

Stereophotogrammetry in the Digital Workflow for the Fabrication of Implant-Supported Fixed Complete Prostheses

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Abstract

Stereophotogrammetry is used for digital impressions in the rehabilitation of complete arch implant-supported fixed prostheses.^{1,2} This clinical report describes a complete digital workflow for the rehabilitation of a patient with failing dentition, restored with immediate-loaded transitional and subsequent definitive implant-supported fixed prostheses

Initial Presentation

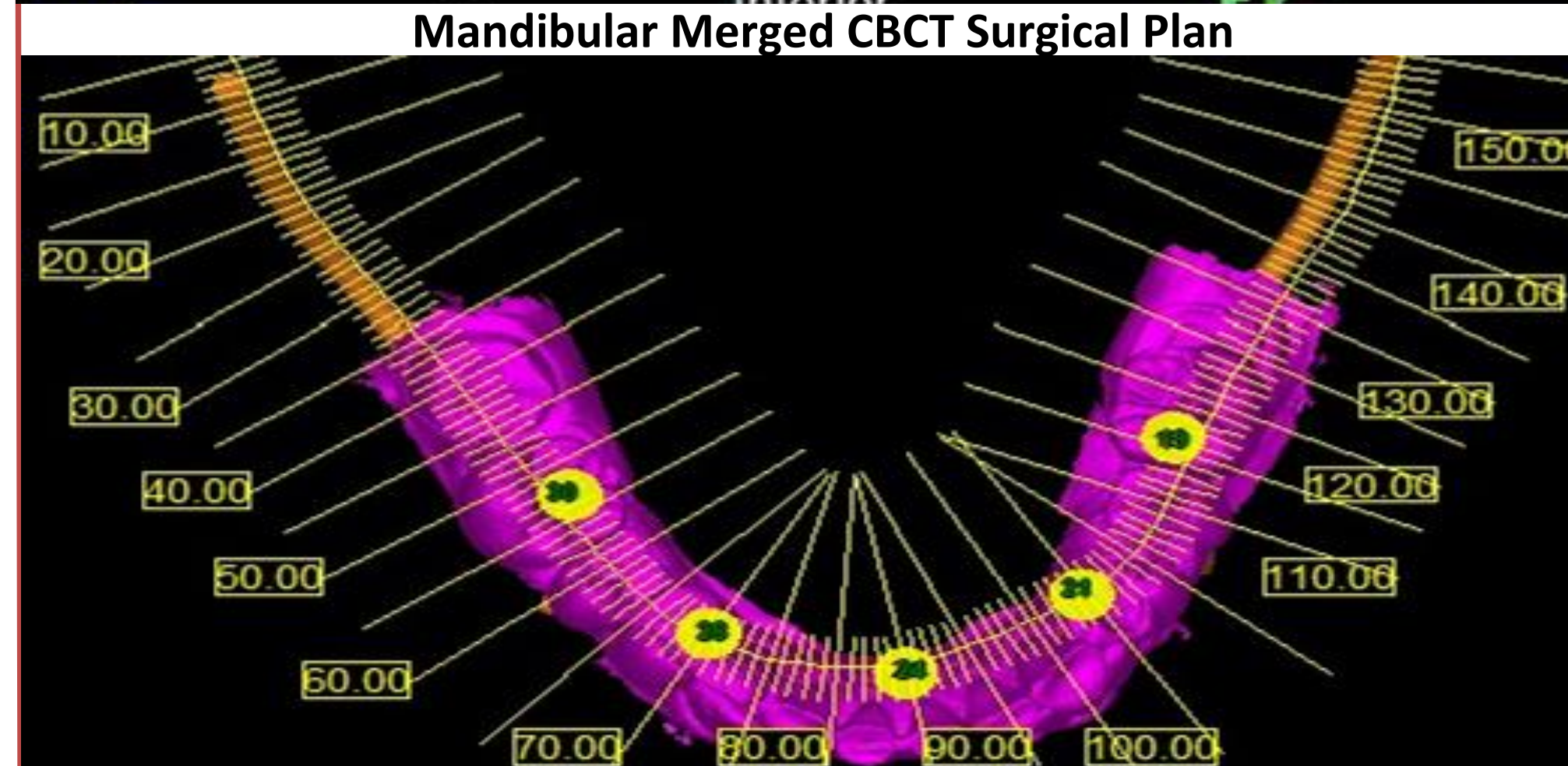
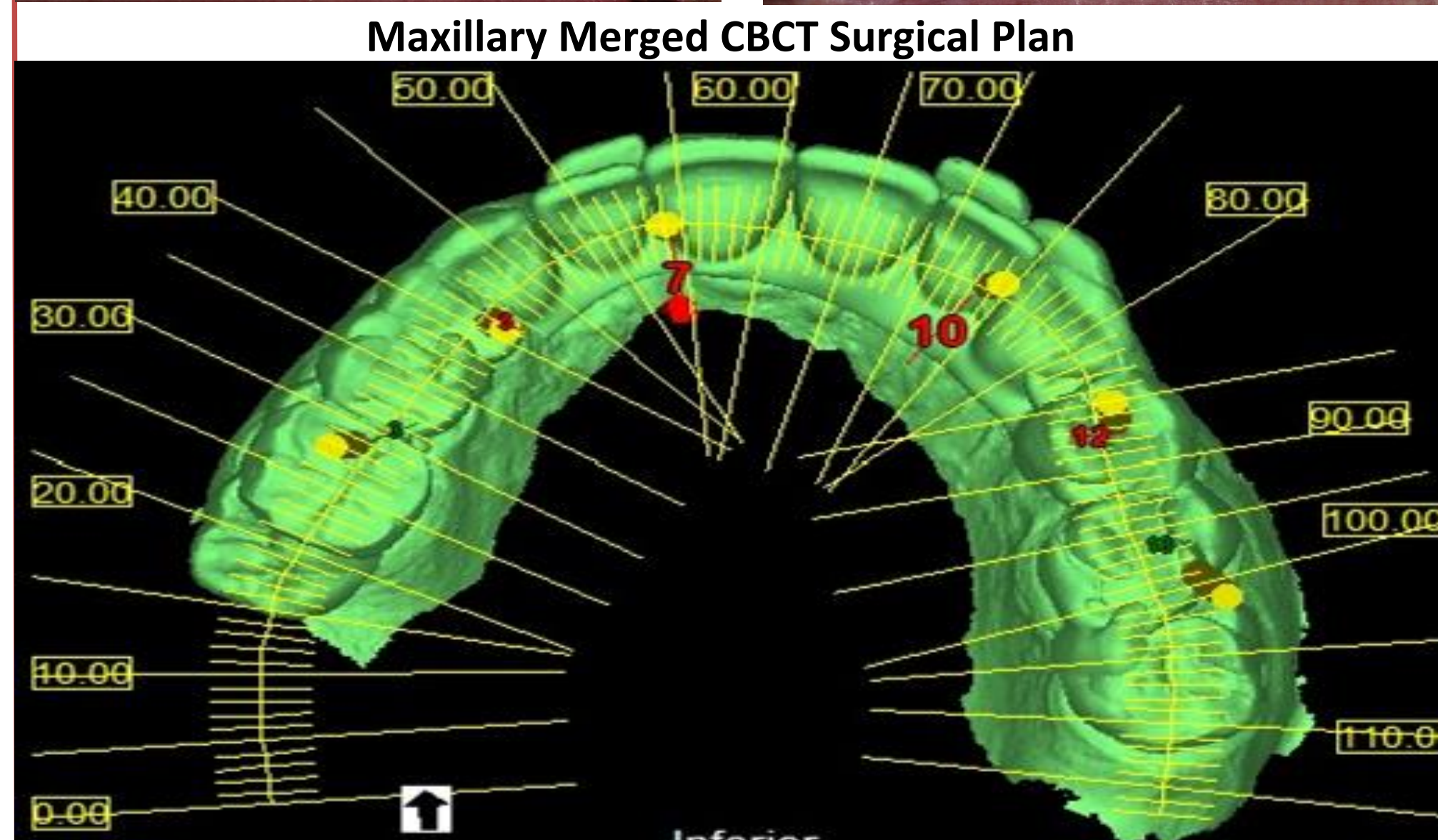
- 64-year-old healthy male with terminal dentition
- CC: “My teeth are ugly, and I want to have a nice smile and chew better”
- Adequate alveolar quality and restorative space for implant-supported fixed maxillary and mandibular complete dentures

Technique Advantages

- Stereophotogrammetry provides an alternative technique for multiple implant-supported restorations, including fixed complete prostheses^{1,2,3}
- Digital registration of the maxillomandibular relationship and mandibular movement
- Ability to retain all digitized models, kinematics, and data
- Fewer clinical steps, fewer sources of error, and accurate results²
- Predictable planning, providing an efficient workflow and improving patient satisfaction^{1,2}
- Successful prosthetic outcome with good fit, esthetics, and occlusion

Clinical Presentation

Initial Presentation/Digital Planning

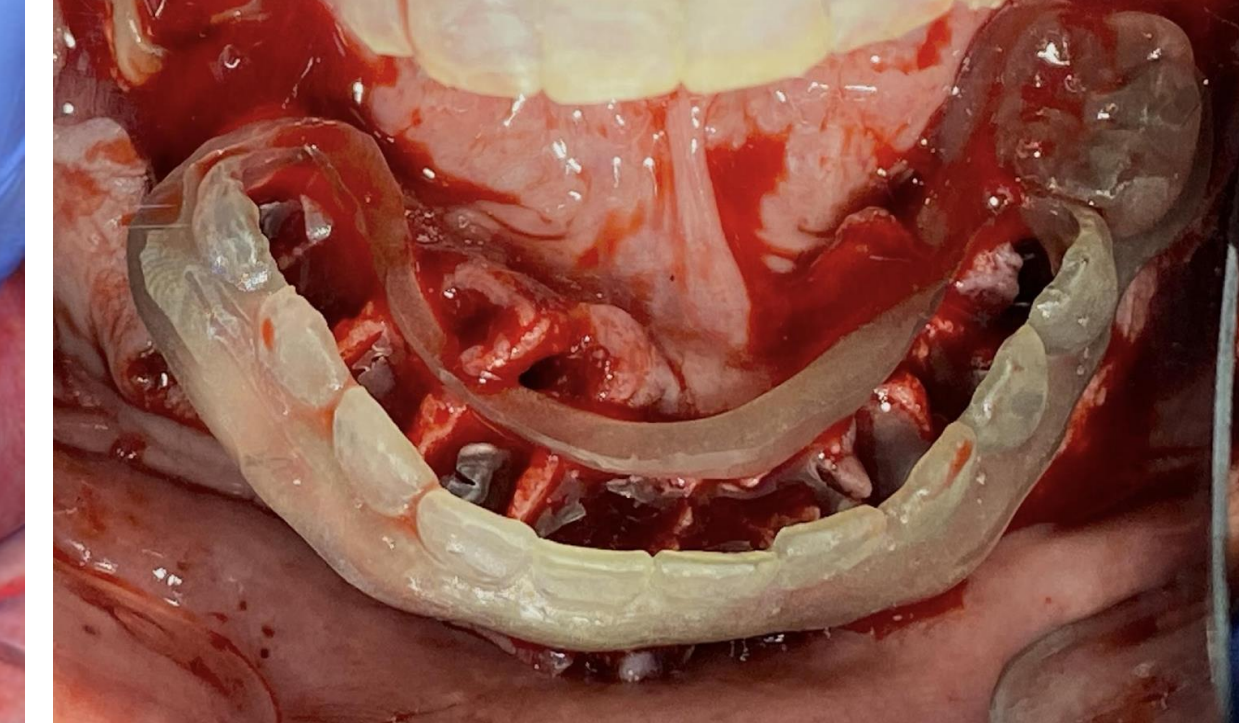


Surgery/Interim Prostheses

Maxillary Guide



Mandibular Guide



Maxillary Flag (PIC) Abutments



Mandibular Flag (PIC) Abutments



Maxillary Immediate Interim Prosthesis



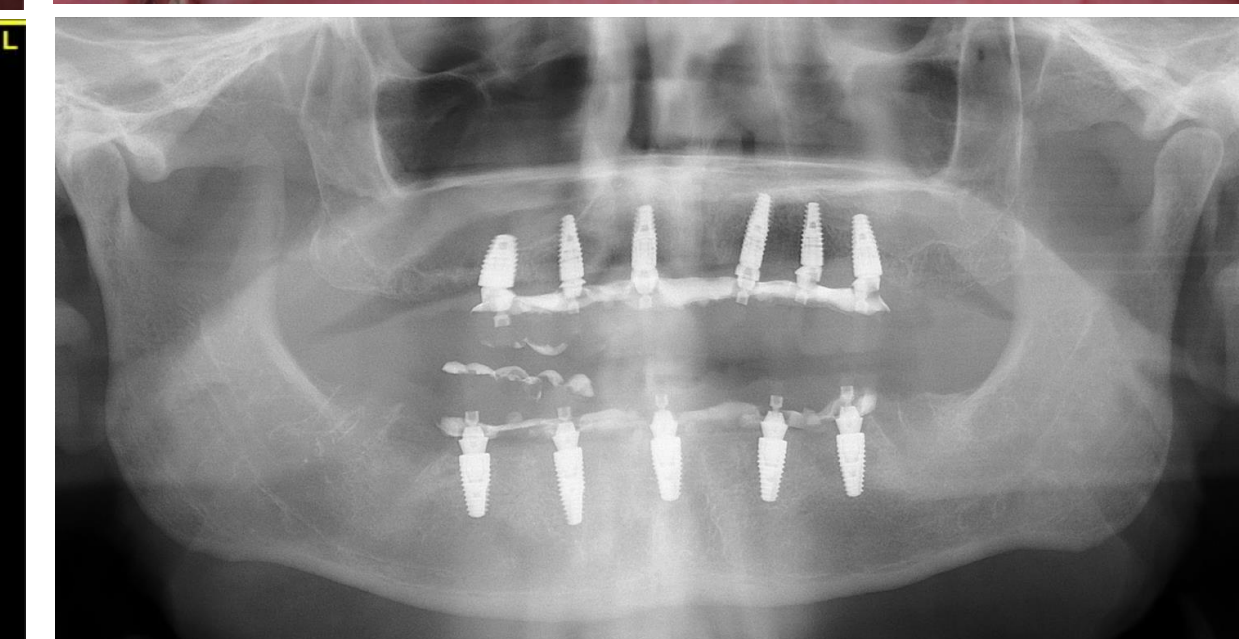
Mandibular Immediate Interim Prosthesis



Immediate Interim Prostheses



Prototypes after Healing



Definitive Restorations



Monolithic Zirconia Fixed Complete Prostheses



Treatment Sequence

	Clinical Sequence	Lab Sequence
Diagnosis & Tx Planning	Step 1: Comprehensive clinical examination of esthetics and phonetics. Diagnostic records including intra-oral scans, digital facebow and axiograph, face scans, CBCT imaging, and photographs	Step 2: Digital diagnostic wax-up, merging with CBCT imaging, and surgical planning of 6 maxillary and 5 mandibular dental implants
Surgery/Interim Prostheses	Step 3: Teeth extractions, alveoloplasty, and implant placements. Recording the inter-implant spatial relationship using a stereoscopic camera and capturing soft tissue contours with an intraoral scanner Step 5: Delivery of immediate interim fixed prostheses the day after surgery	Step 4: Digital design and milling of PMMA interim prostheses Step 6: CAD/CAM fabrication of prototypes Step 8: CAD/CAM fabrication of definitive restorations
Definitive Restorations	Step 7: After 3 months, delivery of prototypes with changes to idealize esthetics and function Step 9: Delivery of definitive maxillary and mandibular monolithic Zirconia prostheses and occlusal guard	

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Acknowledgements

Modjaw ♦♦ 3Shape ♦♦ Straumann® ♦♦ Simplant ♦♦
PIC by Precise Implants Capture ♦♦ Exocad