



Objective

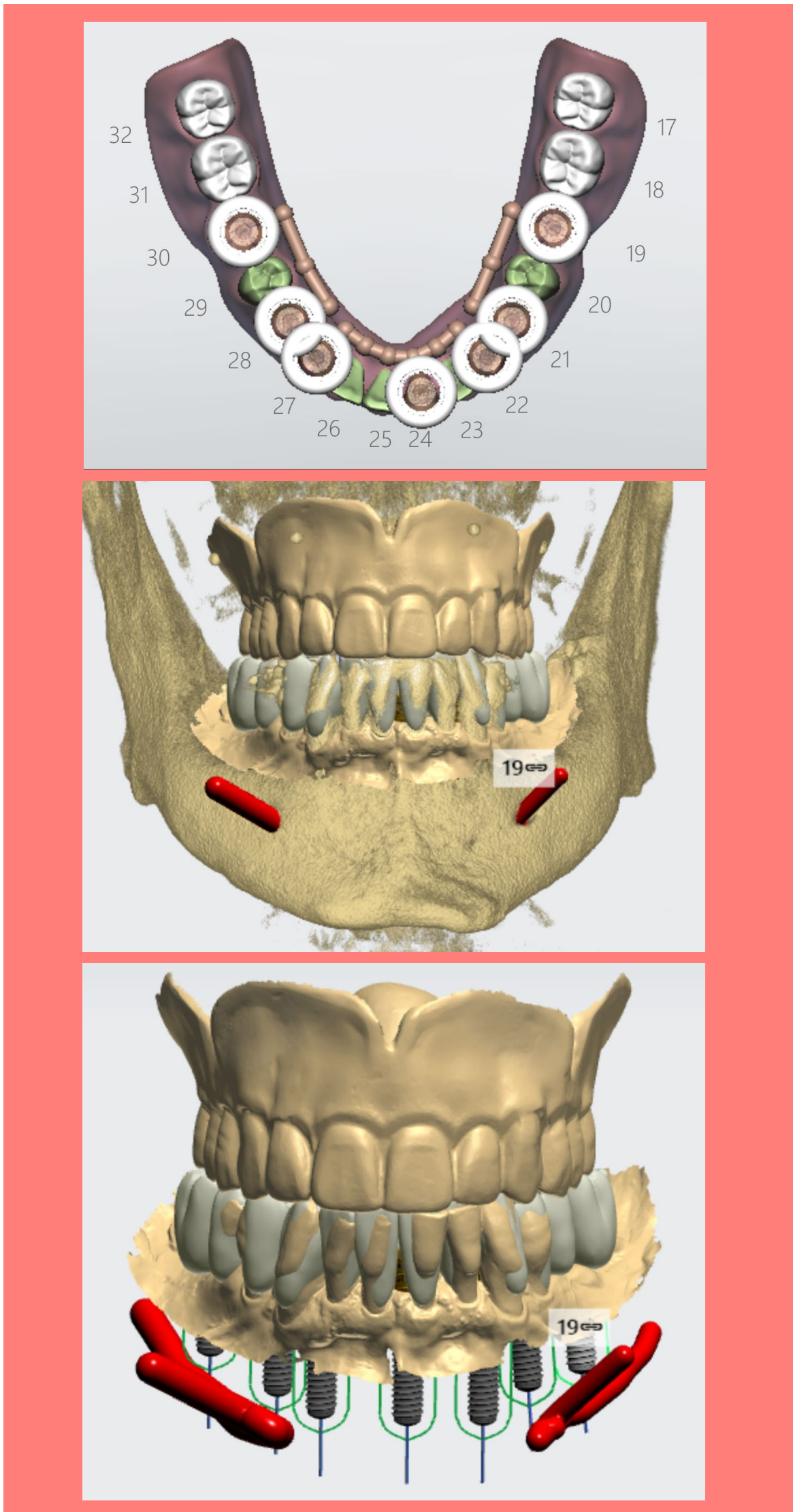
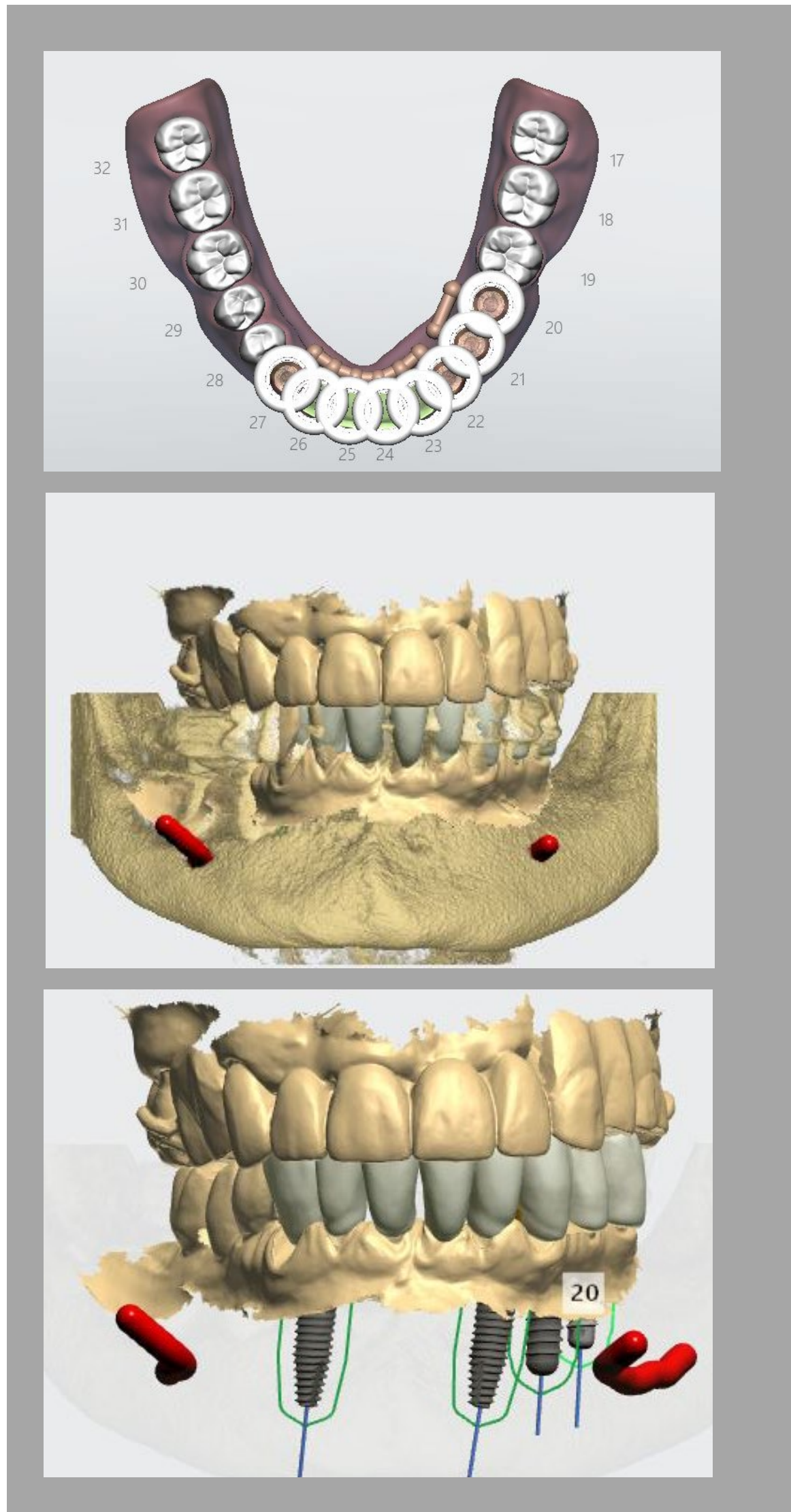
The purpose of this poster is to illustrate a digital workflow using a two-step surgical approach in patients with terminal dentition requiring complete arch implant rehabilitation.

Introduction

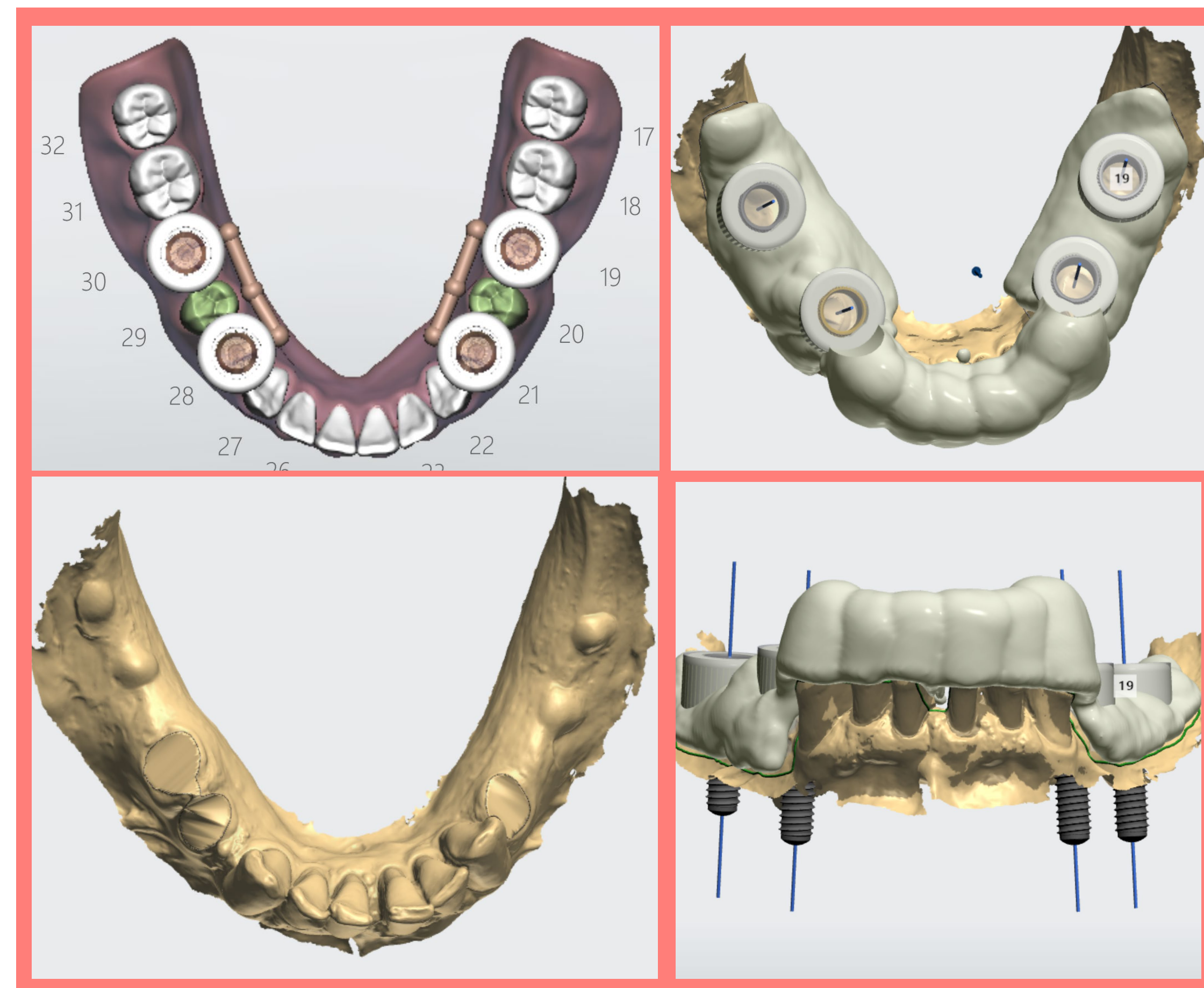
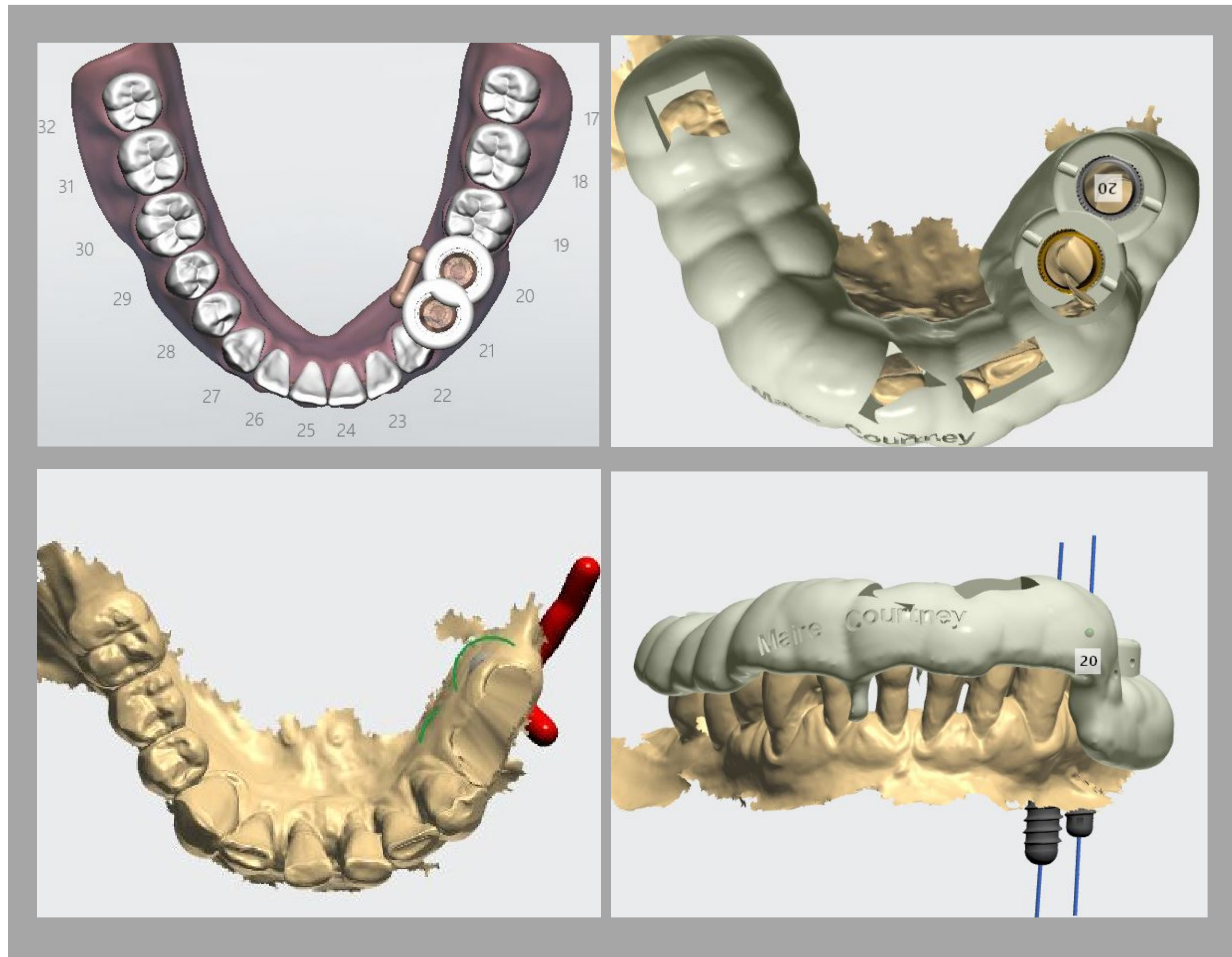
Current surgical guides can be tooth supported, mucosa supported, or bone supported. In terminal dentition, the use of mucosa-supported surgical guides exhibit inherited inaccuracy. This technique utilizes existing teeth and planned implants to support and stabilize the surgical guide at two steps.

Technique

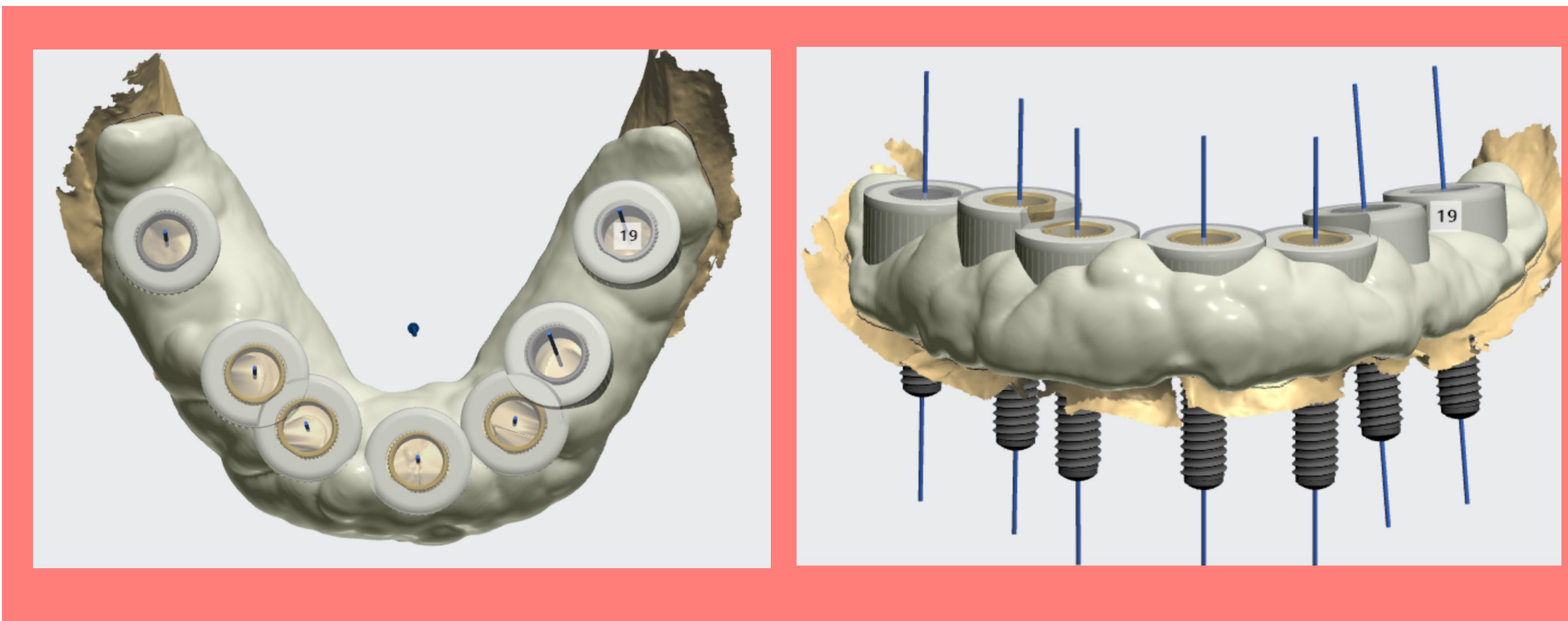
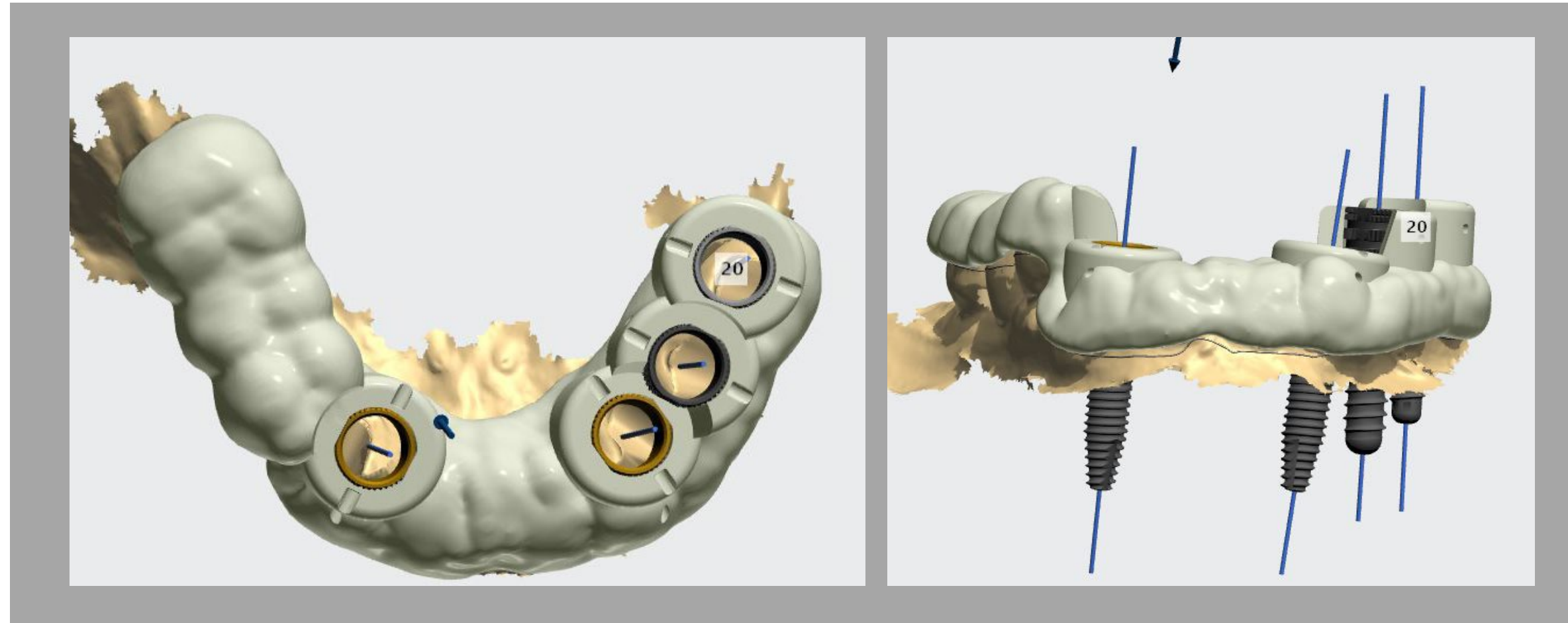
1. Obtain an intra-oral scan (TRIOS, 3 Shape A/S) of the existing dentition at the diagnostics phase.
2. Capture a cone beam computed tomography and generate a DICOM file.
3. Utilize implant planning software (Implant Studio; 3Shape A/S) to plan for implant placement for the patient with terminal dentition following the virtual diagnostic wax-up using files obtained in steps 1 and 2.



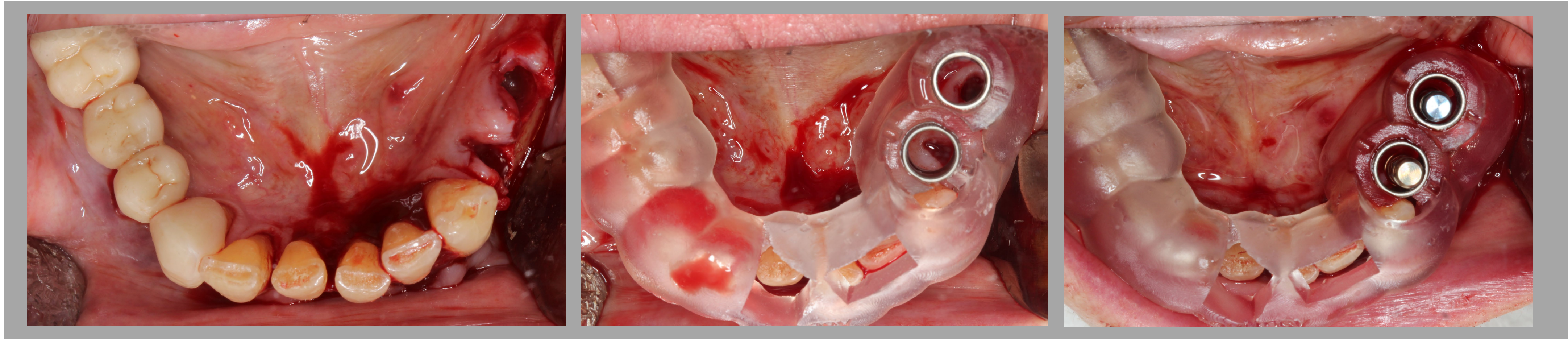
4. Duplicate implant planning of step 3. Redefine the implant planning to a partially edentulous patient for implant placement on the posterior teeth. Extract posterior teeth (if any posterior tooth presents); then remove anterior implants from the initially positioned anterior implants on the file. Keep the posterior implants unchanged and manufacture (P30; Straumann) the first surgical guide for placement of the posterior implants.



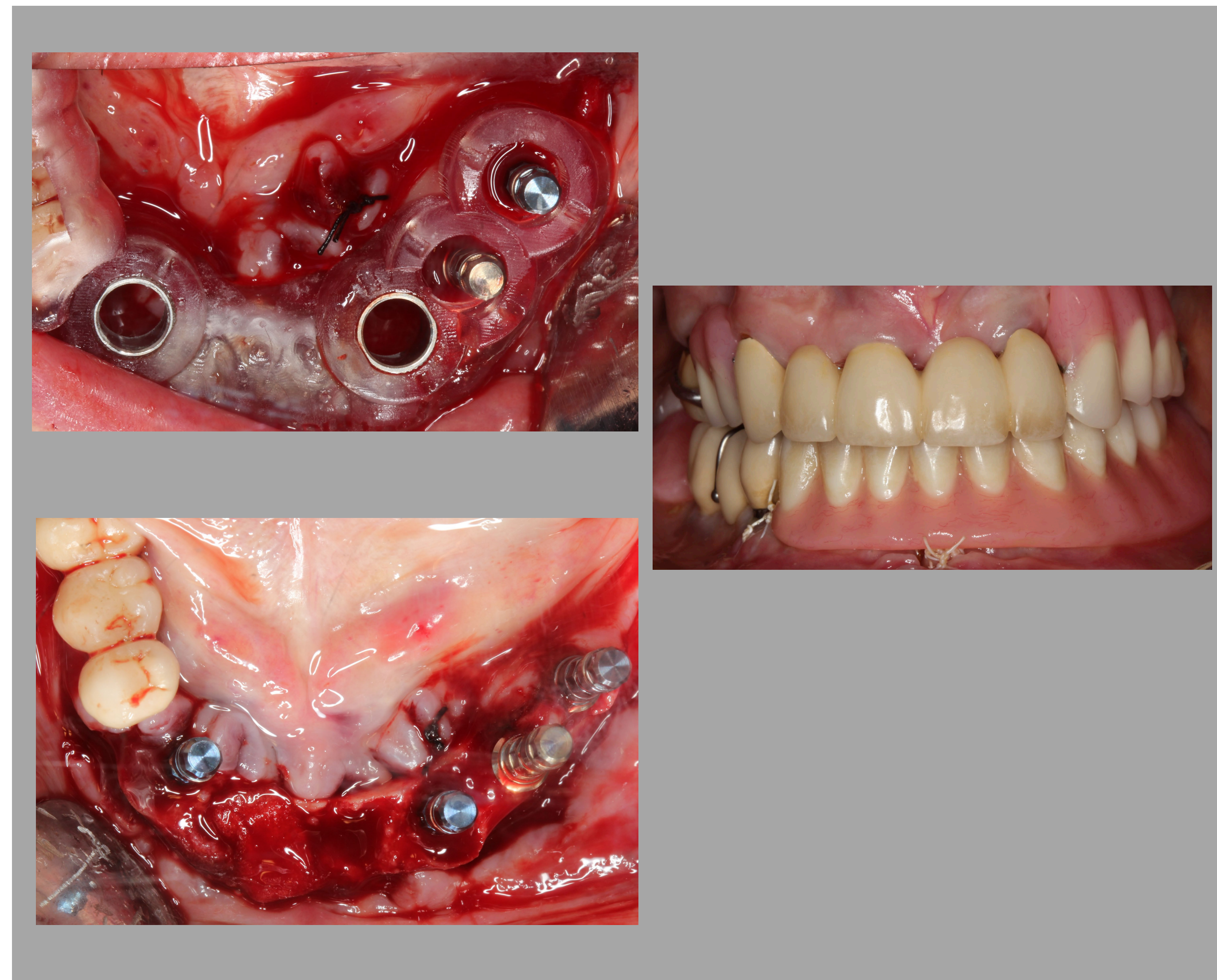
5. Use the file with planned implants in step 3. Design and manufacture the second surgical guide.



6. Extract posterior teeth (if any posterior tooth presents) on the day of surgery; then, utilize the surgical guide manufactured in step 4 to place posterior implants.



7. Extract anterior teeth; then, use the surgical guide fabricated in step 5 and stabilize the guide on posterior implants using the guided implant sleeve or an open-tray impression post. Then, place the anterior implants using the second guide.



Conclusion

The present report illustrates a two-step approach for implant placement using two surgical guides. Advantages of this approach are A) anchor pins used for mucosa-supported guides are eliminated; B) surgical guides are tooth-mucosa, and implant-mucosa supported instead of a surgical guide that is only mucosa-supported. This approach may lead to more predictable implant placement in patients with terminal dentition by eliminating mucosa-supported guides that have inherited inaccuracy.

References

1. Papaspyridakos P, Chronopoulos V. Transition from failing dentition to complete-arch implant rehabilitation with a staged approach: a 3-year clinical report. J Prosthet Dent. 2014;112:423–8.
2. Donos N, André Mezzomo L, Mardas N, Goldoni M, Calciolari E. Efficacy of tooth-supported compared to implant-supported full-arch removable prostheses in patients with terminal dentition. A systematic review. J Clin Periodontol. 2021;49:224–47.