

DIOnavi. Brochure Ver.2

Product Introduction: DIOnavi.
Clinical Case Report



Evolved for Precision and Stability

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-
-

Digital Navigation Implant **DIONavi.**

CONTENTS

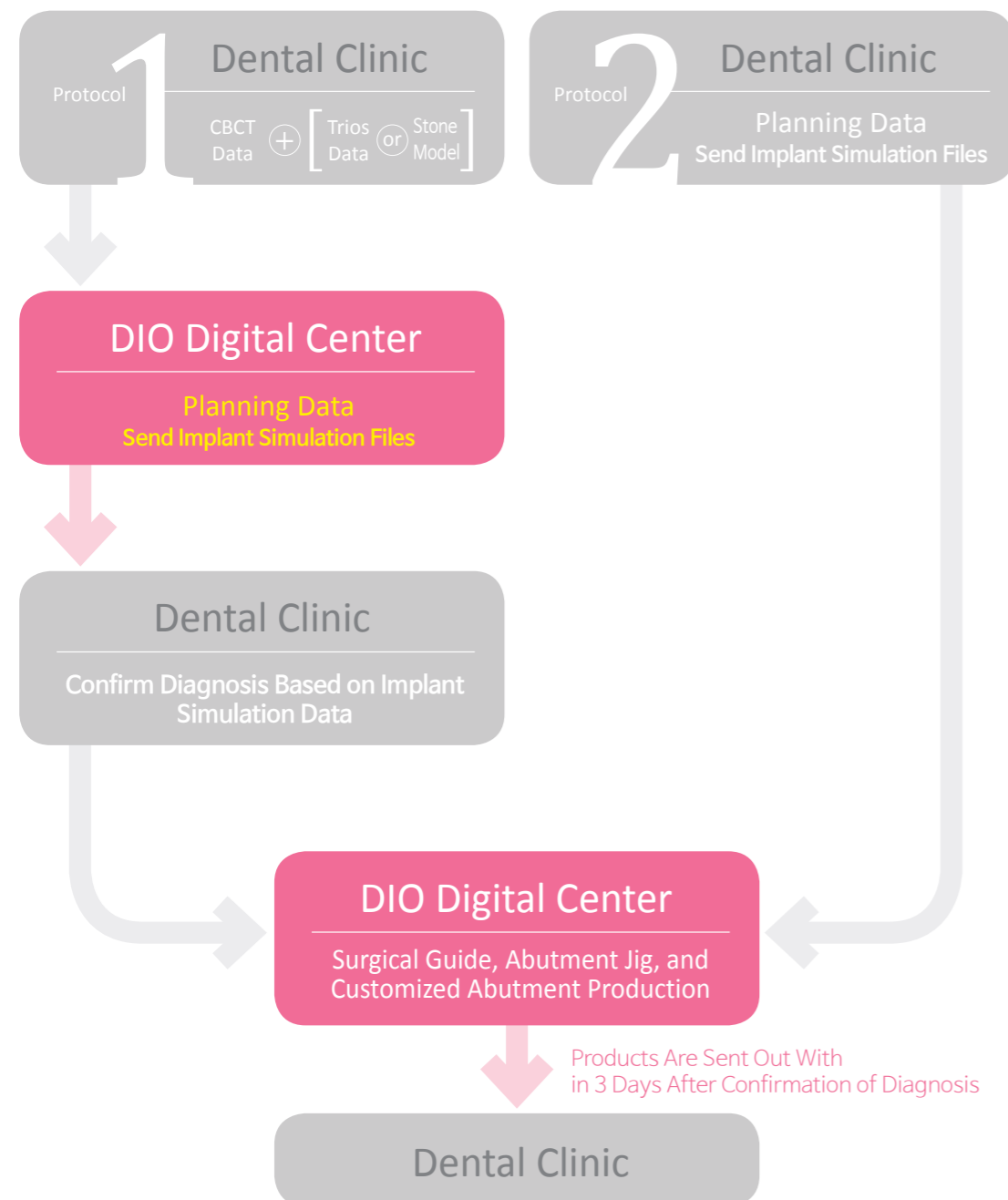
Product Introduction: DIONavi.	Clinical Case Report
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One-Step Protocol

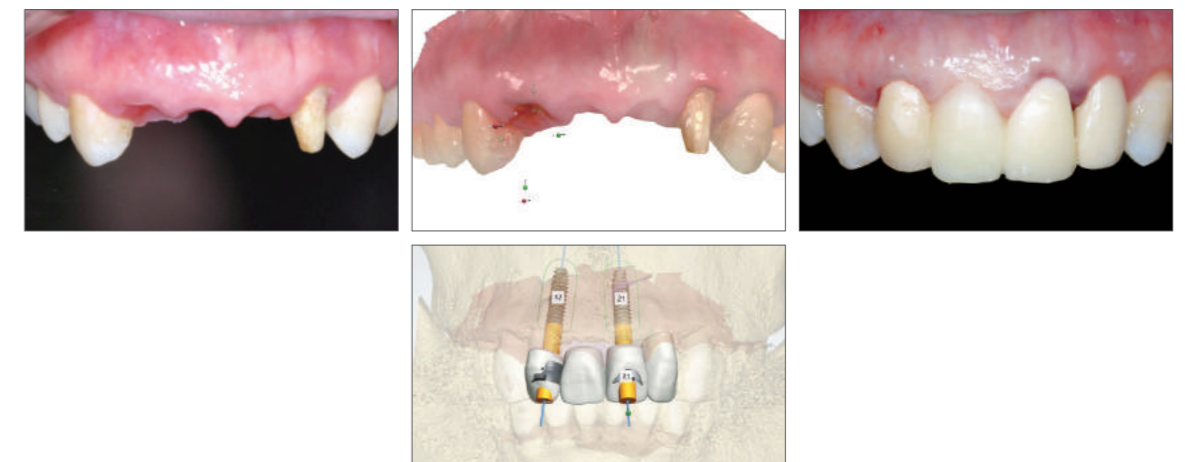
After sending the CBCT and Intr-oral Scan Data, it will take about seven (7) days to fabricate the Surgical Guide using the 3D printer.

※ For edentulous cases that require splint a separate inquiry is required.



DIONavi.System

Digital Navigation Implant System DIONavi., using 100% digital data, provides the optimal process to a successful treatment prior to a scheduled implant surgery. Especially with DIONavi. Surgical Kit, the surgeon can achieve results that exactly match treatment planning with added convenience and high precision. In addition, patients will experience higher than expected level of comfort.



Highest Precision and Stability

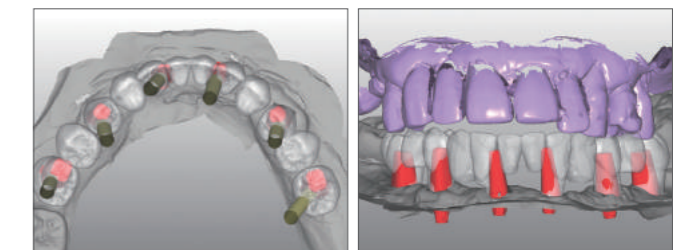
DIONavi offers the ability to consider occlusion and stress distribution during implant planning and increases the accuracy of implant surgery. In addition, high quality patient consultation can be conducted through 3D simulation.

| DIONavi Surgery



Due to accurate pre-designed positioning of the Crown, the Fixture right below can withstand maximum loading conditions.

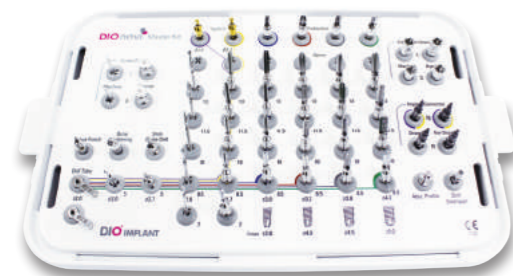
| Traditional Implant Surgery



Due to difficulty in centrally aligning both implant and crown so as to effectively distribute loading, prosthetic fracture and implant failure may arise.

Surgical Instrument

Optimized and perfectly constructed for DIONavi. Flapless Surgery with outstanding cutting performance and acclaimed durability. UPDATE 2015. 12. 01



DIONavi. Master Kit [Code : UF 05]

Dedicated Kit for placing UF(II) Fixtures
Ø3.0 / Ø3.3 / Ø3.8 /
Ø4.0 / Ø4.5 / Ø5.0 under Flapless
Surgery



DIONavi. Narrow Kit [Code : UF 14]

Specialized Kit for placing Narrow Sized UF(II) Fixtures
Ø3.0 / Ø3.3 with enhanced precision under Flapless
Surgery



DIONavi. Sinus Crestal Approach Kit [Code : SMK 02]

Dedicated Kit designed for crestal approach
sinus surgery without an incision



DIONavi. Surgical Guide Fix & Pin Kit [Code : SGF 02]

Kit designed for edentulous and "Free End" cases with
Guide Fix (connects on top of a fixture), Guide Fix Pin
(used after Initial Drilling), and Anchors to fix the Surgical
Guide onto gingiva.

Surgical Instrument DIONavi.Clinical Case



Normal Case

DIONavi. Master Kit [Code : UF 05]

For use with Regular Sleeve and UF(II) Fixture placement; a Kit composed of drills with outstanding cutting performance and durability.



Anterior Region & Narrow Crestal Bone Case

DIONavi. Narrow Kit [Code : UF 14]

For use with Narrow Sleeve and UF(II) Fixture placement; a dedicated Kit to enhance accuracy with outstanding cutting performance and durability.



Sinus Case

DIONavi. Sinus Crestal Approach Kit [Code : SMK 02] / DIONavi. Master Kit [Code : UF 05]

Dedicated Kit designed for crestal approach sinus surgery without an incision.



Edentulous Case


DIONavi. Master Kit [Code : UF 05] / DIONavi. Surgical Guide Fix & Pin [Code : SGF 02]

Kit designed for edentulous and "Free End" cases and includes Guide Fix (connects on top of a fixture) and Guide Fix Pin (used after Initial Drilling).






At the Planned
Location
Perfect Implant
Planning



DIO navi
CLINICAL
C A S E
REPORT

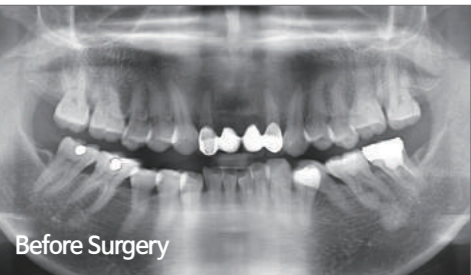


Minimally invasive implant placement using DIOnavi. surgery

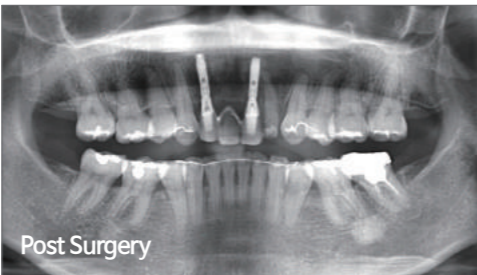
Dr. Kang JaeSeok, Clinical Director at Yedam Dental Clinic

49 year old female with maxillary anterior bridge. Surviving bone is insufficient and implant surgery appears doubtful. For aesthetic reasons planned temporary prosthetics.

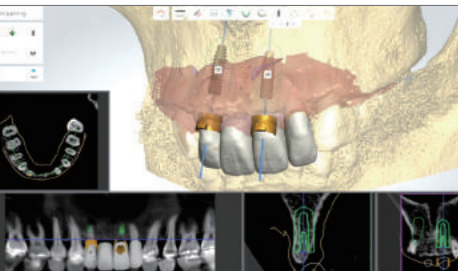
#12 tooth extraction and immediate temporary prosthetics | bone width 4.2mm → UF(II) Narrow Ø3.3 Fixture Placement.
#21 post placement mount temporary prosthetics | bone width 4.5mm → UF(II) Narrow Ø3.3 Fixture Placement.



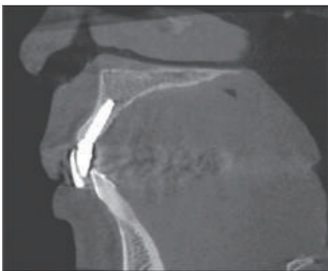
Before Surgery



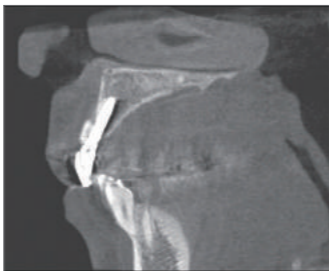
Post Surgery



Implant Planning



#21 bone width 4.5mm
UF(II) HSA Implant Ø3.3×13mm



#12 immediate extraction,
bone width 4.2mm
UF(II) HSA Implant Ø3.3×13mm

DIOnavi. Surgical Procedure



1. Bridge removal and #12 tooth extraction



2-3 Ready captured CBCT data and Trios digital impressions are merged so that Surgical Guide, Abutment Jig and Customized Abutment are pre-designed and pre-made before surgery day.



4. After Surgical Guide is fastened, conduct Bone Flattening Drilling. (Since alveolar bone is narrow, drilling should be done to flatten its surface)



5. UF(II) HSA Implant Ø3.3×13mm placement



6. Customized Abutment connected



Post implant surgery, temporary prosthetics installed on the same day.

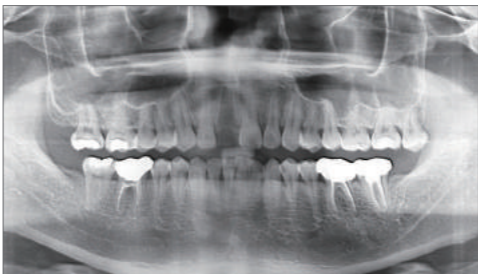


Final Restoration Installed

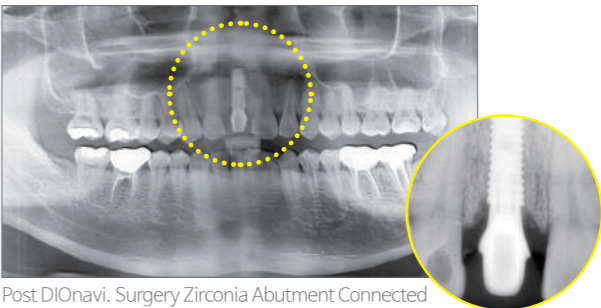
Through Advance Planning Expand the Limits of Implant Surgery at the Maxillary Anterior Region

Dr. Dong DoEun, Clinical Director, Welcome Dental – Mampo Branch

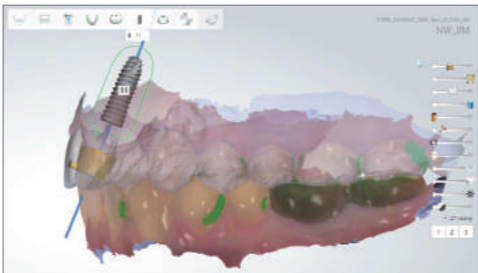
After placement of HF(II) HSA Implant, labially use Bio-Oss for GBR procedure



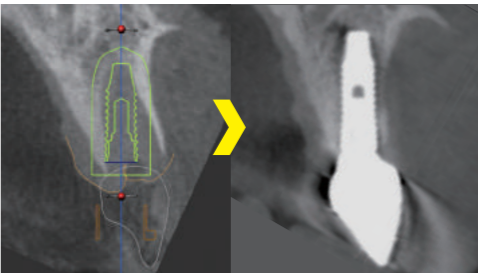
#11 missing tooth



Post DIOnavi. Surgery Zirconia Abutment Connected



Implant Planning



Implant Planning CT-3 months later

DIOnavi. Surgical Procedure



1. Patient came in after tooth extraction



2. Surgical Guide is fastened.



3. Zirconia Abutment Connected



4. Zirconia Abutment Connected (Reverse Angle)



5. Provisional Restoration Installed



6. Provisional Restoration Installed (Reverse Angle)



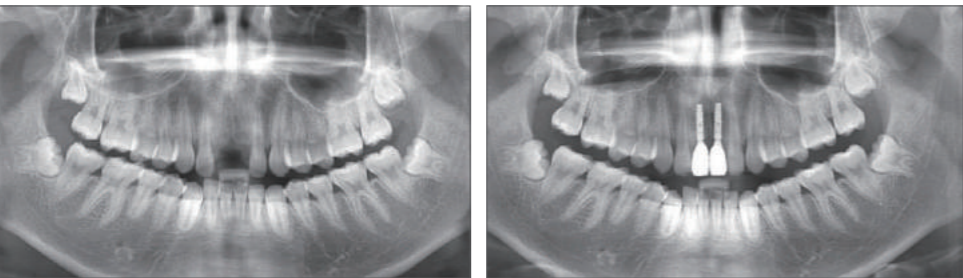
Final Restoration Installed - 3 months later

Esthetic Zone Implant Restorations of Maxillary Incisors Using CBCT– Surgical Guide

Choi SungOk, Clinical Director, Apple Tree Dental Hospital

17 year old, male / Under went clinical procedure for esthetic implant restoration. This is the restoration of lost maxillary central incisors as well as production of aesthetically shaped prosthetics.

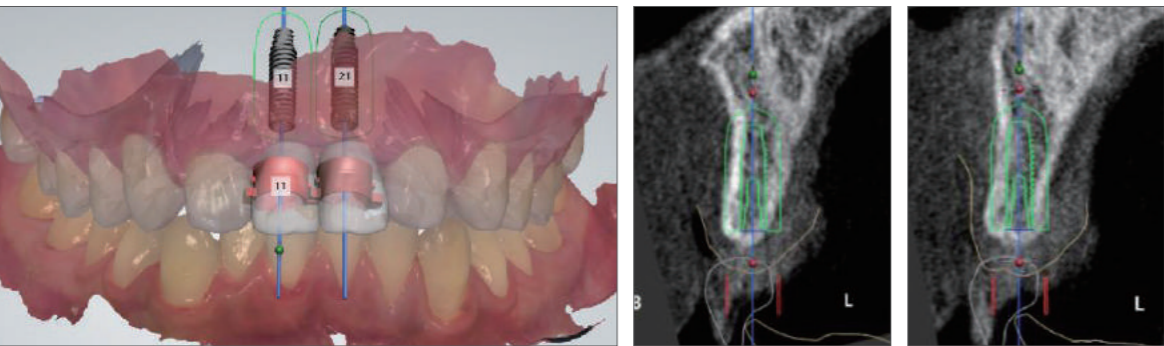
Implant Restoration treatment for the narrow maxillary central incisor is a high difficulty level surgery. During which CBCT Data and Intra-oral scan are used to produce precise Surgical Guide to be used to conduct accurate and safe surgery and to restore aesthetic prosthetics.



Initial visitation oral scan image

Final restoration fastened panorama

Planning



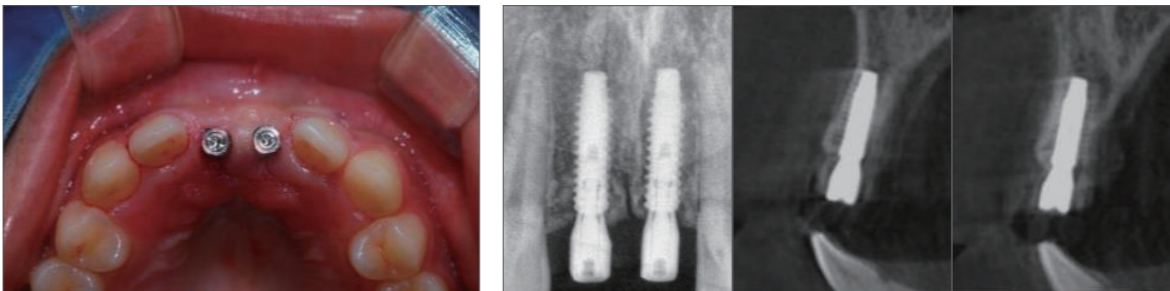
DIONavi. Surgical Procedure



Surgical Guide fastened

Drilling

Fixture Placement



After connecting H-Scan Body, Temporary Crown is manufactured. After implant placement, panorama and CBCT images.



One week after implant placement, temporary prosthetics installed.



Before mounting final prosthetics.



Oral image after mounting final prosthetics.

Prior to implant placement and using surgical simulation, outcomes can be predicted and thus the system has many advantages for use on maxillary anterior surgery that has many esthetic requirements. As compared to solely relying on the surgeon's experience, a surgical procedure that can easily provide to anyone the ability to place implants at desired location and allows to make a prosthesis at optimal positions will provide better results.

Minimally Invasive Tooth Extraction Accompanied By Bone Graft and Immediate Implant Placement

Dr. Lee Hyang Yeon, Clinical Director Michigan Dental Clinic

Age 75 woman / Maxillary #23, 24, 26, 27 – 5 unit bridge state. Patient was aware of #23 and #24 needing extraction and removal of bridge but was worried about lack of bridge and teeth during the healing duration and delayed surgery.

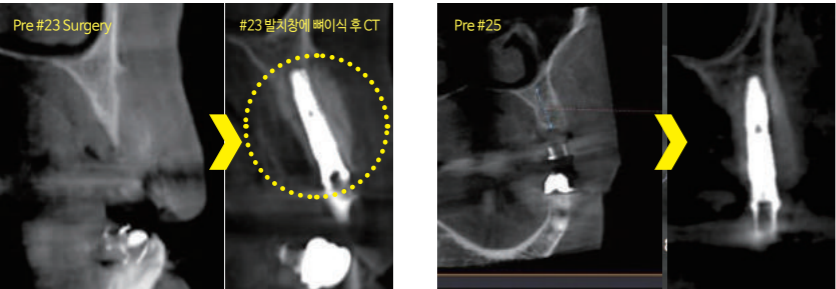
- After extraction of #23, immediate placement of UF(II) HSA Implant ϕ 4.0X13mm and bone graft
- #25 UF(II) HSA Implant ϕ 4.0X13mm.



Initial Examination Panorama

Post Extraction #23, 24 Panorama

Post DIONavi. Surgery Panorama



Pre and Post #23 Surgery CBCT Image
(Post bone graft at extraction socket implant placement)

Pre and Post #24 Surgery CBCT image

DIONavi. Surgical Procedure



1. Surgical Guide Fastened and Removal of Soft Tissue with Tissue Punch

2. After Mounting Healing Abutment at #23, Extraction Socket Bone Graft

3. Customized Abutment & Abutment Jig setting



Abutment Jig setting

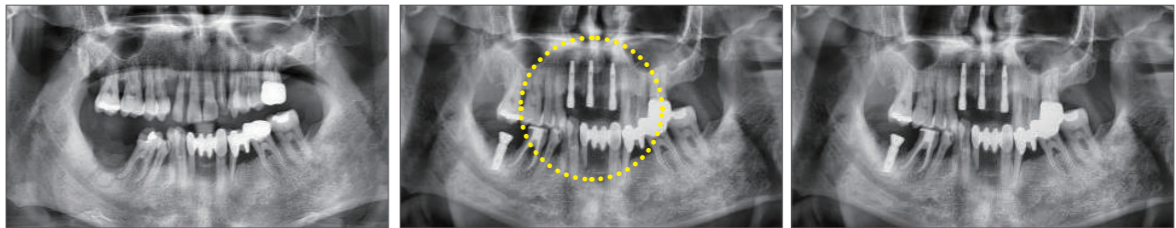
Abutment Jig One Week After Surgery

Anterior Region Tooth Extraction And Implant Placement With Consideration For Final Prosthetics

Dr. Lee Dong Ho, Clinical Director Allright Dental Clinic

Age 65 male / After tooth extraction, prevent sharp slippage during drilling through a Surgical Guide. In case of adjacent teeth used for guide anchorage has movement, use as a supplements Surgical Guide Fix Pin and Surgical Guide Fix used for edentulous cases.

- Surgical area #22, #13, #11 Complains of unsatisfactory aesthetics and movement of teeth in the anterior region due to usual periodontitis.
- Extraction of #12~#22; Implant Placement at #11, #13, #22 and Immediate Temporization



Initial Examination Panorama

Post Surgery Panorama

Panorama After 3 Months



Pre Surgical Condition: Movement of Teeth in Anterior Maxillary Region Due to Periodontitis.



Surgical Procedures

Mobility of adjacent teeth, which may affect guide fixation, can be overcome by initial drilling on healed ridge #13 followed by guide fix pin to secure the surgical guide in position.



3 Months After Temporary Crown



6 Months After Oral Image



Sinus Lift Surgery Using CBCT Surgical Guide and Water Pressure

Choi Sung Ouk, Clinical Director Apple Tree Dental Clinic

Age 28 female / Loss of maxillary teeth #25-27 condition. Patient had insufficient amount of bone in the maxillary posterior. Used Digital Guided Surgery (DIONavi.) and Flapless Crestal Approach Sinus Elevation technique using water pressure to easily and quickly placed implants. Relative to Open Lateral Window Approach, this procedure was applied to reduce postoperative complications.

- After fastening surgical guide, implant was placed in #25
- Conducted #26, #27 flapless crestal approach sinus elevation and #28 was extracted for maintenance.



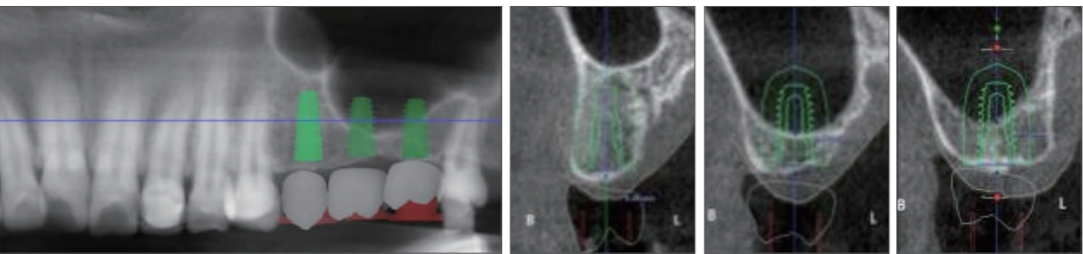
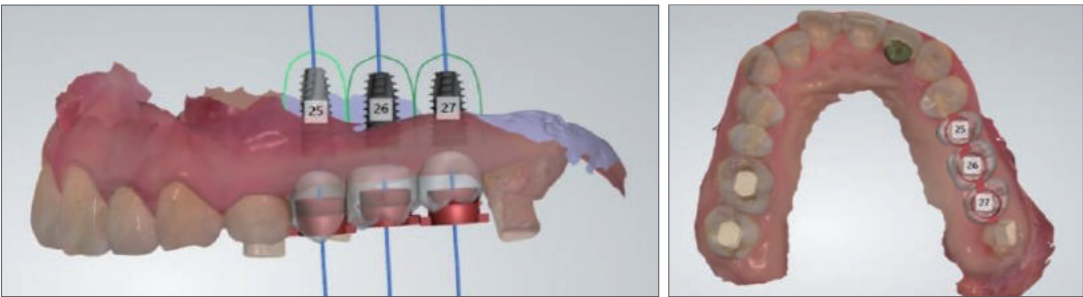
Initial Examination Panorama

Post Surgery Panorama

Post Final Prosthetics Mounting Panorama

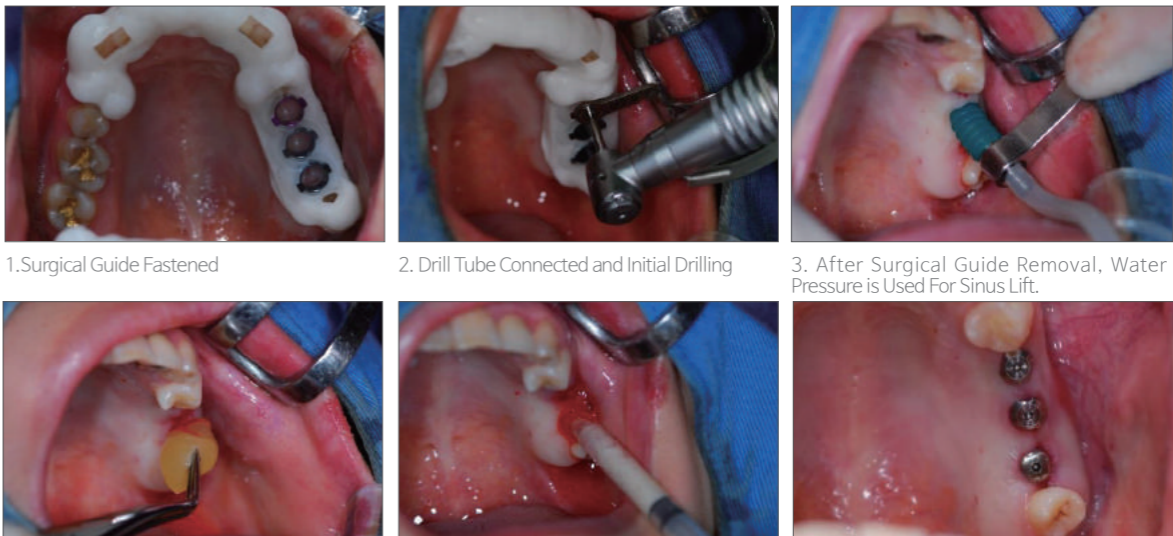


Initial Examination Oral Image



Planning

DIONavi. Surgical Procedure



1.Surgical Guide Fastened

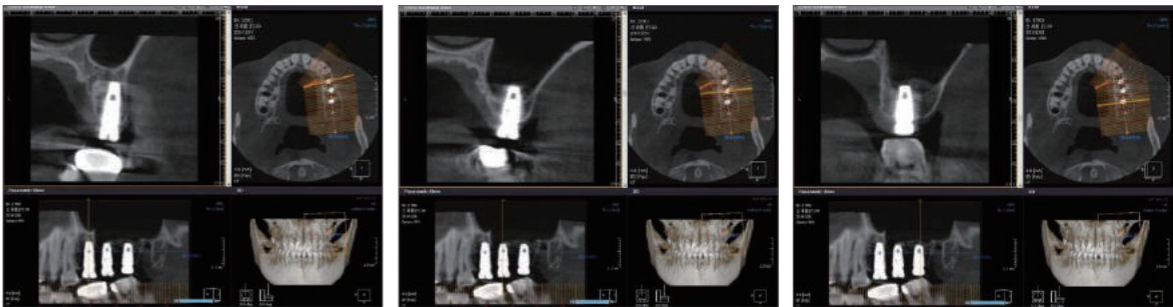
2. Drill Tube Connected and Initial Drilling

3. After Surgical Guide Removal, Water Pressure is Used For Sinus Lift.

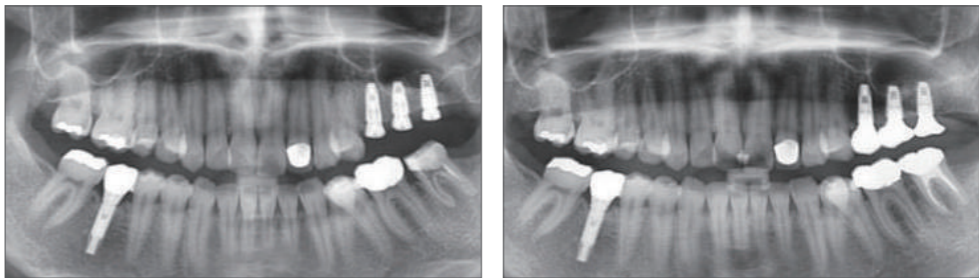
4. PRF

5. Injection of Artificial Bone Material with Syringe

6. H Scanbody and Healing Abutment Connected



Post Surgical CT



Post Surgical Panorama

Panorama after mounting final prosthetics.



Post Final Prosthetics Mounting Oral Image

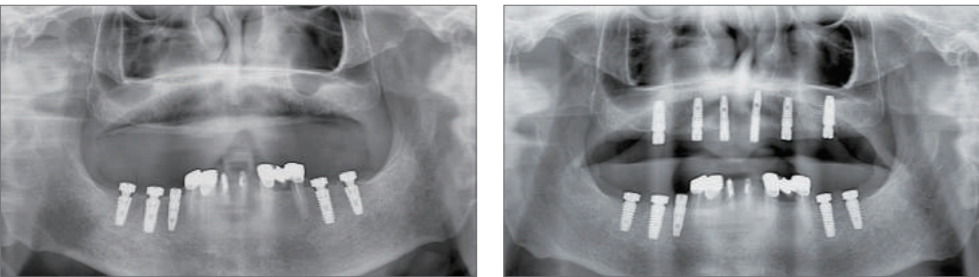
Crestal approach sinus lift done using DIONavi and water pressure offers the benefit of simple surgical procedure, and stability.

Maxillary Sinus Lift Accompanied by Maxillary Edentulous Implant Placement

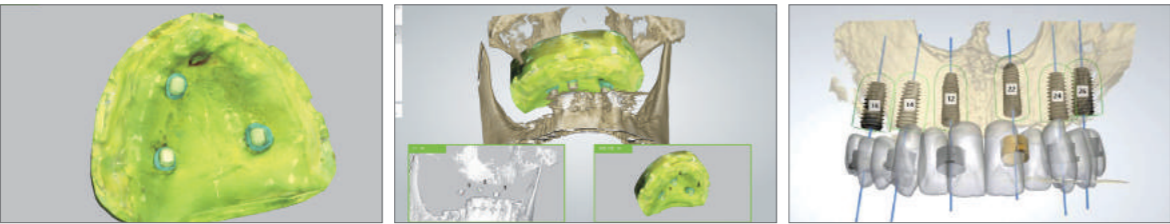
Dr. Sohn Hyun Rak, Clinical Director Welcome Dental Clinic, Busan Station Branch

Age 66 Male / Existing Complete Maxillary Denture Condition
Dentures used for more than 10 years. Due to the resorption of the anterior labial bone, at the time of repair of prosthetics and related soft tissue management, there may rise aesthetic issues. Planned to place six implants and use Over Denture that does not cover the palate.

- # 16, 26 UF (II) $\phi 5.0 \times 10.0$ mm Fixture placement, #26 sinus elevation performed
- # 14, 24 UF (II) $\phi 4.5 \times 10.0$ mm Fixture / # 12, 22 UF (II) $\phi 3.8 \times 11.5$ mm Fixture

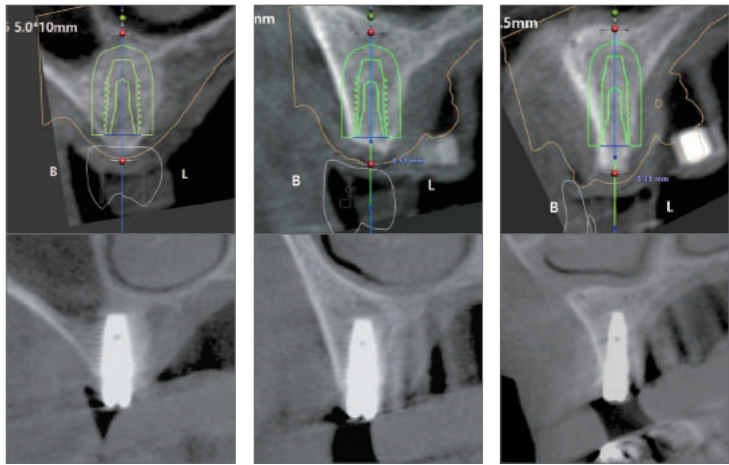
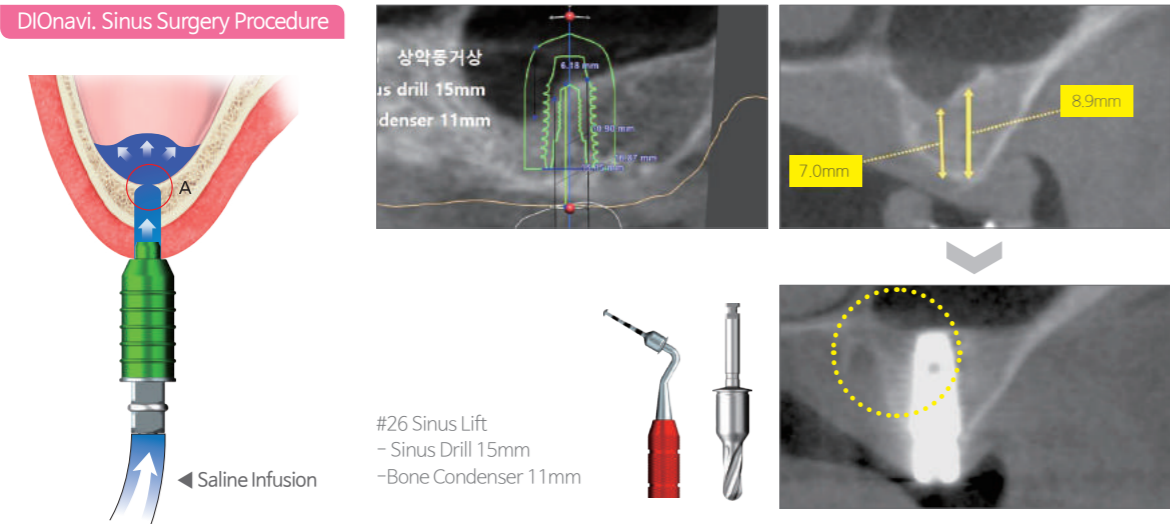


Initial Examination Panorama Post DIONavi. Surgery Healing Abutment Connected

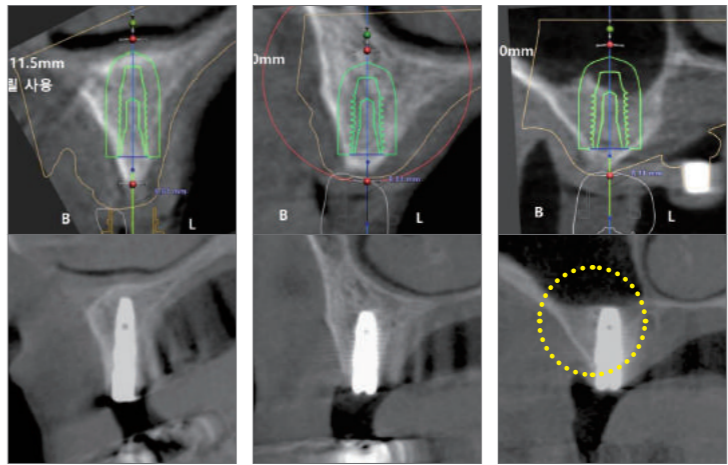


Template With Attached Markers and Stone Model Scanning Merge Oral Scan Data and CBCT Data Planning (Implant Studio- 3Shape)

DIONavi. Sinus Surgery Procedure



#16 UF(II) HSA $\phi 5.0 \times 10.0$ mm #14 UF(II) HSA $\phi 4.5 \times 10.0$ mm #12 UF(II) HSA $\phi 3.8 \times 11.5$ mm



#22 UF(II) HSA $\phi 3.8 \times 11.5$ mm #24 UF(II) HSA $\phi 4.5 \times 10.0$ mm #26 UF(II) HSA $\phi 5.0 \times 10.0$ mm



Healing Abutment Connected

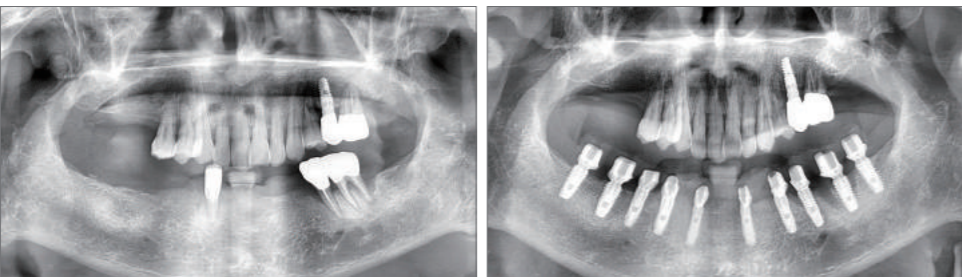


Final Prosthetics Mounted

Edentulous and Tooth Extraction With Consideration For Proper Occlusion of Final Prosthetics

Chung Dong Gun, Hospital Director SaeGaeRo Dental Hospital

Long-term use denture; #34 #35 has tooth mobility due to occurrence of periodontal disease and mandibular bone resorption.
- After extraction of #42, #34, & #35, placed implants at #32, #34, #35, #36, #37 / #42, #44, #45, #46, #47
→ immediate temporization.

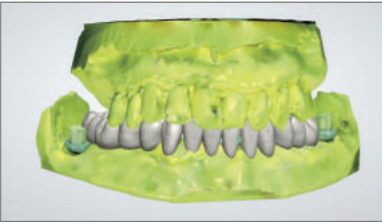


Pre Extraction #34, #35, #42

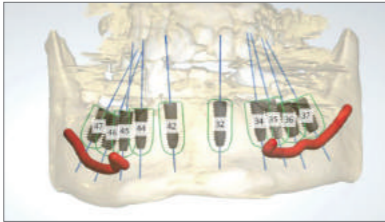
Customized Abutment Connected



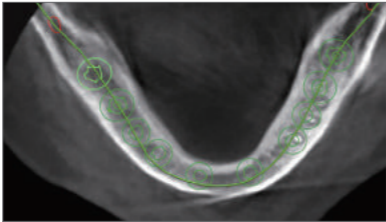
Before Surgery



Occlusion Considered Crown Arrangement Design

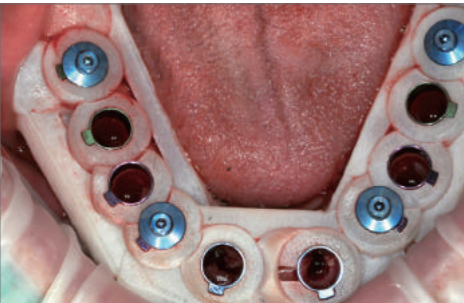


Implant Planning-1



Implant Planning-2

DIONavi. Surgical Procedure

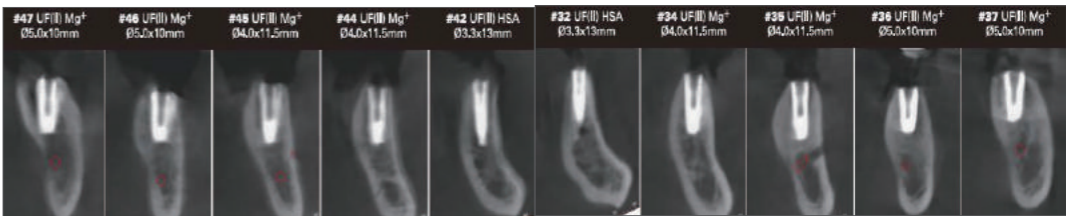


Custom Abutment Connected

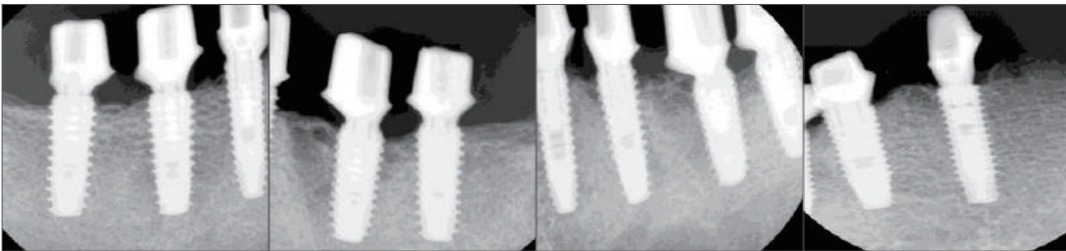


Abutment Jig Attached on Day of Surgery

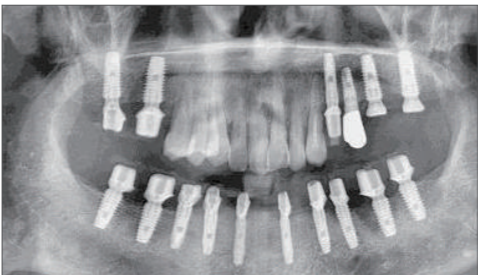
Surgical Guide is fastened to edentulous oral cavity and to improve stability, Guide Fix is connected after implant placement.



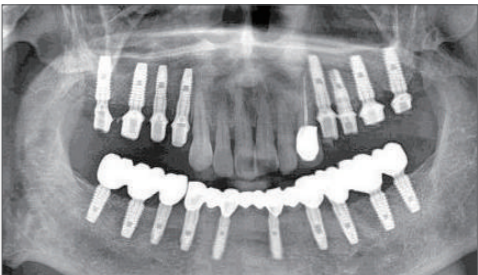
Post Surgery CBCT Images



8 Months Lapse Panorama



Post Surgery 6 Months Panorama



Post Surgery 12 Months Panorama



Post Surgery Temporary Crown



Post Surgery 12 Months

Edentulous Case Guide Fix and Initial Drilling Accuracy Check

Fix Pin can be used to not only to fix the position of the Surgical Guide but also to check the accuracy of Initial Drilling. The initial drilling path may not be accurate if the bottom of fix pin and the guide do not make secure connection. By readjusting and correcting the initial drilling, accurate surgical outcome may be achieved.
As in this case, at the anterior (#31 or #41) and at posterior (#36, #46) positions, after conducting Initial Drilling, properly fasten Fix Pin ("tripodism") and then at the Premolar (#34, #44), molar (#36, #46) conduct implant placements first and then fasten Guide Fix to the Fixtures. Conducting these steps will produce more precise surgery.

DIONavi. Clinical Review

Dr. Lee Hyang Reon, Clinical Director

Michigan Dental Clinic

Minimally invasive (flapless) extraction accompanied by immediate implant placement and bone graft.

The discussion for immediate implant placement after tooth extraction still appears to be in progress. The most problematic area for immediate implant placement after tooth extraction procedure is drill slippage. Unlike other guides, using DIONavi Surgical Guide removes the risk of slippage and is very helpful in placing implants accurately at the desired location. In addition, Flapless Surgery which minimizes trauma inflicted on the patient is an advantage.

Dr. Dong Do Gun, Clinical Director

Welcome Dental Clinic

Overcoming the obstacles of the anterior maxilla implant placement through pre-planning.

The biggest advantage of DIONavi is the "Power of diagnosis". Biggest concern for an implant procedure is the difficulty of knowing the the best fixture direction, depth and length during the surgery. However after introducing DIONavi, sufficient planning and analysis can be done in advance of implant surgery and including bone graft and connective tissue graft. Especially in the anterior maxilla, for many cases there is difficulty in maintaining a safe and secure path through access hole to Buccal Bone and Cingulum. However, by using DIONavi and following the existing treatment plan, surgery can be done accurately and obstacles overcome.

Dr. Kim Sang Ha, Clinical Director

e-Wellness Dental Clinic

Stable Implant Placement in the Edentulous Case Using DIONavi Surgical Guide System

Major concerns in edentulous cases are how to fix the surgical guide and while using the flapless technique, how to overcome sharp adjustments that may occur. To solve this issue, Surgical Guide Fix and Fix Pin were used to fix the Guide for stable implant placement. As for Flapless Technique, the trimming of the bone plane is not an easy task. However, with DIONavi, use of the Bone Flattening Drill allows for flattening the drilling area for accurate subsequent drilling without risk of slippage. This advantage of DIONavi offers high satisfaction to the surgeon. Also in general for cases where mental foramen is positioned relatively forward, traditional implant procedures can be difficult. However, with DIONavi implants can be precisely placed at the desired site following a pre-designed treatment plan that removes the patient's biggest anatomical risk factors and also gives the surgeon the peace of mind.


Dr. Choi SungOk, Clinical Director

Apple Tree Dental Hospital

Sinus Lift Surgery Using DIONavi and Water Pressure

DIONavi surgery, as opposed to conventional implant surgery, has no incision and closure process thus, surgical procedure is short and results in very high patient satisfaction. In particular, sinus elevation procedure can be simple and reliable through the Crestal Approach Technique using water pressure. Specifically, depth control from Sinus Drill Stopper and the rounded shape of the Sinus Drill end minimizes damage to the sinus membrane. For cases requiring Lateral Approach Technique, to minimize patient's discomfort and faster healing, DIONavi is used for sinus elevation.

DIO Implant Online Community

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 www.youtube.com/DIOHQ

DIONavi. Brochure ver2. DIO Marketing Team(Designed by hjchoi) 2016. 06

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