CLINICAL CASE

Nobel Biocare™

Digital Workflow for Immediate Maxillary and Mandibular Staged Restoration: Using Photogrammetry and 3D Printing Technology

Dr. Ankur Johri
Allentown, United States

Dr. Johri, Ankur

Patient description:
Elderly male patient, with past medical history of high blood pressure, diabetes, squamous cell carcinoma of nose and chest, and melanoma

Clinical situation:
Presence of multiple caries in the upper teeth and cuspal fractures. Patient has low smile line.

Surgical solution:
Phase 1: Extraction of upper failed dentition followed by immediate placement of NobelActive® 4.3x15 mm on 15,25 with MUA of 17° and 4.3X13 mm on 12, 22 with MUA of 30° followed by immediate loading
Phase 2: Extraction of lower failed dentition followed by immediate placement of Nobel Parallel ® 4.3x15 mm on 35, 45 with MUA of 30° and 3.75X13 mm on 33, 43 with Straight and MUA of 17° followed by immediate loading

Restorative solution:
Temporization:
Immediate loading using 3D printer from SprintRay 3D (OnX Tough 2) Screw-retained printed temporary crown on engaging universal base
Final: Screw-retained zirconia crown bonded to Nobel Biocare's engaging universal base abutment

Surgery date(s):

First surgery (Maxilla):
April 22, 2024

Second surgery (Mandible):
July 10, 2024

Total treatment time
7 months.

"Digital technology has revolutionized the way I do my All-on-4 cases. Photogrammetry combined with Intraoral scanning and 3D printing allows me to deliver high quality esthetic restorations in a predictable and efficient manner for my patients" – Dr. Johri, Ankur

Initial patient's smile

Pre-operational frontal face

Pre-operational three-quarter face

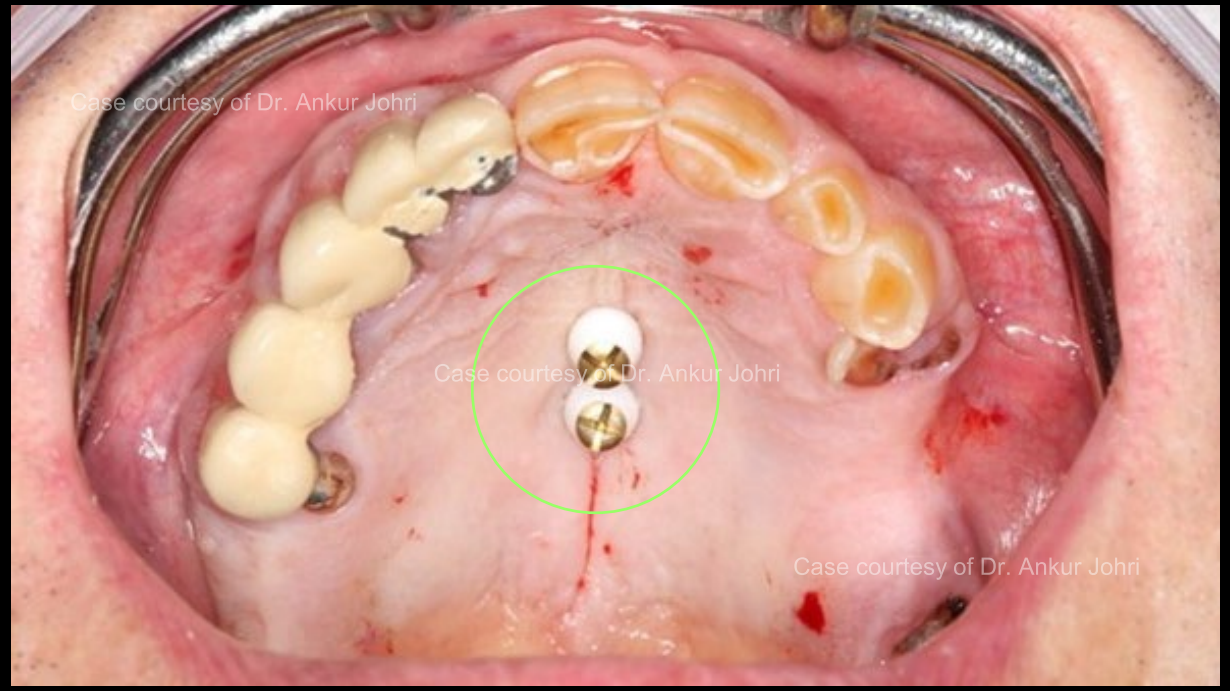
Pre-operational intraoral smile

Initial situation | Data collection | Treatment planning | Surgical execution | Post-surgical impression | Immediate loading | Phase 1 check-up | Final restoration

Initial patient’s X-ray

Pre-operational right lateral

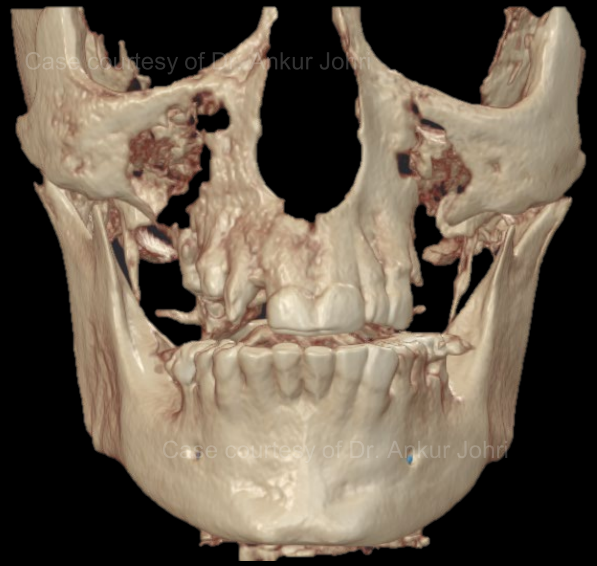
Pre-operational left lateral



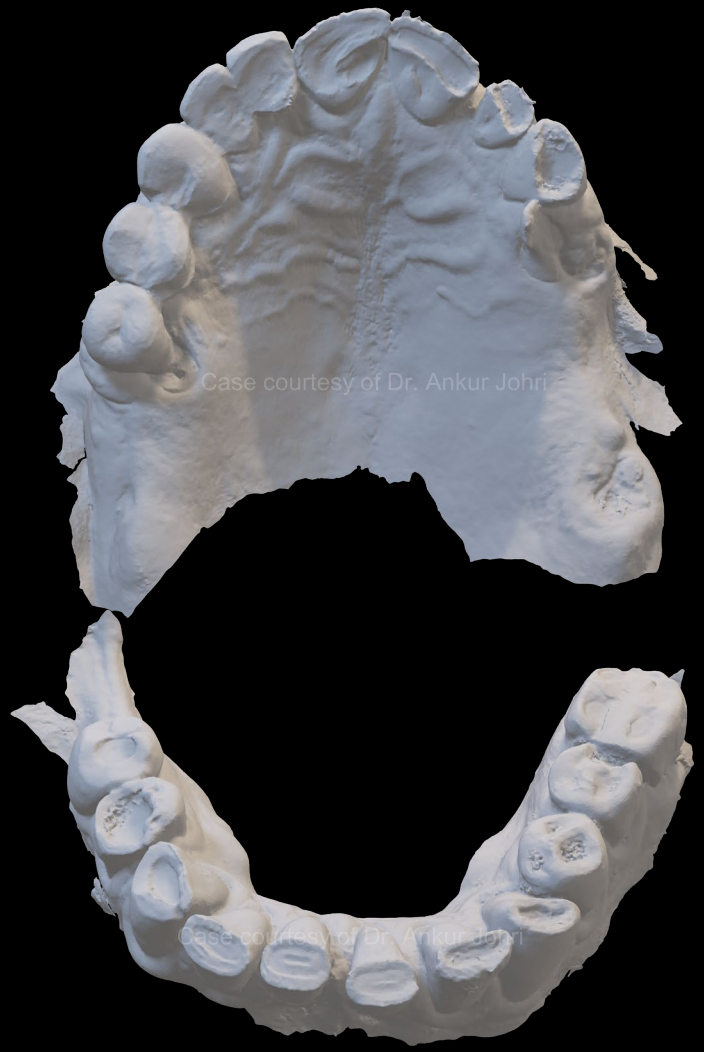
Pre-operational occlusal view with reference markers

Notes:

Pre-operational intraoral scan performed with fiducial screws or reference markers in the pallet, that will help match with post-surgery intraoral scans.

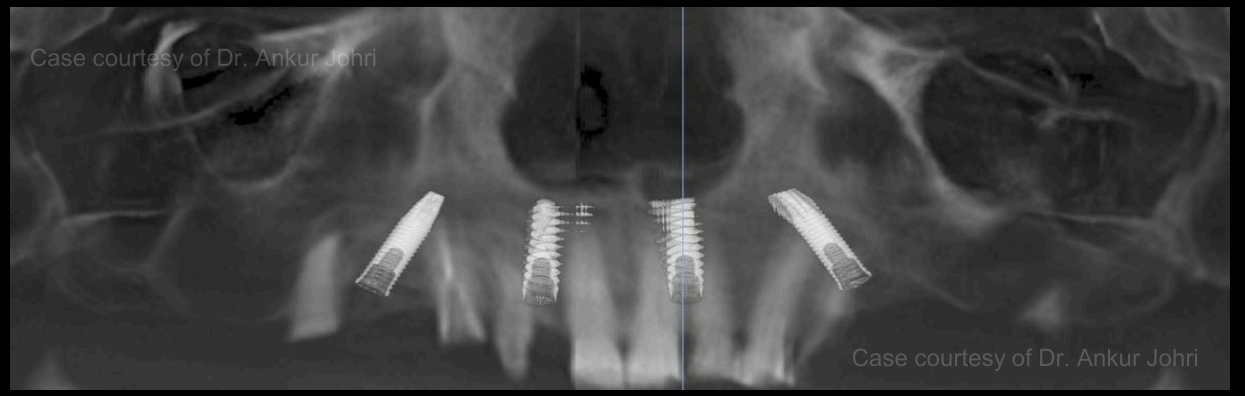


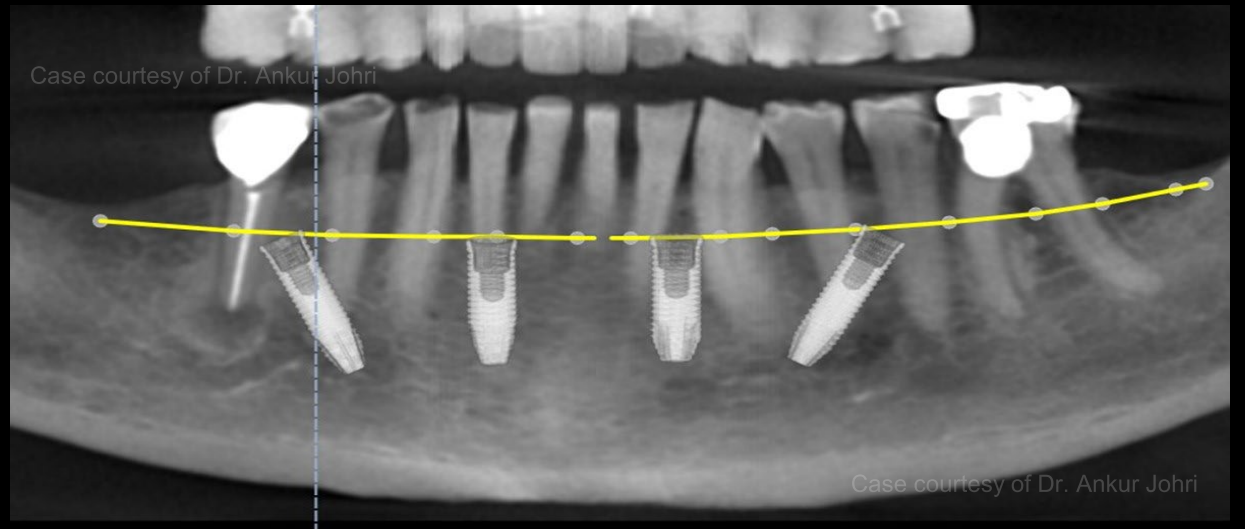
Preop CBCT



Preop IOS

Clinical pictures

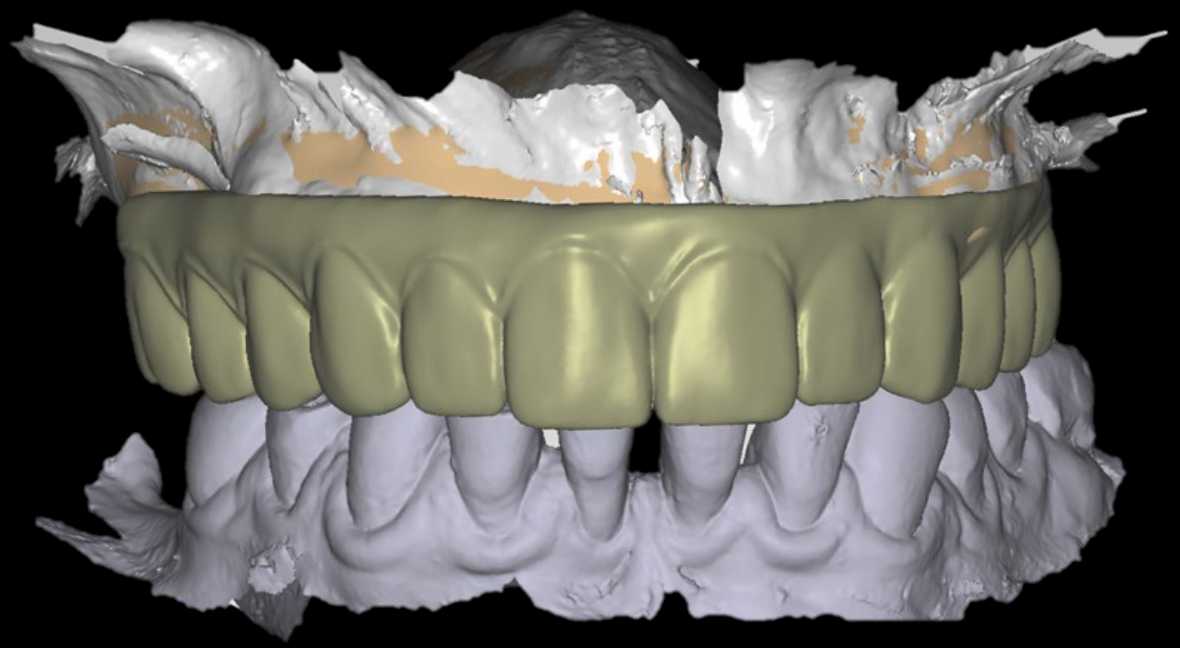




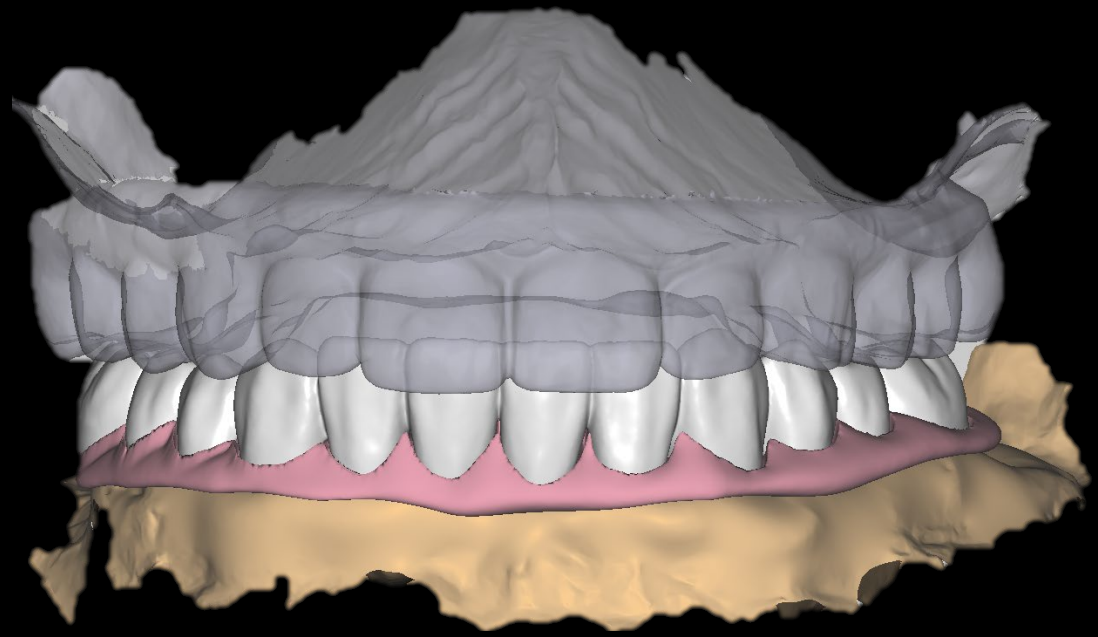
Implant position plan DTX studio

Pre-op patent's smile

Close-up of design with Exocad software

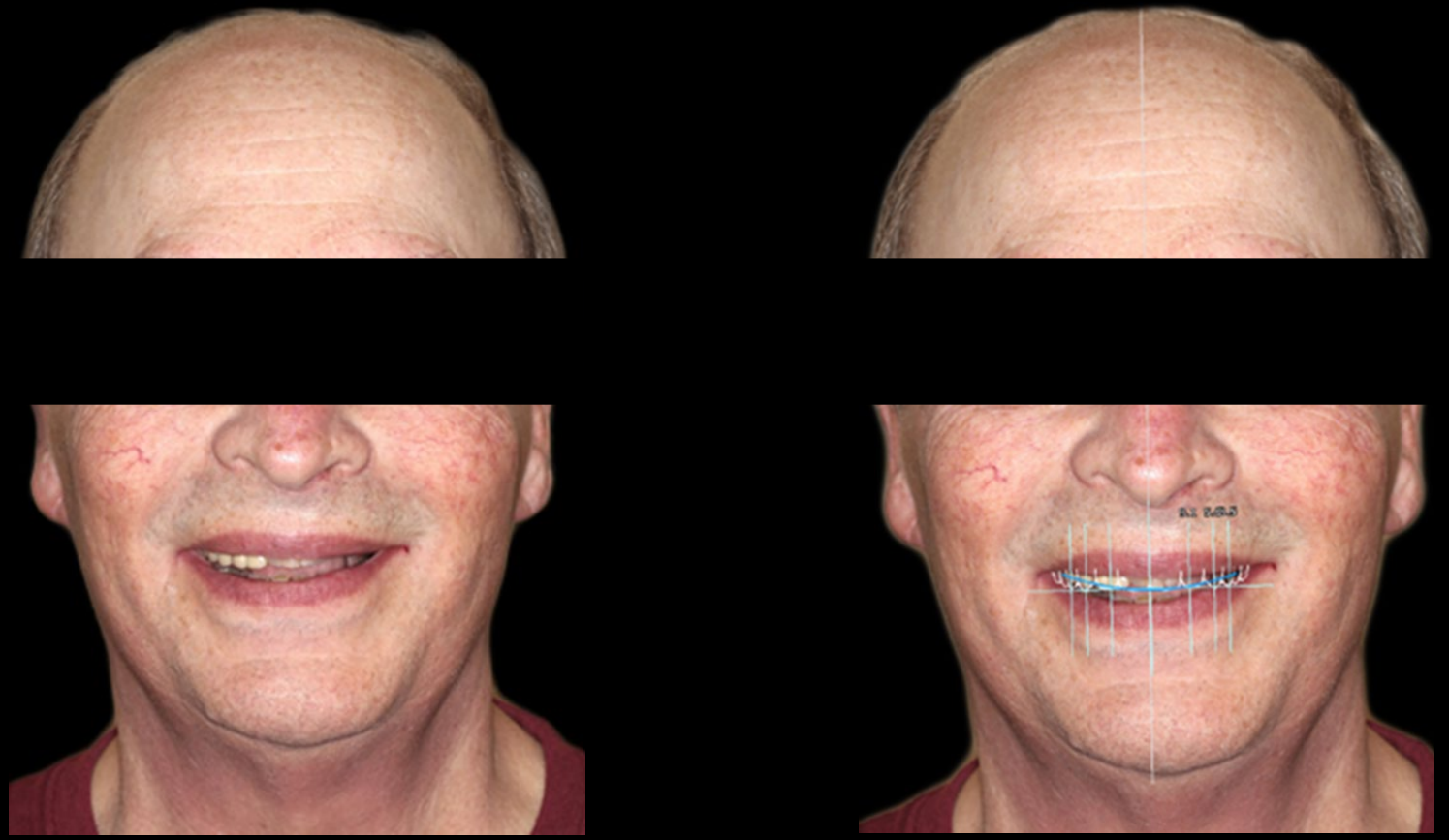


Prosthetic wax-up maxilla– Frontal view



Prosthetic wax-up mandible– Frontal view

Case courtesy of Dr. Ankur Johri



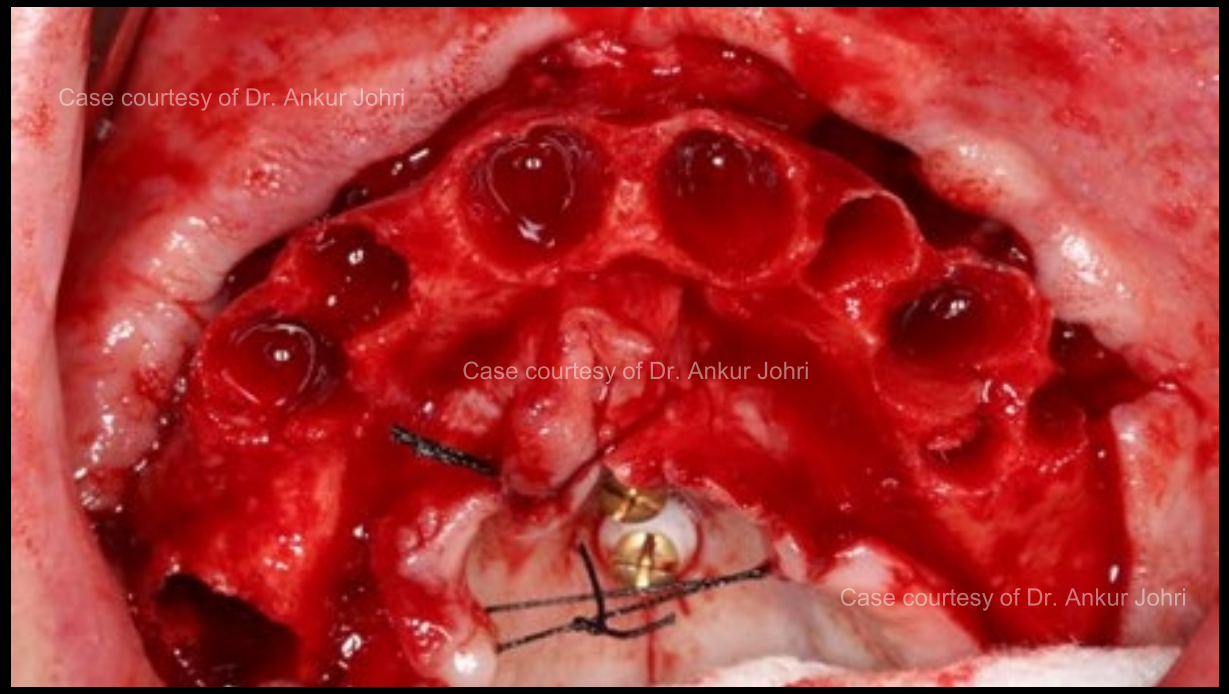
Pre-op frontal - without smile design)

Pre-op frontal – with smile design helper lines

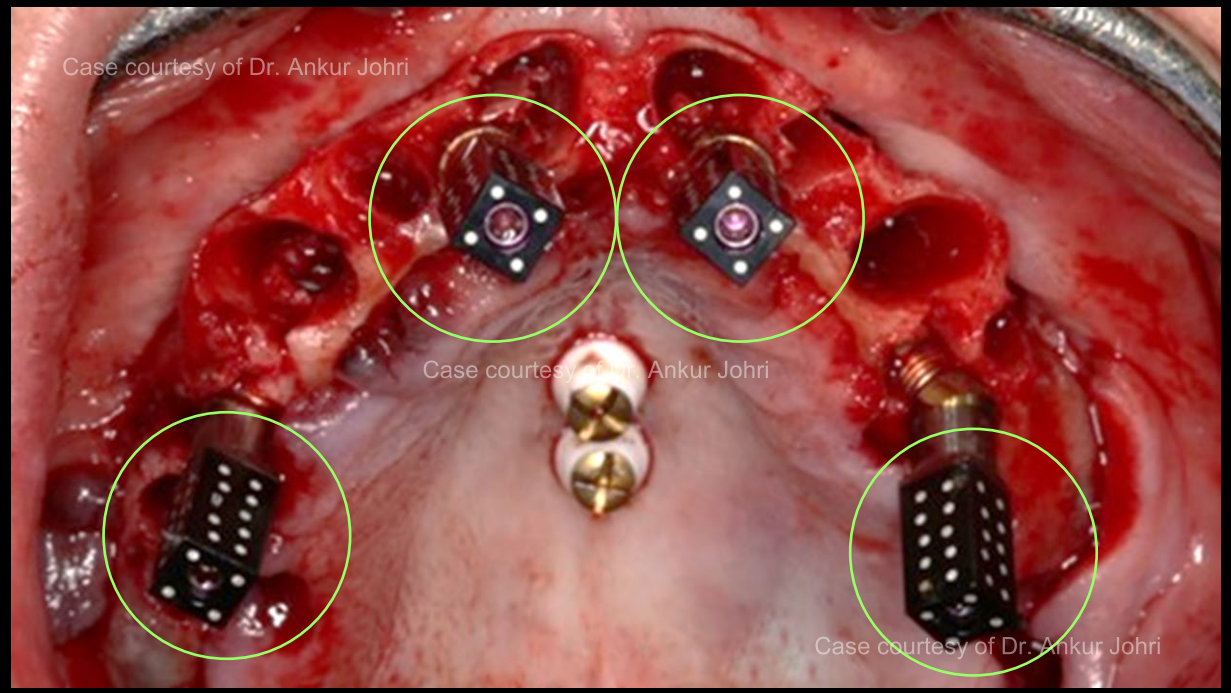
Pre-op frontal – Maxillary smile design incorporation

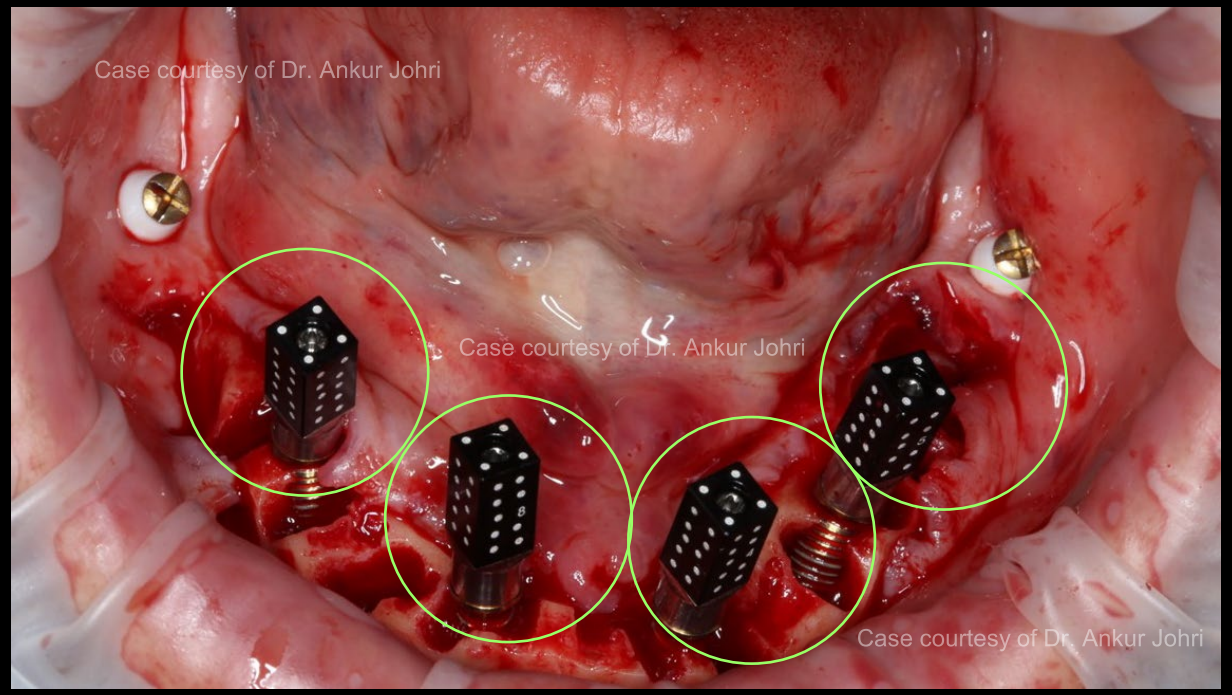
Pre-op frontal – Mandibular smile design incorporation

Case courtesy of Dr. Ankur Johri

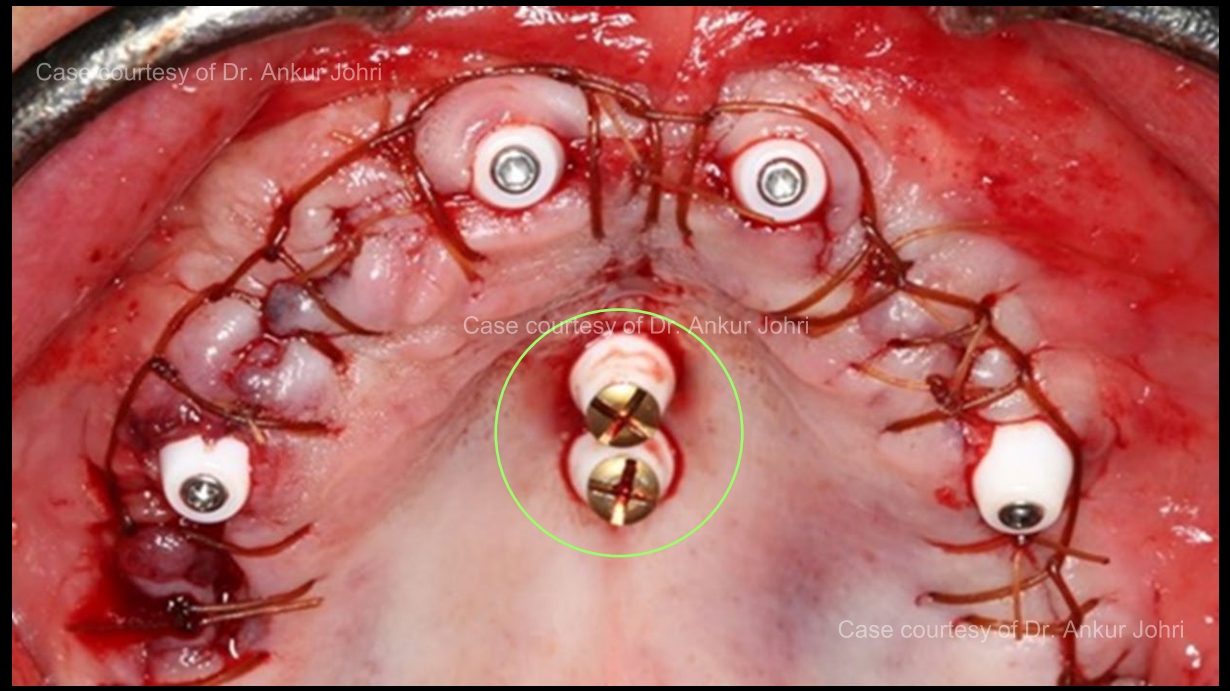


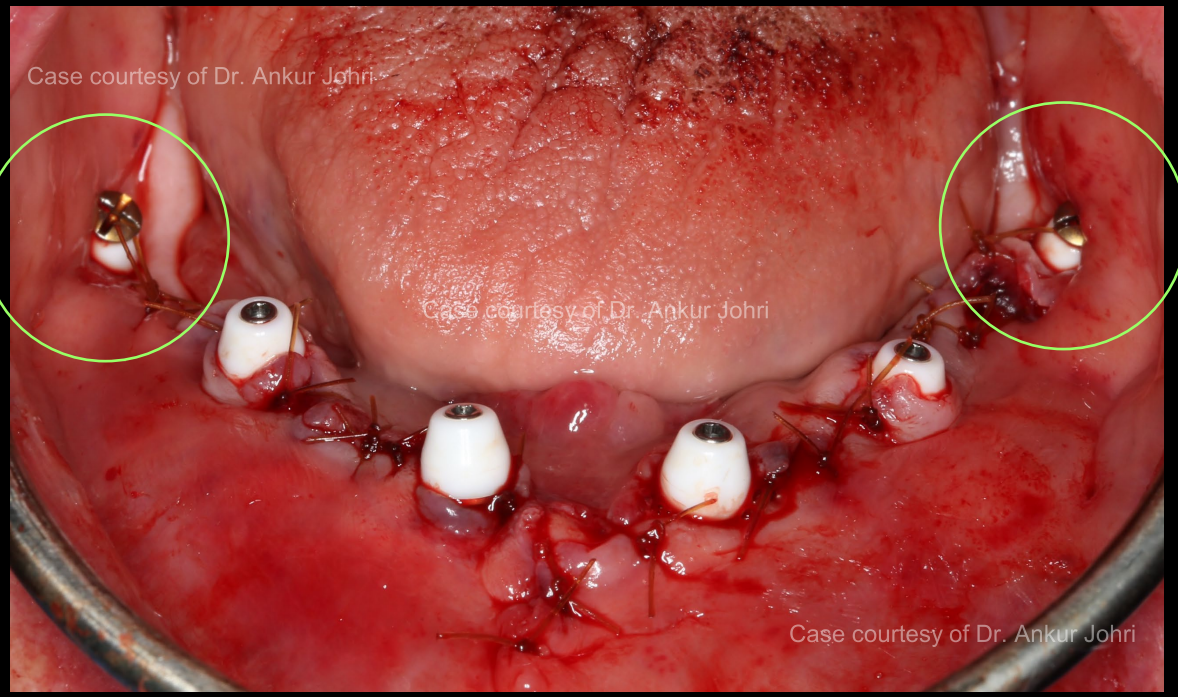
Extraction followed by ridge reduction





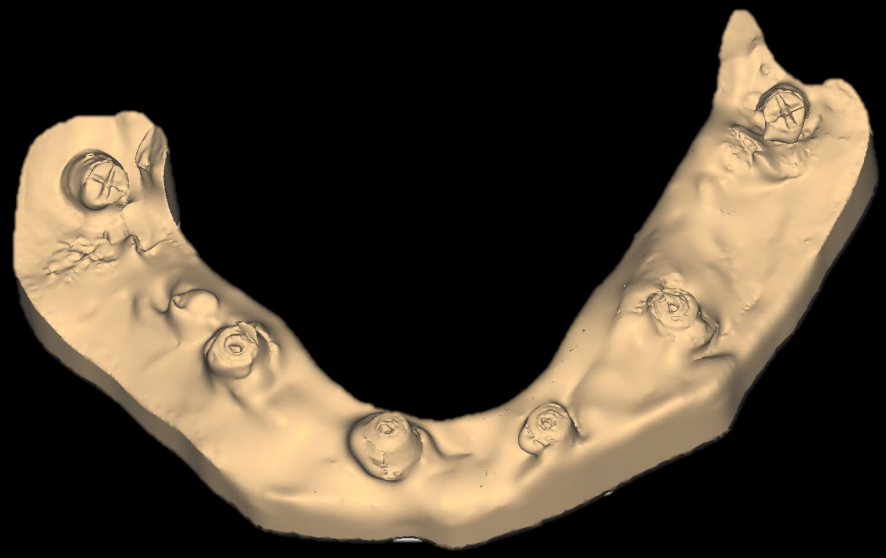
Post-operational scan using iCam specific position locators to accurately capture implant positions



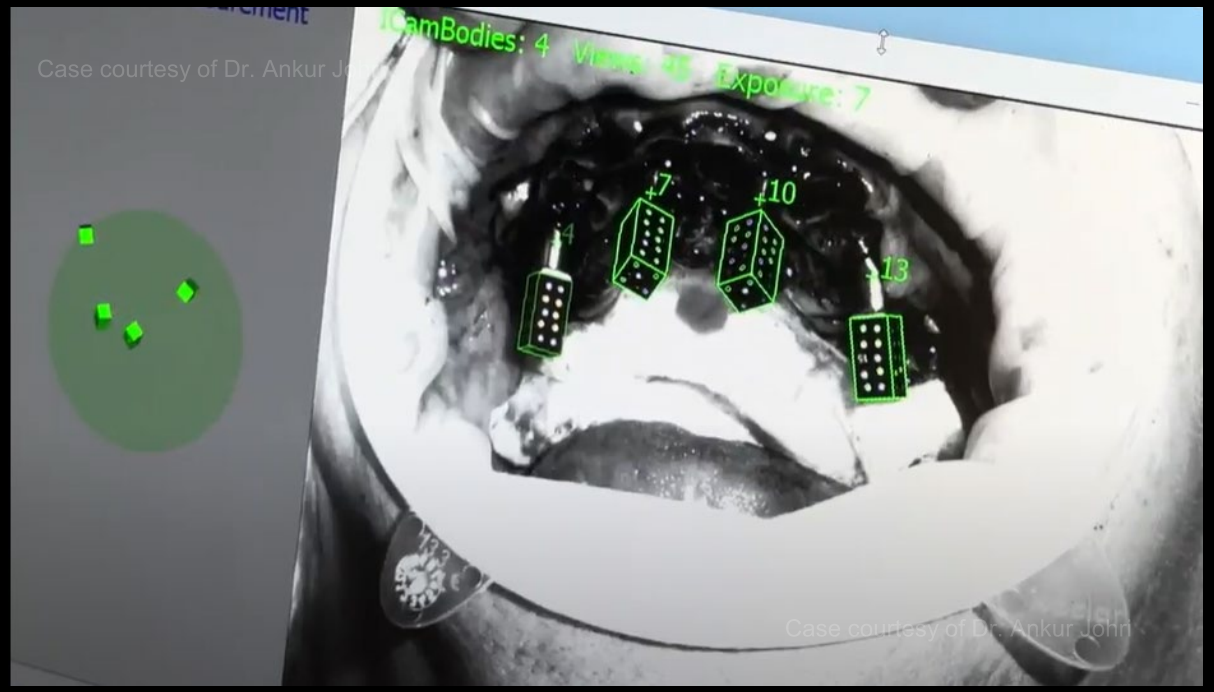


Post-operational Intraoral scan (also called soft tissue scan), using position locators on Nobel Biocare's Multi-Unit Abutment*

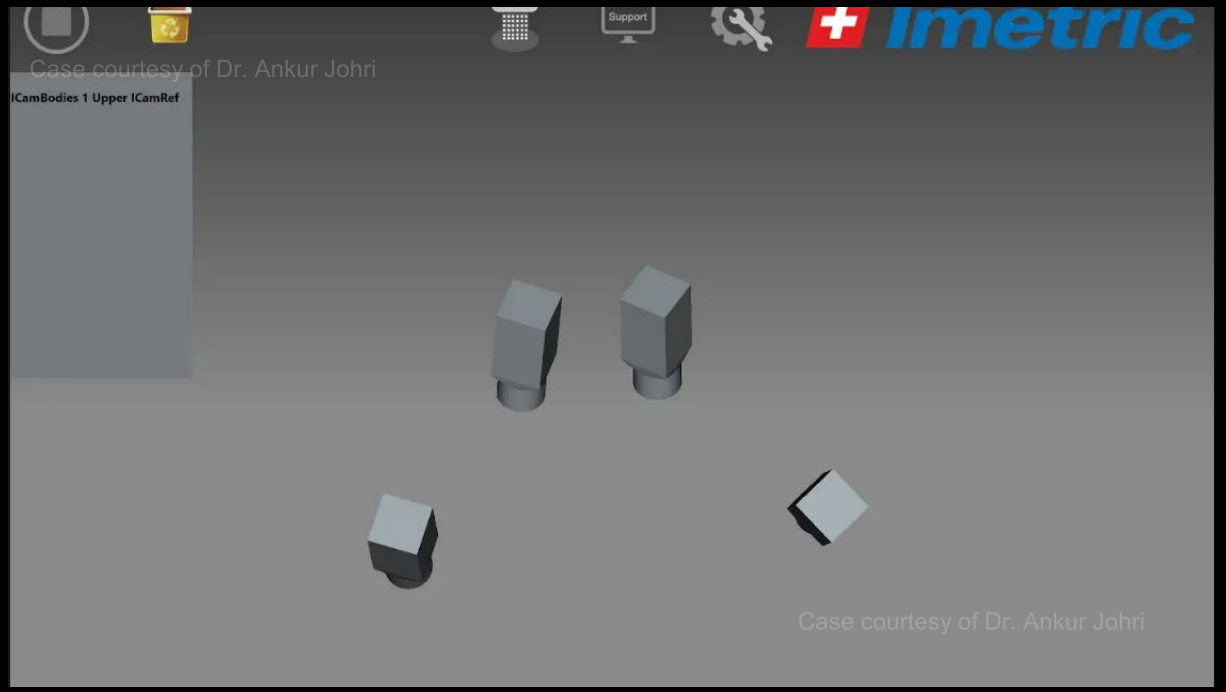
*Reference markers will be used as reference scan to match with preoperational scan (slide 6)



Post-operational soft tissue scan

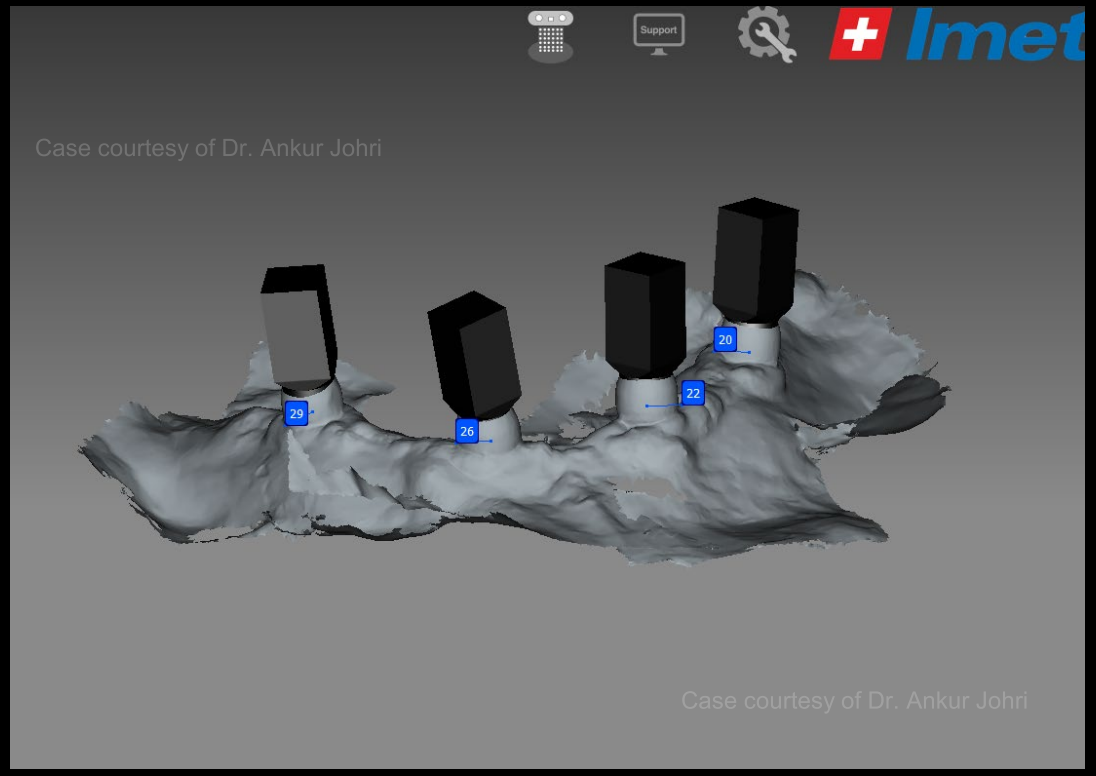


Post-operational scan using iCam -specific position locators to accurately capture implant positions



iCam bodies defining exact implant coordinates, and to be matched with post-operational intraoral scan in Imetric4D software

Post-operational scan using iCam-specific position locators to accurately capture implant positions

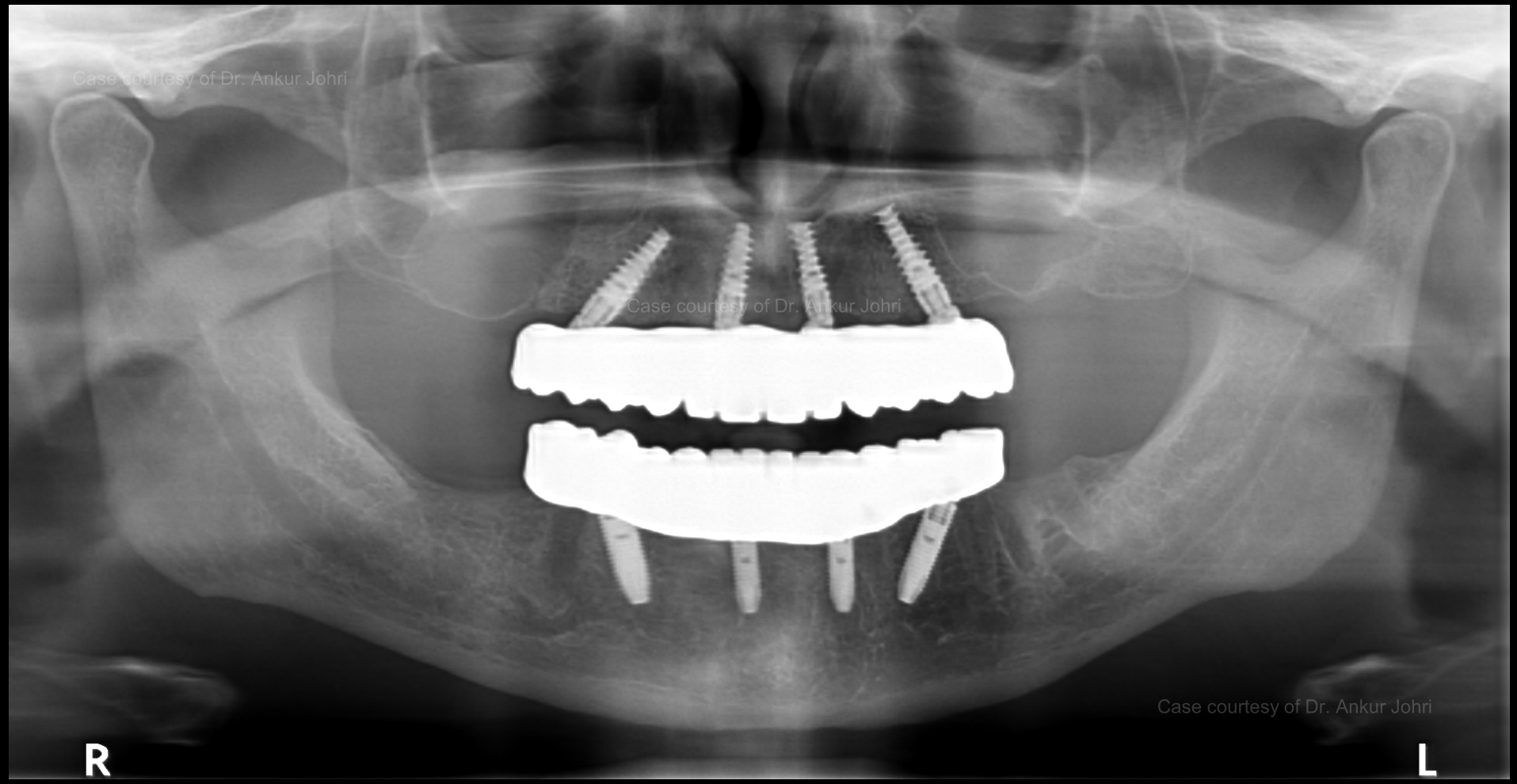


iCam bodies defining exact implant coordinates, and to be matched with post-operational intraoral scan in Imetric4D software

Immediate temporization – frontal view

Immediate temporization – lateral view

Initial situation | Data collection | Treatment planning | Surgical execution | Post-surgical impression | Immediate loading | **Final restoration**



Panorex with Final prosthesis in Maxilla and Mandible

Final restoration using NobelProcera®

Case courtesy of Dr. Ankur Johri

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