Immediately loaded full-arch restoration on four implants in the maxilla

Digital workflow and surgery, including definitive restoration

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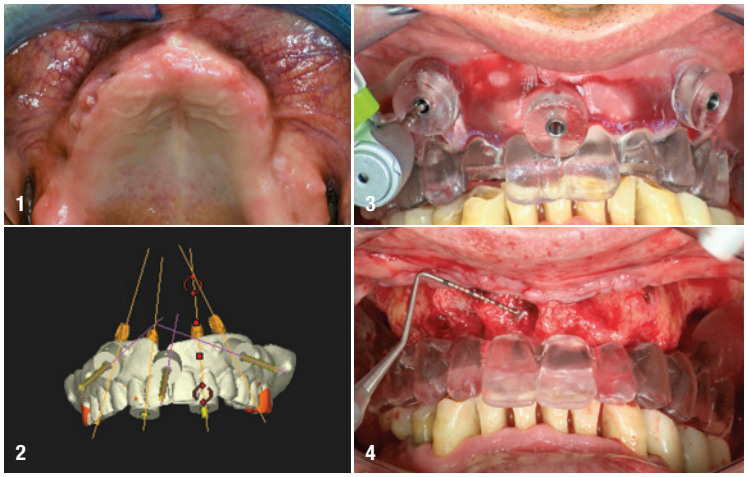


A 78-year-old male patient with an ASA physical status of II and a previous history of implant treatment requested an implant-supported restoration. Four PrimeTaper EV implants (Dentsply Sirona) were inserted according to digital planning, and the two distal implants were angled to make the best use of the height of the bone crest.

MultiBase EV abutments (Dentsply Sirona) were inserted, and an immediate impression was taken. Four hours after the start of the appointment, a temporary screw-retained implant-supported restoration was delivered to the patient. After healing of the site, a digital impression was taken for the definitive restoration, which was realised with a full monolithic zirconia sleeve on an Atlantis BridgeBase suprastructure.

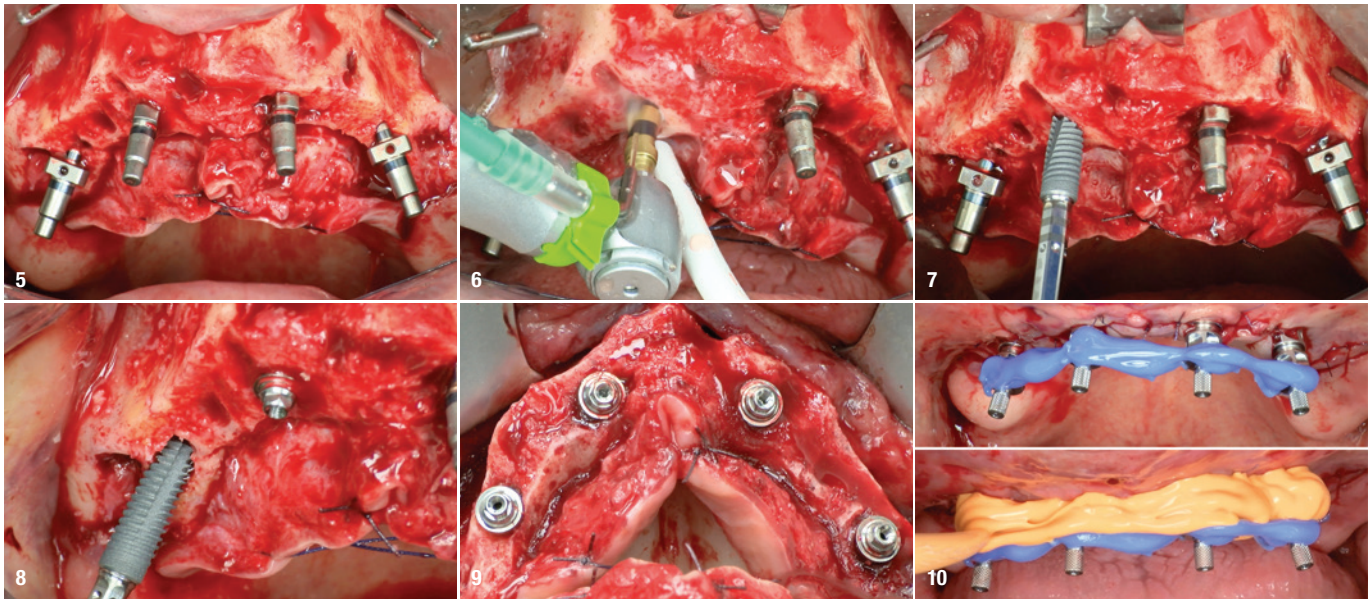
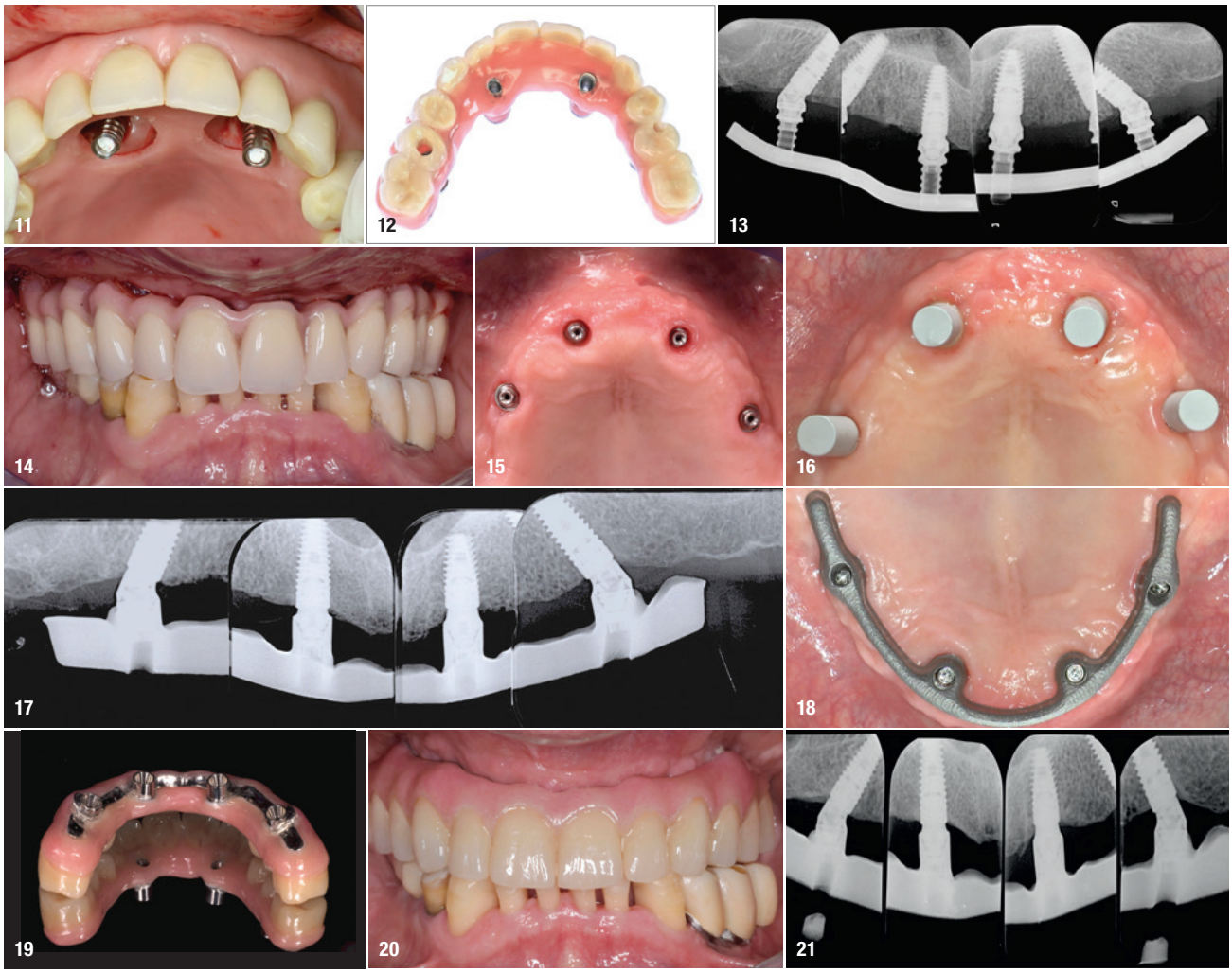


Fig. 1: Pre-op view of the edentulous maxilla, showing the healing area on the right side where the original implants had been removed. **Fig. 2:** Digital implant treatment planning was performed in Simplant software (Dentsply Sirona) with a bone reduction guide mask for four implants in the maxilla. **Fig. 3:** A surgical guide was used for the first drill to ensure precise implant positioning. **Fig. 4:** After making the surgical incision, the bone reduction guide was placed to de-



termine the amount of bone reduction needed. **Fig. 5:** The FRIOS MicroSaw (Dentsply Sirona) was used to remove bone to create a flat and homogenous bone plate. Guide pins were used to check the implant positions. **Fig. 6:** The recommended drilling protocol for PrimeTaper EV was followed for implant placement in position #12. The drilling procedure ended with the #4 PrimeTaper drill. The #5 PrimeTaper drill was used for 2 mm cortical preparation. **Fig. 7:** A PrimeTaper EV 4.2 × 11.0 mm implant was placed in position #12. **Fig. 8:** A PrimeTaper EV 4.2 × 13.0 mm implant was placed at a 30° angle in position #15. **Fig. 9:** Occlusal view of the four abutments in place. **Fig. 10:** MultiBase EV pick-up copings were attached and tightened (5–10 Ncm) for the impression, taken using Aquasil Ultra+ low-viscosity impression material (Dentsply Sirona). Autopolymerising flowable resin was used to secure the copings. **Fig. 11:** MultiBase EV temporary cylinders and autopolymerising resin were used to attach the denture. **Fig. 12:** Occlusal view of the temporary screw-retained restoration. **Fig. 13:** Radiographic evaluation of the temporary screw-retained restoration. **Fig. 14:** Temporary restoration in place four hours after the start of the appointment. **Fig. 15:** Healed soft tissue with abutments in place. **Fig. 16:** Atlantis IO FLO-S scan bodies in place for intra-oral scanning for manufacturing of the definitive restoration. **Fig. 17:** Try-in of the fixed Atlantis BridgeBase suprastructure. **Fig. 18:** Radiographic evaluation showing passive fit of the suprastructure. **Fig. 19:** The full monolithic zirconia sleeve was tried in on top of the suprastructure prior to cementation finalising the definitive restoration. **Fig. 20:** Definitive restoration seated. **Fig. 21:** Radiographic evaluation twelve months after implant placement.

about the author

Dr Marco Toia graduated in dentistry from the University of Milan in Italy in 2001 and specialised in orthodontics in 2004 and oral surgery in 2007 at the same university. He received his PhD from Malmö University in Sweden in 2020 on clinical and mechanical aspects of implant-supported screw-retained multi-unit CAD/CAM metal frameworks. Dr Toia is in private practice in Milan and conducts research in affiliation with Malmö University. He is an active member of the Italian Academy of Osseointegration, the Italian president of PEERS (the Platform for Exchange of Experience, Research and Science, founded by Dentsply Sirona) and an ordinary member of the Italian Academy of Prosthetic Dentistry and European Association for Osseointegration.

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