

Objectives

The aim of this clinical report is to present a fully digital approach of planning and executing immediate implant placement, immediate loading, and the fabrication of maxillary and mandibular definitive full-arch implant-supported fixed prostheses.

Case Overview

A 68-year-old female patient presents with terminal dentition. Following examination, diagnosis and treatment planning, intra-oral scans and clinical photos were used to virtually design complete dentures (3Shape). Using an implant planning software (CoDiagnostix), denture designs, initial scans, CBCT data were merged, and implant positions planned. A series of stackable guides were designed: tooth supported guide, bone reduction guide, implant placement guide, abutment alignment guide, and interim prosthesis guide. Following the healing period, photogrammetry (PIC) was used to record implant positions. PIC, tissue, and interim prostheses scans were merged in a CAD/CAM software (exocad) to design and 3D print (Sprintray) prototypes to test esthetics and function. Prototypes were used to fabricate definitive monolithic zirconia full-arch implant-supported fixed prostheses.

Outcomes

The fully digital approach utilizing stackable guides, photogrammetry, and CAD/CAM softwares facilitated the precise immediate placement of implants with adequate restorative space and primary stability. Prostheses were delivered with the planned occlusion, occlusal plane, esthetics and function with less chairside adjustments and clinical steps.

Conclusions

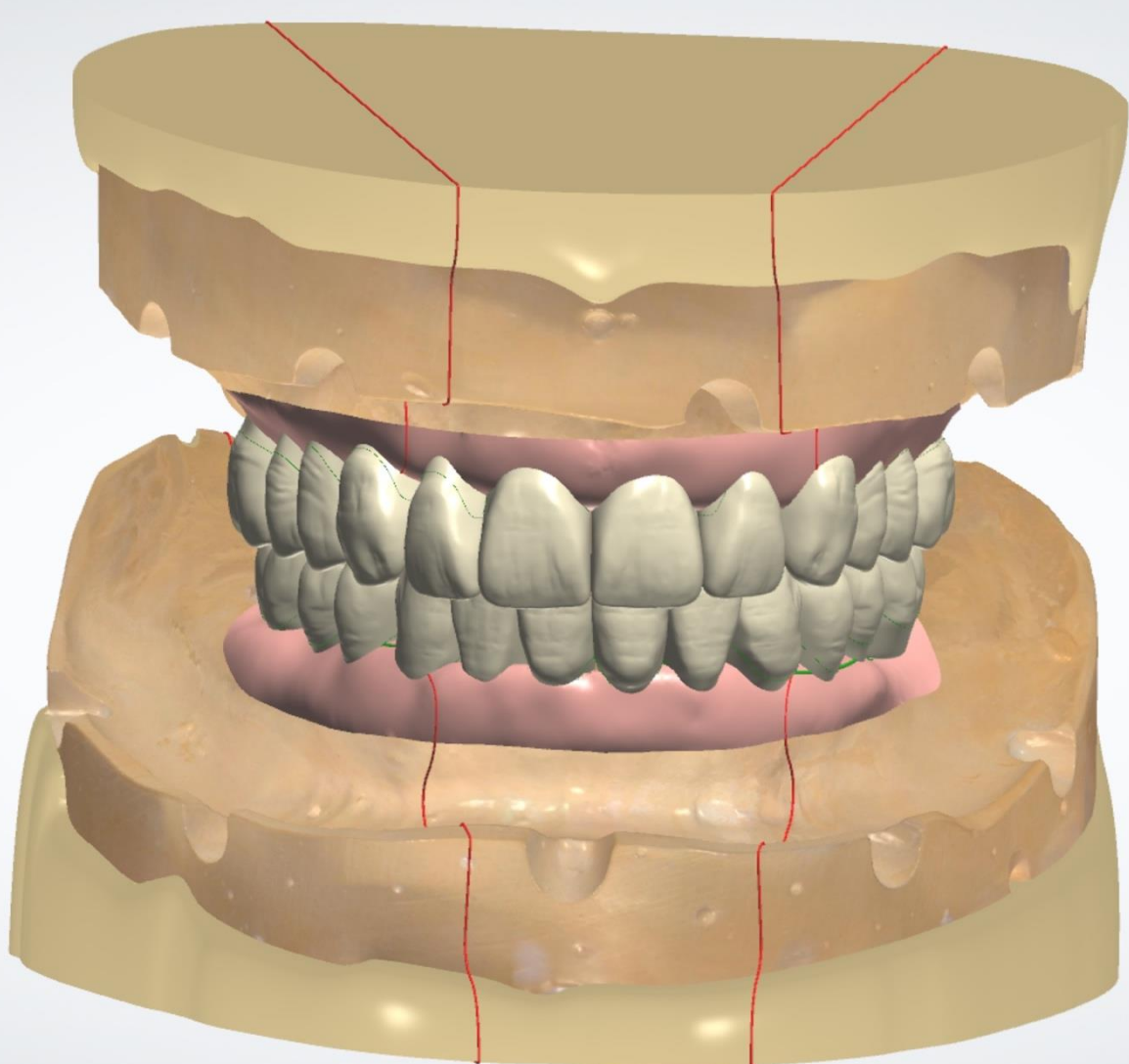
Fully digital approach to full-mouth implant-supported fixed prostheses increases the predictability of the surgical and restorative steps, accuracy of transferring the virtual plan into the patient's mouth, and the ease of delivering prostheses. This method is time efficient resulting in higher patient satisfaction.

Clinical Presentation

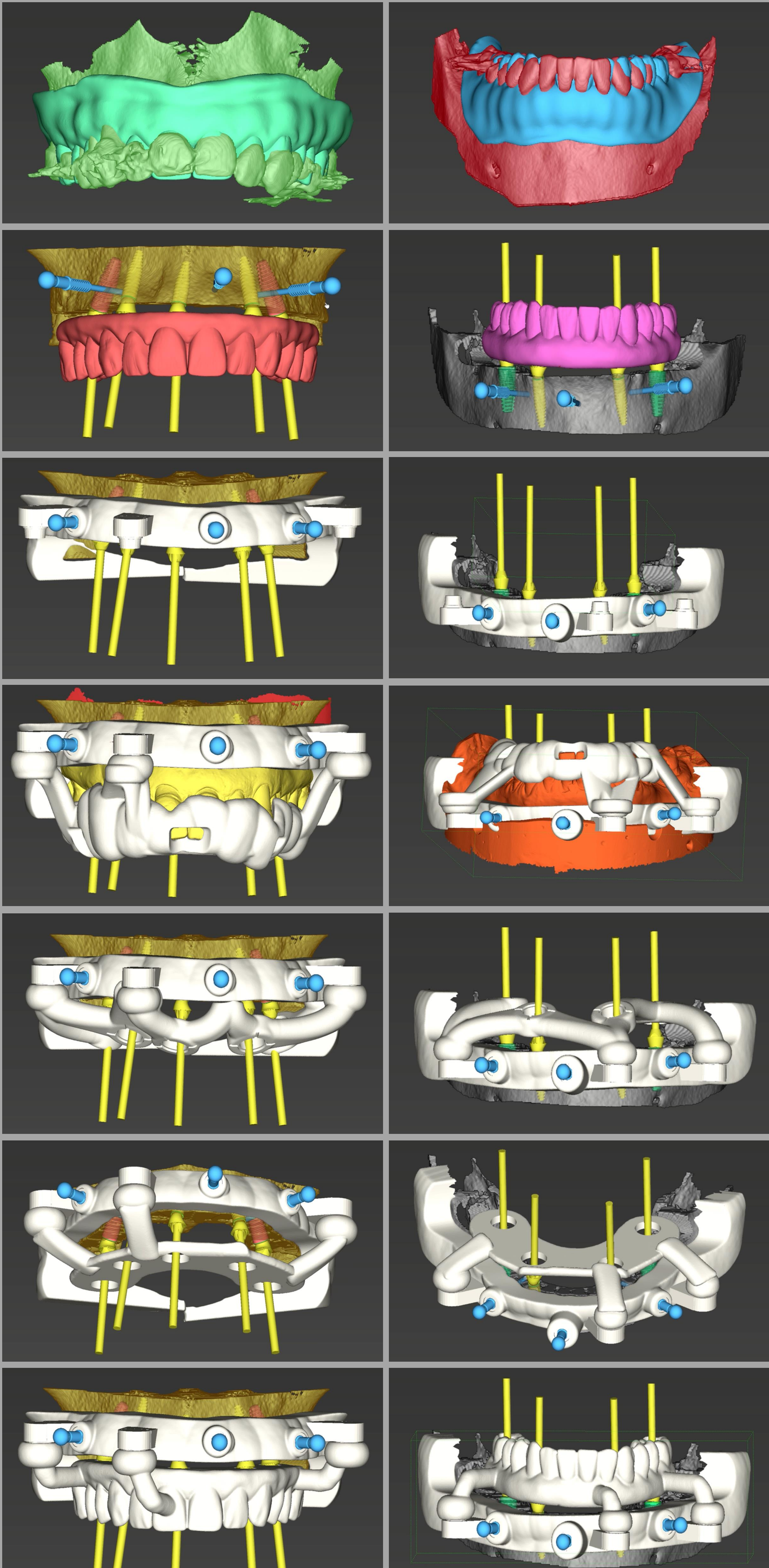
Initial Presentation



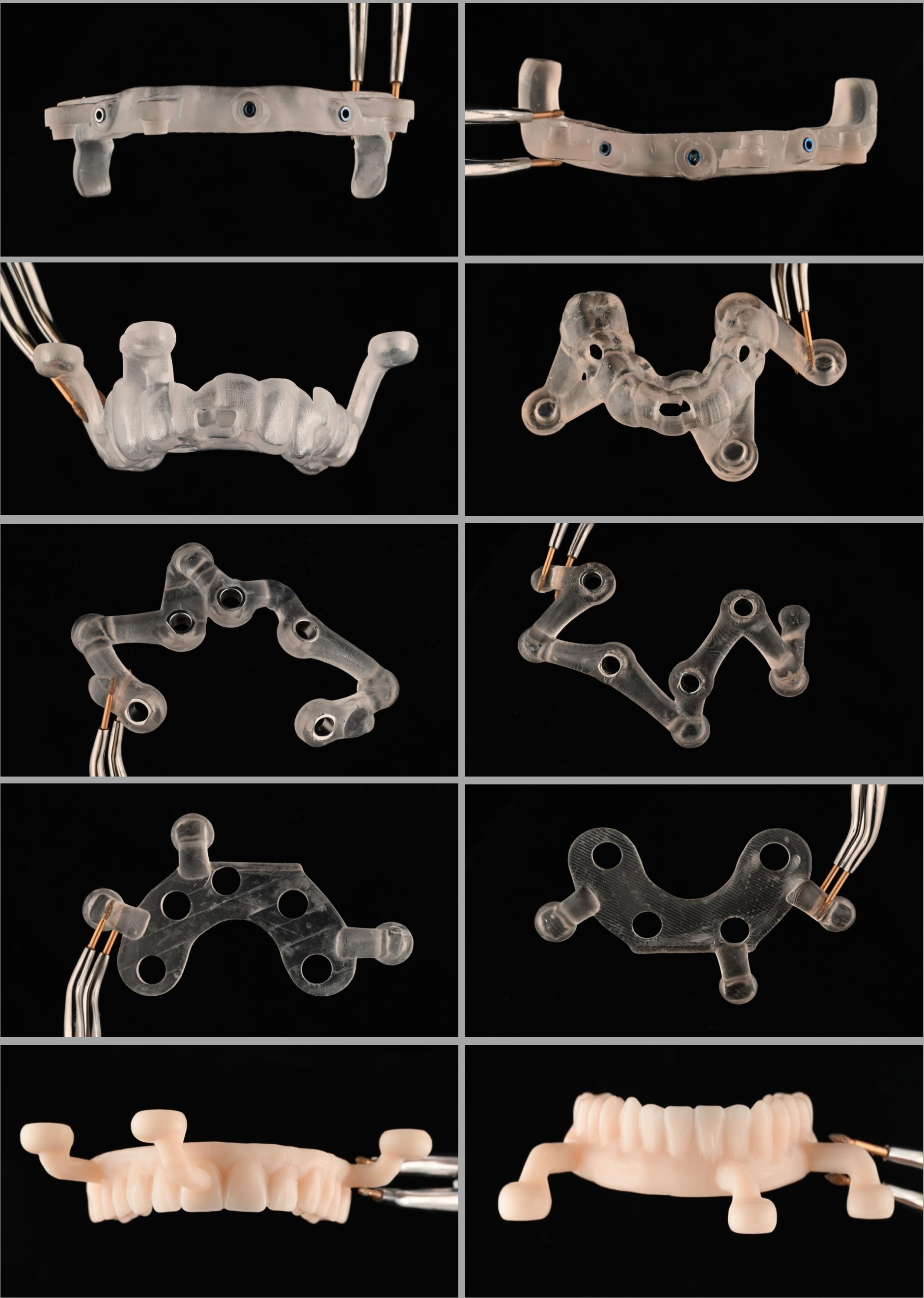
Digital Dentures



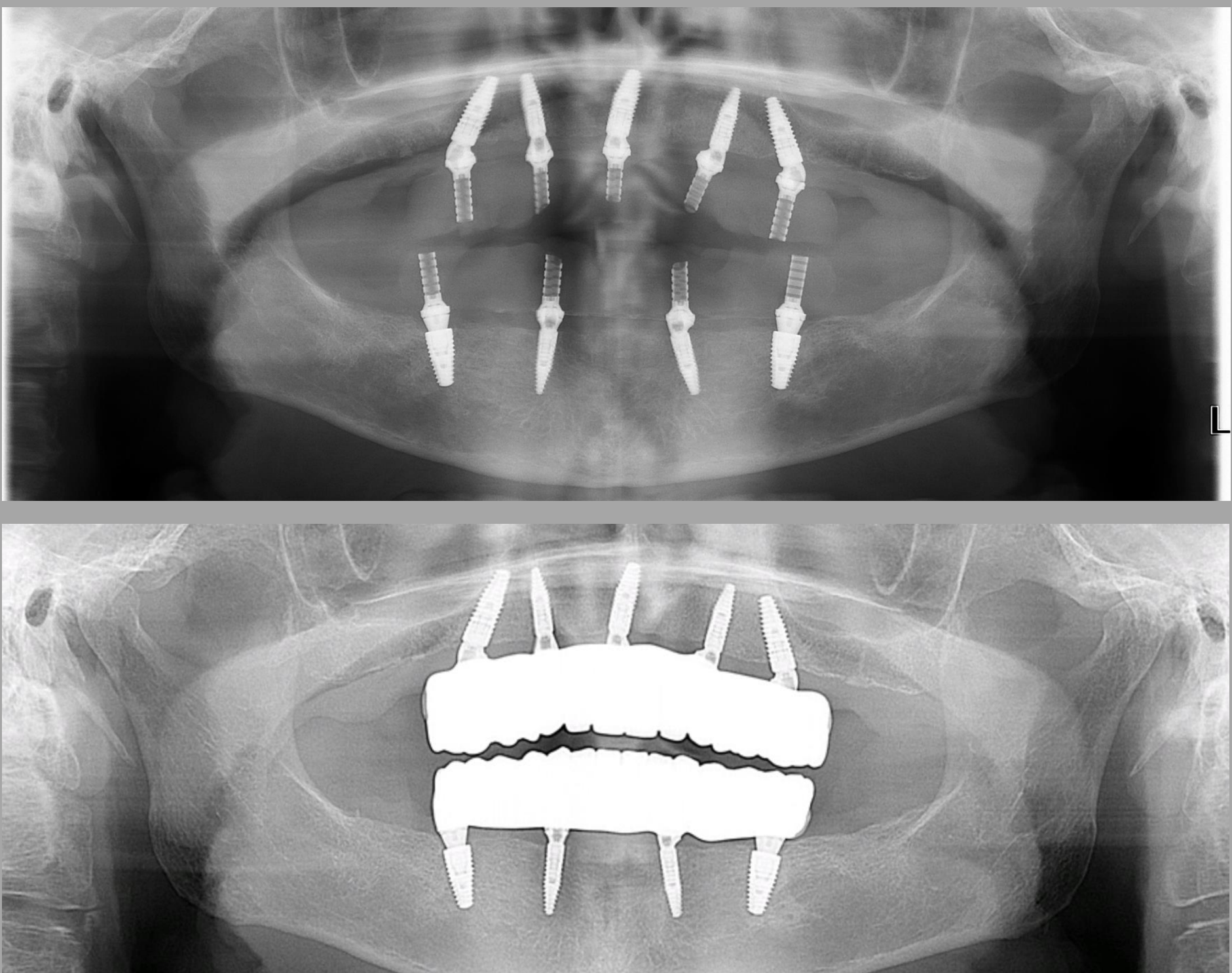
Surgical Planning



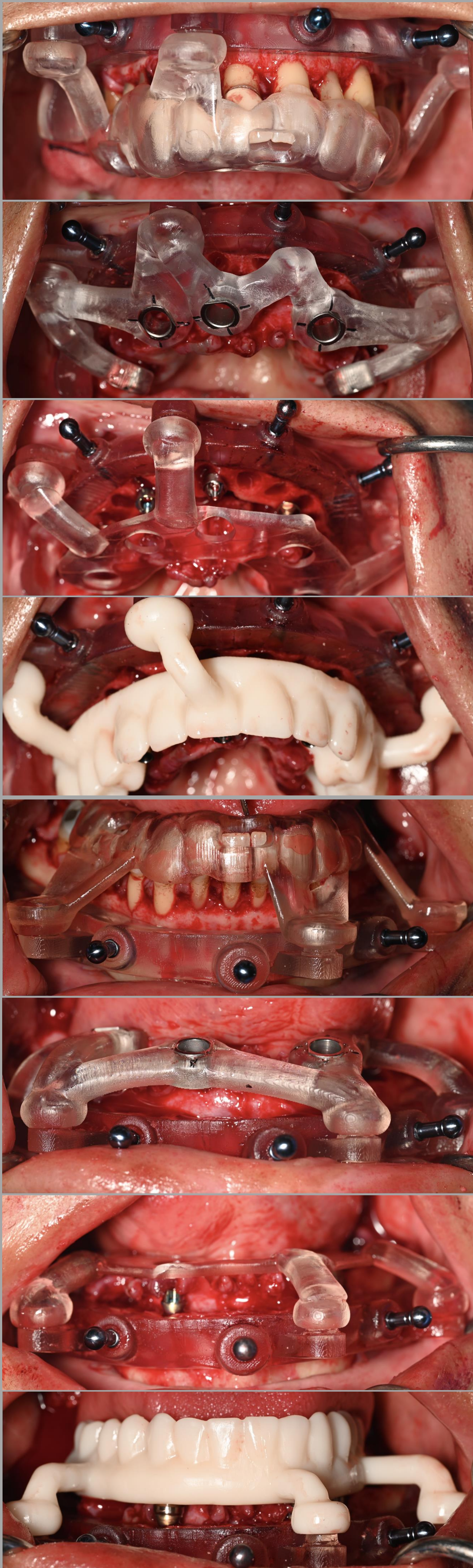
Stackable Guides



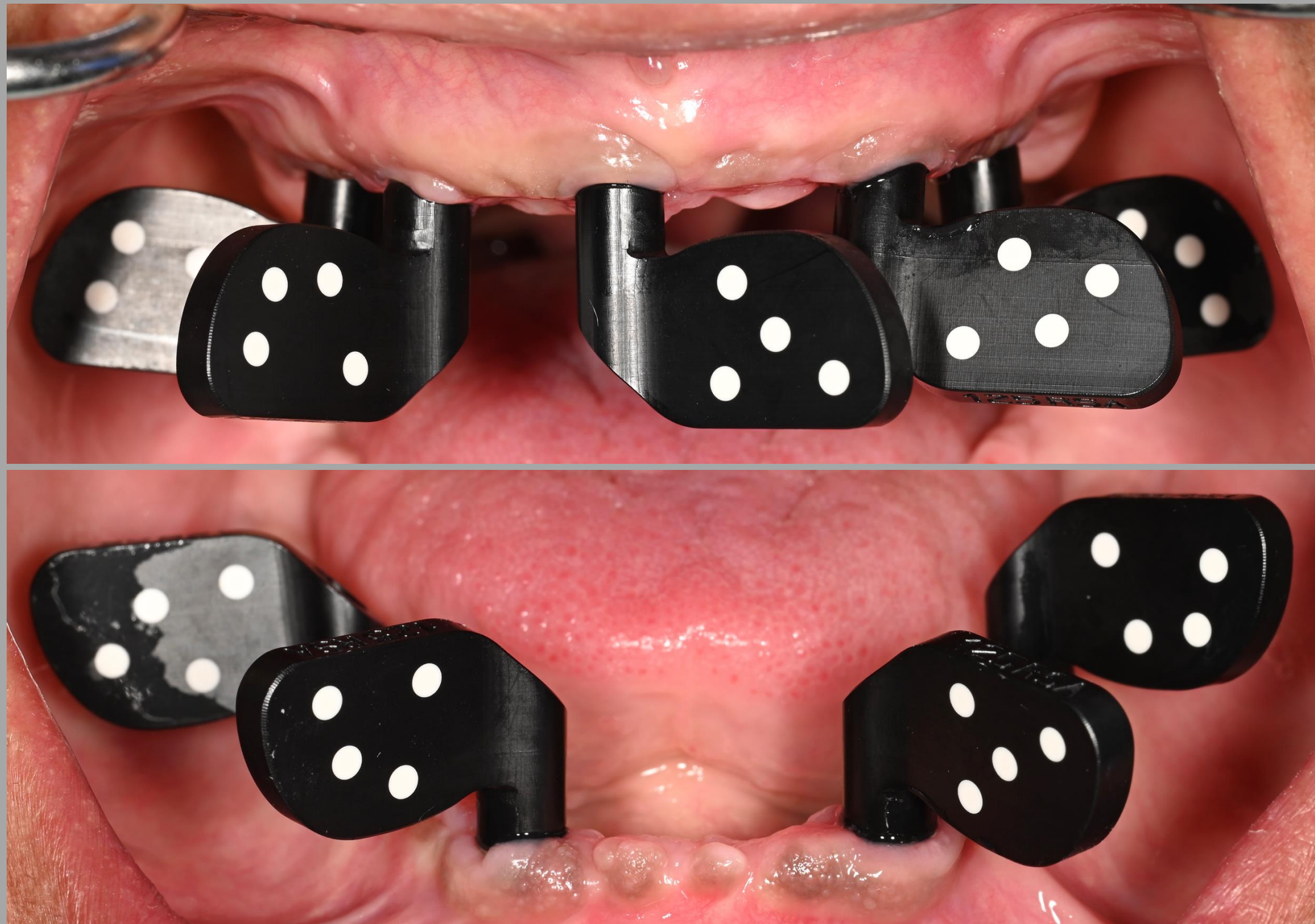
Post-op Radiographs



Surgery



Photogrammetry



Prostheses

