

A Full Guided Implant Surgery Using Complete Digital Workflow with Cobalt Chrome Guided: A Case Report

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Introduction: Many patients require solutions to shift from a failing dentition to a full-arch rehabilitation using dental implants. The placement of four to five implants through guided surgery combined with an interim, immediate loaded prosthesis constitutes a predictable treatment for full-arch rehabilitation. This report aims to present the digital workflow and clinical use of a chrome cobalt bone reduction and surgical guide, which can simplify implant rehabilitation in terminal dentitions and increase the precision and predictability of treatment outcomes.

Materials and Methods: The patient was treated with an entire arch implant-based fixed maxillary and mandibular prosthesis with immediate function. A virtual patient was created, and implant planning software was used to develop three guides: a tooth-supported guide stabilized by three pins, a bone reduction guide fabricated from chrome cobalt, and an implant guide from chrome cobalt that fit onto the bone reduction guide.

Results and Discussion: In this case of full-arch prosthetic implant-based rehabilitation in the maxilla and mandible, a chrome cobalt bone reduction guide and implant guide succeeded in increasing stability, resistance to fracture and predictability of the alveoloplasty procedures.

Conclusions: A chrome cobalt reduction guide and implant guide can be beneficial when working in areas with reduced bone density.

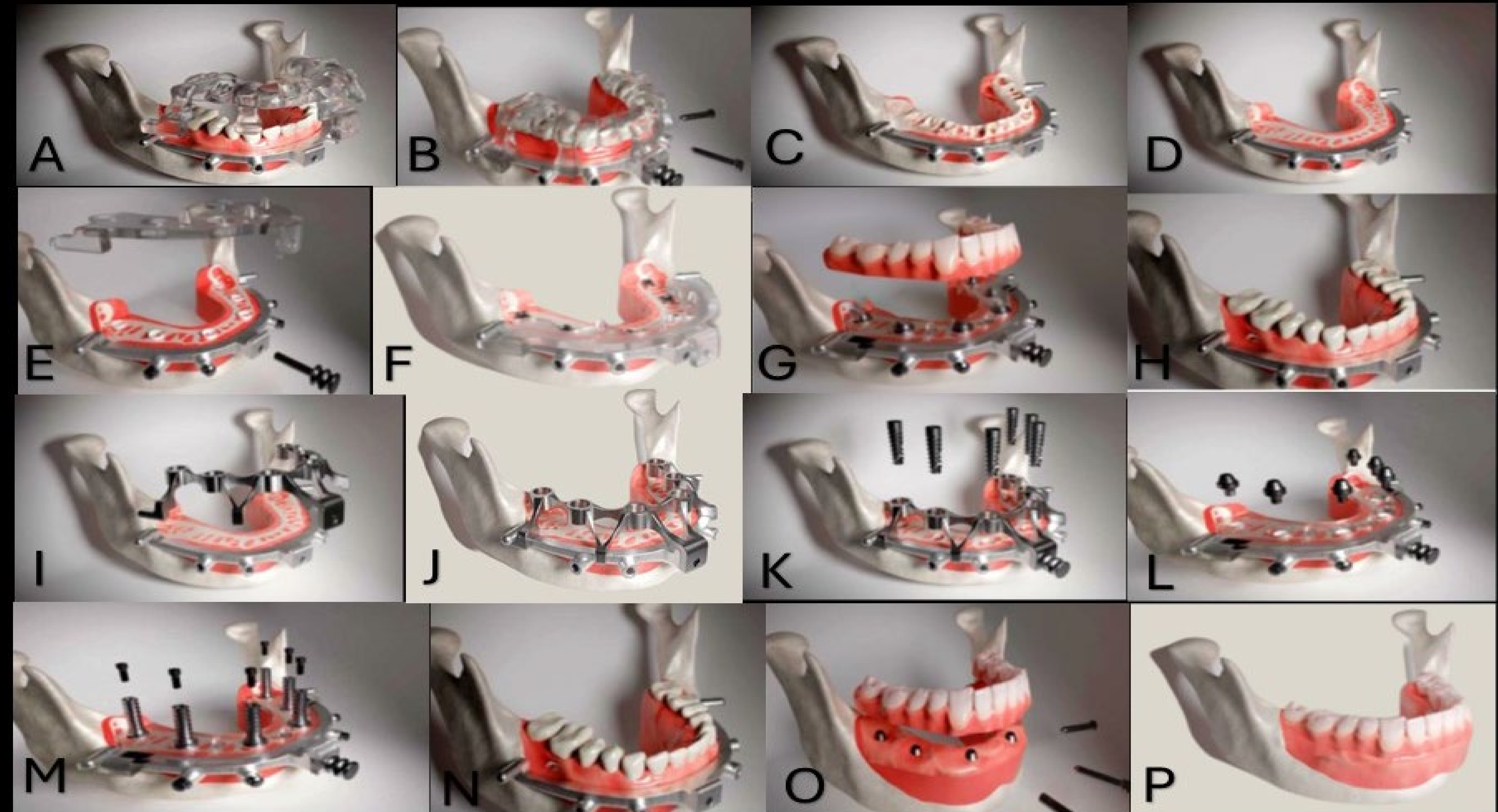


Fig. 1: A & B: Flap elevation, bone reduction exposure, and inserting the posterior guide assembly stabilized with a pin guide. C & D: Extraction of the teeth and bone reduction. E & F: Bone reduction verification use the multi-guide to evaluate the bone reduction amount. G & H: Inserted the prosthetic teeth over the multi guide bone reduction and verified the seating of the prosthetic teeth. I & J & K: For osteotomy and implant placements, follow the timing marked on the surgical guide. L & M: Placed the multi-unit abutment and temporary cylinder. N: Picked up the prosthetic teeth and final position. O: Removed the prosthetic, pin guide and bone reduction, polished and finished the final prosthesis. P: Final delivery of the prosthetic teeth.

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Fig. 2: Extra oral photographs showing the patient smile and frontal view. Intra-oral photos show occlusal view for the maxillary and mandibular arch.



Fig. 3: Extra oral photographs with the patient display an exaggerated smile.

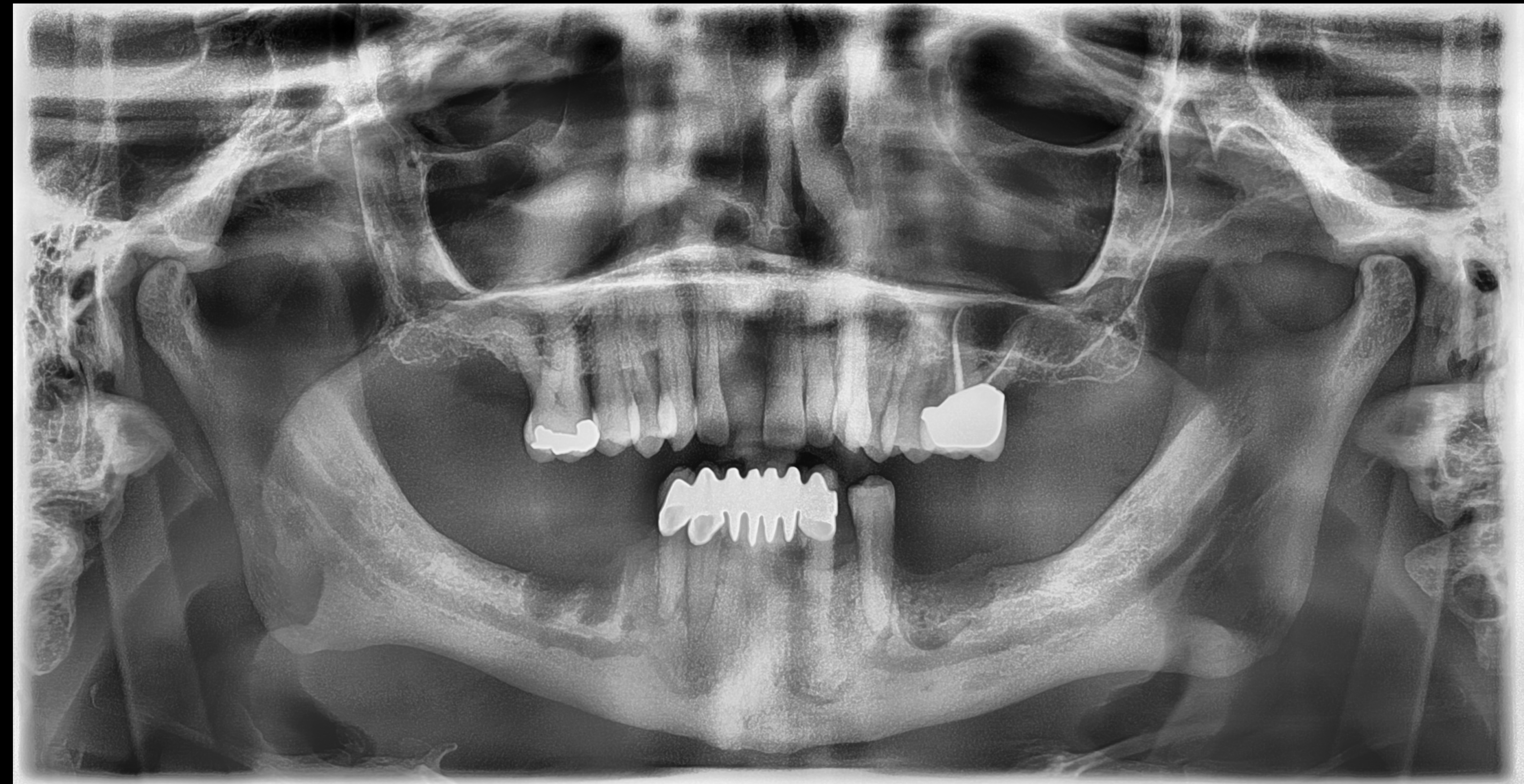


Fig. 4: Panoramic image of patient displaying failing dentition with several pathological conditions and further restriction of the available bone for implant placement.

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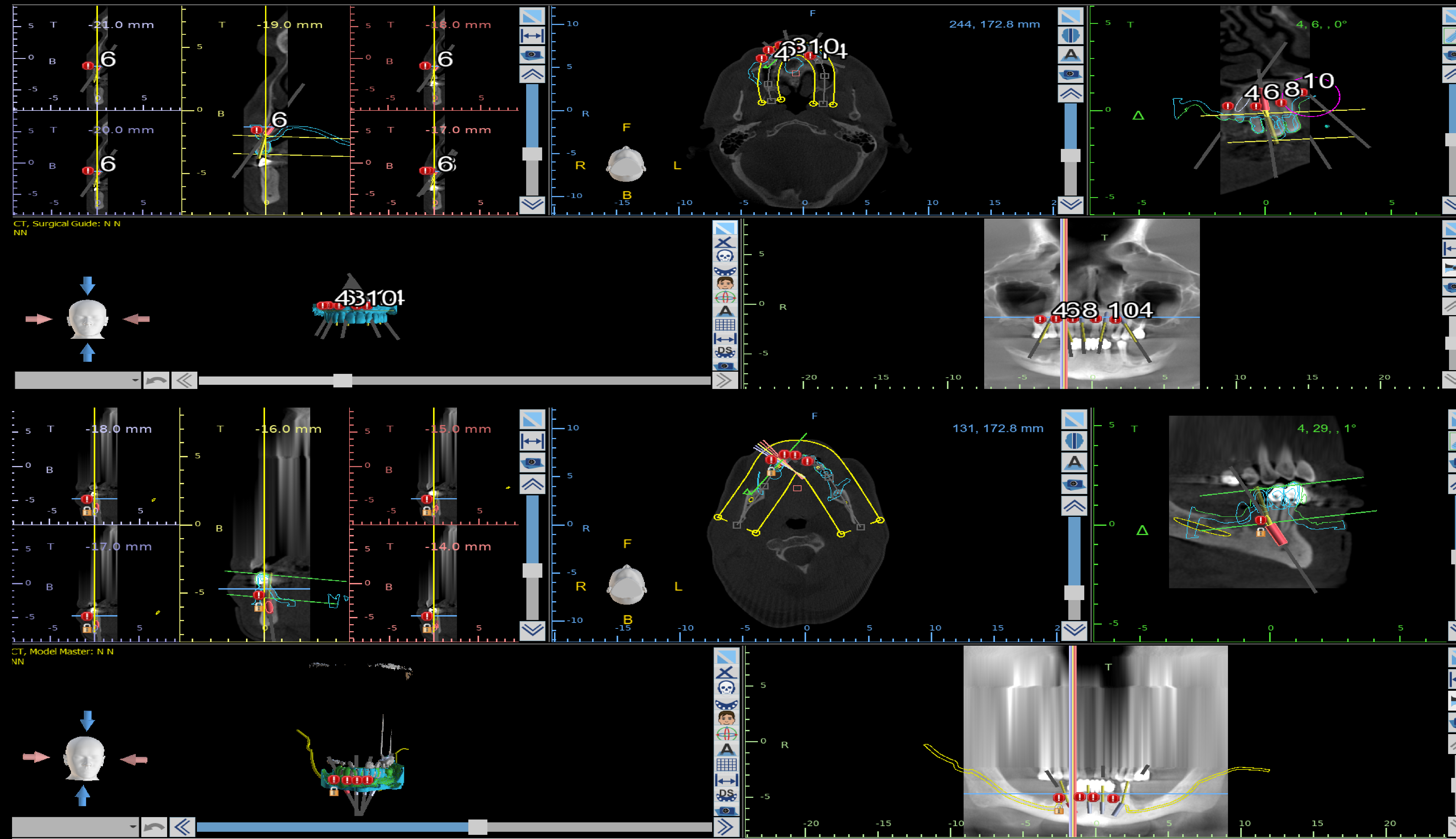


Fig. 5: 3D surgical plan for computer-guided implant surgery (Blue sky bio).

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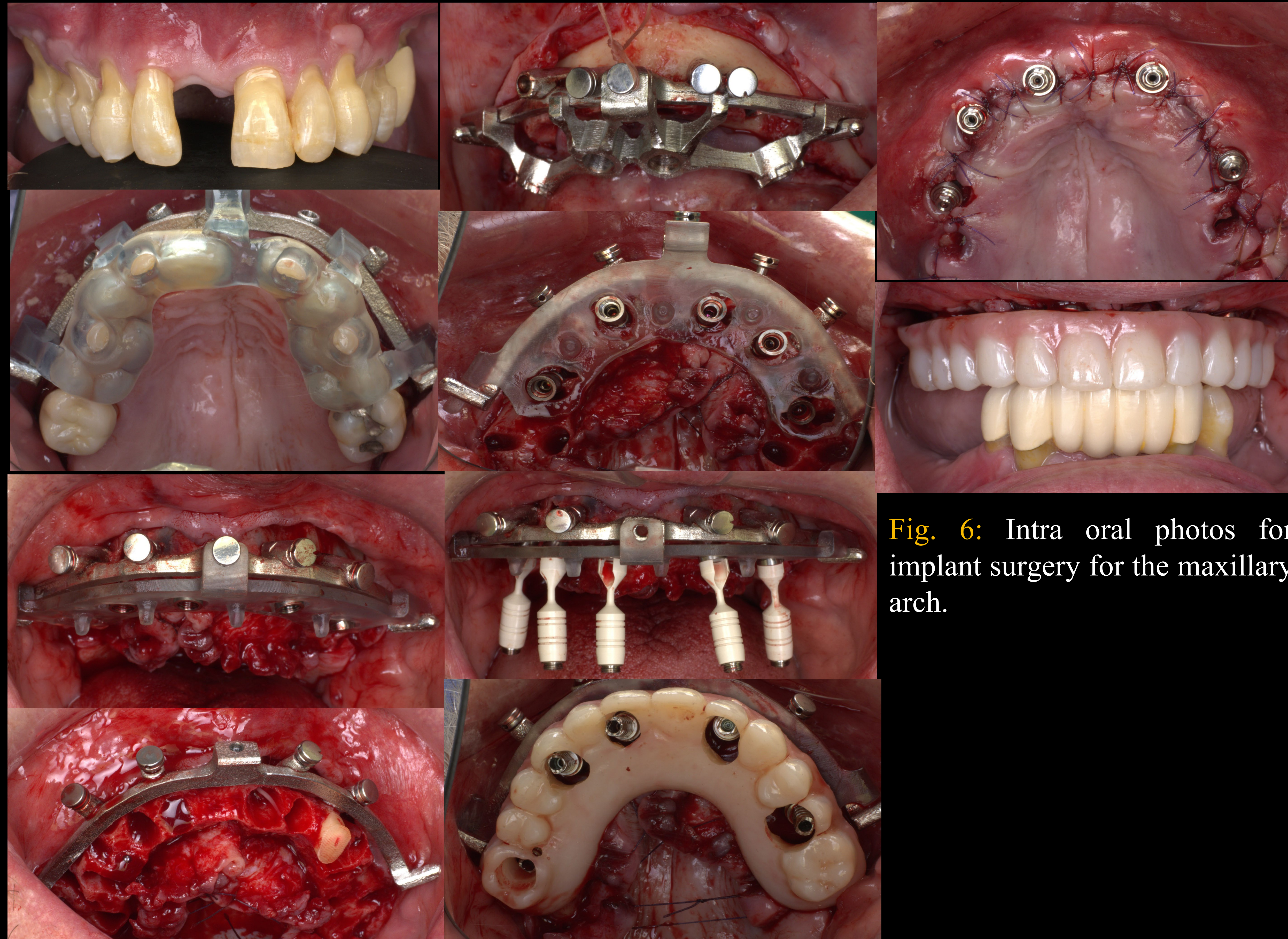


Fig. 6: Intra oral photos for implant surgery for the maxillary arch.

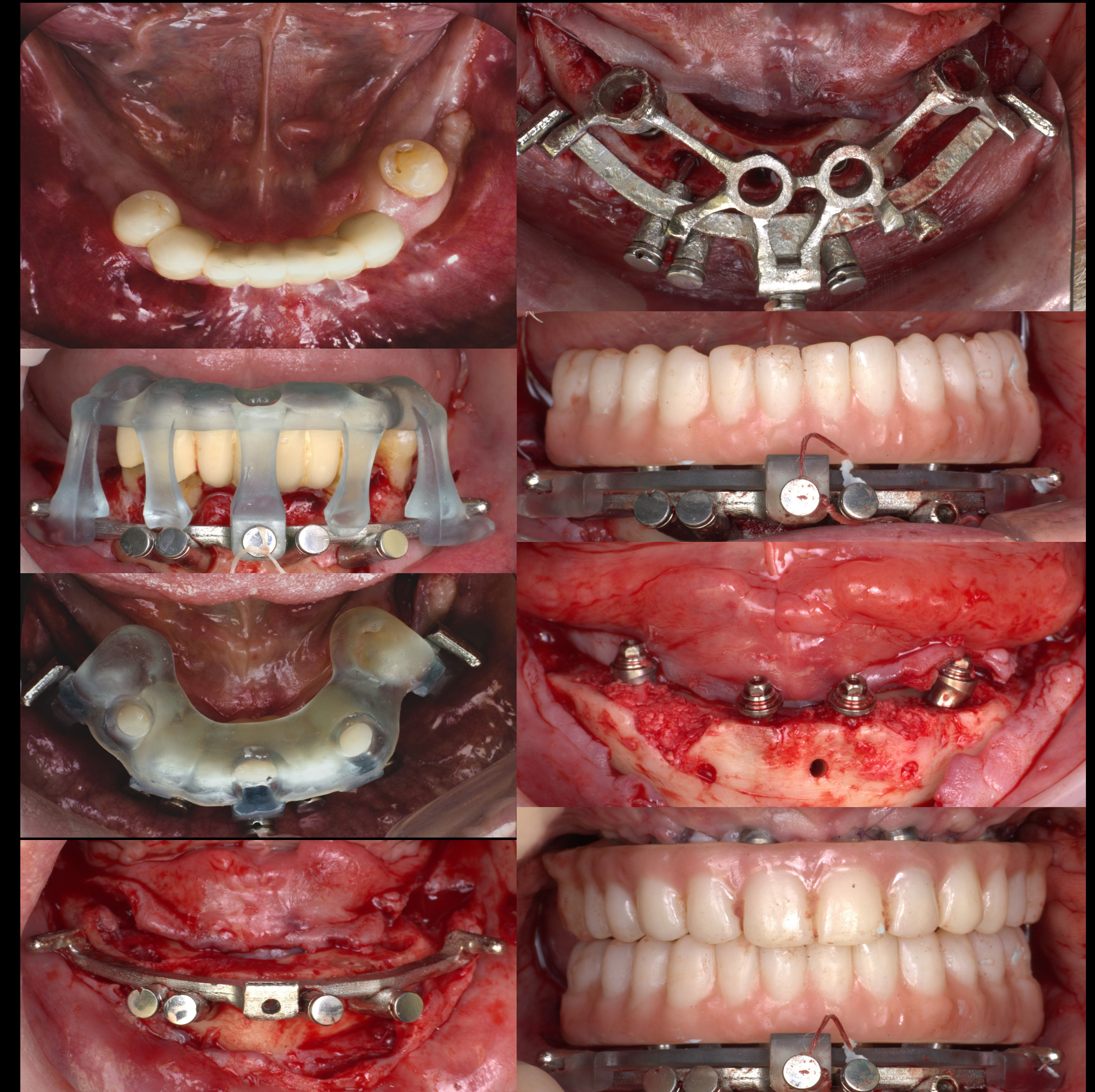


Fig. 7: Intra oral photos for implant surgery for the mandibular arch.

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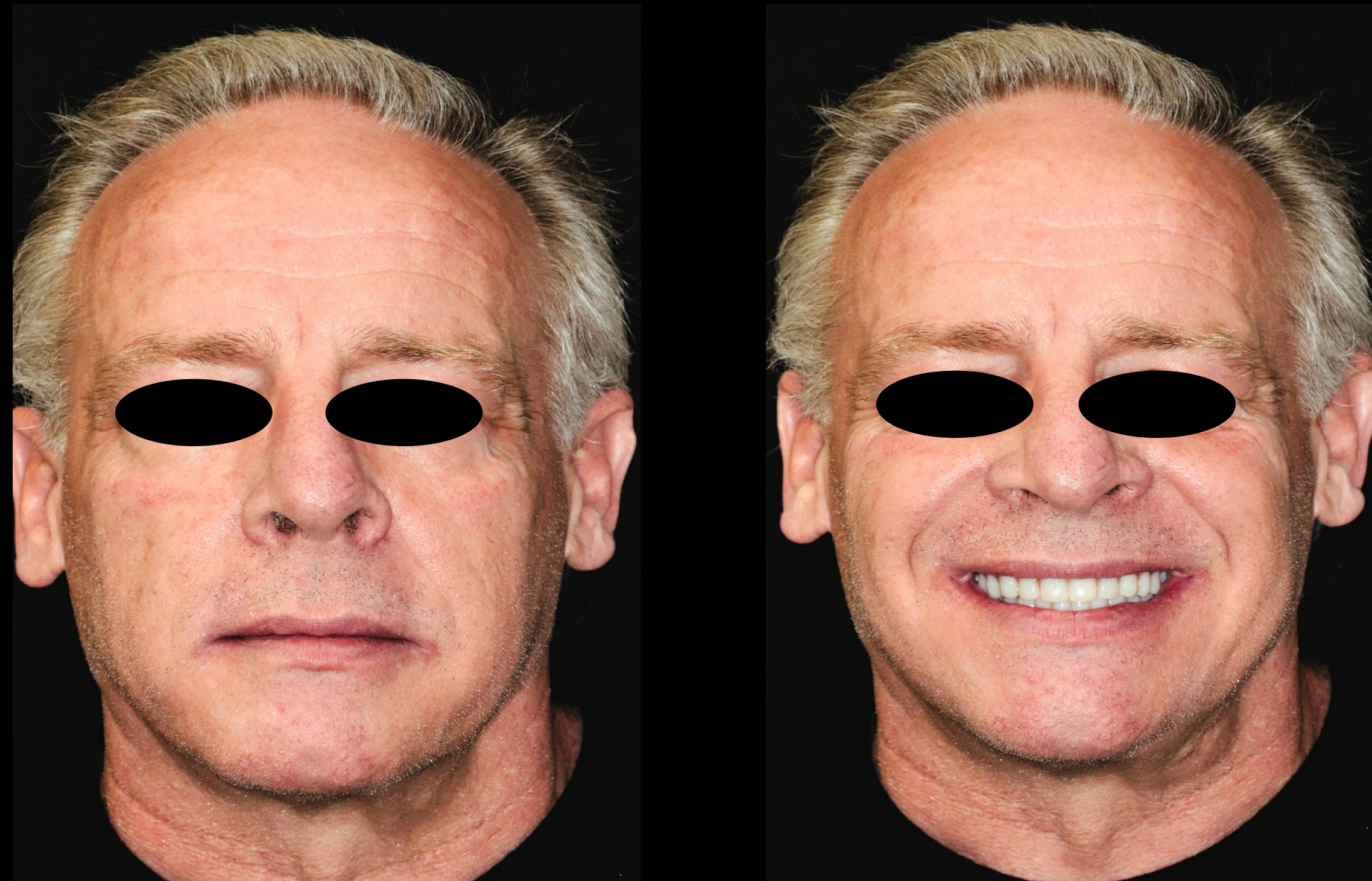


Fig. 8: Extra oral photographs showing the patient smile and frontal view. After the delivery of the prototype prosthetic teeth.



Fig. 9: Post-operative intra oral photos show the frontal view and buccal view of the final delivery of the prototype prosthetic teeth.



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Fig. 11: Post-operative extra oral photographs showing the patient smile.

Fig. 10: Post-operative Panoramic image of patient displaying final delivery of the prototype prosthetic teeth.