



Dynamic guided surgery vs. static guided surgery in implant placement in CAD-CAM mandibular reconstruction using fibular free flap: a case series



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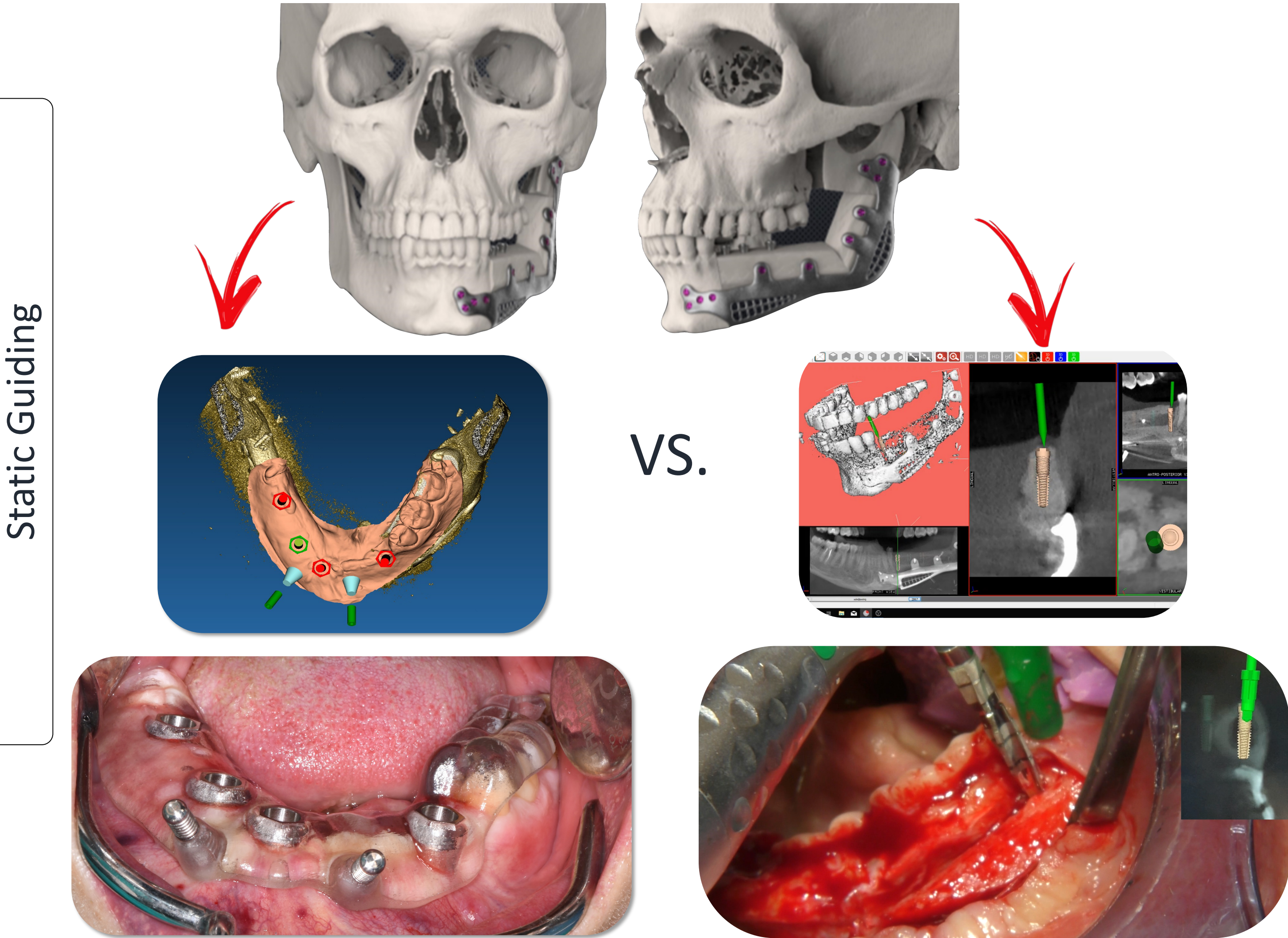
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Background and Aim

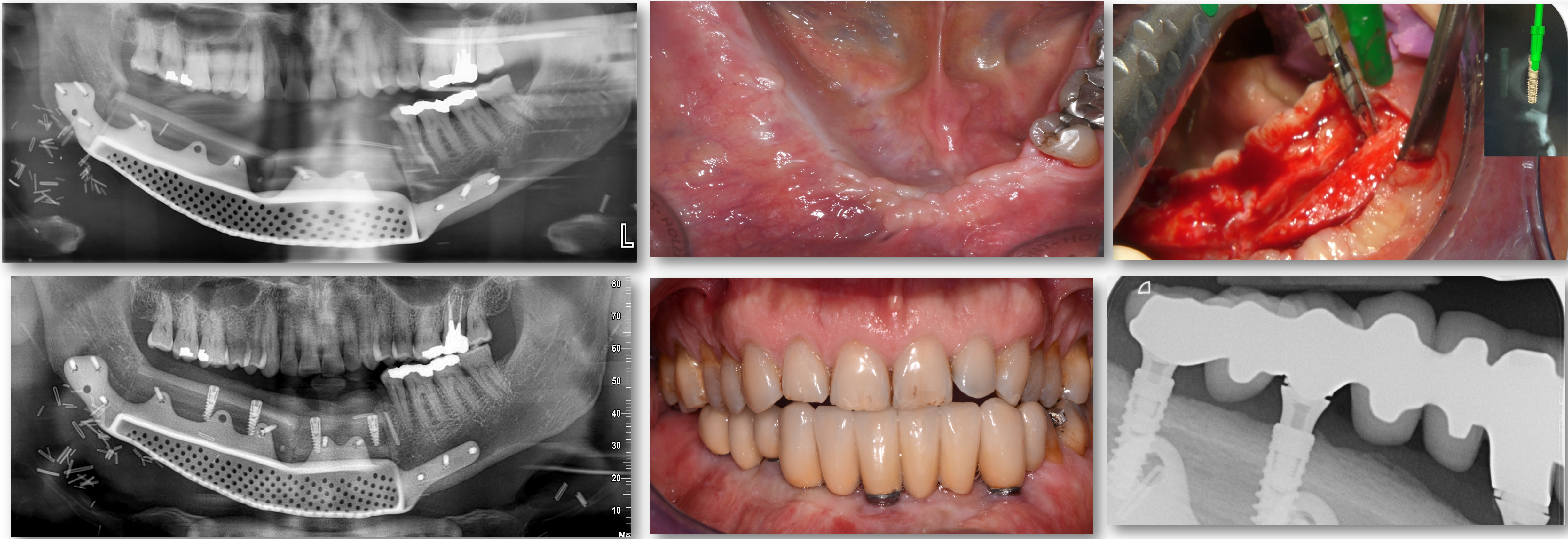
To rehabilitate patients undergoing mandibular resection due to oral cancer was proposed to use a fibula-free flap. To improve masticatory efficacy and maintain the patient's facial contour, they were treated with guided implant surgery using the new CAD-CAM reconstructions, which enable a coronal position of the fibular free flap and ideal implant placement for proper prosthetic rehabilitation with an adequate crown height. The aim of the present study was to compare the effectiveness of two guided implant placement techniques (dynamic-guided surgery and static-guided surgery) for reproducing preoperative virtual planning.

Material and Methods

This case series was carried out on eight patients: 5 patients rehabilitated with 15 osseointegrated dental implants using static guided surgery and ten dental implants in 3 patients using dynamic navigation. Before bone resection surgery, to gain a 3D virtual model of the jaws and guide the design of the final oral rehabilitation, performed the following steps: preliminary digital impress, CBCT scan, wax-up, and alignment. The virtual wax-up aimed to recreate the dental arch before the bone resection. Static-guided surgery includes the realization of the customized surgical guide designed on the virtual model to fit correctly during surgical procedures. Follow-up examinations were performed according to a standardized protocol, including radiological and clinical evaluations.

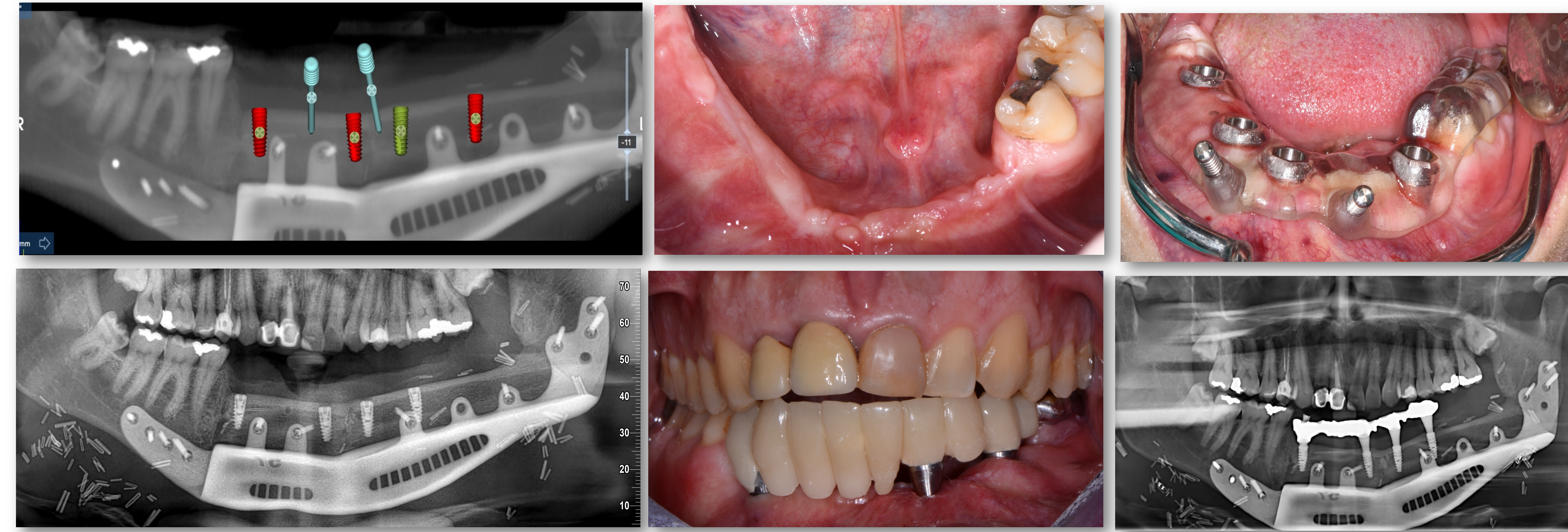


Dynamic Navigation



VERSUS

Static Guiding



Results

No complications were verified during the post-operative period, and all dental implant placement was successful at the 1-year follow-up session.

Conclusion

Despite the limitations of this pilot study, both techniques seem effective for correct implant placement. Further studies are required to evaluate both methods' advantages and disadvantages.

References

Mandibular reconstruction using a new design for a patient-specific plate to support a fibular free flap and avoid double-barrel technique A. Tarsitano, S. Battaglia, G. Corinaldesi, C. Marchetti, G. Pellegrino, L. Ciocca. Acta Otorhinolaryngol Italy. 2021 Jun;41(3):230-235