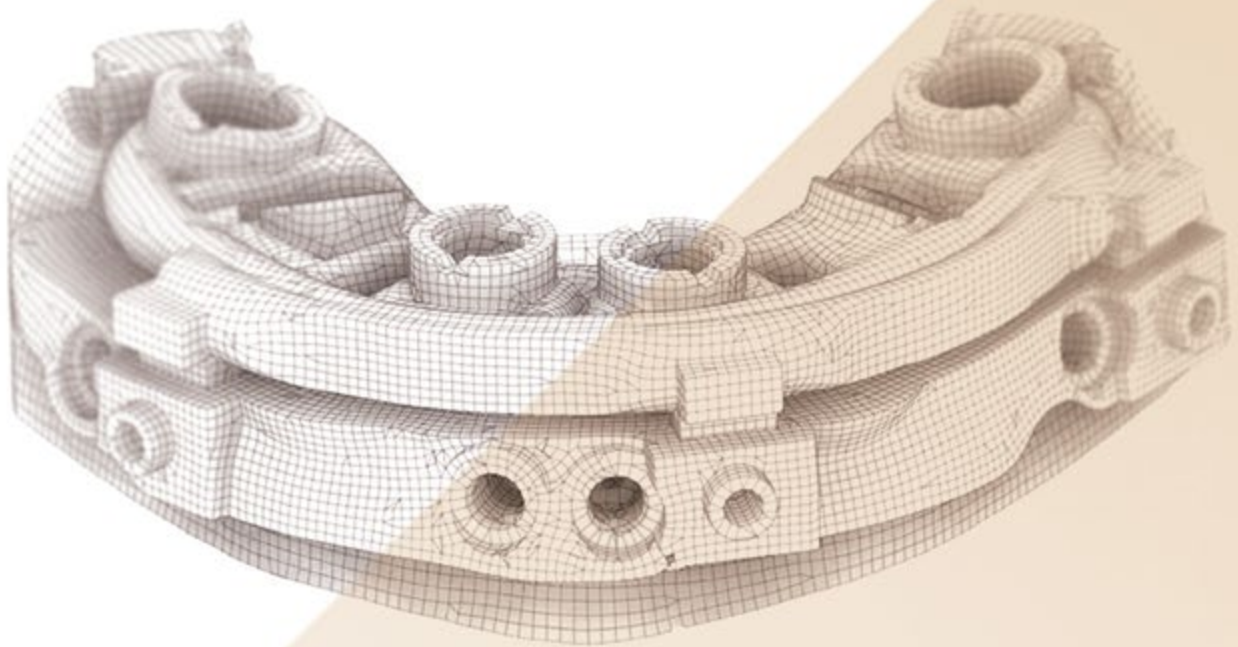


**FROM
TERMINAL DENTITION
TO
REHABILITATED FULL MOUTH**

DIGITALLY-GUIDED DUAL ARCH SURGERY



**CASE REPORT BY
DR. AHMED TAREK**

A Case Report by DR. AHMED TAREK

Solutions Featured:

- 3Sixty Anatomic Guide™
- Atomica Implant Planning Software
- 3Sixty Treatment Planning Services



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A 53-year-old male patient with an unremarkable health history presented to the clinic. The patient had terminal dentition due to most of the remaining teeth being periodontally compromised, showing signs of attrition, carious lesions, calculus formation, gingival recession and in some cases mobility. The upper arch was partially edentulous (Kennedy Class I: bilateral free-ended saddle). Although the patient was fully dentate in the lower arch, most of the teeth had very poor prognosis; especially 24 which showed Class III mobility (Miller Classification).



The treatment aimed to rehabilitate the patient's upper and lower arches with All-on-6 fixed complete screw-retained hybrid denture. All teeth were to be extracted followed by the immediate placement of 6 implants in the maxilla and 6 in the mandible to provide support for the final restoration. The patient was found to have sufficient bone to allow for the use of the Anatomic Guide™ treatment protocol.

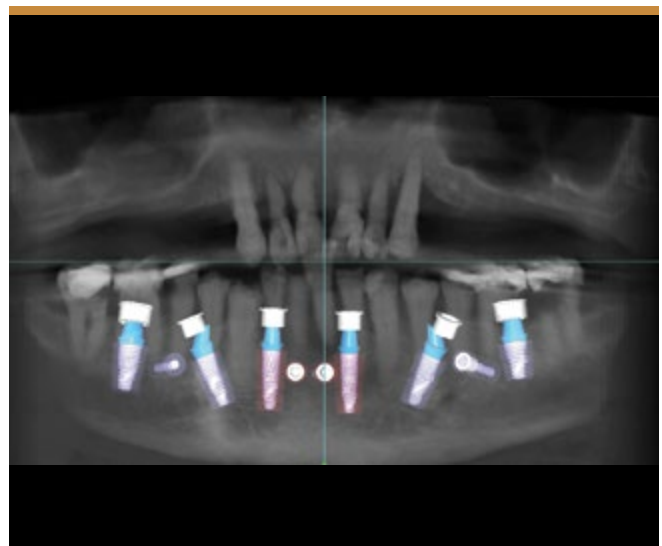
The CBCT scan image was exported and the working area was identified, highlighting the bone volumes to work with. The digital impression was superimposed using radiological reference points.

By analyzing every radiographic segment of the maxillary and mandibular bone, the implants' position, type, diameter, and length were selected. Similarly, the proper height of the 6 abutments was determined. To place the Anatomic Guide™, three 13 mm fixation screws were virtually planned in the upper arch, and 4 in the lower. Special care was given to avoid any interference between their positions and those of the implant fixtures.

Treatment Planning For Maxilla



Treatment Planning For Mandible



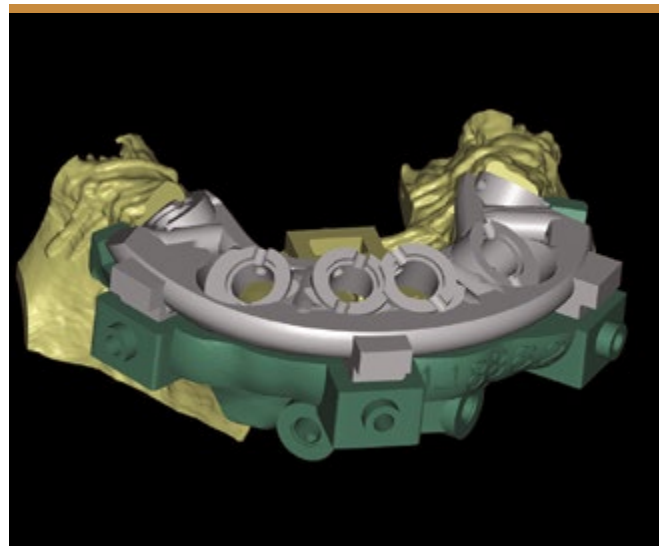
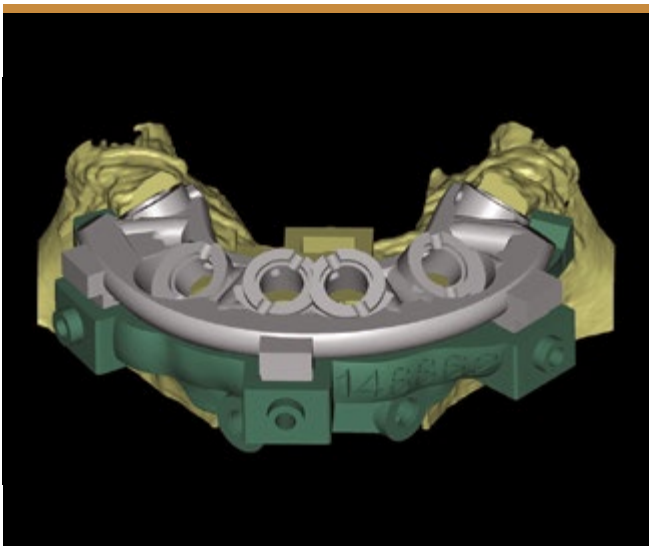
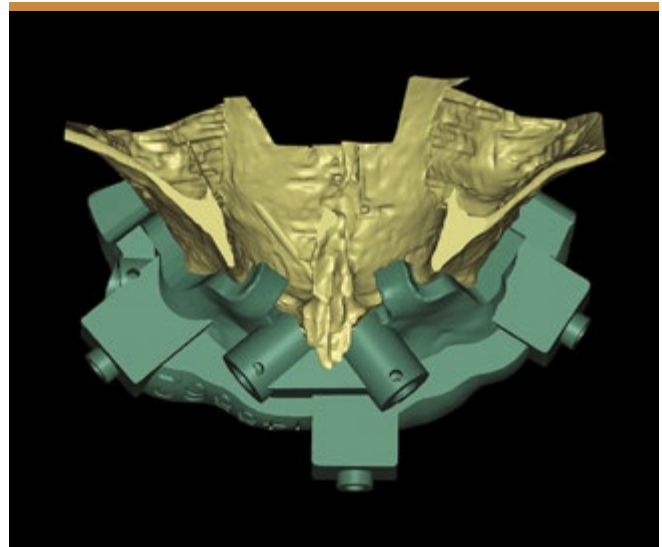
Drill Protocol

3Sixty Drill Protocol was then generated outlining the diameter and length of each Neodent GM Helix Implant, the length, and offset of each sleeve, as well as drill tool height, total drill depth, and which drill to use.

3Sixty Anatomic Guide™ Drill Protocol:

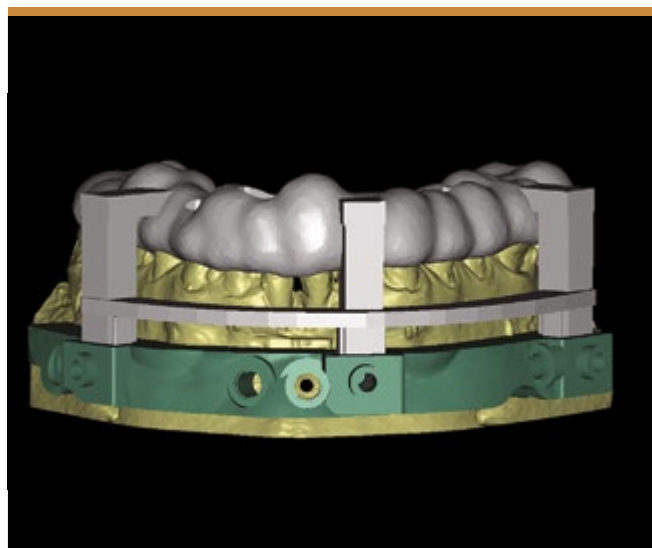
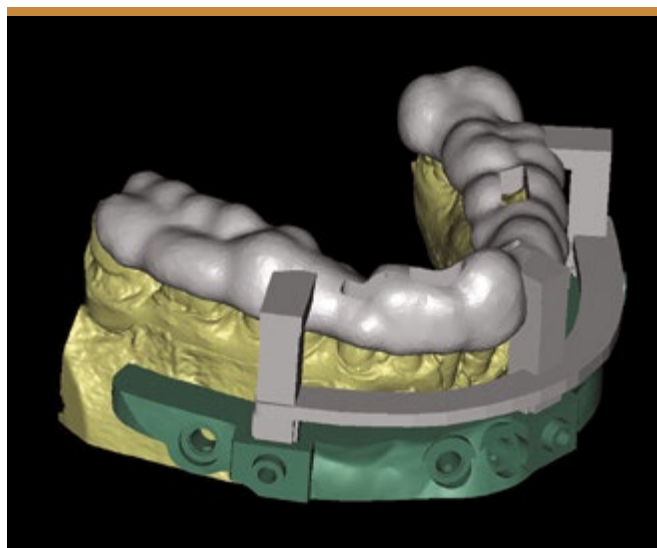
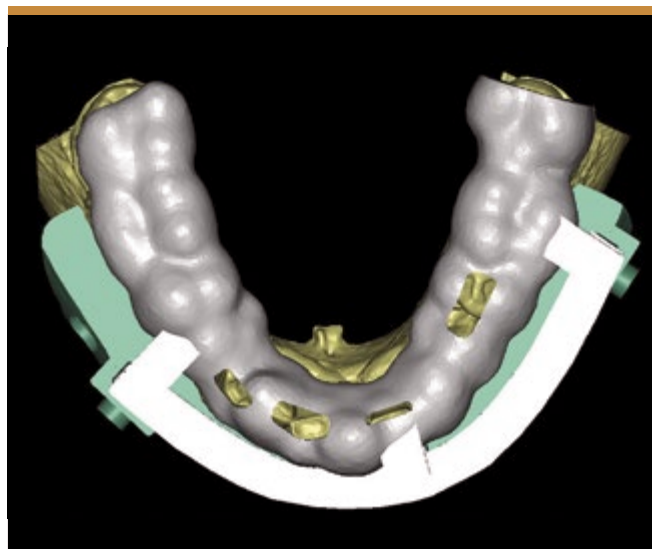
Implant Manufacturer	Neodent	Neodent	Neodent	Neodent	Neodent	Neodent	Neodent	Neodent	Neodent	Neodent
Implant Product Line	GM HELIX IMPLANT	GM HELIX ACQUA IMPLANT	GM HELIX ACQUA IMPLANT	GM HELIX ACQUA IMPLANT	GM HELIX ACQUA IMPLANT	GM HELIX ACQUA IMPLANT	GM HELIX ACQUA IMPLANT	GM HELIX ACQUA IMPLANT	GM HELIX ACQUA IMPLANT	GM HELIX ACQUA IMPLANT
Implant Product Number	109.950	140.983	140.983	140.983	140.983	109.950	140.953	109.950	140.985	140.985
Implant Diameter	4.3	4	4	4	4	4.3	5	4.3	4	4
Implant Length	11.5	10	10	10	10	11.5	8	11.5	13	13
Sleeve Name	Neodent Regular (GM)	Neodent Regular (GM)	Neodent Regular (GM)	Neodent Regular (GM)	Neodent Regular (GM)	Neodent Regular (GM)	Neodent Wide	Neodent Regular (GM)	Neodent Regular (GM)	Neodent Regular (GM)
Sleeve Length (mm)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Sleeve Offset (mm)	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Tool Height	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Total Drill Depth	22.50	21.00	21.00	21.00	21.00	22.50	19.00	22.50	24.00	24.00
Drill To Use	11.5	10	10	10	10	11.5	8	11.5	13	13
HU Inside	382 HU	633 HU	697 HU	926 HU	807 HU	753 HU	618 HU	1155 HU	988 HU	864 HU
HU Around	563 HU	670 HU	874 HU	968 HU	830 HU	832 HU	652 HU	1127 HU	972 HU	940 HU
Driver/Implant Holder	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
Drill Depth Control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Implant Placement Control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Anatomic Guide™ Design



Upper Anatomic Guide™ with bone support from the anterior nasal spine

Anatomic Guide™ Design



Lower Anatomic Guide™ with tooth-borne Vertical Mount

The accurate seating of the Anatomic Guide™ is facilitated by the Vertical Mount which is placed on top of the remaining teeth provided that they are stable enough (i.e. immobile). Tooth position is the most accurate method to guide the placement of the Anatomic Guide™.

In this case, this could not be achieved in the maxilla due to excessive tooth mobility, so nasal spine-supported Anatomic Guide™ design was chosen to ensure accurate seating. In the mandible, tooth #24 was scheduled for extraction prior to the placement of the Vertical Mount since it showed signs of buccolingual mobility. Tooth-supported lower Anatomic Guide™ design was used for the lower arch.

A single full-thickness facial flap is required to expose the outer cortical plate of bone where the Anatomic Guide™ should be seated. After soft tissue is retracted and once the Anatomic Guide™ is in position, a few intraosseous holes are drilled into the bone to help secure it in place by means of titanium screws. According to the digital treatment plan, three fixation holes were required in the maxilla and four in the mandible.

After the Anatomic Guide™ was screwed into the bone, the Vertical Mount was removed and the remaining teeth were extracted. Then bone reduction was carried out following the contour of the Anatomic Guide™ to ensure an ideal restorative space. Once the implantation site was adequately prepared, the Placement Guide was attached to the Anatomic Guide™ using metal pins.

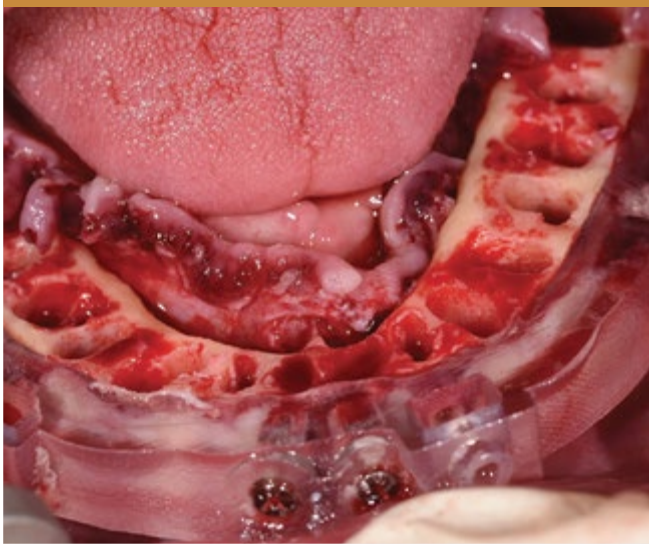
Guided by the Placement Guide and digital treatment plan report, 3Sixty Drill Protocol for Neodent GM Helix implants was followed and a total of 12 implants were placed; 6 in the maxilla and 6 in the mandible. The Placement Guide was then removed and multi-unit abutments were screwed in place.



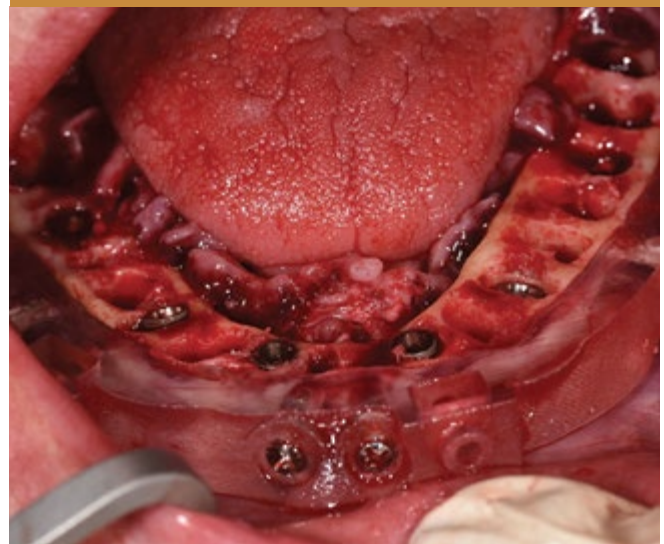
Anatomic Guide™ with tooth-borne Vertical Mount



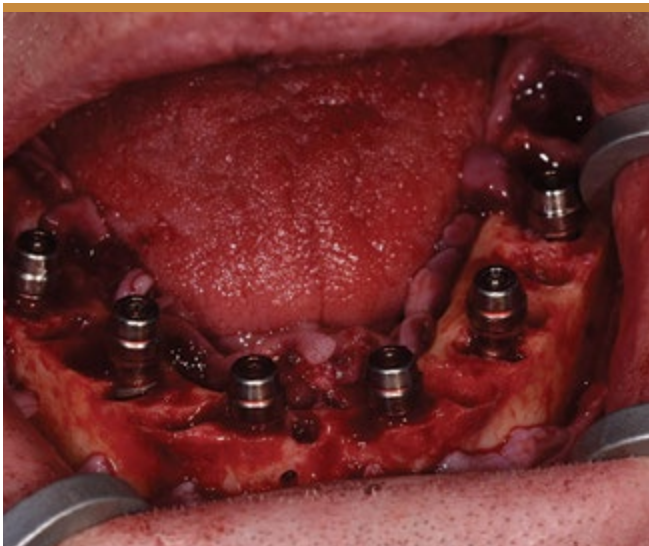
Lower Anatomic Guide™ seated



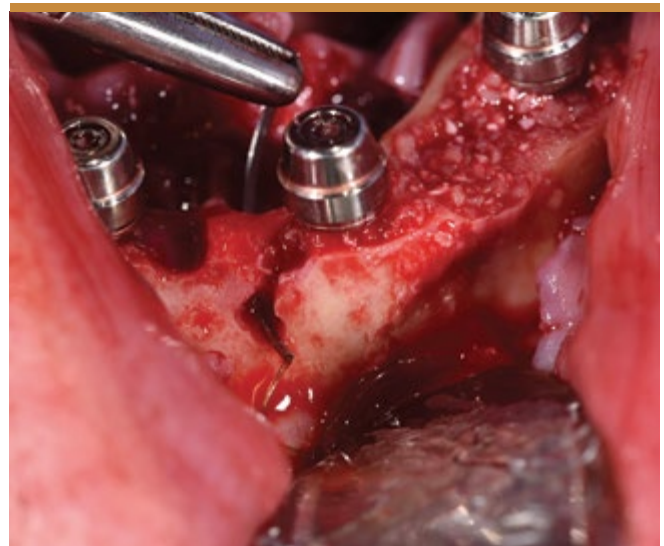
Precise osteotomy by the Anatomic Guide™



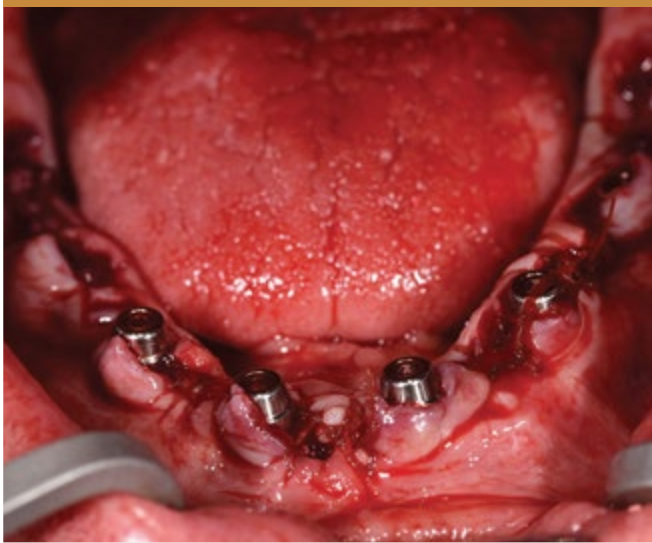
6 Implant fixtures placed in the mandible



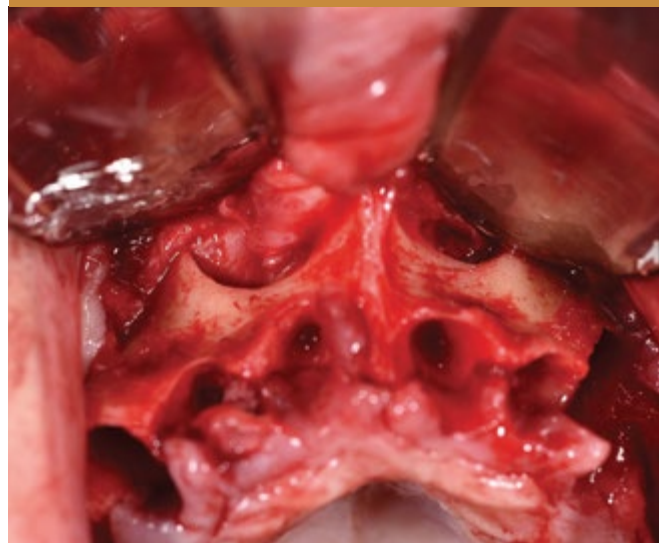
Multi-unit abutments attached



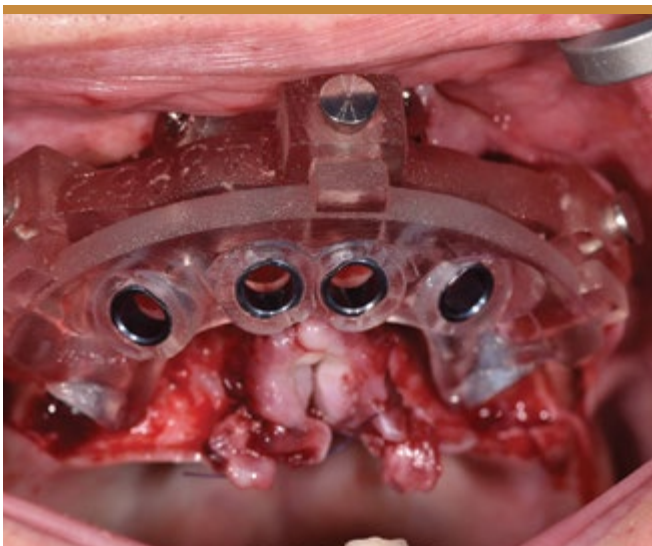
Bone anchoring of suture



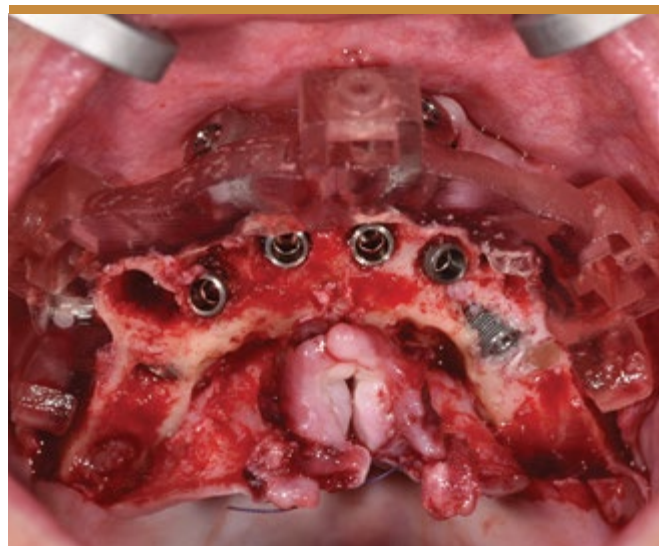
Soft tissue flap adequately repositioned



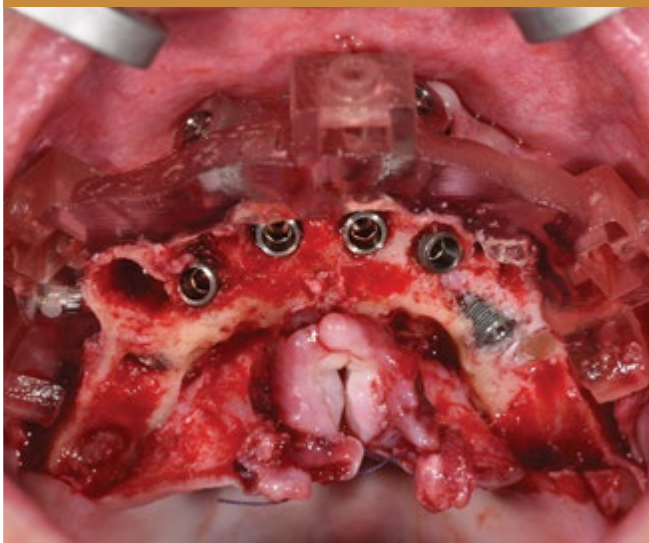
Nasal spine exposed for Anatomic Guide™ placement



Upper Placement Guide attached to the Anatomic Guide™



Bone reduced and 6 implant fixtures placed in the maxilla



6 Multi-unit abutments attached



Upper and lower PMMA prostheses



Post-operative CBCT



Post-operative smile

Implant-retained dentures are superior to conventional dentures in functionality, aesthetics and overall quality of life. Guided surgery significantly increases the success rate and longevity of provisional as well as final restorations; particularly those involving the placement of multiple implants. 3Sixty Anatomic Guide™ is a stackable full-arch system that uses streamlined digital treatment planning through Atomica Implant Planning Software dental planning software. The workflow of this protocol is simplified and intuitive. With the help of CBCT and intra-oral scans, the treatment plan can be digitally designed, revised and approved prior to the day of surgery. This minimizes the overall time of the procedure and reduces the number of appointments.

This case demonstrates the advantages of the Anatomic Guide™ protocol for All-on-X treatment modality. The ease of which the digital wax-up, Placement Guides, temporary and final prostheses can be designed and fabricated via Atomica Implant Planning Software is unmatched. Clinicians have been adopting this digitally-guided approach to implant surgery due to its simplicity, accuracy and speed of workflow. With enhanced outcomes for the patients, 3Sixty Anatomic Guide™ is currently the least invasive and most comfortable solution for implant-supported fixed complete dentures.

ABOUT DR. AHMED TAREK



Born in Saudi Arabia and raised in Egypt, Dr. Ahmed Tarek earned his BDS Degree in Dentistry with honors in 2009. He immediately began his career as an implant dentist and tutor for dental students. After moving to the US in 2016, Dr. Tarek joined Buffalo Dental School's International Program, graduating third in his class in 2019.

In 2020, he received a fellowship from the American Academy of Implant Prosthodontics for continuing excellence in his field. As an international member of both the US National Dental Honor Society and an active fellow of the Egyptian Society of Oral Implantology, Dr. Tarek is able to stay ahead of new technology and developments in dentistry around the world.

ABOUT 3SIXTY

3Sixty has been a steadfast pioneer in the field of digital dental technology since 2007. Based in Atlanta, Georgia, we provide market-leading implant planning and guided surgery solutions for dental professionals across the US. With over 30 dental labs certified by 3Sixty, we have improved the oral health of more than 90,000 people by delivering treatment planning services to thousands of American dental practices through our Atomica Implant Planning Software Dental Planning Software, guided surgery products; such as our 3Sixty Surgical Guides, and the cutting-edge full-arch stackable system, Anatomic Guide™.

ABOUT ANATOMIC GUIDE™

Anatomic Guide™ is a highly accurate, minimally invasive bone reduction guide for full-arch cases that require rehabilitation using All-on-X treatment modalities. It is 75% smaller and 3 times stronger than conventional bone reduction guides. Thanks to its accuracy, it can be secured to the patient's distinctive anatomy by short metal screws providing more stability and eliminating cantilever effect. It is a fully customizable, stackable system with all the parts attachable through latches. The Anatomic Guide™ Workflow is a team-oriented, step-by-step process that is practical, preplanned and predictable. It helps you streamline both the pre- and post-surgical phases of the full-arch treatment. Supported by a team of experts, you will feel confident in your practice and get rid of any undue stress on surgery day.



BY DENTISTS, FOR DENTISTS

3Sixty has been a steadfast pioneer in the field of guided surgery since 2007. Over the years, we have endeavored to help dentists do their best work by providing them with the most advanced solutions in the market. It is this determination that keeps us at the forefront of computer-guided surgery.

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