

Scalloped guide as an alternative to conventional (flat) bone reduction guides – a case report



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OBJECTIVE | To discuss a case involving implementation of a unique scalloped bone reduction guide to facilitate maintenance of ideal bone architecture and gingival contours.



Figure 1. Initial case.



Fig 2. Frontal Smile.



Fig 3. Lateral view.



Fig 4. Intraoral frontal view.



Fig 5. Occlusal view after crown removal.

TREATMENT OPTIONS

CASE REPORT |

V.W., 61y, presented to the clinic complaining about her excessive gingival exposure. Clinical and radiographic examination revealed severe **vertical maxillary excess** and a **failed maxillary dentition**. A digital smile design was done combining photo and intraoral scan.

FLAT BONE REDUCTION WITH FP-3 PROSTHESIS

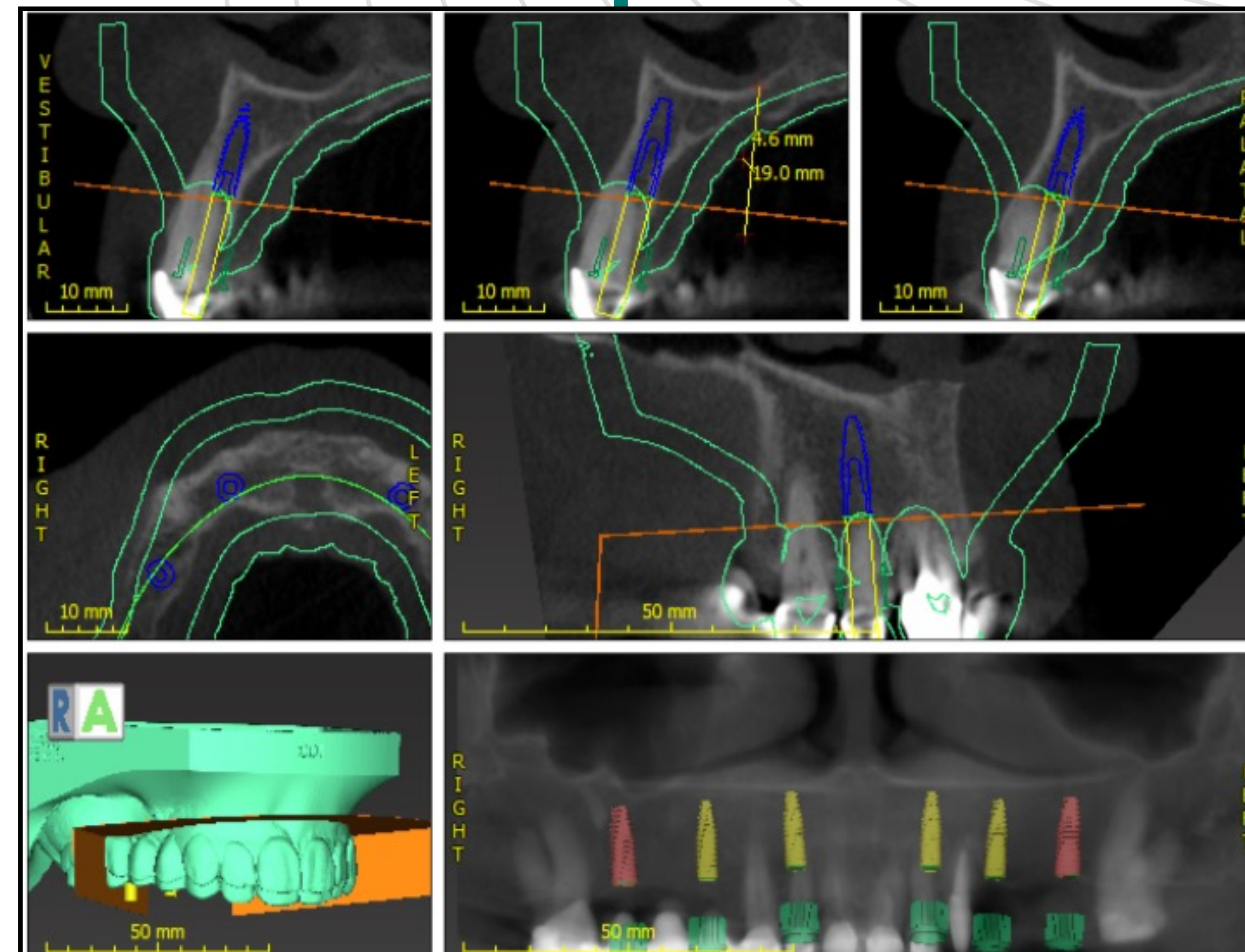


Fig 6. Digital implant planning with coDiagnosticX[®]. In this option, a good amount of bone would have to be removed to hide the transition zone between the prosthesis and the gum.

SCALLOPED REDUCTION WITH FP-1 PROSTHESIS



Fig 7. IOS (3D) aligned with the photo (2D).

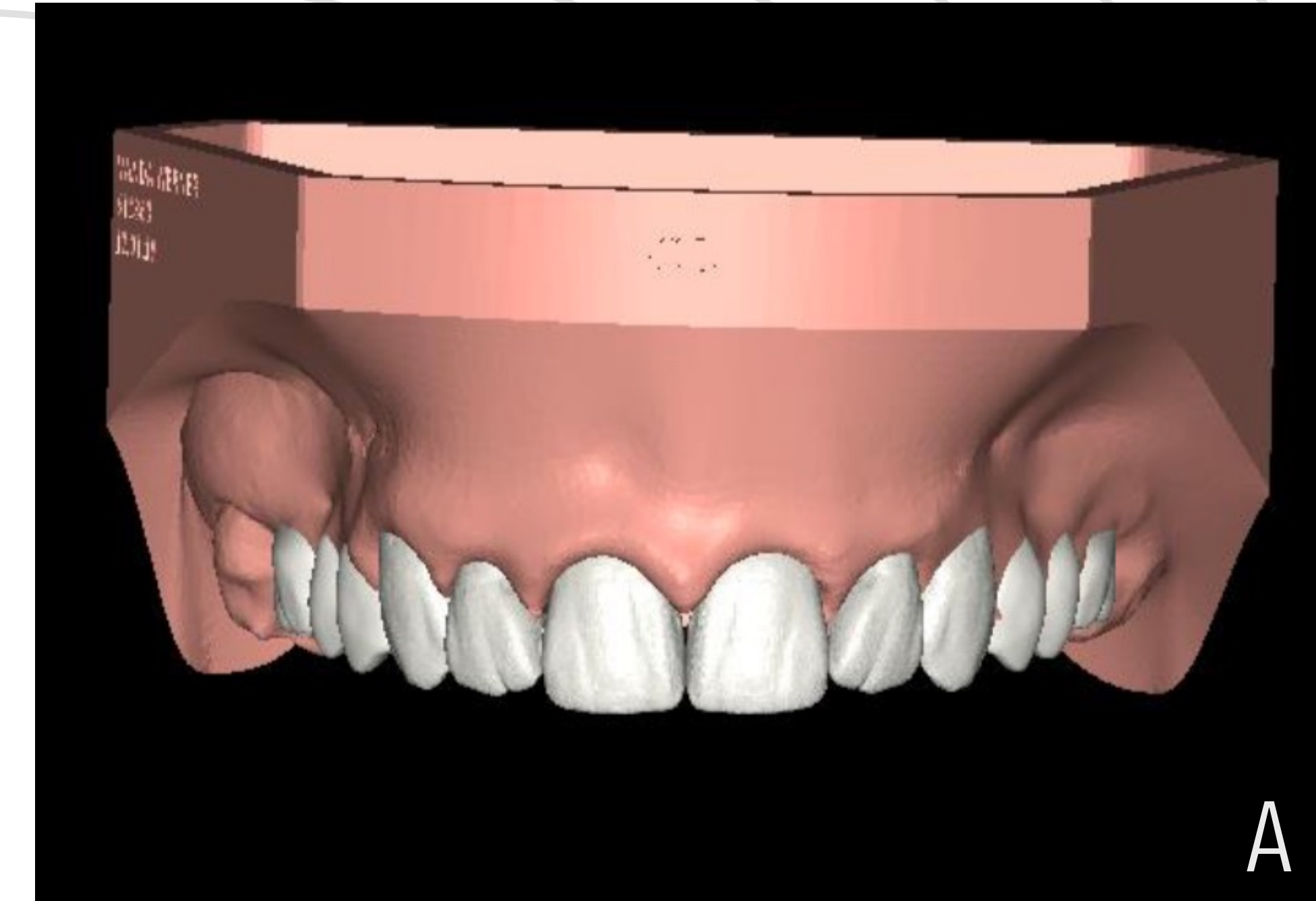


Fig 8. A) Virtual wax-up by Nemotec. B) Implant placement planned virtually in a prosthetically-driven 3D position based on the future smile design.

TREATMENT SEQUENCE |

extraction
all teeth

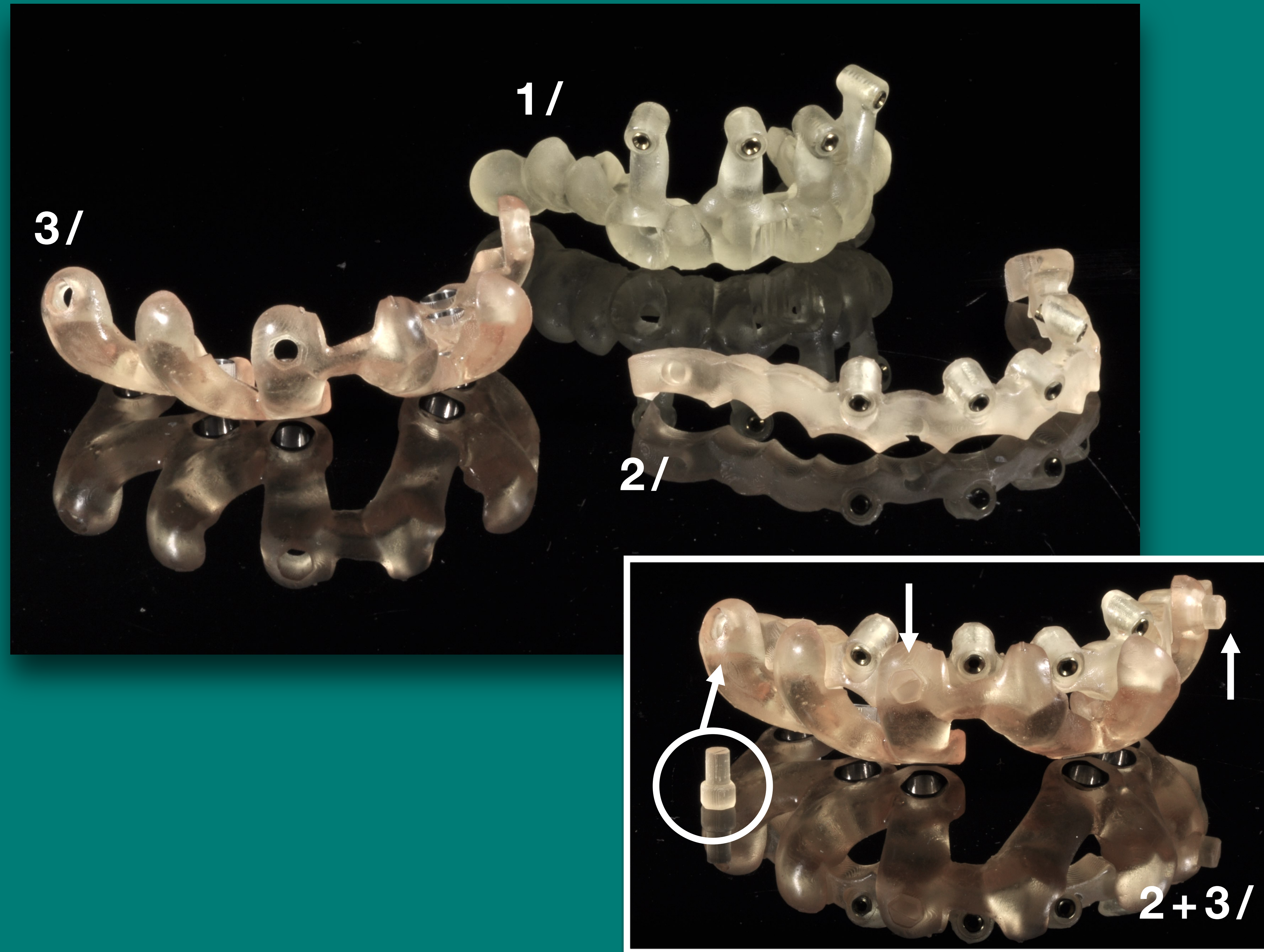
placement of
six implants
(BLT, Straumann)

scalloped bone
reduction + bilateral
soft tissue graft

installation of
SRA abutments

immediate loading
with a FP-1 prosthesis

GUIDE SEQUENCE | Three stackable guides are supported with fixation pins.



First guide | is supported by the remaining teeth to facilitate fixation pin placement.

Second guide | is used as a reference for performing the gingivectomy and scalloped bone reduction.

Third guide | is connected with the second with pins and is used to guide implant placement according to the virtual prosthetic plan.



Fig 9. The first guide adapts on remaining teeth to oriented the fixation pins.

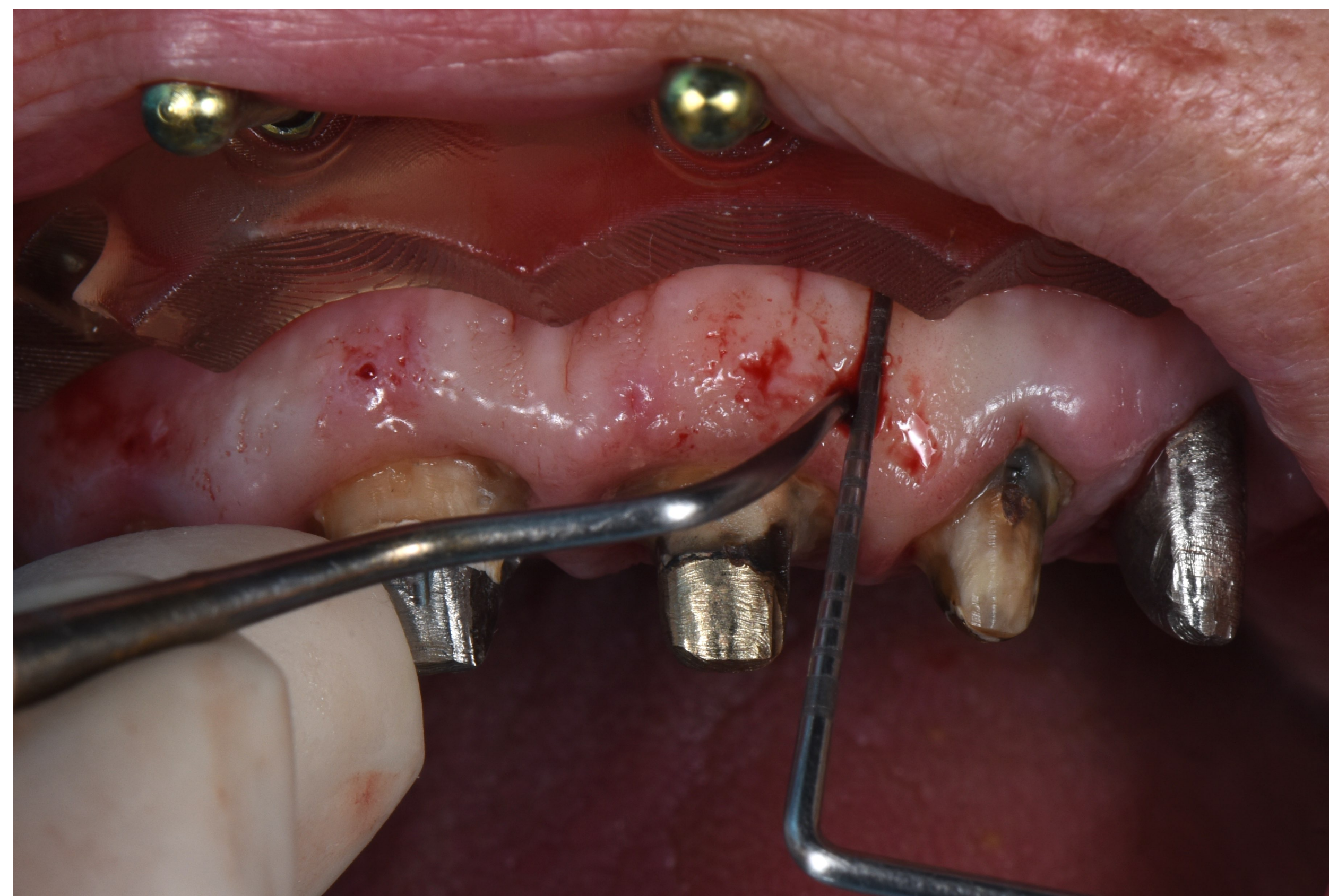


Fig 10. The second guide is fixed to the pins to perform the gingivectomy.

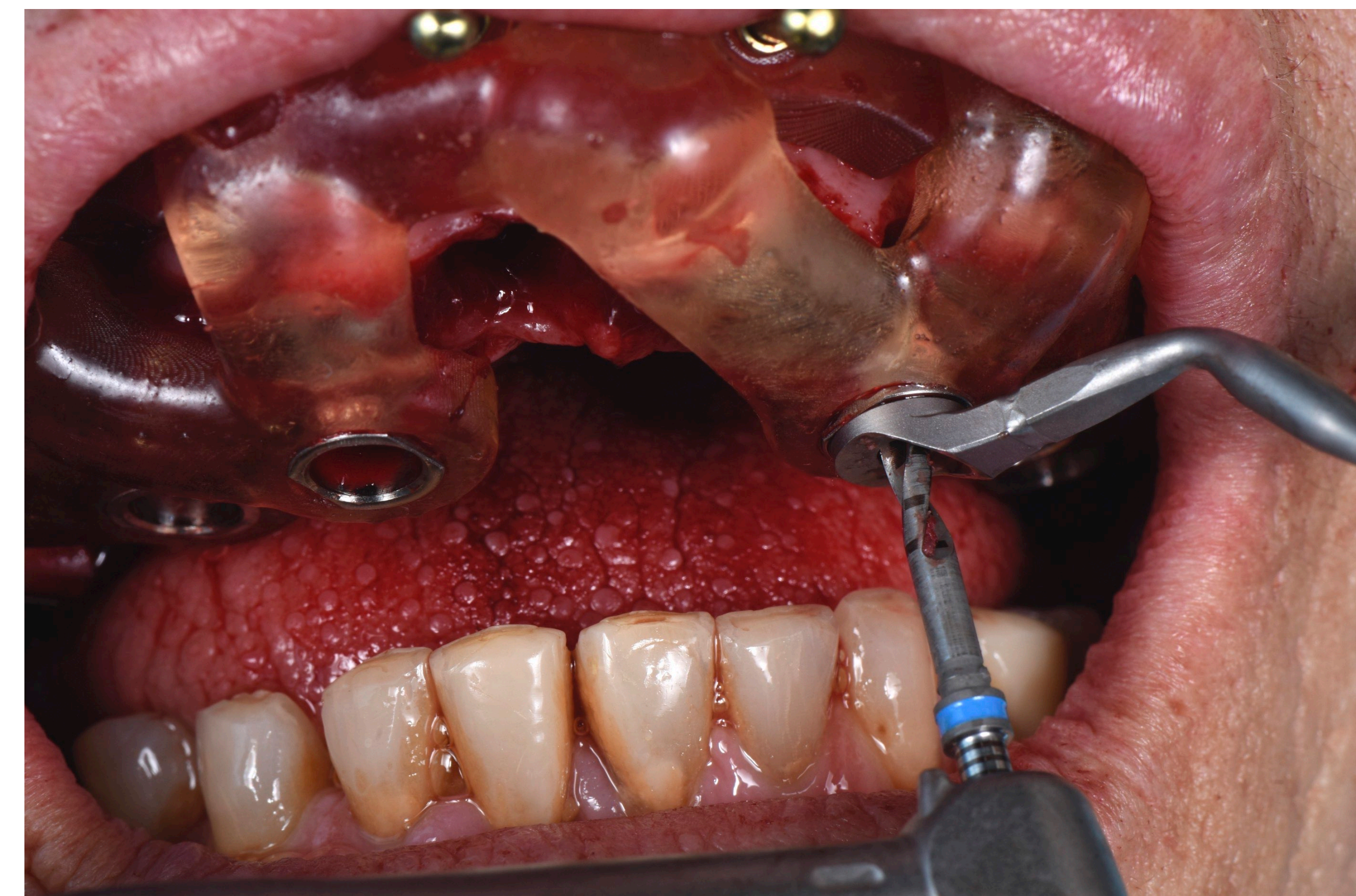


Fig 11. Connecting the third guide for implant placement after teeth removal.

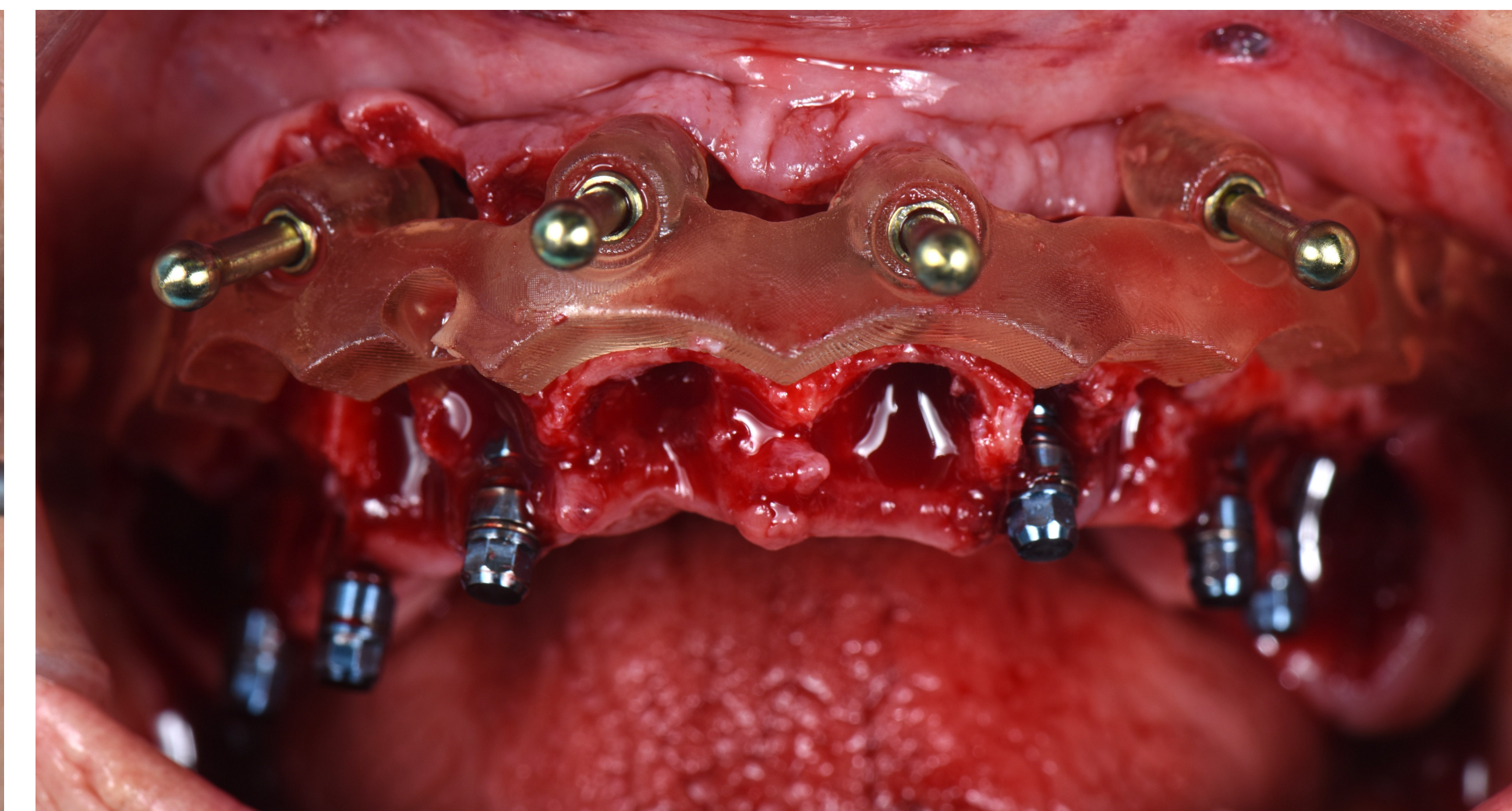


Fig 12. Bone reduction is performed according to the second guide.

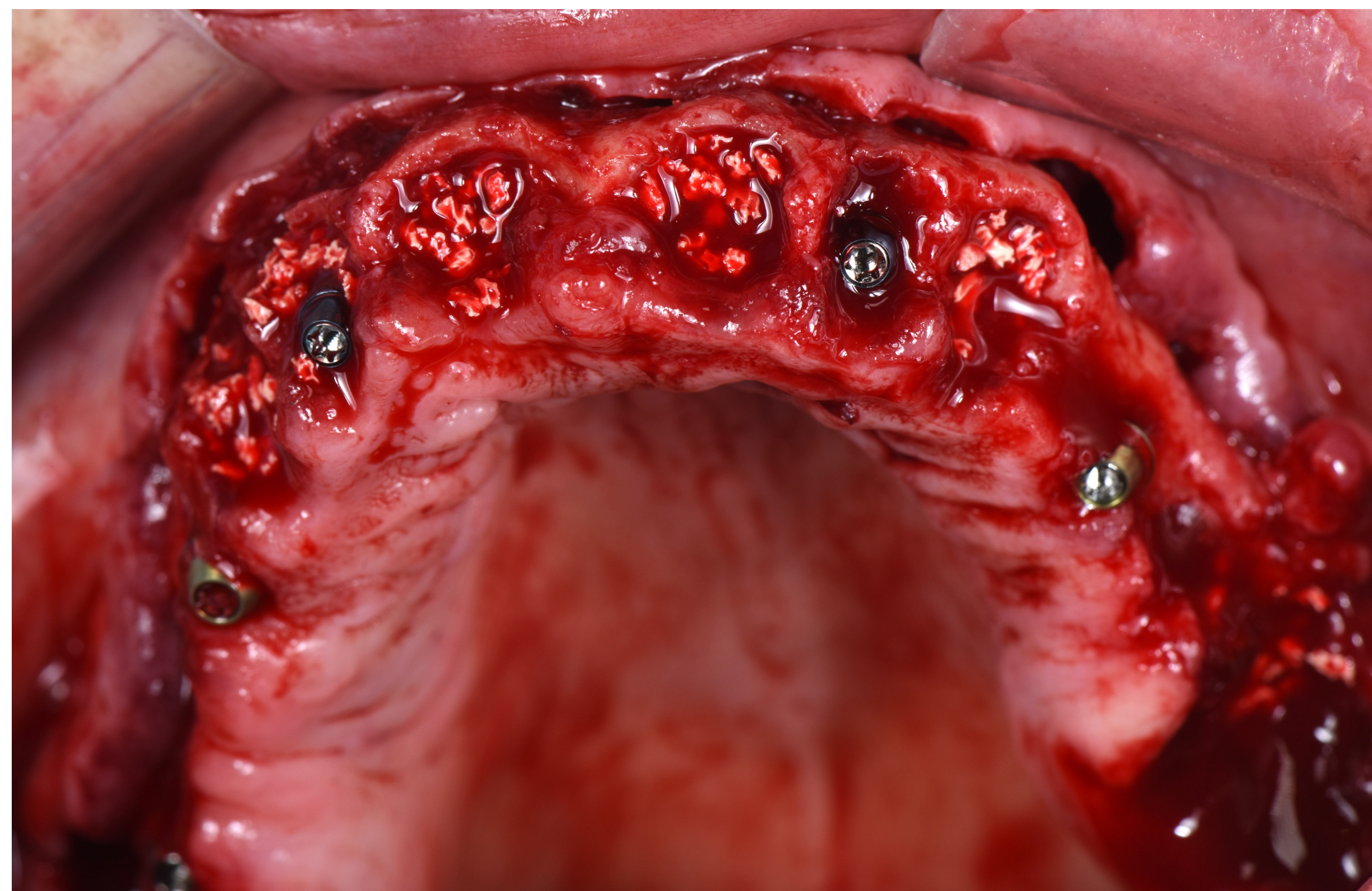


Fig 13. SRA abutments are installed then extraction sockets and gaps are filled with bovine bone.

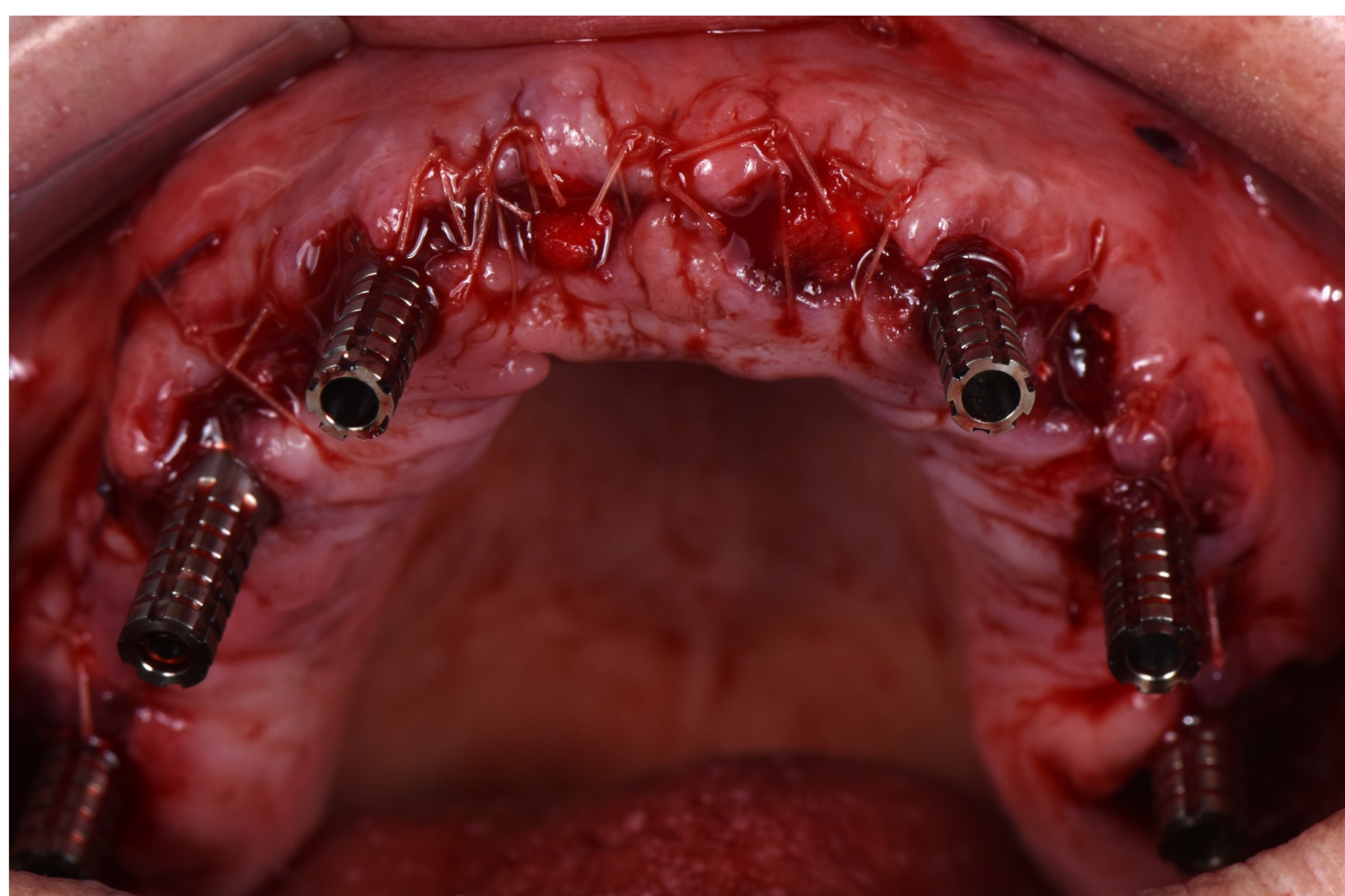


Fig 14. Bilateral soft tissue grafts and sutures are done, and temporary abutments are installed.



Fig 15. The temporary prosthesis is made with PMMA based on the 3D printed virtual model using a putty tray.



Fig 15. After immediate loading. A) Frontal view. B) Occlusal view.

CONCLUSION |

- Clinical success involving complex maxillary rehabilitation requires good **planning** and **team expertise**.
- **Digital 3D planning** is a reliable tool to properly establish and evaluate the future occlusal plane, smile line, and lip support.
- **Bone scalloped guide** is an excellent alternative to conventional flat bone reduction guide since it requires less bone removal, the ability to fabricate a FP-1 prosthesis, shorter surgical time, and a more natural smile.



Fig 20. New PMMA FP-1 temporary after 4 months.



Fig 17. Panoramic x-ray after 2 months.

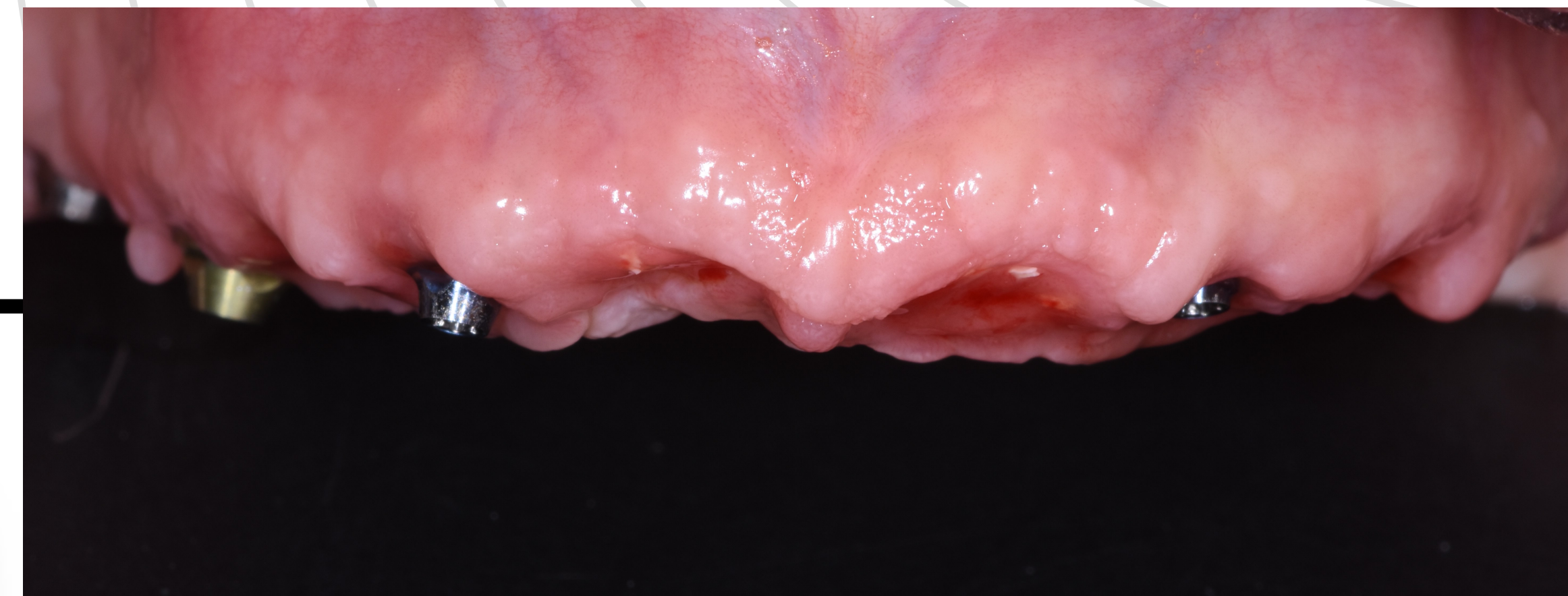
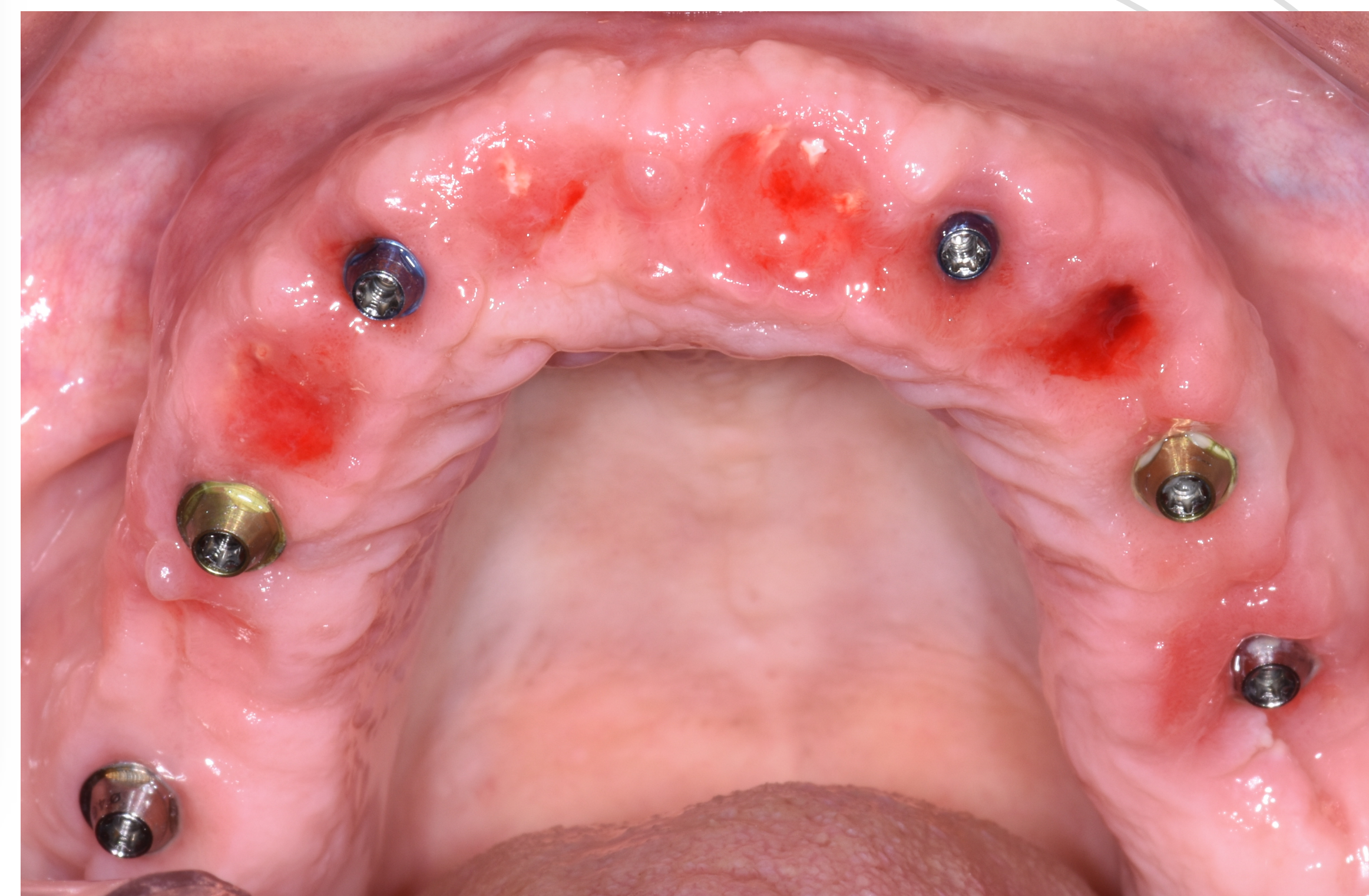


Fig 18. Gingiva healing after 4 months.



Fig 19. Reduction of overjet.

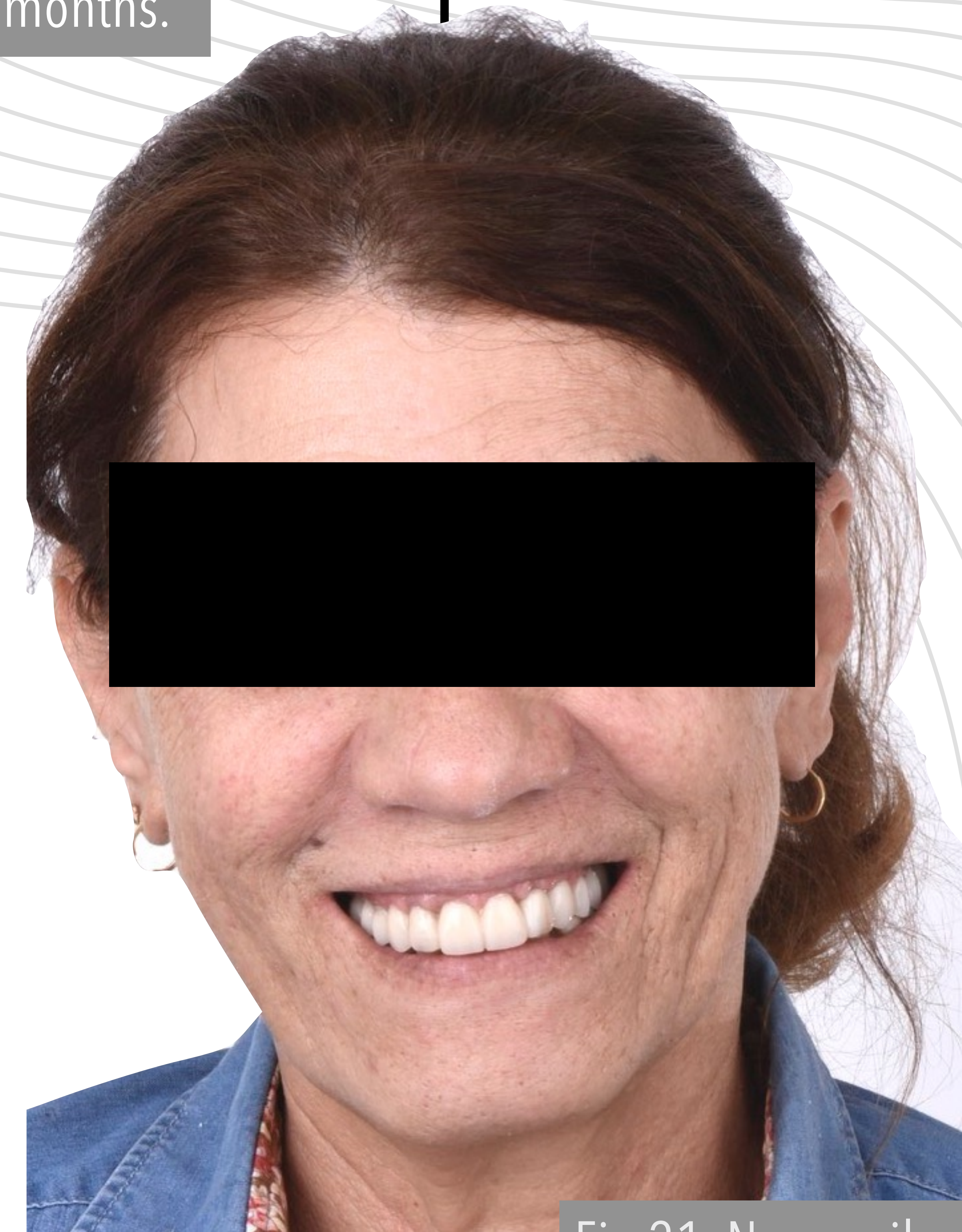


Fig 21. New smile.