

UNICON Implant

Pursuing the Completion of the 11° Implant System



UNICON Fixture

At the culmination of our R&D journey for better clinical outcomes and solutions, we proudly present the UniCon Implant, the pinnacle of the 11° connection. UniCon Implant integrates a unified prosthetic lineup regardless of diameter or length with a single connection, delivers enhanced mechanical stability, and offers true clinical efficiency through an optimized surgical protocol.



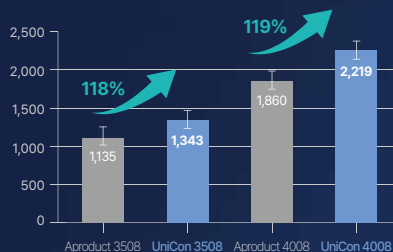
One Connection

- Streamlined prosthetic lineup
- Simplified inventory management
- Single driver for all procedures



Superior Strength

- Higher fracture resistance compared to similar products
- Long-term stability expected



Apical Deep Thread

- Additional lower threads
- Enhanced initial stability
- Designed for immediate post-extraction placement



Full Helix Cutting Edge

- Improved self-tapping performance
- Reliable and stable insertion

1.5° Taper / Dual Thread

- Facilitates strong initial fixation
- Fast and stable placement
- Minimizes bone damage

Universal + Convenient = “**UNICON**”

A name that reflects universality, adaptable to all bone qualities and cases, while ensuring that the procedure is convenient and easy for anyone to master

UNICON Implant Surface

Hybrid type SLA Surface (HSA)

Optimal Surface Morphology

Implementation of **Micro Surface morphology** on the upper part to reduce peri-implantitis and **Macro Surface morphology** on the lower part to enhance the initial bone response

Alumina Blasting

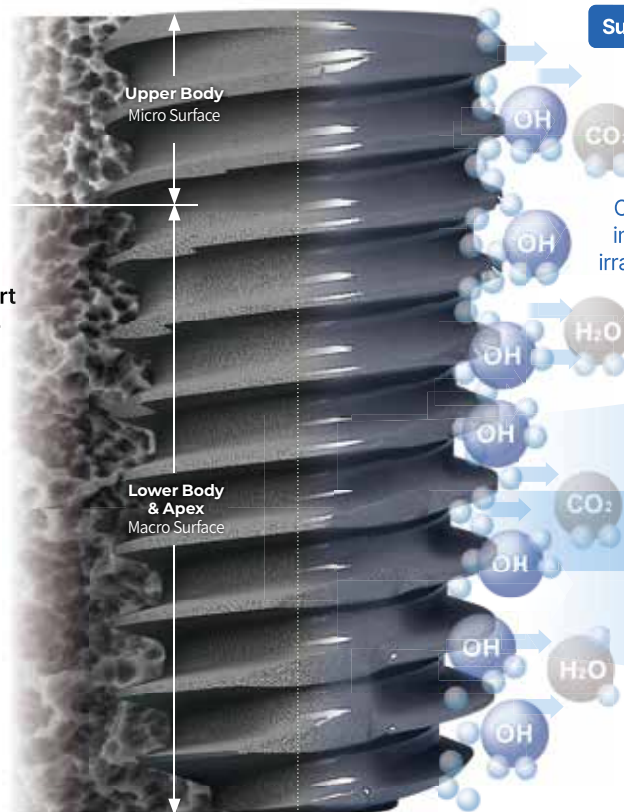
Double Acid Etching

High-Temperature and High-Pressure Water-jet

7-Step Vacuum Ultrasonic Cleaning

UV Drying

High Purity Clean Surface



Surface Modification by VUV Irradiation

Anti-aging Effect

Over 90% of organic matter on the implant surface is removed by irradiating a vacuum UV (VUV) source, enabling rapid and strong bone formation.

VUV Irradiation

Hydrocarbon Removal

Modification to Superhydrophilic Surface

Electro-Positive

Enhancement of Cell and Protein Adhesion

Rapid Osseointegration

Patented Surface, HSA

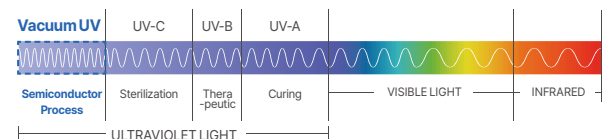
A distinctive level of surface roughness unique to DIO IMPLANT has been achieved through extensive research and experimentation based on sandblast large grit & acid etching (SLA).



*KOREA Patent No. 10-1652968

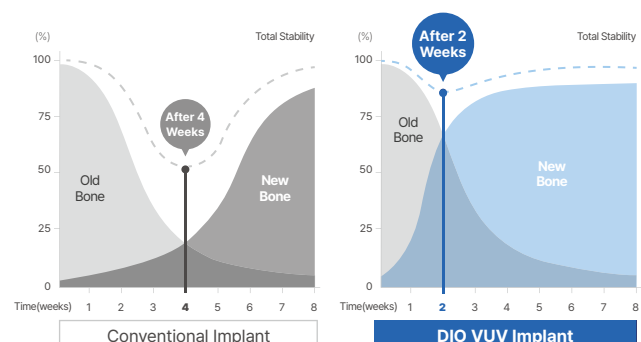
What Is VUV?

VUV is the highest-energy ultraviolet light used in semiconductor processes. DIO was the first to apply VUV to remove organic matter from the implant surface, and its effectiveness has been validated through joint research with UCLA, USA.



VUV, Healing Time in Half!

Fewer surface organics and higher blood absorbability ensure more stable bone-to-implant integration, shortening the treatment period.

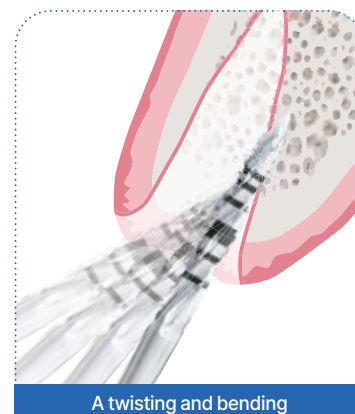
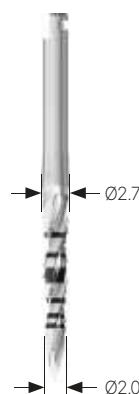


*Source: Implant Dentistry, Volume 22, Nov 5, 2013, PhD Takahiro Ogawa et al.

Multi Initial Drill

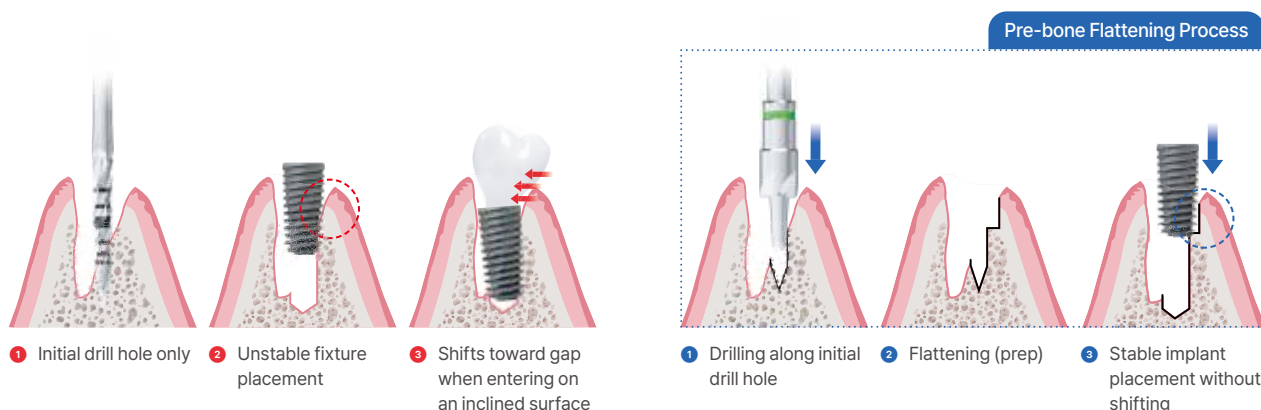
It provides highly accurate initial drilling in extraction sockets. With both point and side-cutting capabilities, it allows stable drilling even when the clinician drills as desired.

* Diameter: Designed to widen from Ø2.0 to Ø2.7



Pre-bone Flattening Drill

Even with accurate initial drilling in the extraction socket, the implant may shift toward the gap during placement. The pre-bone flattening drill allows implants to be placed in the correct position.



Modify Bur for Ridge Adjustment or Post-initial Drilling Expansion

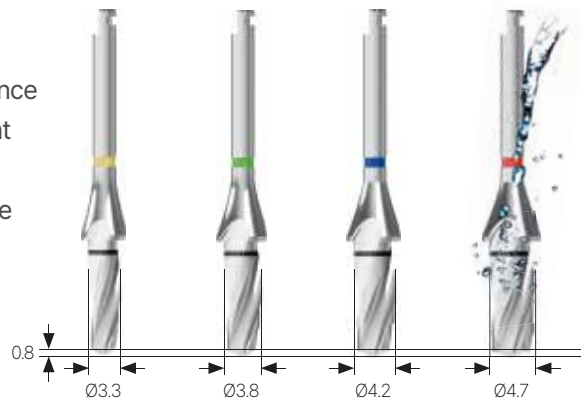
This is applied to reshape narrow ridges or irregular bone. It is also applicable for expanding the central septum after initial drilling in molar extraction sockets.

* Prevents displacement of cortical bone in the septum



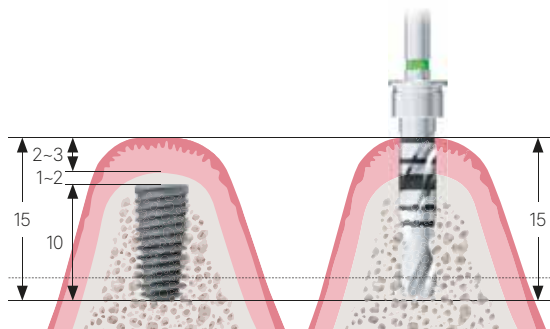
Taper Drill for Implant Placement

The UniCon taper drill delivers excellent cutting performance in all types of bone quality, and depth control is convenient with the integrated drill stop. The streamlined body shape ensures direct irrigation to the drill hole, reduces the risk of bone heating.



Straight Drill for Implant Placement

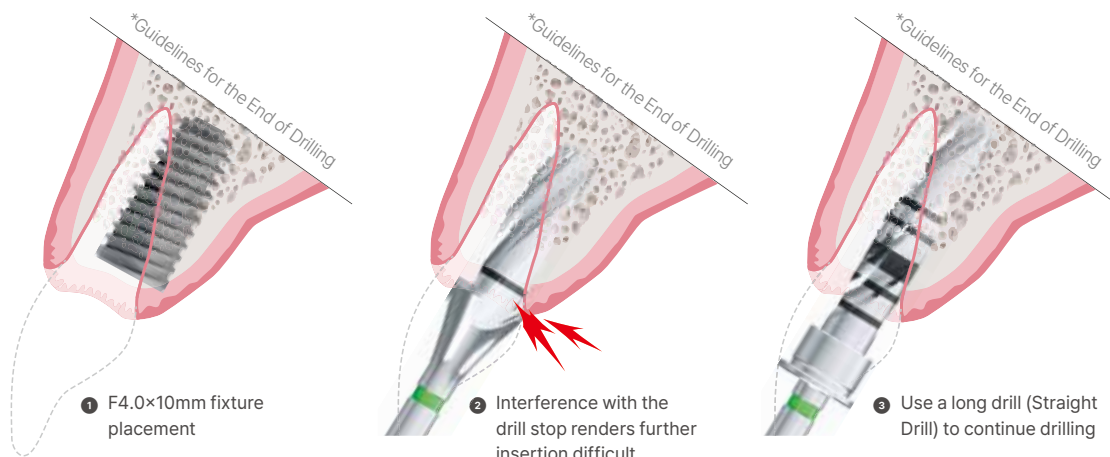
The Straight drill is used for following cases



When a long drill is required in flapless procedures



When partial widening is needed in hard bone or to prevent excessive torque at the apical end in the extraction socket septum



When a long drill is needed in extraction sockets

Fixture Driver for Implant Placement

The fixture driver allows implant placement up to 7 mm below the soft tissue, depending on tissue thickness. It enables precise placement to the planned depth even under excessive torque.

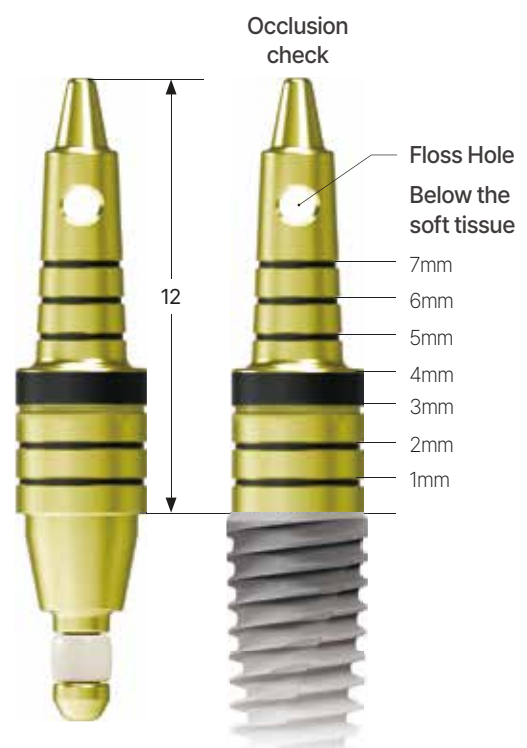
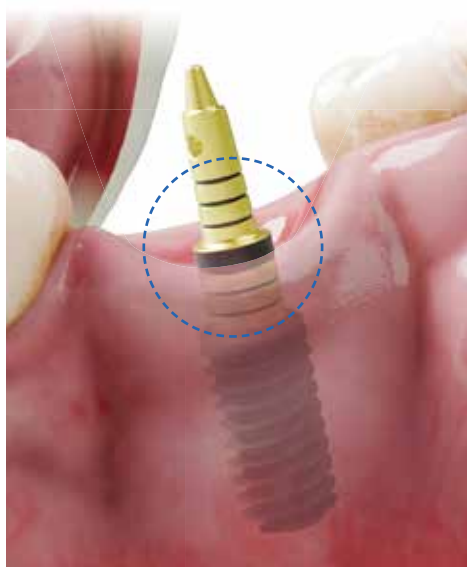


For machine use For wrench use



Final Check Pin for Verifying Placement Depth and Position

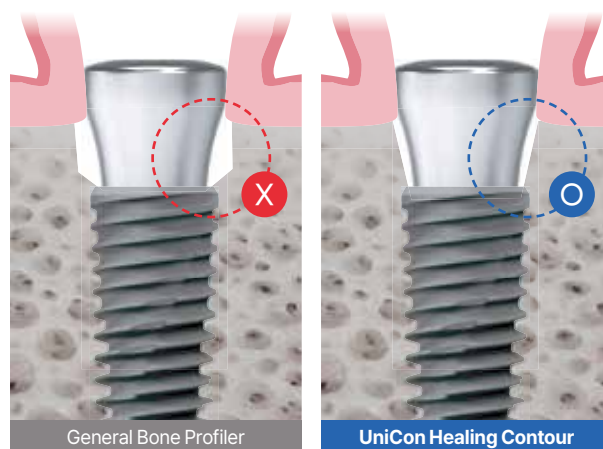
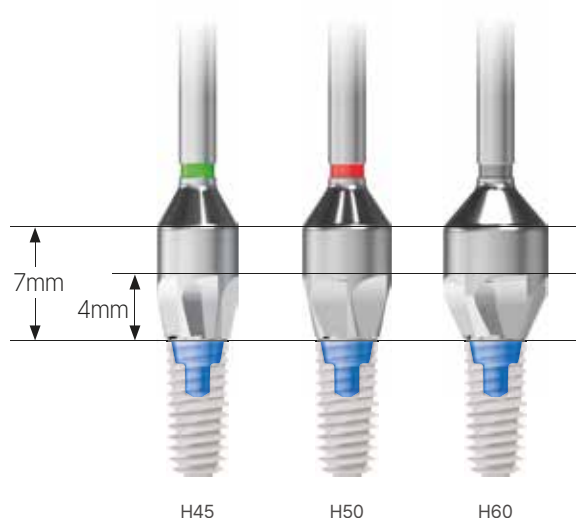
We recommend performing a final check after implant placement. Check the depth and the direction of occlusion and make any adjustment if necessary.



Healing Contour

Removal of Interfering Bone During Prosthesis Connection

This instrument is used to remove interfering bone after fixture placement, and it is particularly useful for deep insertion. It is designed to match the healing abutment shape to prevent excessive bone removal. Select the drill corresponding to the selected healing abutment shape for accurate drilling.

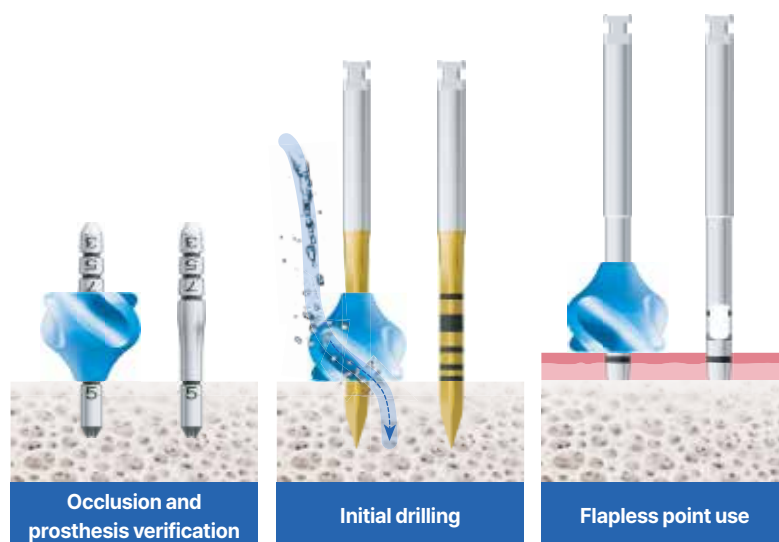


Positioning Bell

for Convenient Implant Placement and Spacing

For single, bridge and free-end multiple cases, the Positioning Bell can be used during initial drilling to simultaneously consider spacing from adjacent teeth and prosthesis dimensions. It can be applied to the Ø2.0 Tissue Punch, Position Drill, or Initial Check Pin depending on the intended use. Its irrigation-easy design minimizes the risk of bone heating during drill sequence.

Canine / Premolar	General use
Ø7.2	Ø8.0
Second molar	First molar
Ø9.0	Ø10.0
Made of biocompatible medical-grade silicone for safe insertion of drills or instruments	



Consistent Cuff Design

System-wide Natural S-Curve design & minimal bone interference and gingival pressure

The Natural S-Curve design is applied throughout the entire system, from healing, impression taking, and prosthetic stages, to minimize bone interference and gingival pressure, contributing to the emergence profile of the prosthesis and the formation of healthy interdental papillae.



Intuitive Design

Intuitive Confirmation of Correct Connection

Thanks to its intuitive design with a distinct singularity point, complete or incomplete seating can be easily verified on X-rays.

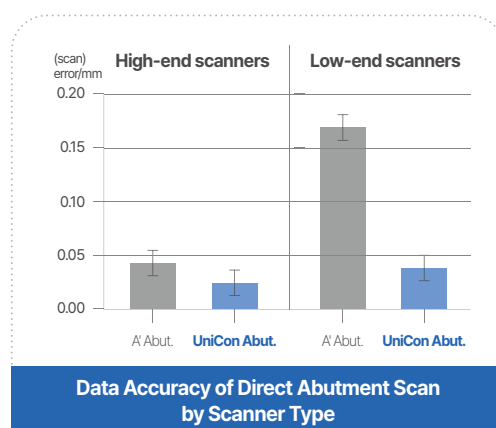
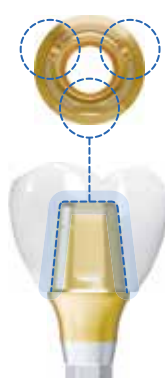
Seating Status	Correct seating	Incomplete seating
Connection Gap	Zero Gap	Gap
Healing Abutment		
Impression Coping		

Detail Design

Optimized for Digital Prosthetics

Abutment geometry has been optimized to improve the accuracy of digital scanning and the fitness of zirconia prostheses.

Landmark Function During Scan Registration

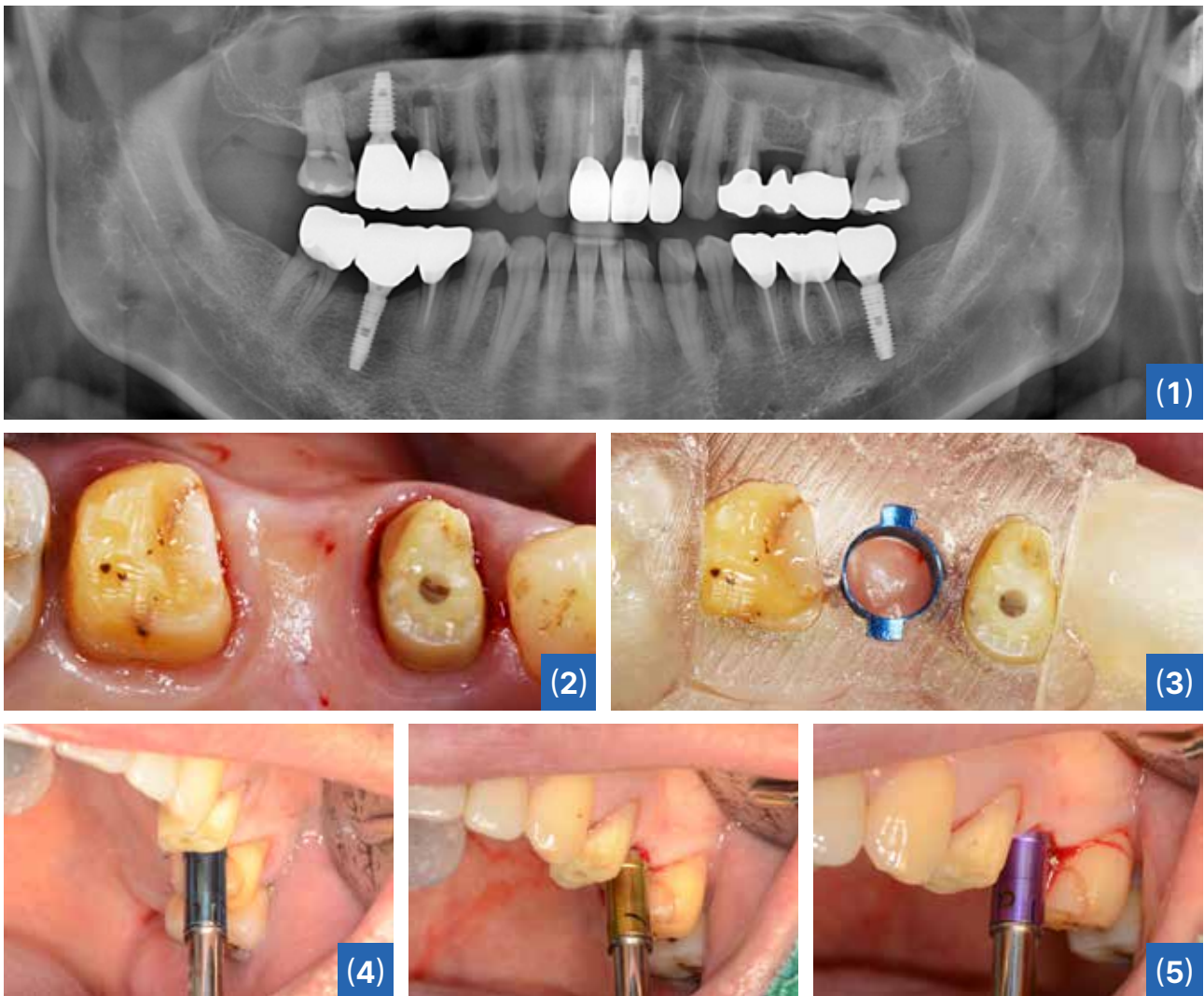


UNICON Clinical Case

Case No. 01

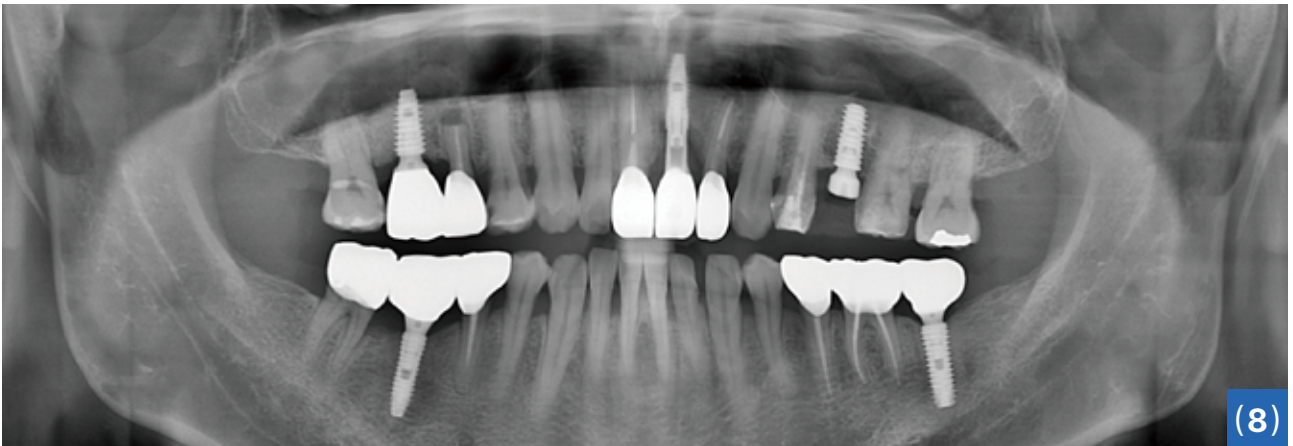
[#25] Osteotome-assisted sinus elevation (RBH $\leq$ 7mm)

A 3-unit bridge on #24–26 with inadequate prosthetic margins was removed, and a UNICON ($\Phi 5.0 \times 10$ mm, VUV) was placed at #25, where the residual bone height was ≤ 7 mm. After accessing the maxillary sinus with a Sinus Lift Drill, the sinus floor was fractured with an osteotome while elevating the membrane. No bone graft was placed in the sinus.



- (1) Panoramic radiograph before removal of the #24–26 bridge
- (2) Removal of the #24–26 bridge
- (3) Surgical guide placement
- (4) Sinus floor fracture (Osteotome + 6 mm stopper)
- (5) Sinus floor fracture and membrane elevation (Osteotome + 7~8mm)

A healing abutment was connected following implant placement. After 6 months of healing, a 2-unit bridge was delivered on #25–26.

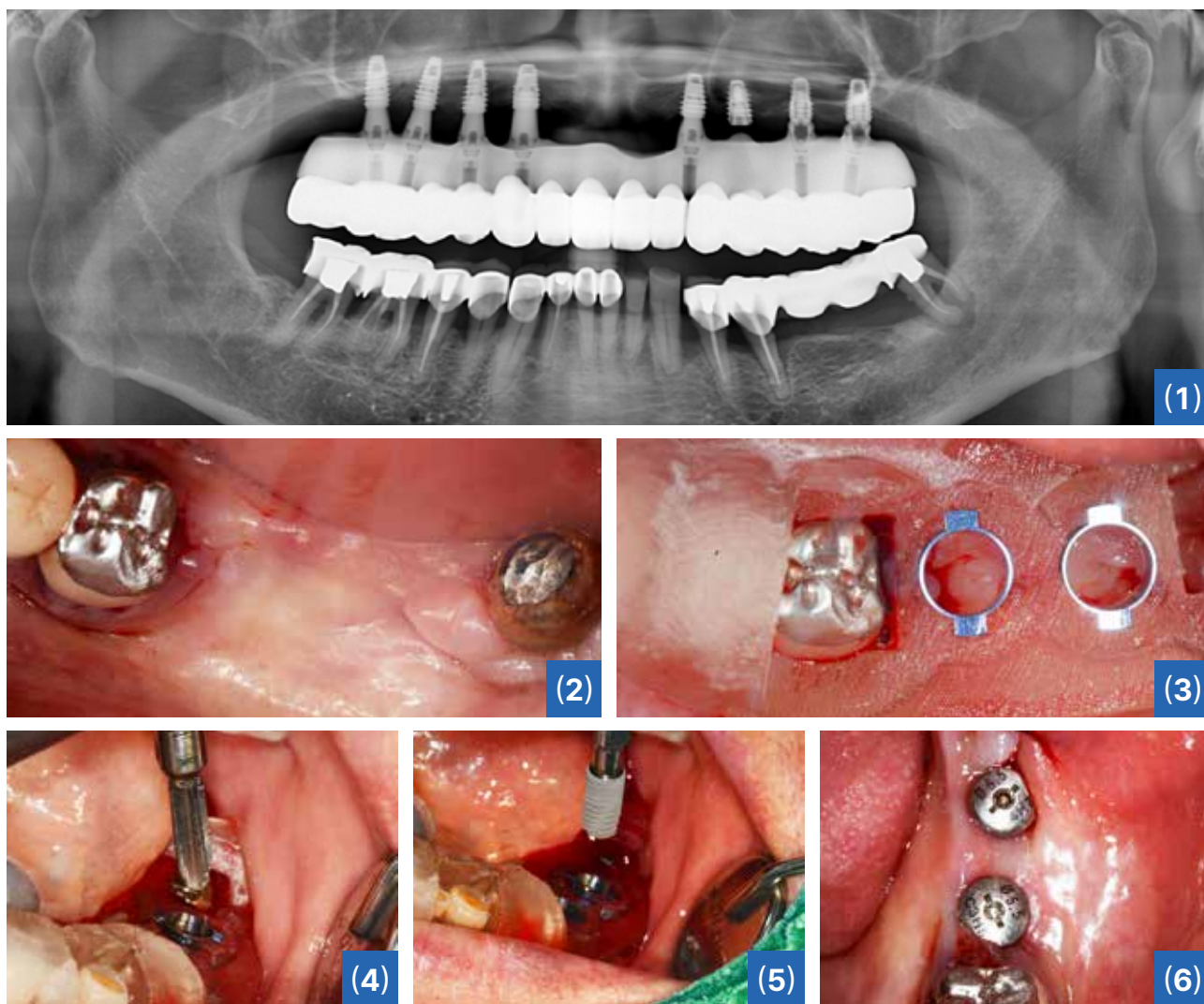


- (6) Placement of UNICON ($\Phi 5.0 \times 10$ mm, VUV)
- (7) Healing abutment connection
- (8) Panoramic radiograph after healing abutment connection
- (9) Final prosthesis
- (10) Standard x-ray radiograph after final restoration

Case No. 02

[#36 #37] Mandibular posterior bridge case

The compromised #38, an abutment tooth for a 5-unit bridge in the left mandibular posterior region, was extracted. UNICON were placed at #36 and #37 to restore masticatory function. Because a 10 mm fixture at either site would be in close proximity to the inferior alveolar canal, drilling depth was carefully controlled throughout the procedure.



(1) Panoramic radiograph before removal of the #34 and #35–38 long bridge

(2) Long bridge removal

(3) Surgical guide placement

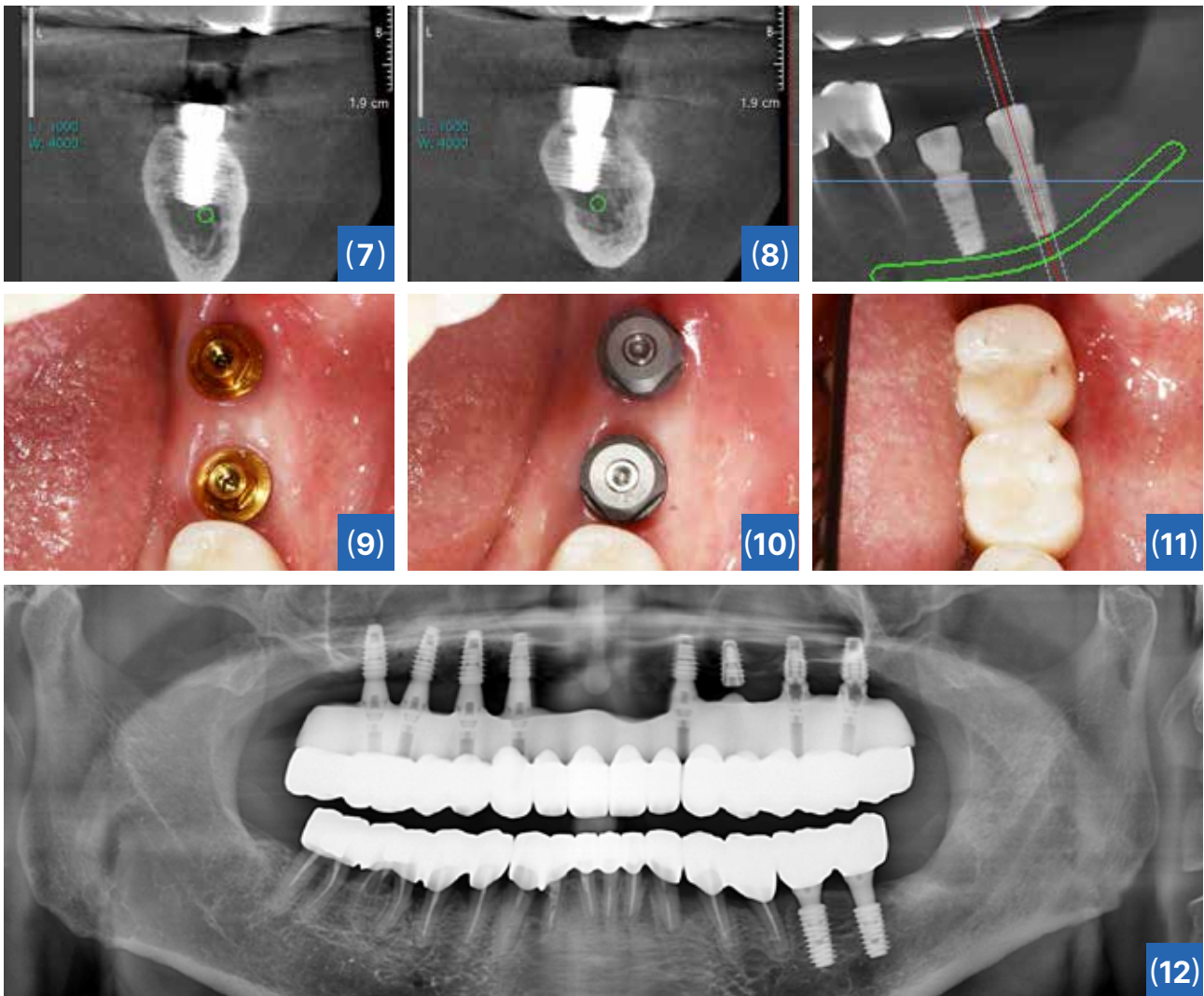
(4) Drilling

(5) Placement of #36 UNICON (Φ5.0 × 10 mm, VUV)

#37 UNICON placement (Φ5.0 × 8.5 mm, VUV)

(6) Healing abutment connection and extraction of #38

Three months after implant placement, osseointegration was confirmed and DeSR abutments were connected. A digital impression was obtained using DeSR H-scanbodies, and the final restoration was delivered as a screw-retained 2-unit bridge.

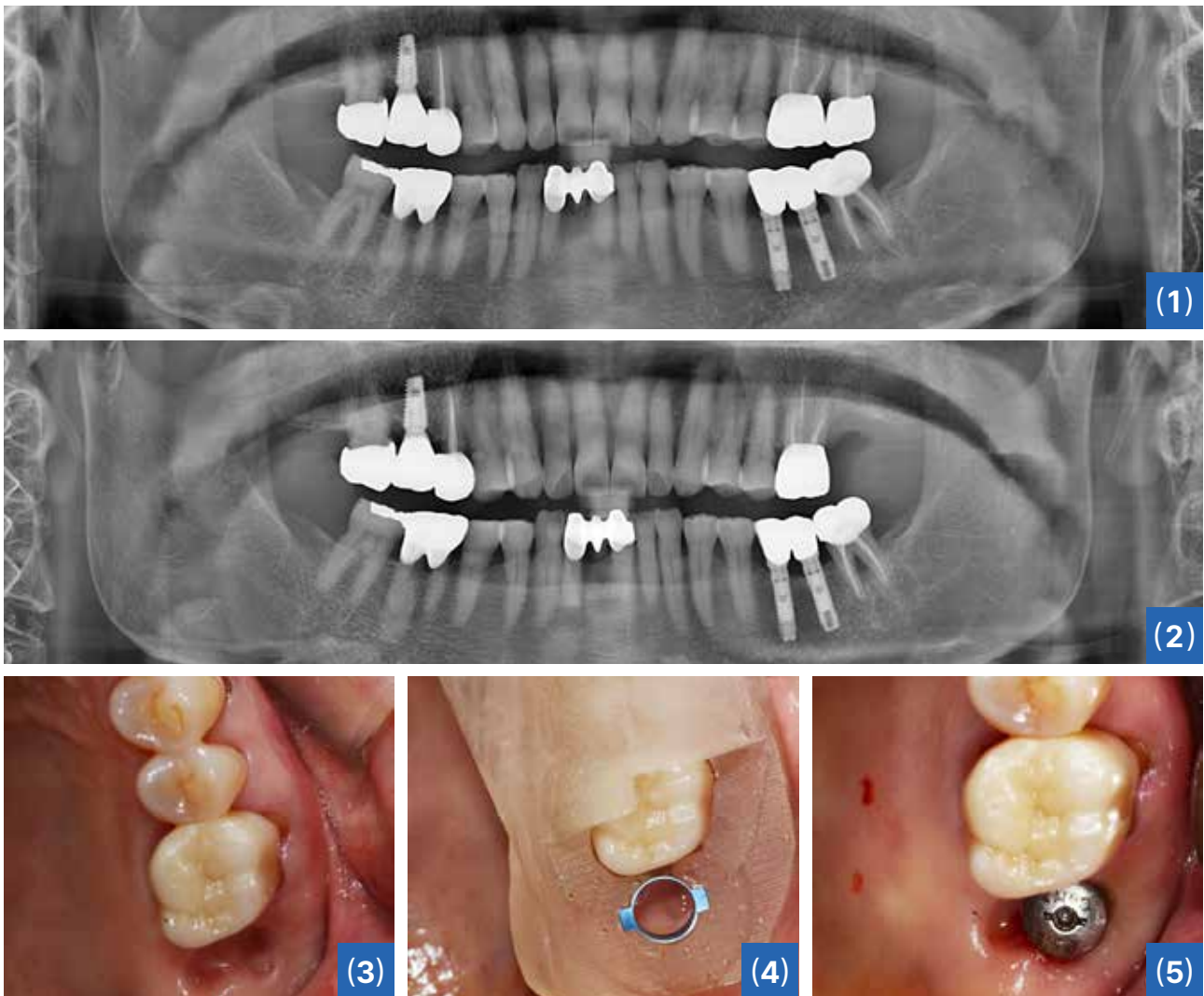


- (7)** CBCT image after #36 implant placement
- (8)** CBCT image after #37 implant placement
- (9)** DeSR abutment connection
- (10)** DeSR H-scanbody connection
- (11)** Final prosthesis delivery
- (12)** Panoramic radiograph immediately after final prosthesis delivery

Case No. 03

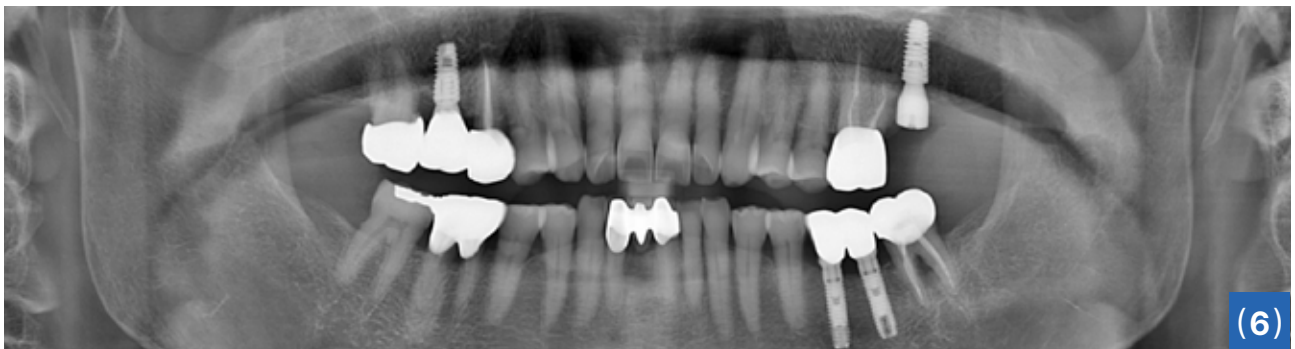
[#27] Delayed implant placement after extraction

Bone loss and caries were observed beneath the gold crown on #27, and the tooth was extracted. After allowing bone formation within the extraction socket, a UNICON ($\Phi 5.0 \times 10$ mm, VUV) was placed and a healing abutment was connected.



- (1) Panoramic radiograph before extraction of #27
- (2) Panoramic radiograph after extraction of #27
- (3) Preoperative view
- (4) Surgical guide placement
- (5) UNICON placement ($\Phi 5.0 \times 10$ mm, VUV) and healing abutment connection

Three months after implant placement, osseointegration was confirmed and a DeSR abutment was connected. A digital impression was obtained using a DeSR H-scanbody, and the final restoration was delivered as a screw-retained single crown.

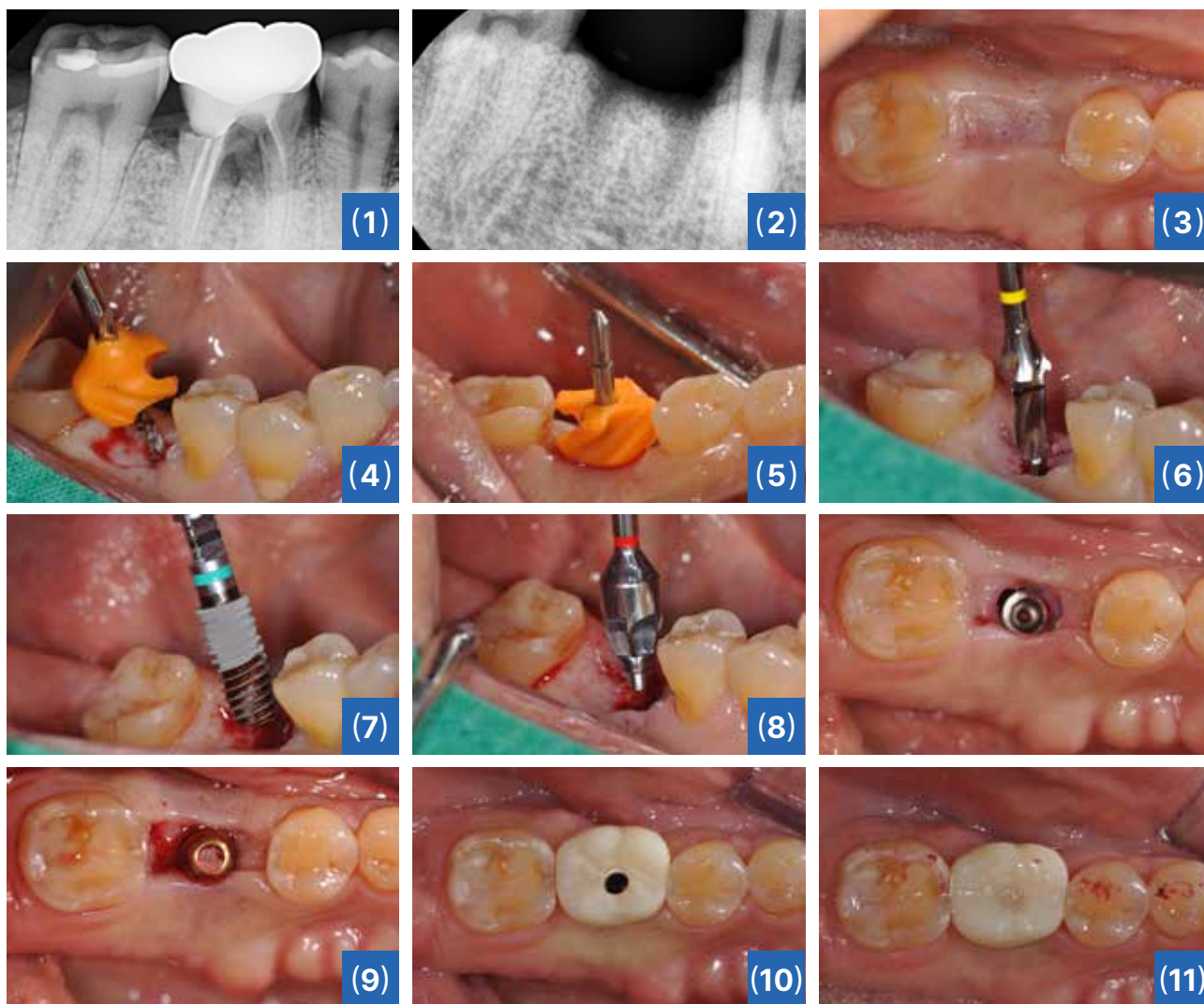


- (6)** Panoramic radiograph after healing abutment connection
- (7)** DeSR abutment connection
- (8)** DeSR H-scanbody connection
- (9)** Final prosthesis delivery
- (10)** Panoramic radiograph immediately after final prosthesis delivery

Case No. 04

[#46] Immediate loading of a single mandibular posterior implant

A root fracture and inflammatory gingival swelling were observed at the mandibular right first molar, and the tooth was extracted. After 1.5 months, bone formation within the extraction socket and soft-tissue closure were confirmed. A UNICON (Ø5.0 × 11.5 mm, VUV) was then placed and immediately restored with a provisional prosthesis.



- (1) Periapical radiograph before extraction of #46
- (2) Periapical radiograph 1.5 months after extraction of #46 (day of surgery)
- (3) Preoperative view
- (4) Multi Initial Drill / Positioning Bell
- (5) Initial Check Pin / Positioning Bell
- (6) Taper Drill

- (7) Placement of UNICON (Ø5.0 × 11.5 mm, VUV)
- (8) Healing Contour
- (9) Cemented Abutment connection (Ø5.5 × 5 mm, C4 mm)
- (10) Provisional prosthesis delivery
- (11) Occlusal adjustment of the provisional prosthesis and screw-access sealing

One month after provisional restoration, healthy peri-prosthetic soft tissue and an ideal emergence profile were observed. Osseointegration of the fixture was also confirmed, allowing fabrication and delivery of the final prosthesis without remaking the provisional restoration. The impression was obtained by directly scanning the Cemented Abutment connected to the fixture.

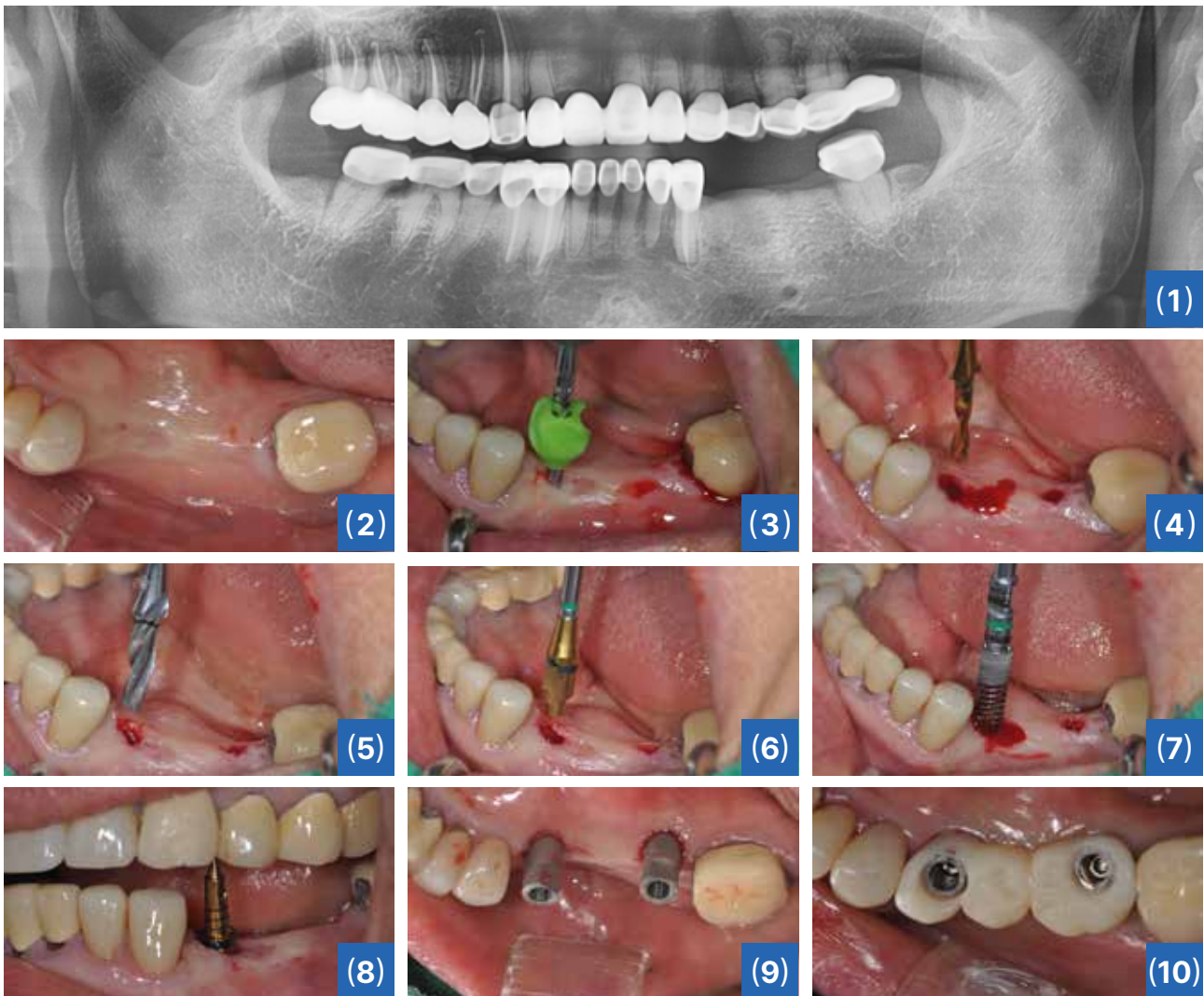


- (12)** Panoramic radiograph 1 month after provisional restoration
- (13)** Shade selection for the final prosthesis
- (14)** Emergence profile developed with the provisional prosthesis
- (15)** Final prosthesis
- (16)** Final prosthesis delivery
- (17)** Periapical and panoramic radiographs immediately after final prosthesis delivery

Case No. 05

[#34, #36] Immediate loading of a mandibular posterior bridge

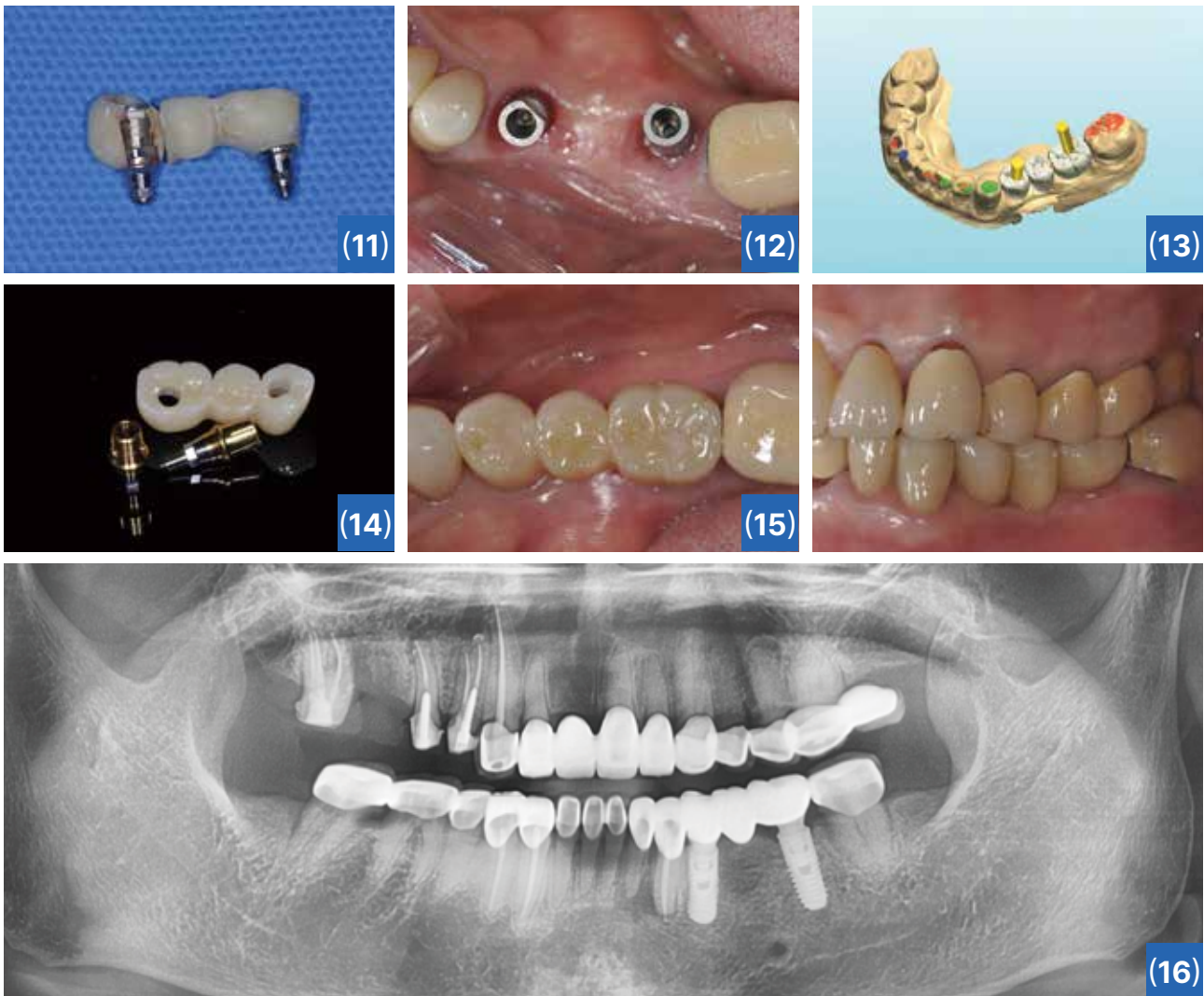
UNICON were placed at the mandibular left first premolar and first molar sites. A digital impression was obtained on the day of surgery, followed by immediate delivery of an SCR-type 3-unit provisional bridge. To reduce occlusal loading, the buccolingual width of the bridge crowns was designed to approximately two-thirds of the natural tooth width.



- (1) Preoperative panoramic radiograph
- (2) Preoperative view
- (3) Multi Initial Drill / Positioning Bell
- (4) Straight Drill
- (5) Taper Drill
- (6) Cortical Drill

- (7) Placement of #34 UNICON (Ø4.0 × 11.5 mm, VUV)
#36 UNICON placement (Ø4.5 × 11.5 mm, VUV)
- (8) Final Check Pin
- (9) Scan Adapter
- (10) Provisional restoration (Temporary Abutment)

At the 1-month follow-up, a fracture was observed on the lingual aspect of the #34 provisional restoration. The temporary bridge was removed, and fixture mobility was assessed to confirm stable osseointegration. A digital impression was then obtained for fabrication of the final prosthesis. The final restoration was fabricated and delivered as an SCRP-type 3-unit bridge using Cemented Abutments (Ø4.5 × 4 mm, C2 mm).

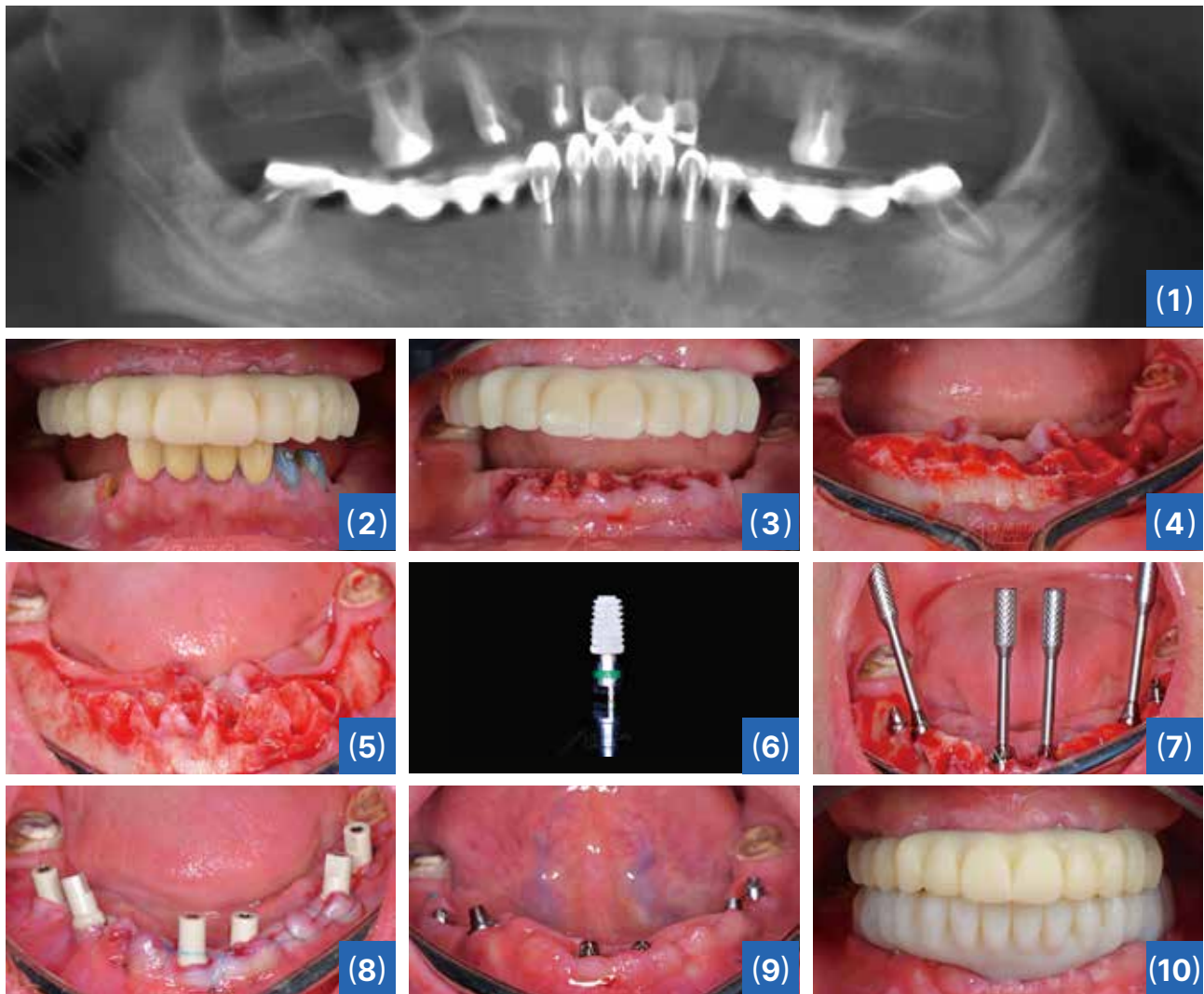


- (11)** Lingual fracture of the #34 provisional restoration (1 month after delivery)
- (12)** Scan Adapter
- (13)** Verification of occlusal contact points for the final prosthesis (in CAD)
- (14)** Final prosthesis
- (15)** Final prosthesis delivery
- (16)** Panoramic radiograph immediately after final prosthesis delivery

Case No. 06

[#36-46] Immediate restoration of an edentulous mandible

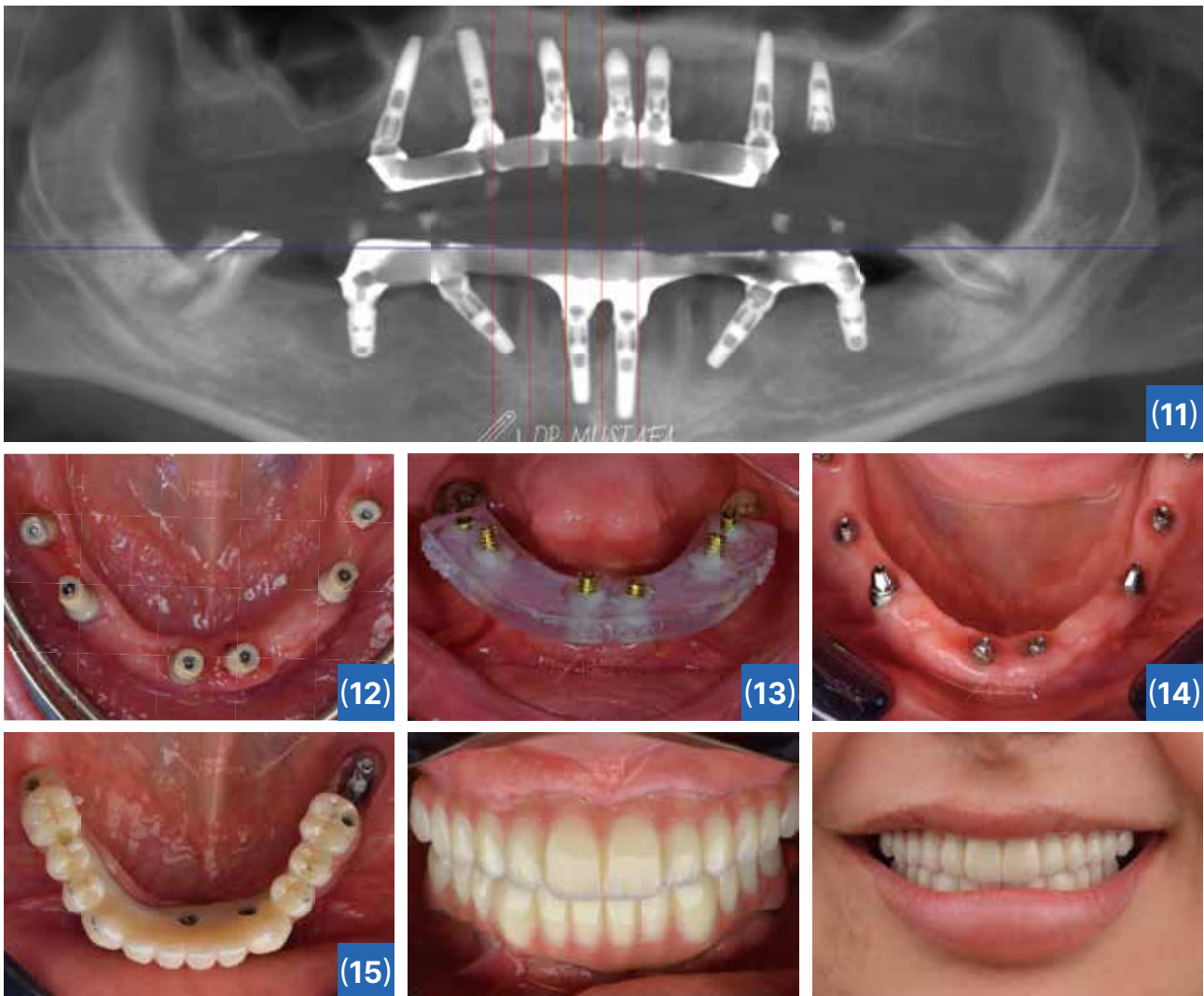
Six UNICON were placed in the edentulous mandible and immediately restored with a full-arch provisional bridge. The provisional bridge was designed for direct connection to the Multi-unit Abutments and fabricated with a PMMA prosthesis bonded to a cobalt-chromium (CoCr) framework. Implant insertion torque ranged from 40 to 60 Ncm.



- (1) Preoperative panoramic radiograph
- (2) Before extraction of the remaining mandibular teeth #34-#43
- (3) After extraction of the remaining mandibular teeth #34-#43
- (4) Flap elevation
- (5) Bone reduction

- (6) UNICON placement
- (7) Multi-unit Abutment connection
- (8) Scan Adapter connection
- (9) Before provisional restoration (3 days after implant placement)
- (10) After provisional restoration

Three months after provisional restoration, an impression was obtained for fabrication of the final prosthesis. A digital impression was used to accurately capture soft-tissue changes during healing, and a Digital Verification Jig was employed to ensure passive fit of the framework. The final prosthesis consisted of a zirconia restoration combined with a CoCr framework and was delivered using a cement-free approach.



- (11)** Follow-up (2 weeks after provisional restoration)
- (12)** Scan Adapter connection (3 months after provisional restoration)
- (13)** Digital Verification Jig connection
- (14)** Before final prosthesis delivery
- (15)** Final prosthesis delivery and occlusal adjustment

DIO Implant **Worldwide**



We infuse our vision and passion for innovation in digital dentistry and dental solutions beyond implants, moving forward from Korea to the global stage.

DIO is recognized as a leading company in digital dentistry not only in Korea but also in over 70 countries worldwide, acknowledged for our exceptional technological prowess and superior quality.

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