

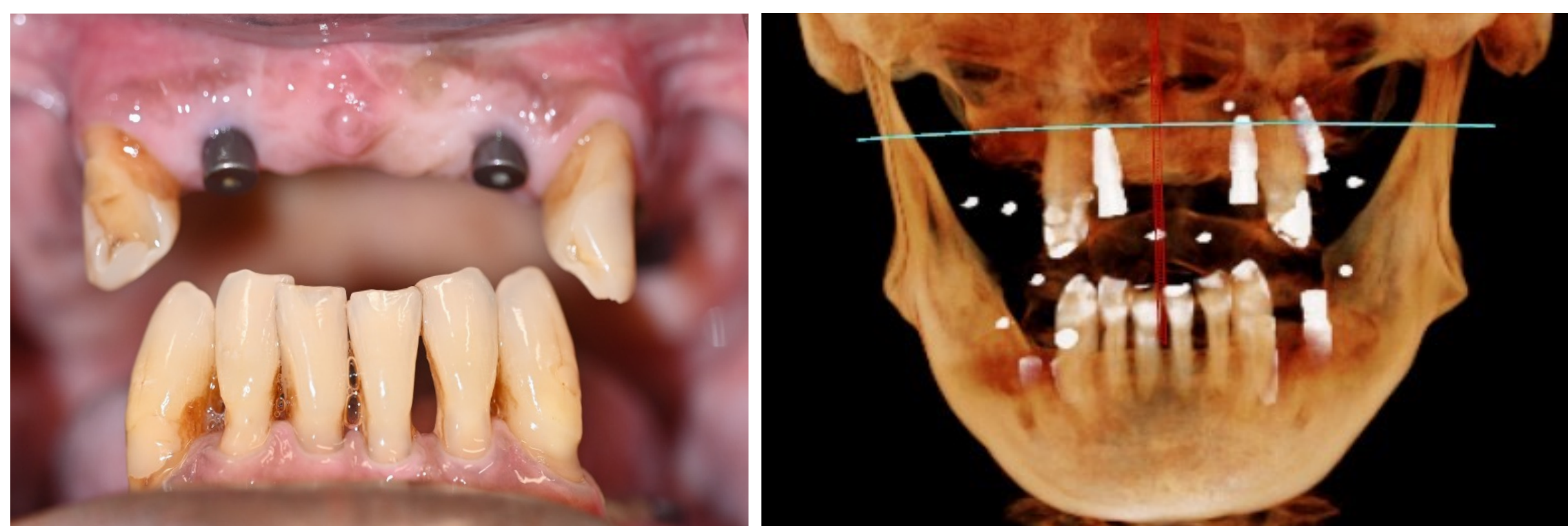


Utilization of CBCT for Interim Implant Supported Fixed Partial Denture Fabrication: A Digital Technique

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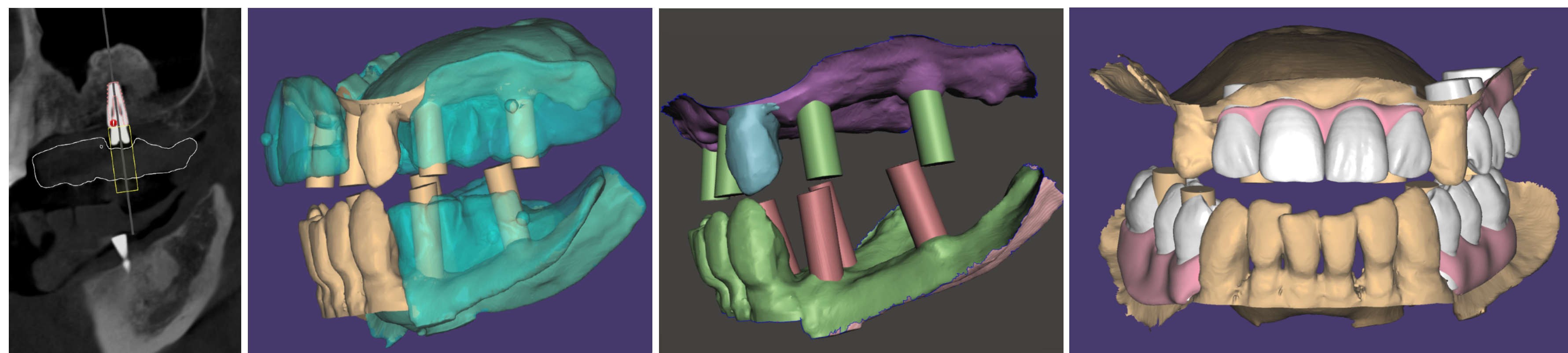
Computer aided imaging (CAI) refers to the use of computers to capture, process, analyze and interpret visual data. This data could be recorded via radiation, light, sound waves, and magnetic fields. When a patient is medically compromised, short clinical visit may be necessary. This case presentation demonstrates the expedited fabrication of fixed implant interim prosthesis for a patient requiring implant placement at #3-5 and was non-compliant of existing interim removable prostheses. We utilized data derived from a implant planning **Dual Scan CBCT** protocol to increase the efficiency of the short clinical appointments.

First Appointment



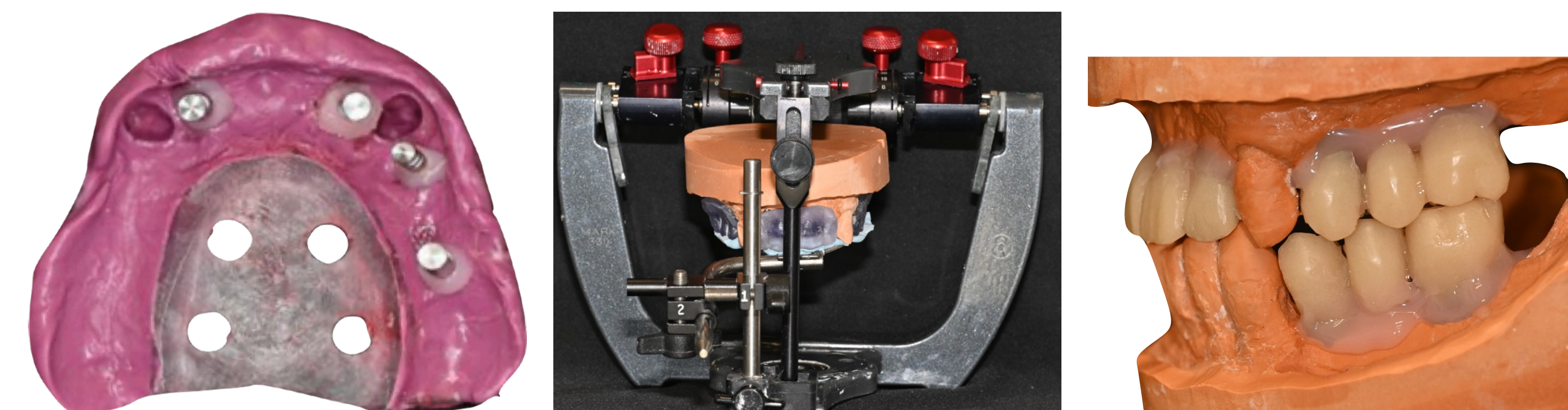
Dual scan CBCT was taken with diagnostic work-up.

Digital Design



After identifying the implant angulation via BlueSkyBio software, the DICOM files were converted and exported as STL files. Meshmixer software was used to generate the digital working cast. The interim prosthesis were then designed in ExoCAD software.

Interim Adjustment



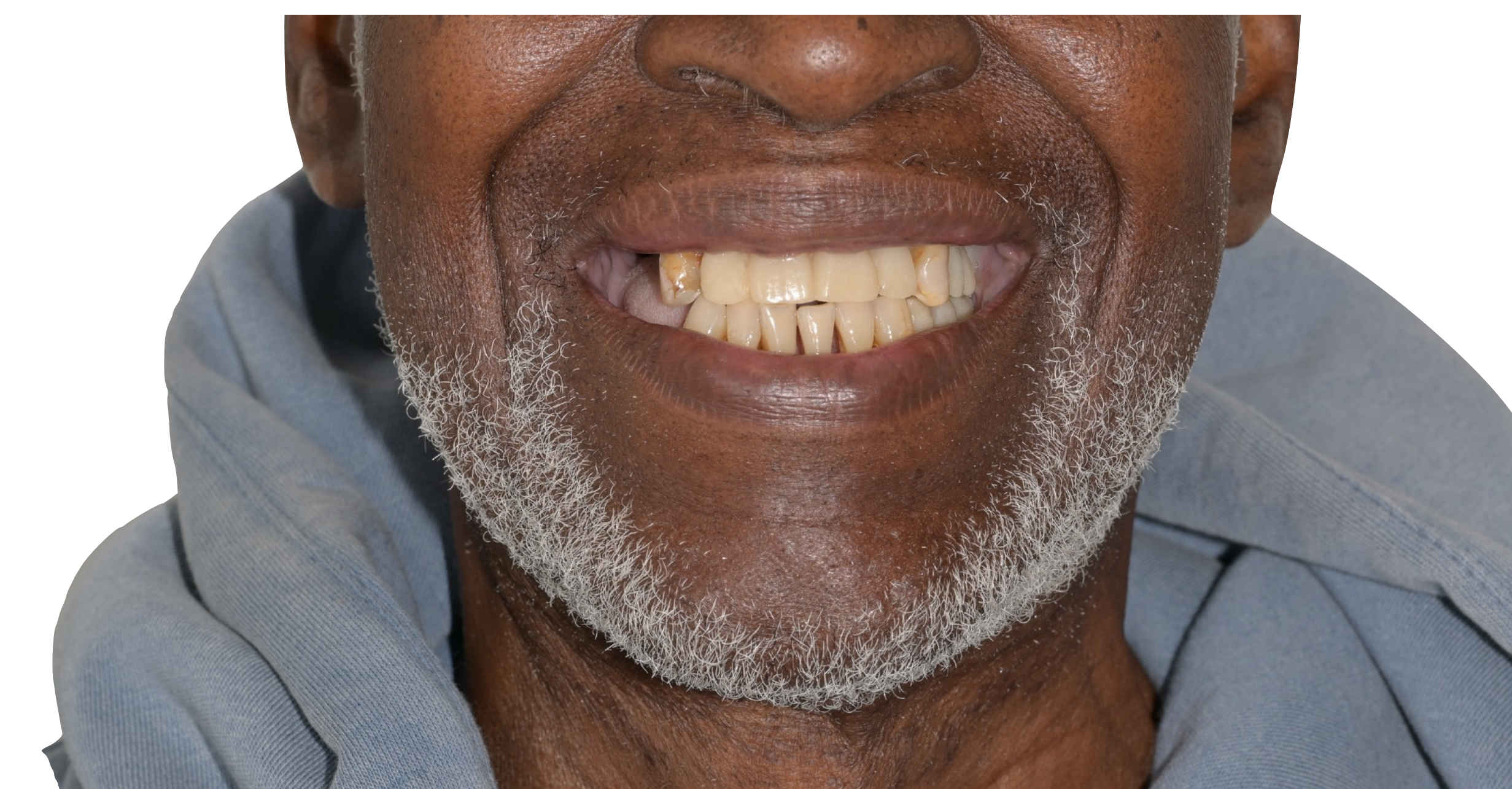
Implant analog custom tray was digitally developed from the diagnostic work-up. Interim intraoral pick-up was done for lab adjustments.



Before



After



Conclusion

The surface data recorded by intraoral scan is superior to CBCT. However, the volumetric data recorded by the dual scan CBCT can be used to develop STLs for designing interim prostheses. This workflow could potentially provide interim prostheses to patients in two clinical visits. Digital assessment of implant position and the diagnostic work-up relationship enables more mechanically sound and hygienic prosthetic design.

References

de Freitas BN, Mendonça LM, Cruvinel PB, Lacerda TJ, Leite FGJ, Oliveira-Santos C, Tirapelli C. Comparison of intraoral scanning and CBCT to generate digital and 3D-printed casts by fused deposition modeling and digital light processing. J Dent. 2023;128:104387.
Kim C, Baek SH, Lee T, Go J, Kim SY, Cho S. Efficient digitalization method for dental restorations using micro-CT data. Sci Rep. 2017 Mar 15;7:43414.