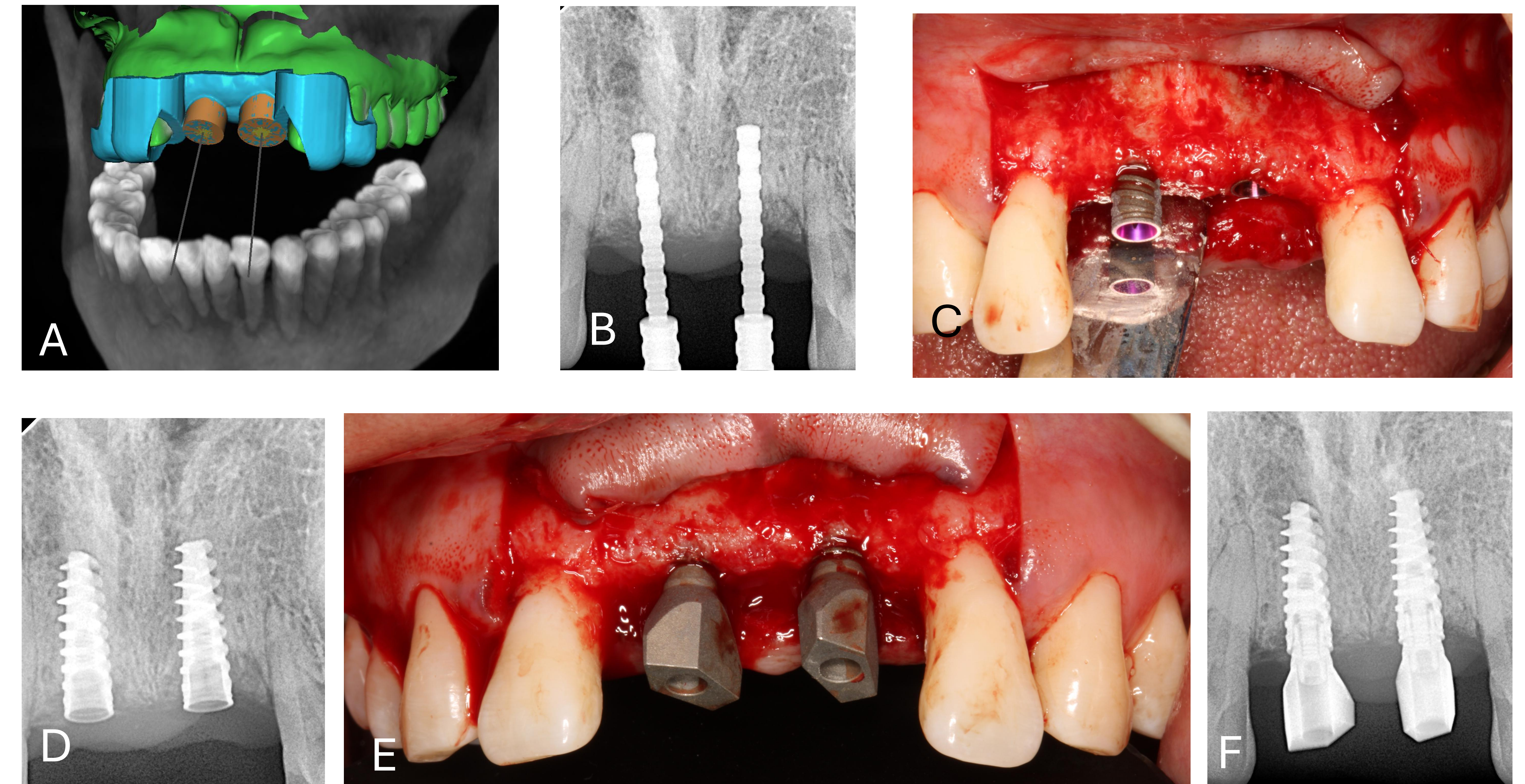


Figure 2. A) Digital guide for dental implant placement. B) Alignment Pins. C) Placement of 11.5 × 3.25 dental implants. D) Radiograph of the dental implant placement. E) Scan bodies for intraoral scanning. F) Radiograph showing proper fit of the scan bodies.



Implant Rehabilitation in the Aesthetic Zone With Digital Workflow: A Clinical Case Report

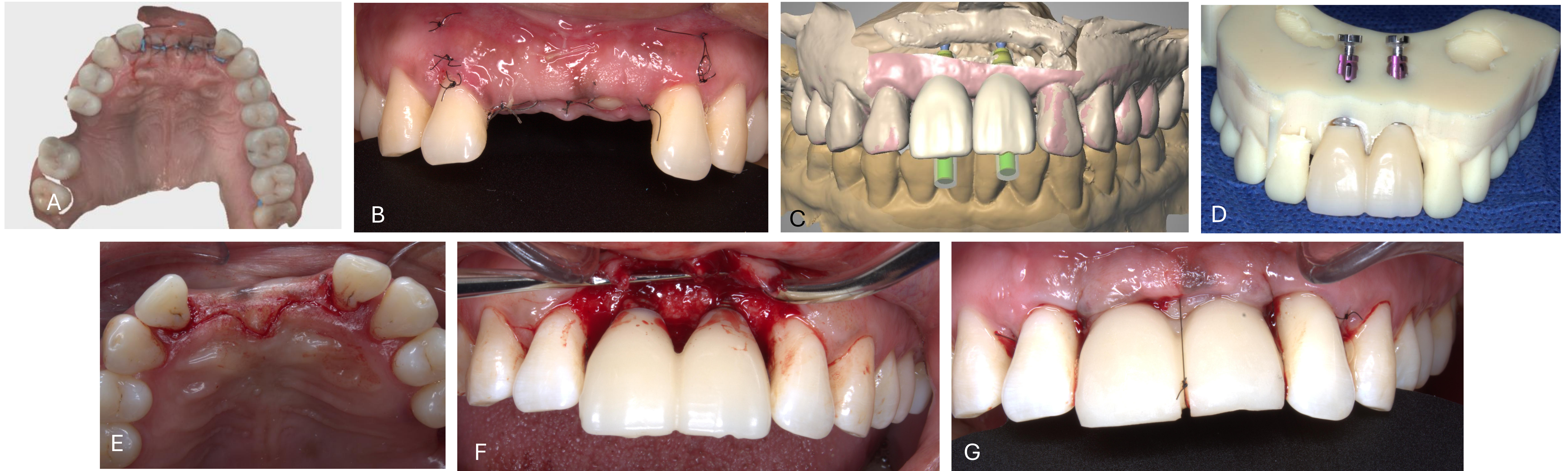


Figure 3. A) Intraoral scanning with sutures. B) 8 days after surgery. C) Digital design of provisional restorations. D) Provisional restorations. E) Incision to uncover implants. F) Placement of provisional restorations. G) Suture with nylon 6-0.



Implant Rehabilitation in the Aesthetic Zone With Digital Workflow: A Clinical Case Report

Results

The use of a digital workflow improved the precision of restorations design and fabrication, minimizing errors and ensuring accuracy. The digital process not only enhanced aesthetic outcomes but also increased efficiency, reducing chair time and improving patient satisfaction. This streamlined workflow significantly shortened the overall treatment duration.



Figure 5. Final photograph after cementation of teeth #8 and #9 implant crown.

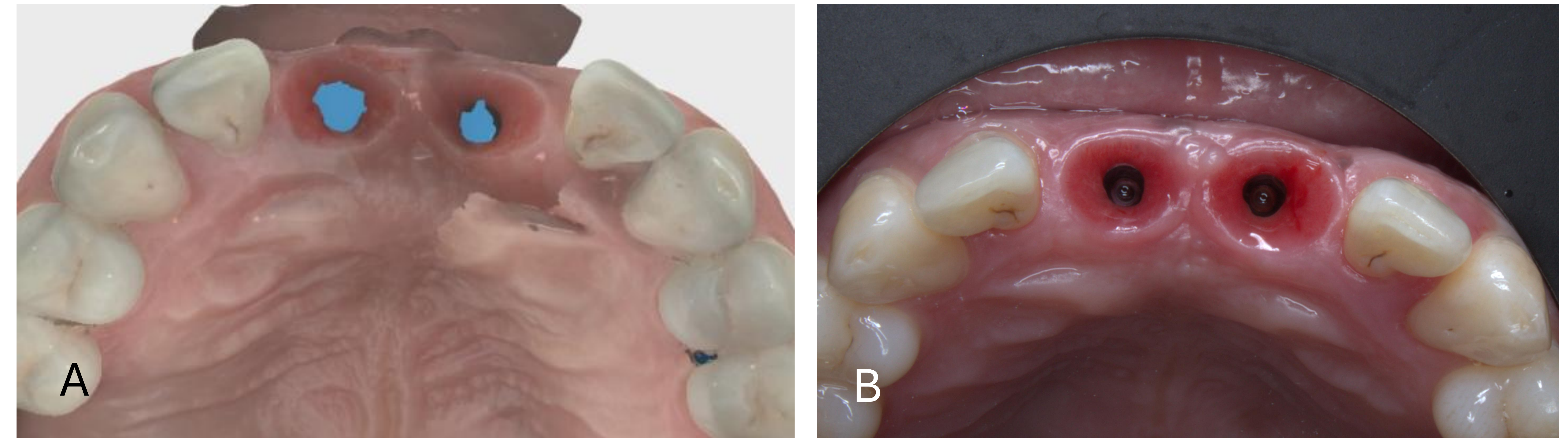


Figure 4. A) Intraoral scanning of the emergence profile. B) Emergence profile.

Conclusion

A fully digital workflow enabled the precise fabrication and placement of implant restorations, achieving excellent functional and aesthetic outcomes in a shorter time. Digital workflows offer a highly efficient, predictable and patient-friendly approach to implant cases, minimizing errors and treatment time while enhancing clinical outcomes

