

Simplified clinical technique for the fabrication of passive full-arch implant prosthesis using reverse scan bodies

Davide Romeo¹ DDS, MS, PhD, Steve Yusupov² DDS, MD, FACS, Jacopo Agliardi¹, Enrico Agliardi¹ MD, DDS

1. Department of Dentistry, Vita Salute University, San Raffaele Hospital, Milan, Italy
2. Gold Coast Oral & Maxillofacial Surgery, Roslyn, New York, NY



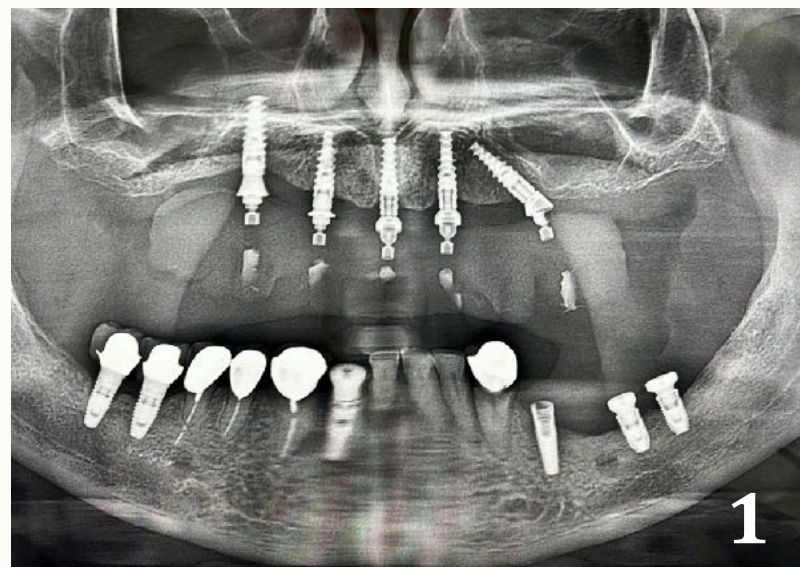
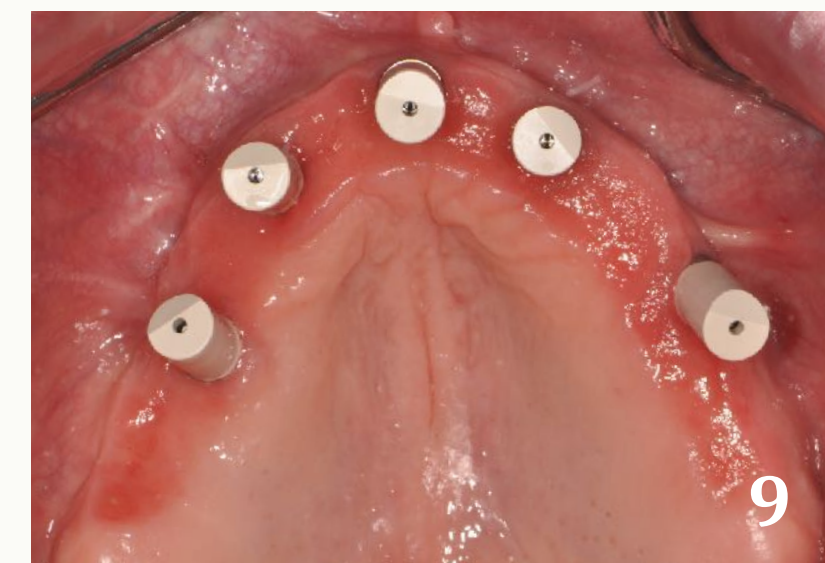
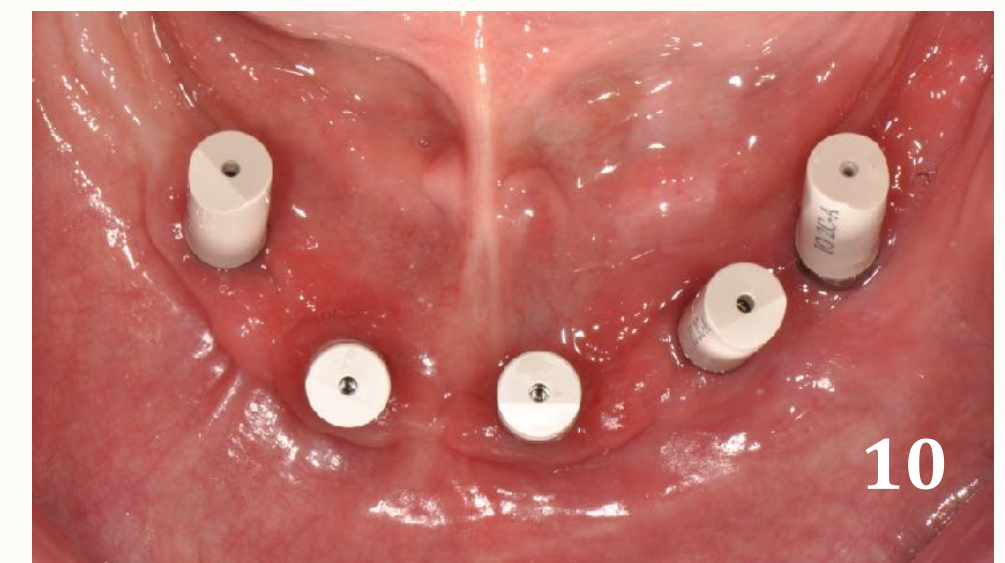
PURPOSE

The aim of this pilot project was to describe a novel clinical technique for the delivery of definitive passive full-arch fixed prostheses in two appointments.

MATERIALS AND METHODS

FIRST APPOINTMENT

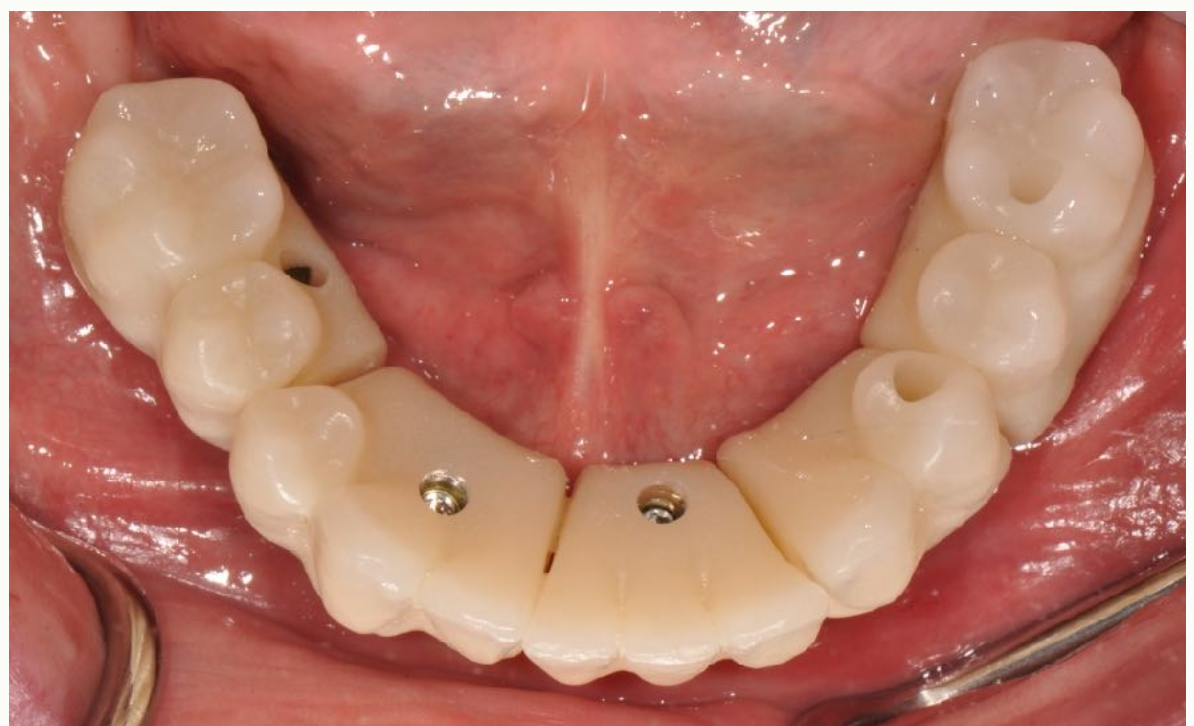
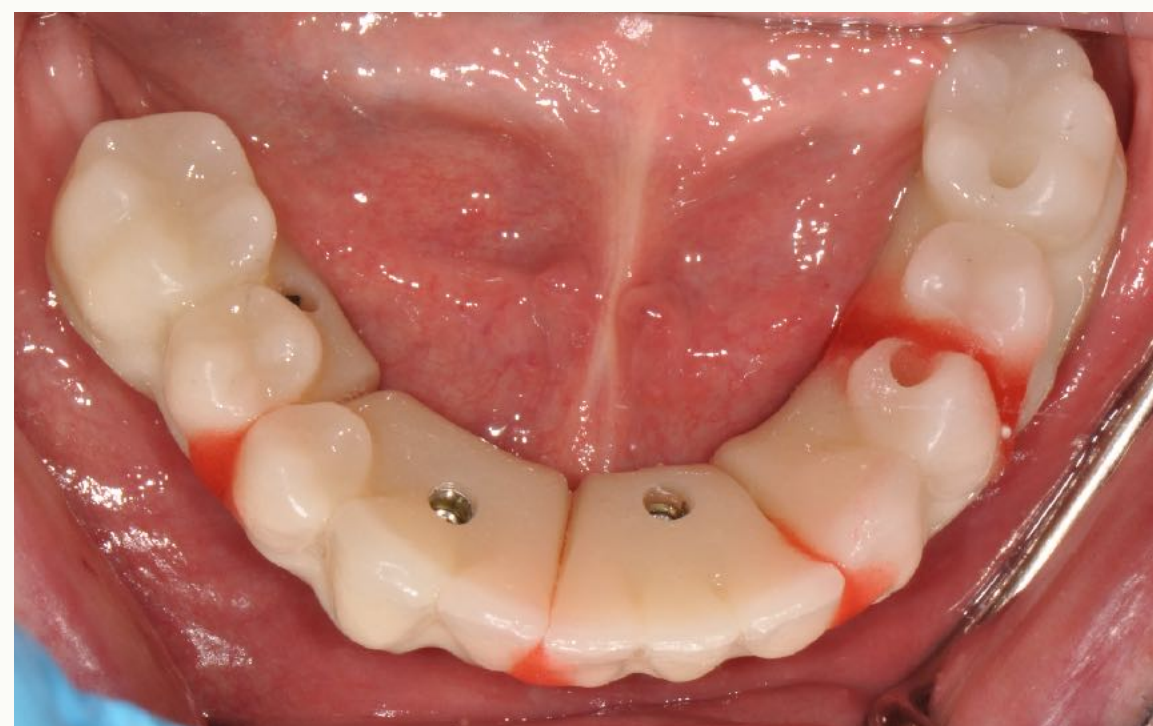
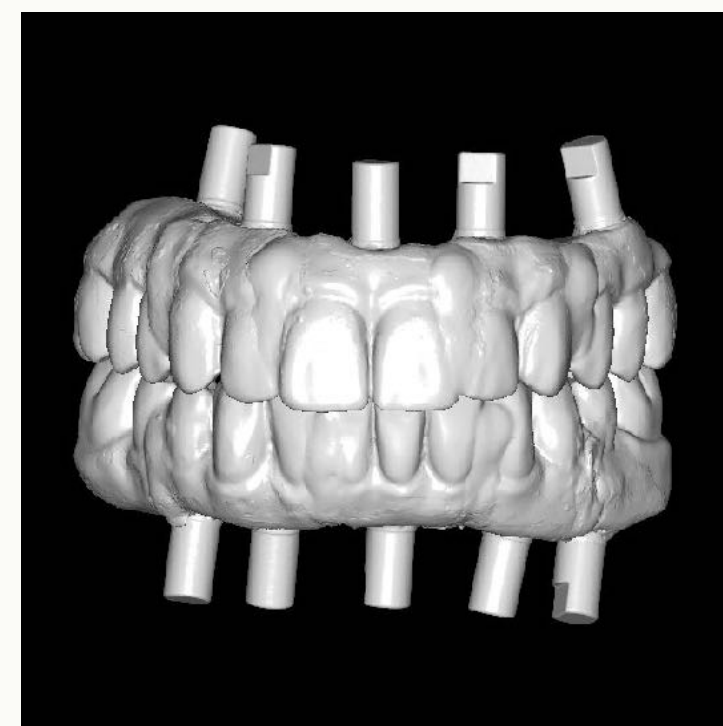
This technique can be used to provide definitive prostheses to a patient currently wearing full-arch temporary prostheses (Figs. 1-5). During the first visit, clinical examination on esthetic, phonetics and occlusion was conducted. Photos and feedback from patient were also recorded. Bite was digitally recorded and both prostheses were removed (Fig.6). Reverse scan body (Dynamic Abutment Solutions, Lleida, Spain) were connected to the prostheses and extra-oral digital impressions were taken (Figs 7,8). Scan bodies (Elos Accurate Scan Body) were positioned over the multi-unit abutments and intra-oral scans were registered to capture the soft tissue (9,10). The generated STL files were imported in a CAD software (Exocad) for the design of try-in prototypes (Surgery Dr. Yusupov, restorative Dr. Romeo).



MATERIALS AND METHODS

SECOND APPOINTMENT

During the second visit, milled prototypes with metal connections were milled into various segments containing one metal insert each. Those segments were splinted intra-orally with acrylic resin to verify the position of the implants and to assess esthetics, phonetics and occlusion. Reverse scan bodies were connected over those prototypes and then scanned with a desktop scanner for the design of definitive prostheses. At the third visit, definitive prostheses will be delivered.



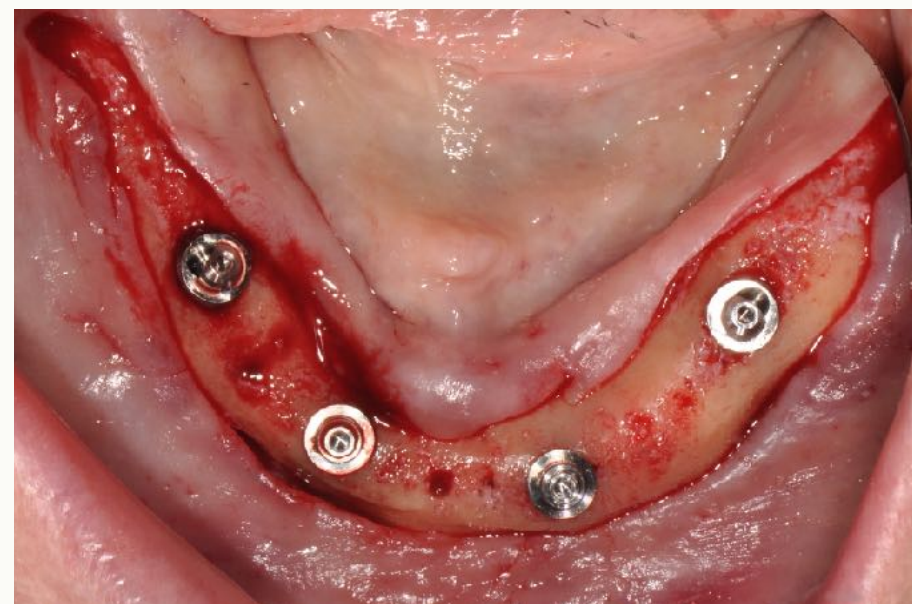
RESULTS

A maxillary titanium/zirconia and a mandibular titanium/composite definitive prostheses were fabricated. Accuracy of fit was assessed by a prosthodontist using four methods: the screw-resistance test, visual inspection, tactile inspection and peri-apical radiographs. Both prostheses were judged passive using the four methods.



CONCLUSIONS

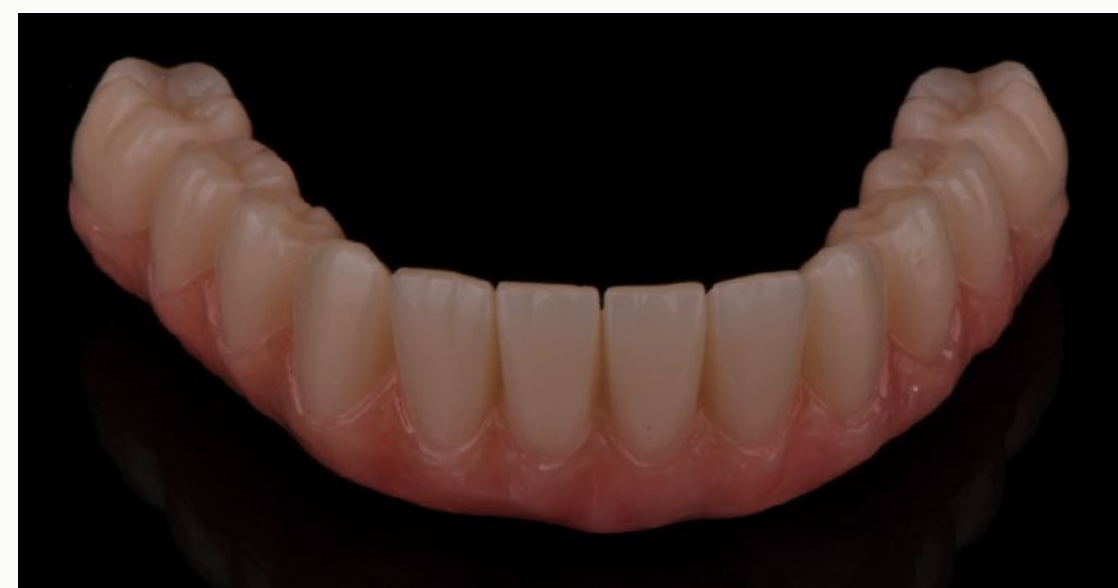
Within the limitations of this clinical report, a complete digital workflow protocol with extra oral scanning and reverse scan bodies may lead to accurately fitting digitally fabricated milled prosthesis. Simplified technique and a reduction of treatment time represent additional benefits of this protocol. Reverse scan bodies can be also connected to the immediate loading prosthesis the day of the surgery in order to fabricate the milled prototype before the patient presents for the phase of fabrication of the definitive prosthesis (Surgery Prof. Agliardi, restorative Dr. Romeo).



SURGERY



VERIFICATION
INDEX
&
ESTHETIC TRY IN



DELIVERY