



STRAUMANN SIRIOS™ X3 CLINICAL **CASEBOOK**



DEAR DOCTOR,

Digital technology is reshaping modern dentistry by streamlining workflows, enhancing efficiency, improving patient comfort, and enabling practices to differentiate themselves while meeting patients' evolving expectations. By embracing innovation, dental professionals unlock new opportunities to remain competitive and deliver the highest standard of care. The right technology not only optimizes daily practice but also highlights what makes each clinic unique, helping it thrive in an ever-changing industry.

As the flagship brand of the world's largest implant manufacturer, Straumann Group® carries a strong legacy of pioneering advancements in dentistry. Recognized globally as one of the most iconic and trusted names in the field, we remain committed to excellence and transformational innovation for forward-thinking dental professionals.

Among our key solutions, the Straumann SIRIOS™ X3 intraoral scanner empowers clinicians to take the next step into digital dentistry, bringing precision, efficiency, and confidence to every patient interaction.



CAPTURE EXCELLENCE

Straumann SIRIOS™ X3 is your gateway to the ultimate dental experience: unlocking tailored treatment journeys and several possibilities for every unique clinical need.

This casebook brings together a selection of clinical case reports that illustrate the use of Straumann SIRIOS™ X3 across a variety of clinical situations. Each case, contributed by experienced clinicians, highlights the planning, procedures, and conclusions involved. Our aim is to inspire you to embrace the advantages of digital dentistry—starting with digital image capturing—by demonstrating how efficiency, predictability, and profitability can be achieved in daily practice. All cases featured in this document were performed using Straumann SIRIOS™ X3 for intraoral data acquisition.

We hope you enjoy the read!



DID YOU KNOW THAT...

87%

of patients say it's important that their dentists use digital technology

100%

of patients prefer intraoral scanners over traditional impressions



COMPETITIVE EDGE

Stand out with advanced technology and attract new patients.



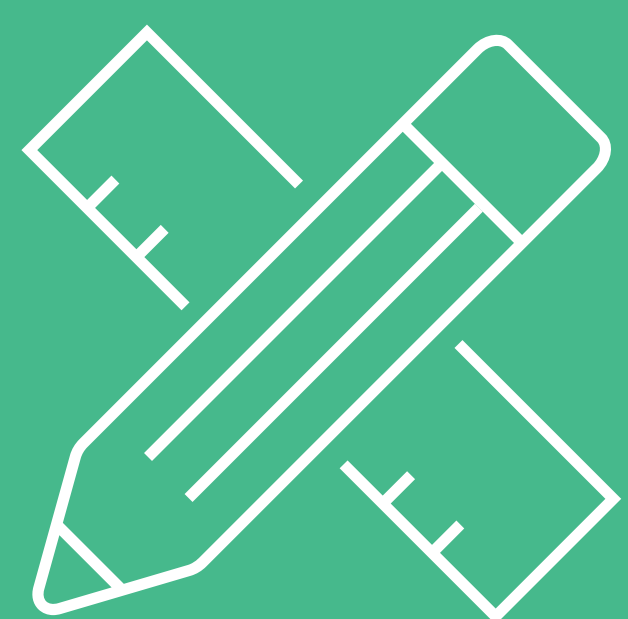
ACCURACY & PRECISION

Improved accuracy and treatment planning, providing highly detailed 3D models.



PATIENT EXPERIENCE

Less invasive procedure and enhanced patient experience.



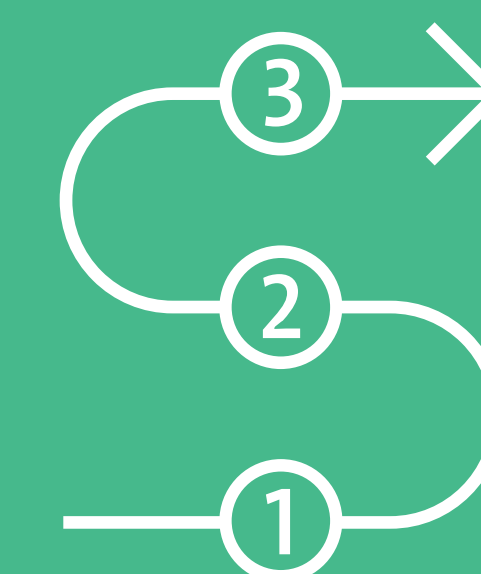
TREATMENT DIFFERENTIATION

Provide personalized treatments and a variety of customized solutions.



EFFICIENCY & TIME-SAVING

Reduce chairtime and rework with faster turnaround time.



INTEGRATION & WORKFLOW

Simply eliminate workflows, inefficiencies and save time.

CLINICAL **CASE** REPORTS WITH STRAUMANN SIRIOS™ X3

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CLINICAL CASE REPORT 1

LOWER FULL-ARCH REHABILITATION WITH STRAUMANN BLX™ AND STRAUMANN EXACT™

INTRODUCTION

Edentulism can negatively impact masticatory function, bite force and oral health-related quality of life. Additionally, in cases of partial edentulism, esthetics may also be affected. Implant-supported rehabilitation has become a widely accepted treatment option in such scenarios. However, the workflow is often time-consuming due to the multiple steps involved in this type of treatment.

The implementation of fully digital workflow for full-arch rehabilitation has been adopted in daily clinical practice, offering reduced chair time and less clinical visits.

INITIAL SITUATION

A 58-year-old female patient, classified as ASA I, presented to the clinic with partial edentulism in both the maxillary and mandibular arches and was wearing removable prostheses. Clinical examination revealed complete edentulism in the posterior mandibular region and rotated teeth in the anterior mandibular segment. In the maxillary arch, the patient was fitted with a removable partial prosthesis.

PATIENT'S CHIEF COMPLAINT

"For a long time, I felt insecure while chewing and speaking with my removable denture. The esthetic limitations, particularly the visibility of metal components on my anterior teeth also negatively affected my self-esteem."



Initial patient smile extraoral view



Patient initial smile portrait



Initial upper occlusal intraoral view



Initial lower occlusal intraoral view

CLINICAL CASE REPORT 1

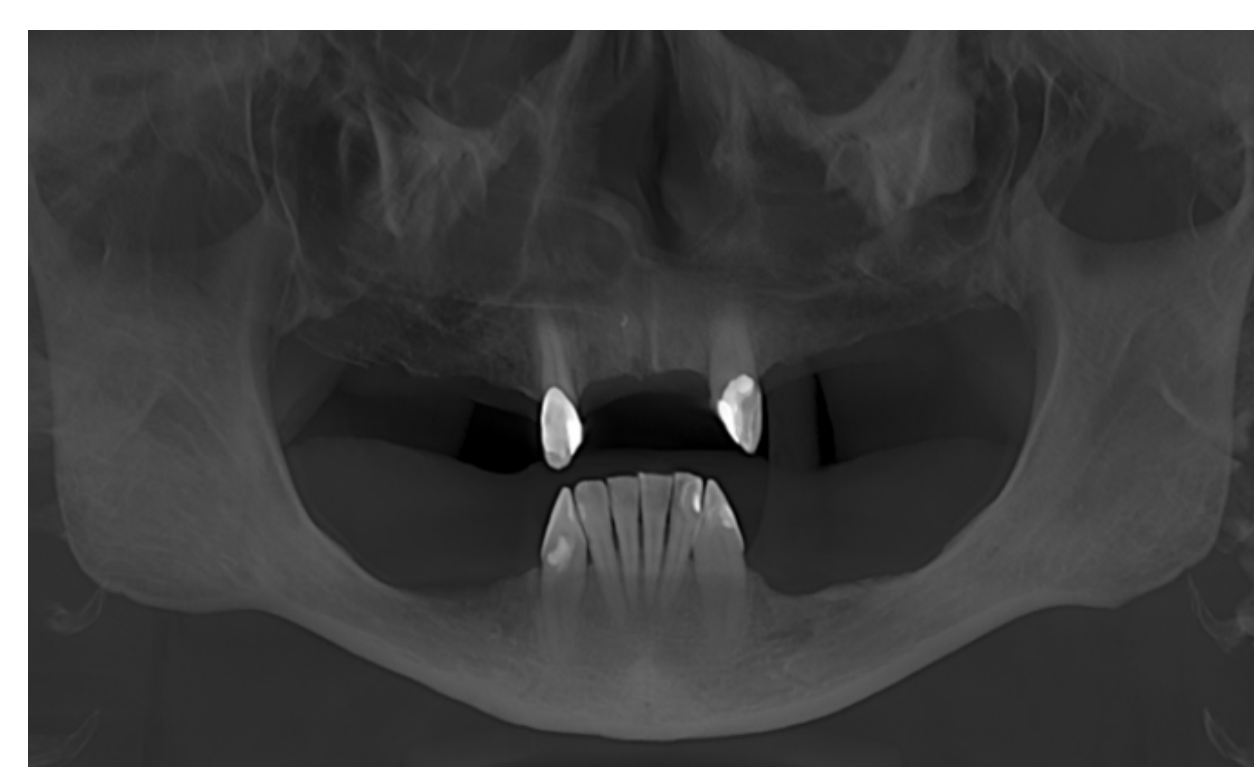
LOWER FULL-ARCH REHABILITATION WITH STRAUMANN BLX™ AND STRAUMANN EXACT™

PATIENT INFORMATION

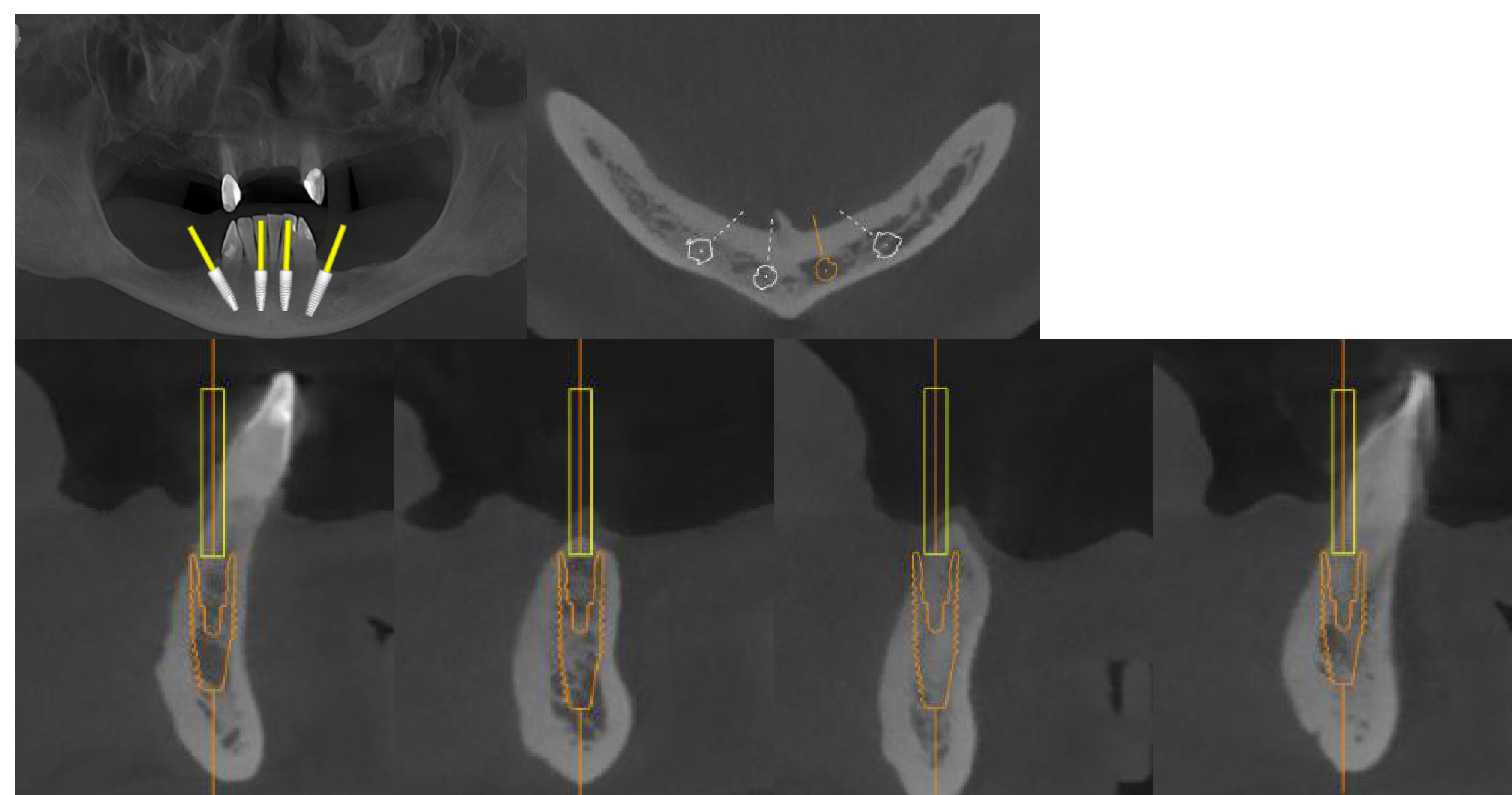
Gender	Female
Age	58
Jaw	Mandible
Health status	ASA I
Bone type	Type I/II
Local infection	No
Risk factors	None

TREATMENT PLAN

A cone-beam computed tomography (CBCT) scan and an intraoral scan using the Straumann SIRIOS™ X3 scanner were conducted to supplement the clinical assessment. The proposed treatment plan involved the extraction of the remaining maxillary and mandibular teeth, followed by the placement of a new fully removable maxillary prosthesis and a fixed, implant-supported mandibular prosthesis, in accordance with the patient's informed consent.



Panoramic reconstruction of CBCT



CBCT slices showing implant planning on coDiagnostiX® software

CLINICAL CASE REPORT 1

LOWER FULL-ARCH REHABILITATION WITH STRAUMANN BLX™ AND STRAUMANN EXACT™

SURGICAL PROCEDURE

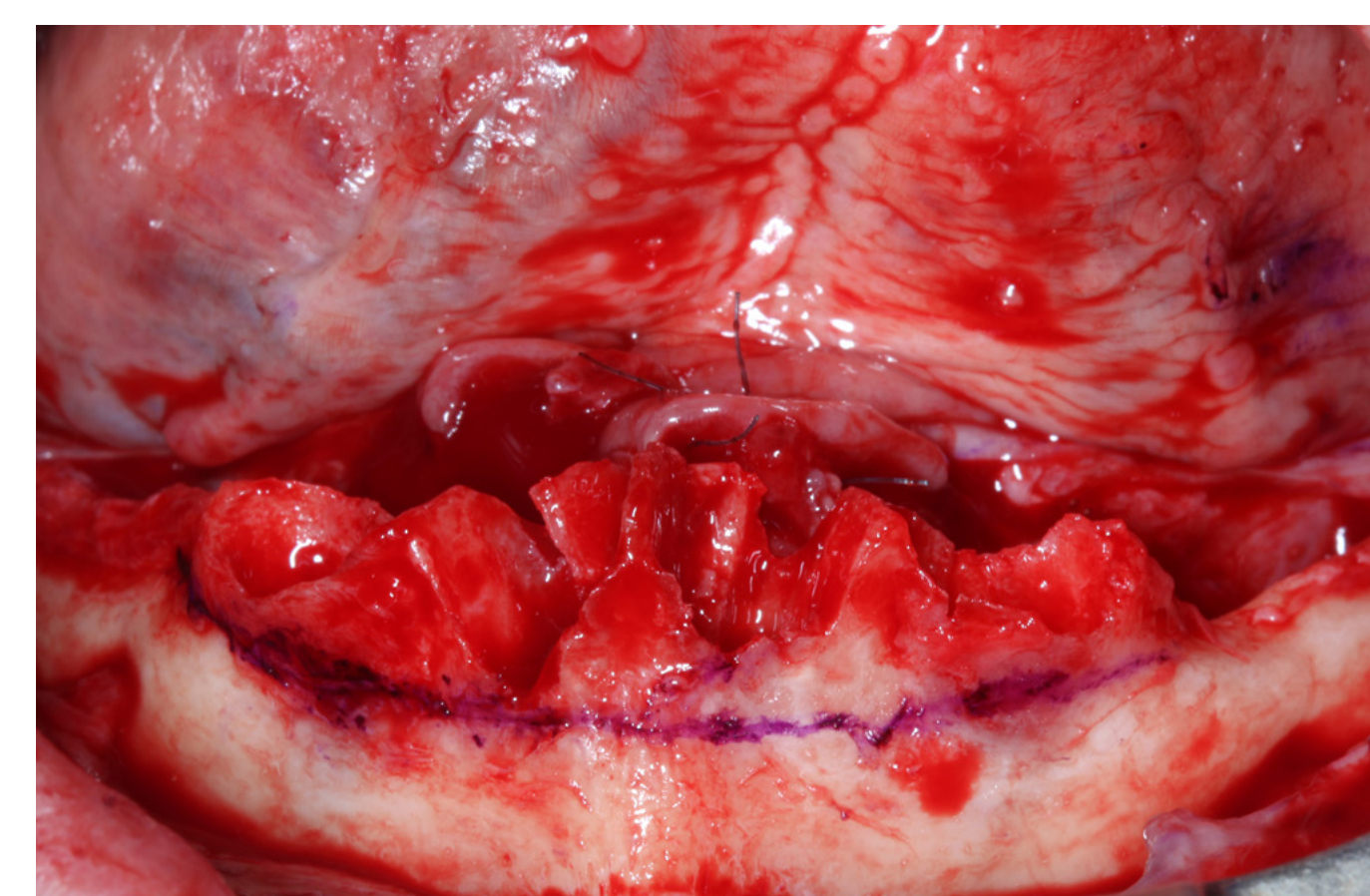
The patient was administered 4 mg of dexamethasone preoperatively to mitigate postoperative edema. The procedure commenced with the extraction of the maxillary dentition under local anesthesia using 2% Mepivacaine.

Subsequently, the remaining mandibular teeth were extracted under local anesthesia with 4% Articaine. Alveolar bone recontouring was performed utilizing surgical burs to optimize the implant site morphology.

Four Straumann BLX™ implants were placed using the Straumann iXCEL™ Implant System: two implants measuring $\text{Ø}3.75 \times 16$ mm were inserted in bone type II, and two implants measuring $\text{Ø}3.75 \times 12$ mm were placed in bone type I.



Incision planning on both occlusal and buccal views



Alveolar ridge before and after osteotomy

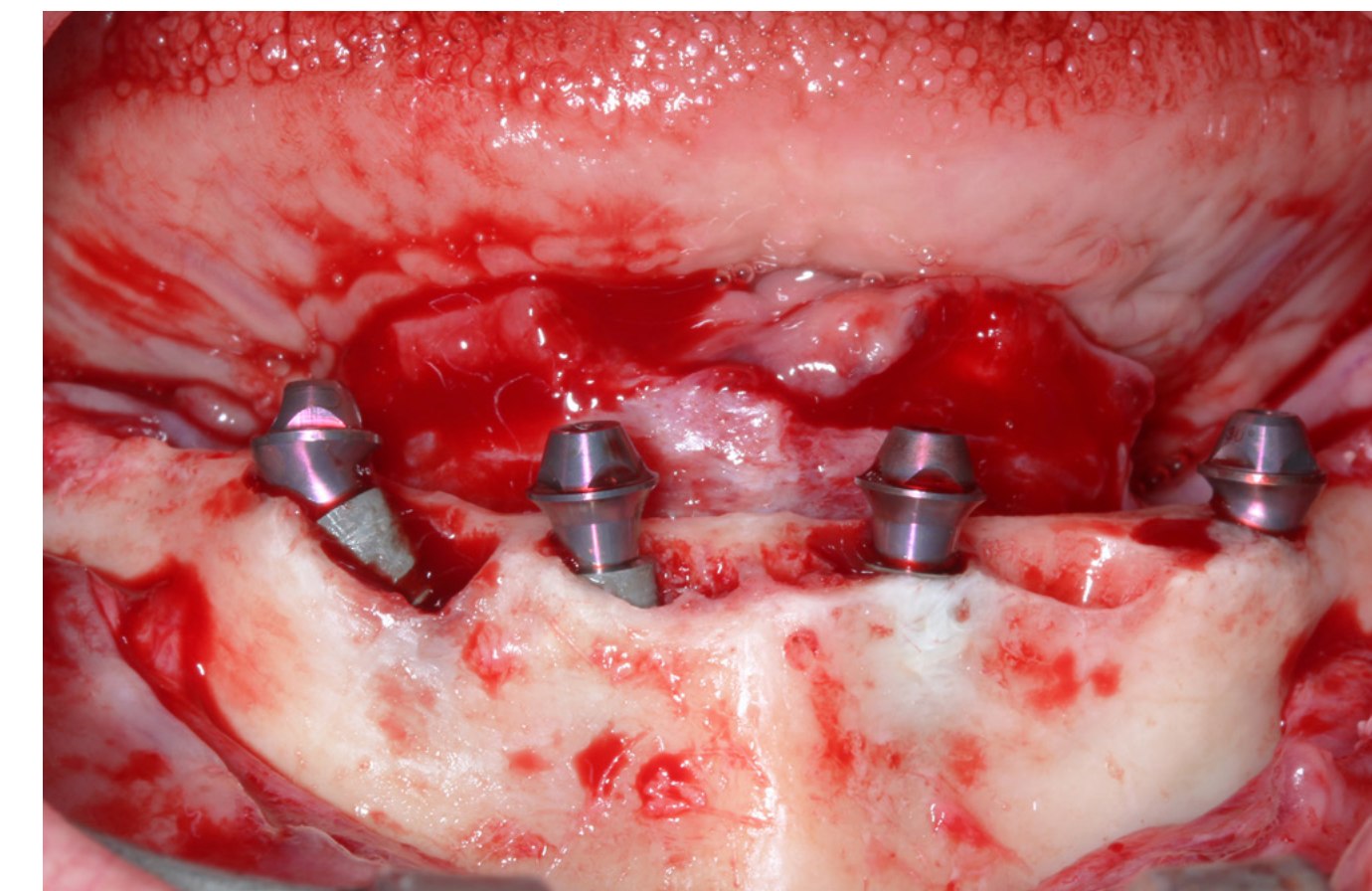
CLINICAL CASE REPORT 1

LOWER FULL-ARCH REHABILITATION WITH STRAUMANN BLX™ AND STRAUMANN EXACT™

SURGICAL PROCEDURE

All implants achieved a primary stability with insertion torque exceeding 45 N·cm. For prosthetic rehabilitation, two Straumann® Screw-retained Abutments with a 30° angulation and gingival height (GH) of 3.5 mm, and two standard Straumann® Screw-retained Abutments with GH 2.5 mm were selected.

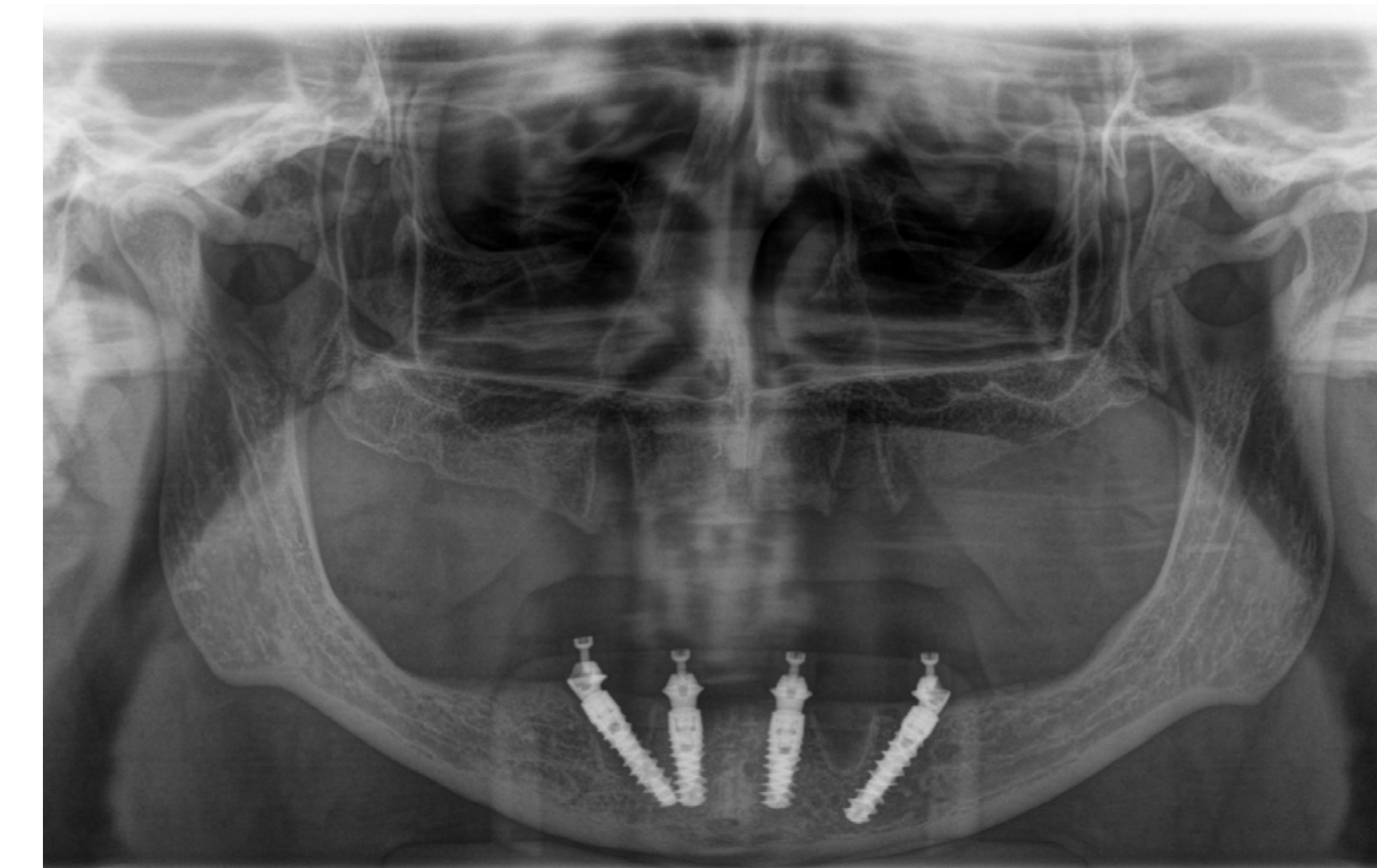
Postoperative management included administration of Amoxicillin 875 mg and Spidufem® 600 mg to provide analgesia and reduce the risk of edema and cross-contamination.



Implants installed



Straumann® Screw-retained Abutments installed



Immediate panoramic radiography

CLINICAL CASE REPORT 1

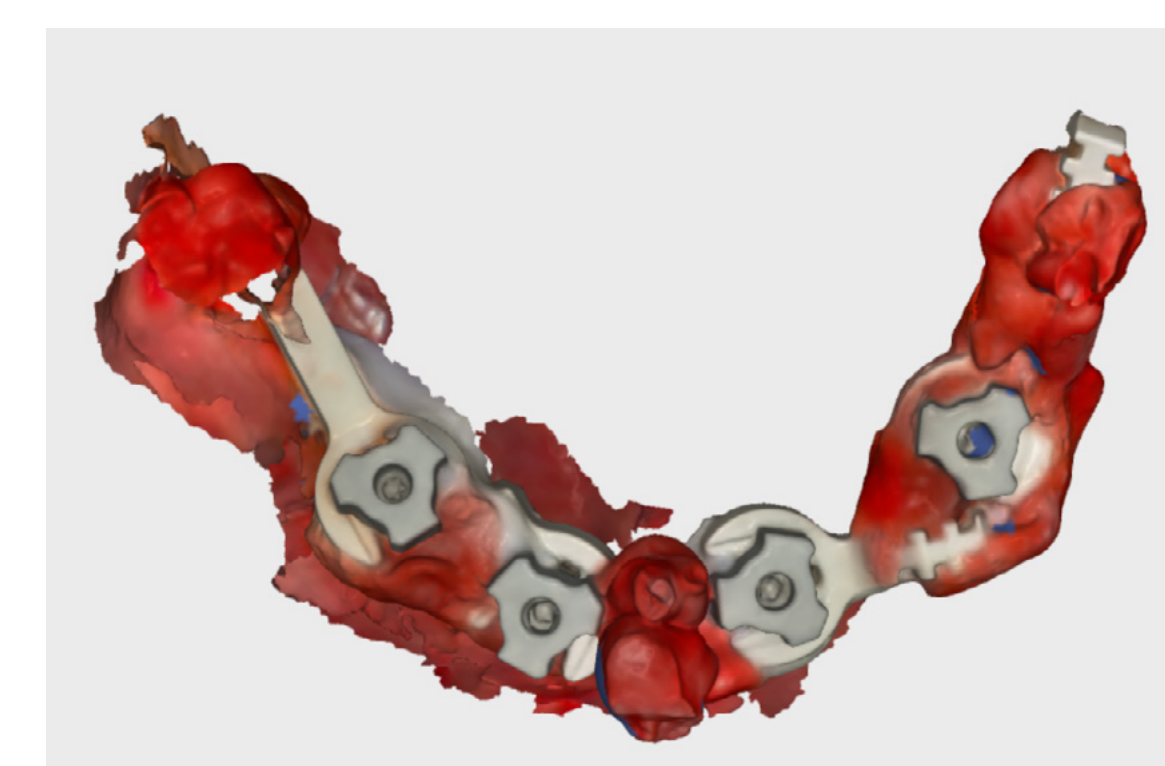
LOWER FULL-ARCH REHABILITATION WITH STRAUMANN BLX™ AND STRAUMANN EXACT™

PROSTHETIC PROCEDURE

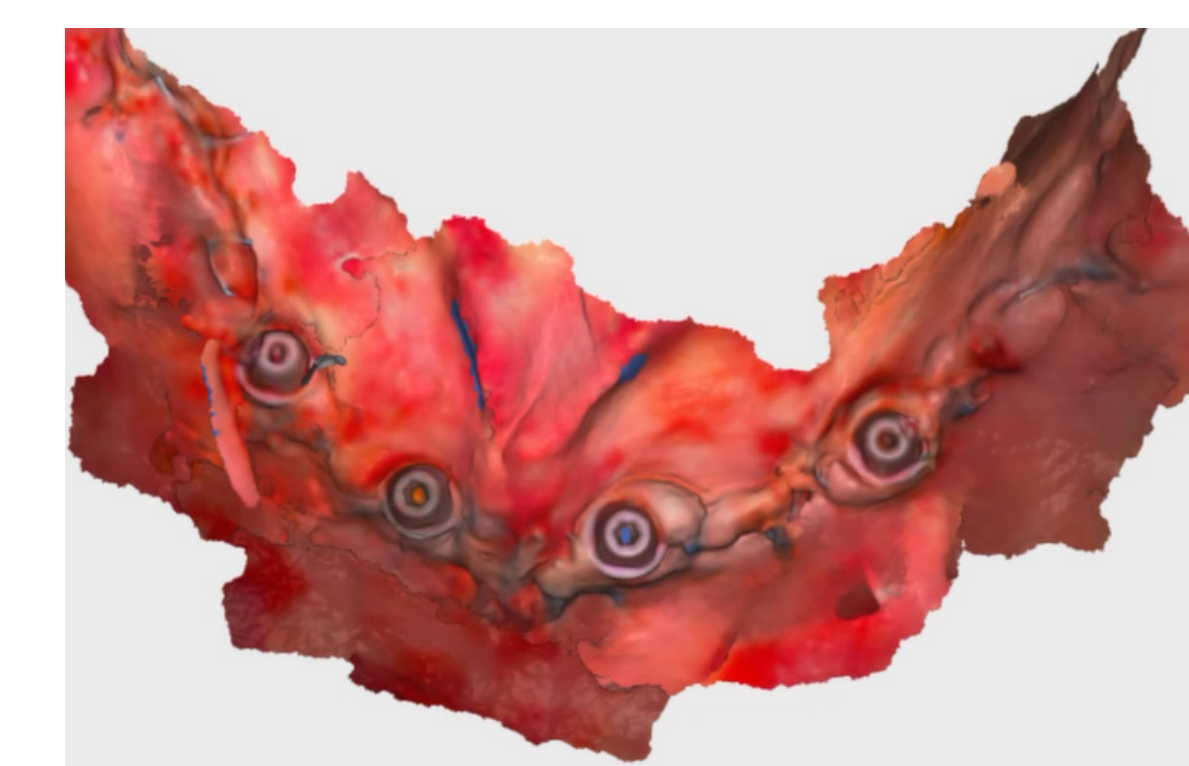
Implant-Supported Prosthetic Rehabilitation Protocol Following surgical intervention, was initiated utilizing the Straumann SIRIOS™ X3 intraoral scanner.

The digital workflow comprised the following steps:

- Intraoral scanning of lower arch, upper arch and bite to accurately capture occlusal relationship.
- Extraoral 3D scanning of the intaglio of the lower prosthesis.
- Intraoral 3D scanning of the lower arch with four Straumann EXACT™ scanbodies, each consisting of a BASE component secured to the abutments, with LINKS* subsequently affixed to the BASE.
- Intraoral scanning of the lower arch without the scanbodies, with Straumann® screw-retained abutments and surrounding gingival tissues.
- The resulting STL files were transmitted to the dental laboratory via the Straumann AXS™ platform.
- A titanium bar was digitally designed and precision-milled for direct placement onto mini-abutments.
- The final prosthesis was fabricated using additive manufacturing techniques, employing Straumann® P-Pro Resin and the Straumann CARES® P40 printer.



Lower arch 3D scan with Straumann EXACT™ scanbodies



Lower arch screw-retained abutments 3D scan



Final prosthesis



*LINKS used in this case: V-form LINK (position 2); Short LINK (position 3); Angled LINK (positions 1 and 4), splinted with acrylic resin to ensure stability and allow occlusion registration with the upper prosthesis.

CLINICAL CASE REPORT 1

LOWER FULL-ARCH REHABILITATION WITH STRAUMANN BLX™ AND STRAUMANN EXACT™

CONCLUSION

Esthetic and functional restoration was successfully achieved following completion of the final prosthetic treatment. The entire rehabilitation process was completed over the course of four clinical appointments.

The implementation of a fully digital workflow for full-arch rehabilitation demonstrated a streamlined and predictable approach, offering enhanced efficiency and reproducibility in routine dental practice.

CLINICAL TEAM FEEDBACK

"The integration of the Straumann SIRIOS™ X3 scanner significantly enhanced the efficiency and precision of the full-arch rehabilitation workflow. This technology facilitated the streamlined execution of all critical steps involved in the immediate delivery of implant-supported prostheses. Notably, the combined use of Straumann EXACT™ scanbodies and LINKS components contributed to improved accuracy and procedural control throughout the digital workflow."



Final panoramic x-ray – after final prostheses



Final buccal intraoral view of the prostheses



Patient final smile portrait

CLINICAL CASE REPORT 2

FULL-ARCH REHABILITATION WITH VENEERS, CROWNS, AND AN IMPLANT-SUPPORTED BRIDGE ON NEODENT® GM IMPLANTS

INTRODUCTION

Restoring both the esthetic appearance and functional integrity of a patient's dentition is a key goal in dental rehabilitation. When treatment involves the esthetic zone, clinicians face unique challenges that demand careful planning and precise execution. In these cases, adopting a fully digital workflow can greatly enhance clinical outcomes. It improves procedural efficiency, reduces chair time, and streamlines daily operations, ultimately benefiting both the patient and the dental practice.

INITIAL SITUATION

A 36-year-old female patient, classified as ASA I, presented with defective restorations on the maxillary dentition, characterized by over-contouring. The patient also expressed esthetic concerns related to the anterior region. In 2023, two dental implants were placed in positions 14 and 16; however, the prosthetic phase of the rehabilitation was still pending to be finalized.

PATIENT'S CHIEF COMPLAINT

The patient reported discomfort and self-consciousness when smiling, attributed to missing dentition and the compromised esthetic appearance of the anterior teeth.



Patient initial smile portrait



Initial buccal intraoral view

CLINICAL CASE REPORT 2

FULL-ARCH REHABILITATION WITH VENEERS, CROWNS, AND AN IMPLANT-SUPPORTED BRIDGE ON NEODENT® GM IMPLANTS

TREATMENT PLAN

At the end of 2023, the patient received two dental implants. A comprehensive rehabilitation of the maxillary arch was planned, encompassing the following procedures:

- Placement of fiber-reinforced composite posts
- Endodontic retreatment of tooth 12
- Porcelain veneers on teeth 11 and 13
- Full-coverage crowns on teeth 12, 21, 22, 23, and 26
- Onlay restoration on tooth 24
- Implant-supported fixed partial prosthesis to restore the edentulous span from teeth 14 to 16

Initial diagnostic records included clinical photographs and periapical radiographs.

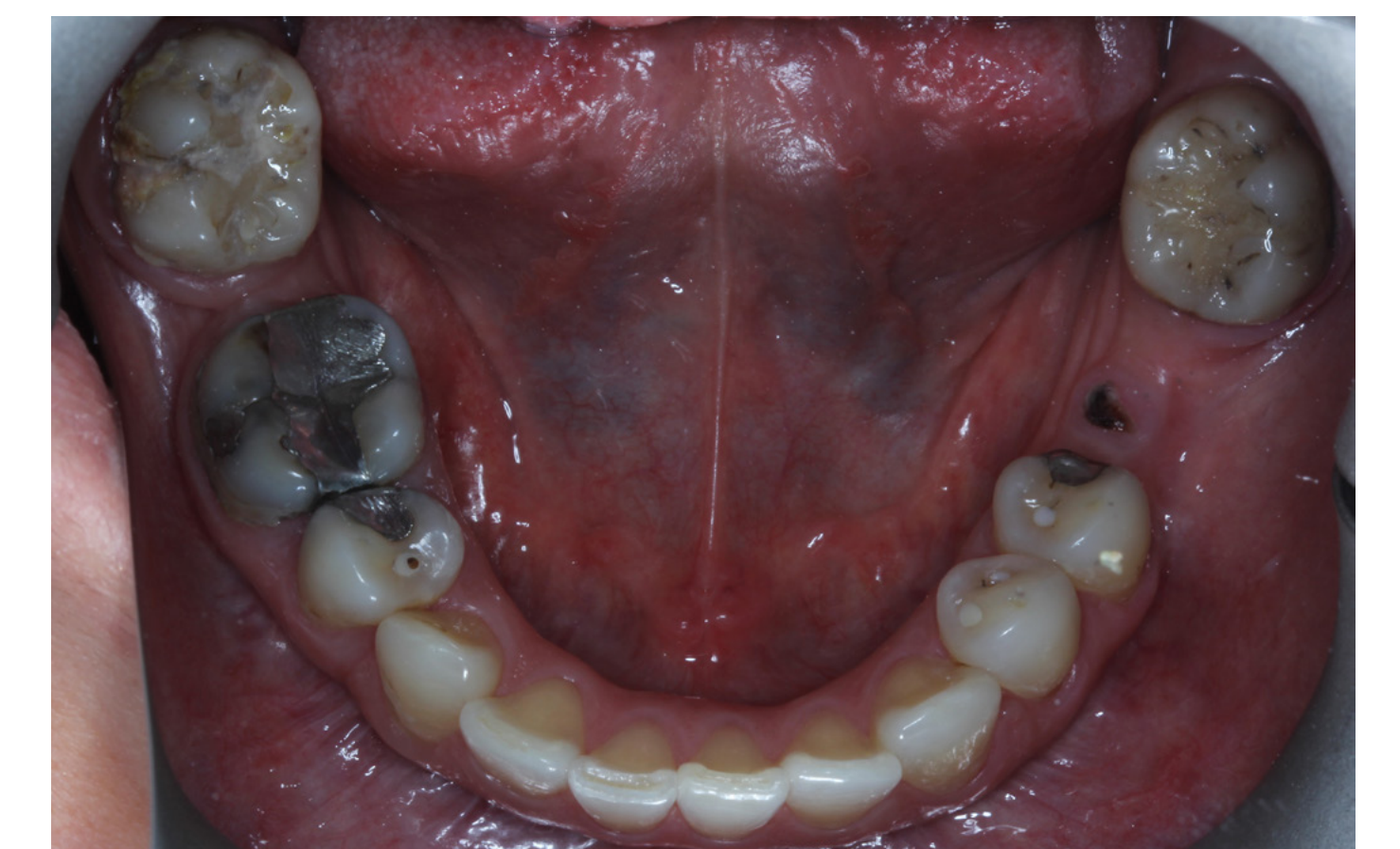
A preliminary intraoral scan was performed using the Straumann SIRIOS™ X3 scanner to support the planning of both provisional and definitive restorations.

PATIENT INFORMATION

Gender	Female
Age	36
Jaw	Maxilla
Health status	ASA I
Smile line	Medium
Local infection	No
Anatomical defects	Posterior region
Risk factors	None



Periapical x-rays



Initial upper and lower occlusal intraoral views



Initial right/left lateral intraoral views

CLINICAL CASE REPORT 2

FULL-ARCH REHABILITATION WITH VENEERS, CROWNS, AND AN IMPLANT-SUPPORTED BRIDGE ON NEODENT® GM IMPLANTS

PROSTHETIC PROCEDURE

Tooth preparation was performed for the planned restorations, including veneers, full-coverage crowns, and an onlay. An implant-supported fixed partial prosthesis was designed for the edentulous region spanning teeth 14 to 16, with Neodent® GM mini conical abutments already in place (tooth 14: 2.5 mm straight; tooth 16: 17° angled, 2.5 mm).

Intraoral 3D scanning was performed using the Straumann SIRIOS™ X3 scanner. The resulting STL files were transmitted to the dental laboratory via the Straumann AXS™ platform. A virtual treatment plan was subsequently developed, and a provisional restoration was fabricated using bis-acrylic resin, based on the initial digital impression.

Two days following the initial procedures, the final restorations were delivered. Veneers and crowns were cemented using the appropriate cement, and the restoration on tooth 26 was secured.

The implant-supported fixed partial prosthesis spanning teeth 14 to 16 was delivered as a screw-retained restoration, featuring a zirconia framework with ceramic veneering.

All restorations were digitally fabricated and milled.



Prepared teeth and scanbodies occlusal intraoral view



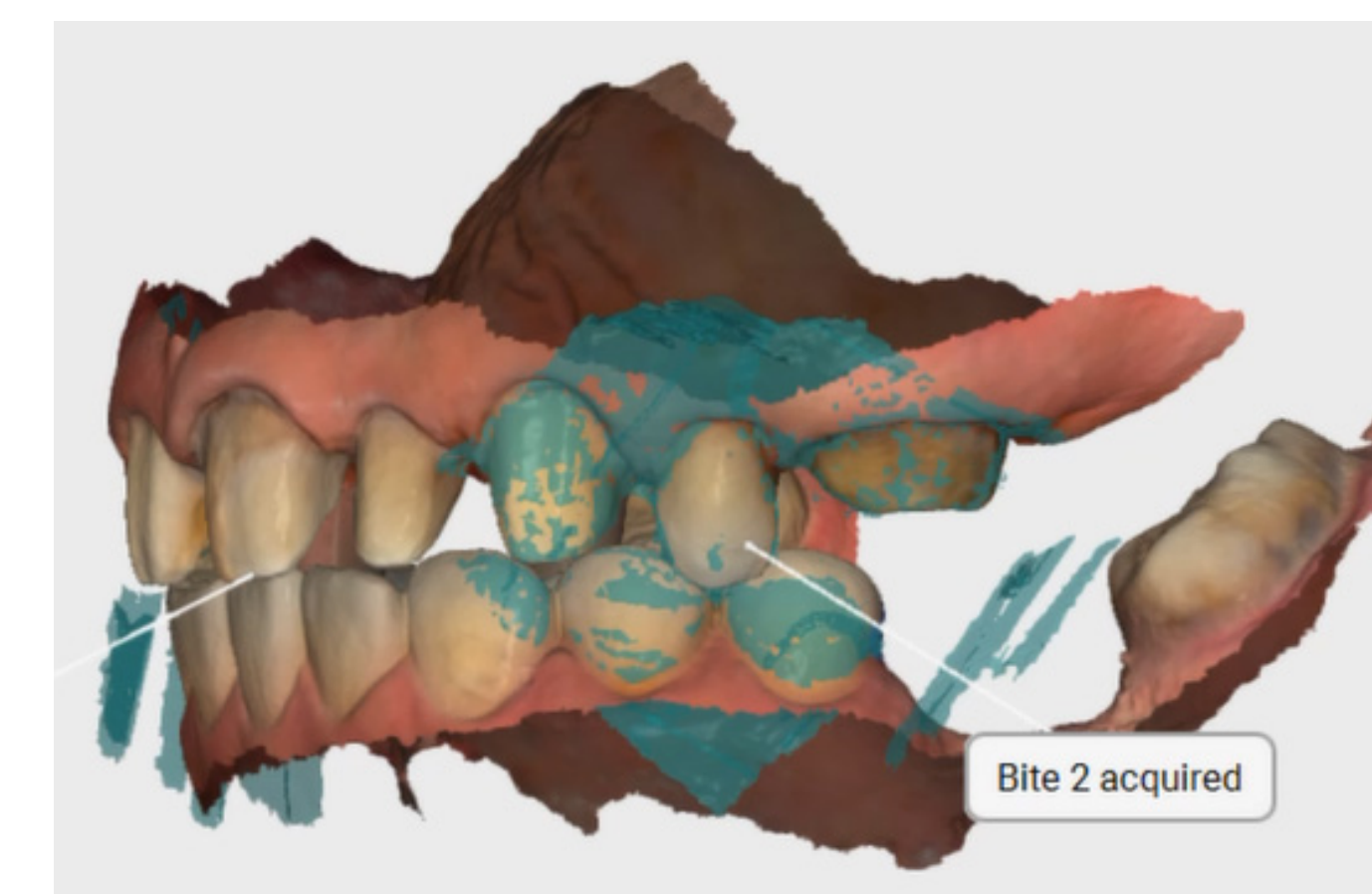
Upper 3D scan of prepared teeth and scanbodies (occlusal view)



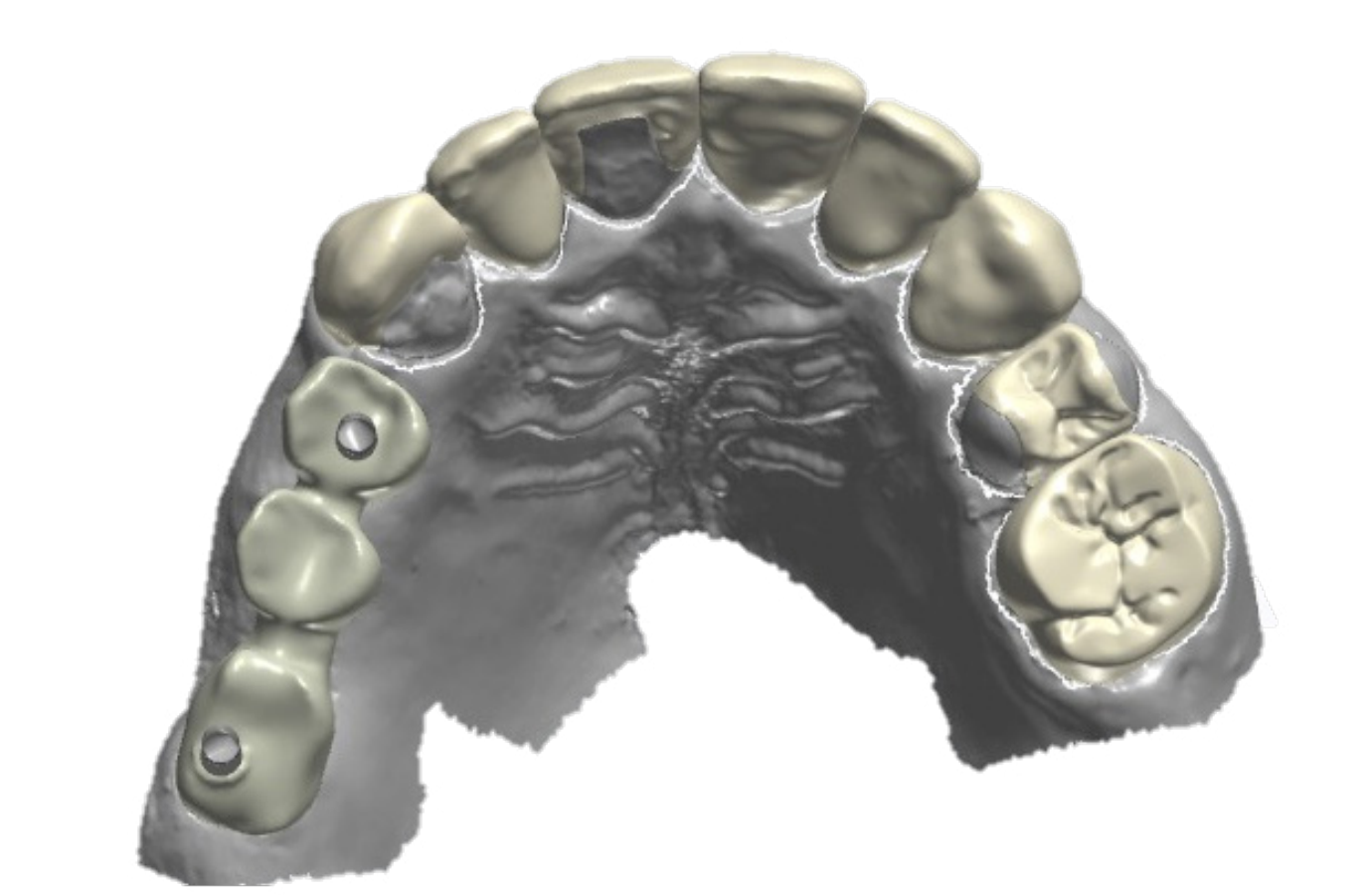
Upper 3D scan of prepared teeth and scanbodies (buccal view)



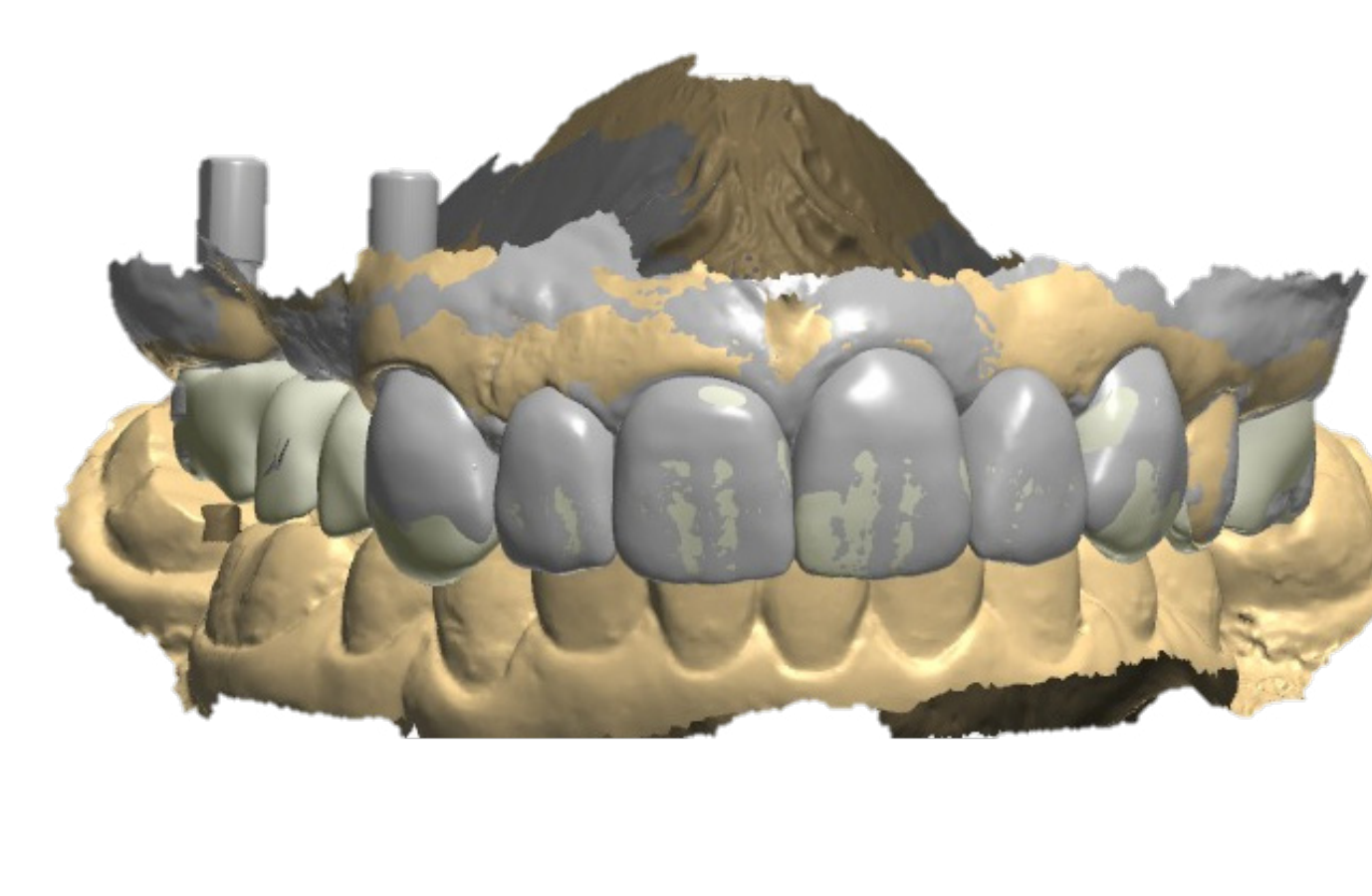
Lower scan (occlusal view)



Bite scan



Virtual planning – occlusal and frontal views



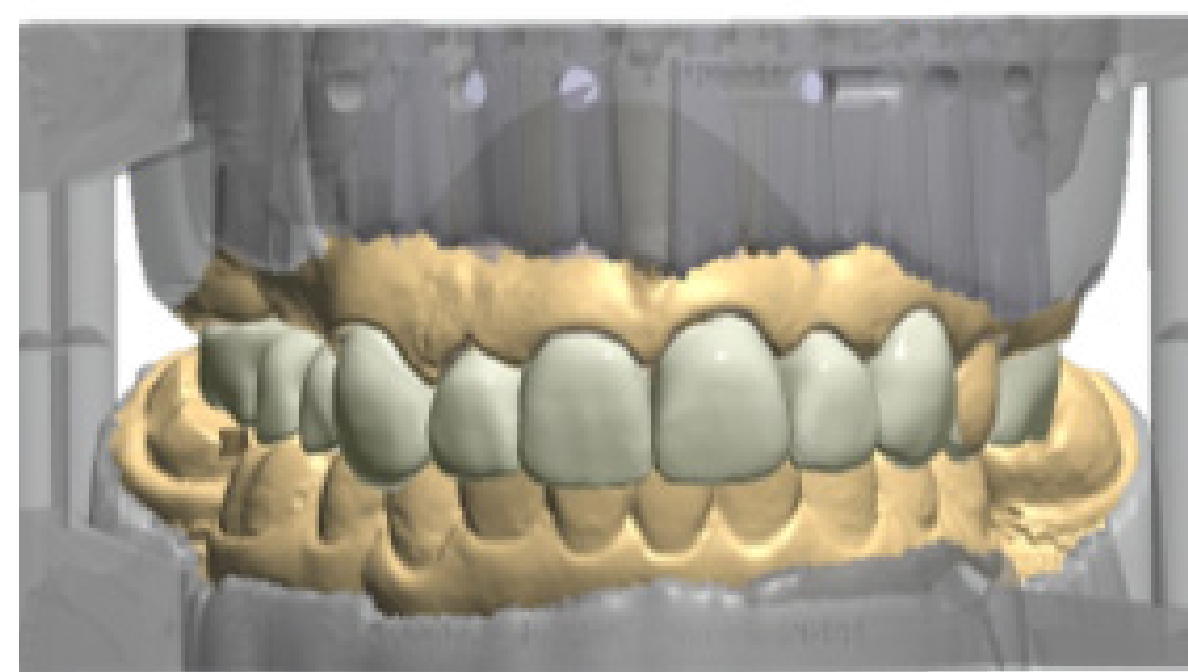
CLINICAL CASE REPORT 2

FULL-ARCH REHABILITATION WITH VENEERS, CROWNS, AND AN IMPLANT-SUPPORTED BRIDGE ON NEODENT® GM IMPLANTS

CONCLUSION

The implementation of Straumann® integrated digital ecosystem enabled precise planning and execution of the treatment protocol. In this case, a complex full-arch rehabilitation was successfully delivered using the Straumann SIRIOS™ X3 scanner, which contributed to reduced chair time and enhanced procedural efficiency.

The integration of digital tools also improved the overall patient experience, particularly in terms of comfort and treatment predictability. Upon completion of the final prosthetic phase, both functional and esthetic outcomes were significantly improved, and the patient expressed high satisfaction with the results.



Final virtual planning – frontal view



Oclusal and buccal intraoral views of the final rehabilitation



Patient final smile portrait



Final periapical x-rays

CLINICAL CASE REPORT 2

FULL-ARCH REHABILITATION WITH VENEERS, CROWNS, AND AN IMPLANT-SUPPORTED BRIDGE ON NEODENT® GM IMPLANTS

CLINICAL TEAM FEEDBACK

"The integration of the Straumann AXS™ platform, in combination with a unified scanning protocol using the Straumann SIRIOS™ X3 scanner, significantly streamlined the rehabilitation workflow. This approach enabled efficient management of all procedural steps involved in various types of implant-supported restorations, enhancing both speed and precision."



Patient final smile portrait

CLINICAL CASE REPORT 3

GUIDED SINGLE-TOOTH CROWN RESTORATION WITH THE NEODENT® ZI CERAMIC IMPLANT SYSTEM

INTRODUCTION

Intra-oral scanners have become indispensable tools in contemporary dental practice, with broad applications across treatments involving both natural dentition and dental implants. Achieving successful clinical outcomes requires integration of esthetic, functional, and biological considerations. In this context, digital intraoral scanners play a pivotal role by enhancing diagnostic accuracy and procedural efficiency.

The Straumann SIRIOS™ X3 scanner, in particular, enables the precise capture of fine anatomical details - including gingival contours, tooth preparations, and implant emergence profiles - which are essential for the planning and execution of both restorative and surgical procedures.

PATIENT'S CHIEF COMPLAINT

The patient reported experiencing discomfort and insecurity due to the sensation of mobility in the anterior tooth, which interfered with daily activities. Additionally, the absence of a posterior tooth contributed to masticatory difficulties.



Patient initial smile portrait



Initial buccal intraoral view



Initial upper and lower intraoral occlusal views



CLINICAL CASE REPORT 3

GUIDED SINGLE-TOOTH CROWN RESTORATION WITH THE NEODENT® ZI CERAMIC IMPLANT SYSTEM

INITIAL SITUATION

A 41-year-old male patient, classified as ASA II, presented with complaints related to tooth 12. Clinical and radiographic evaluations revealed grade II mobility and advanced root resorption of the affected tooth. Additionally, tooth 47 exhibited a full crown preparation and required prosthetic rehabilitation.

PATIENT INFORMATION

Gender	Male
Age	41
Jaw	Maxilla
Health status	ASA II
Smile line	Low
Bone type	Type II
Local infection	No
Risk factors	Smoker



Initial buccal intraoral view of tooth 12



Periapical x-ray of tooth 12



Initial occlusal intraoral view of full crown preparation on tooth 47



Periapical x-ray of tooth 47

CLINICAL CASE REPORT 3

GUIDED SINGLE-TOOTH CROWN RESTORATION WITH THE NEODENT® ZI CERAMIC IMPLANT SYSTEM

TREATMENT PLAN

The treatment plan included immediate implant placement in the region of tooth 12 following extraction. To enable guided surgical planning, cone-beam computed tomography (CBCT) and intraoral 3D scans were performed and integrated into the coDiagnostiX® software. Immediate loading with a provisional crown was planned to preserve esthetics during the healing phase.

A comprehensive preoperative 3D scan was performed using the StraumannSIRIOS™ X3 scanner to support both surgical and prosthetic planning. The resulting STL files were sent to the dental laboratory via the Straumann AXS™ platform for the design and fabrication of the surgical guide and prosthetic components.

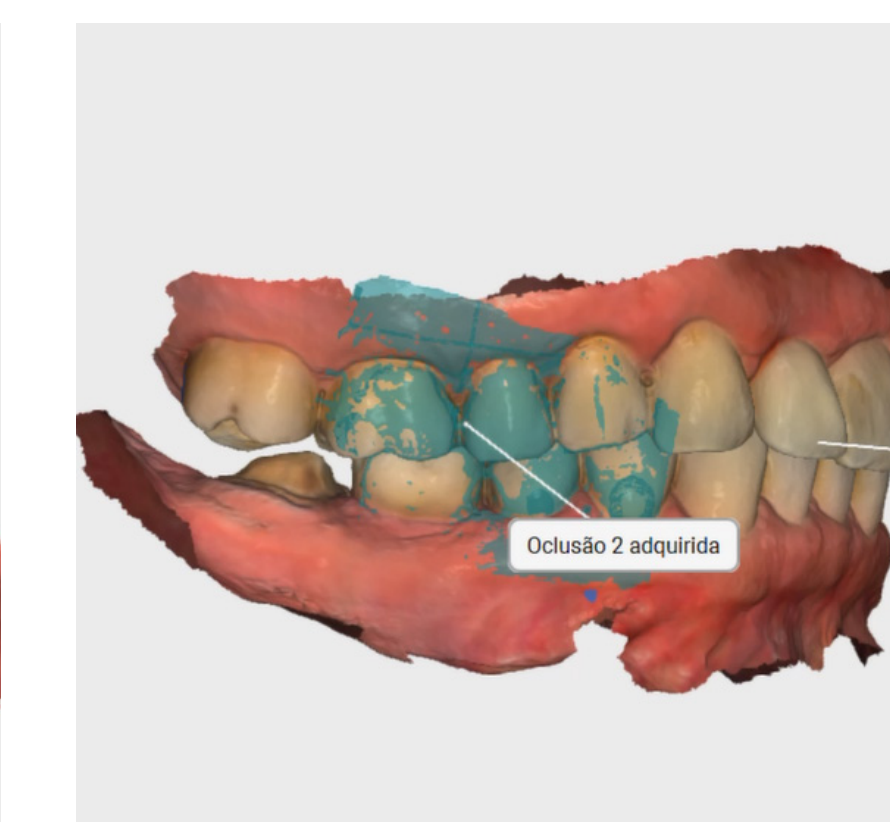
For tooth 47, a zirconia crown was planned based on the initial intraoral 3D scan data.



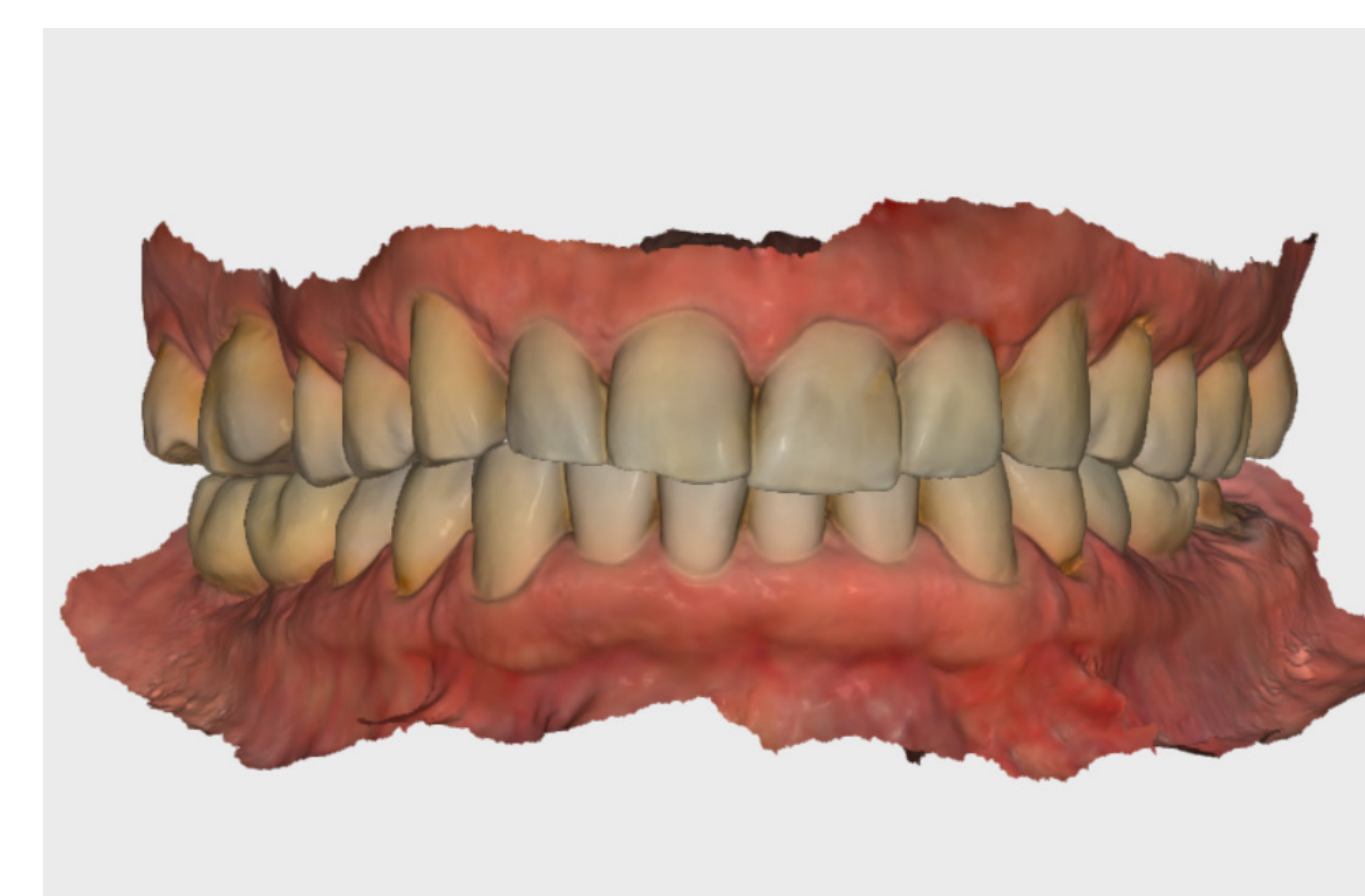
Upper scan (occlusal view)



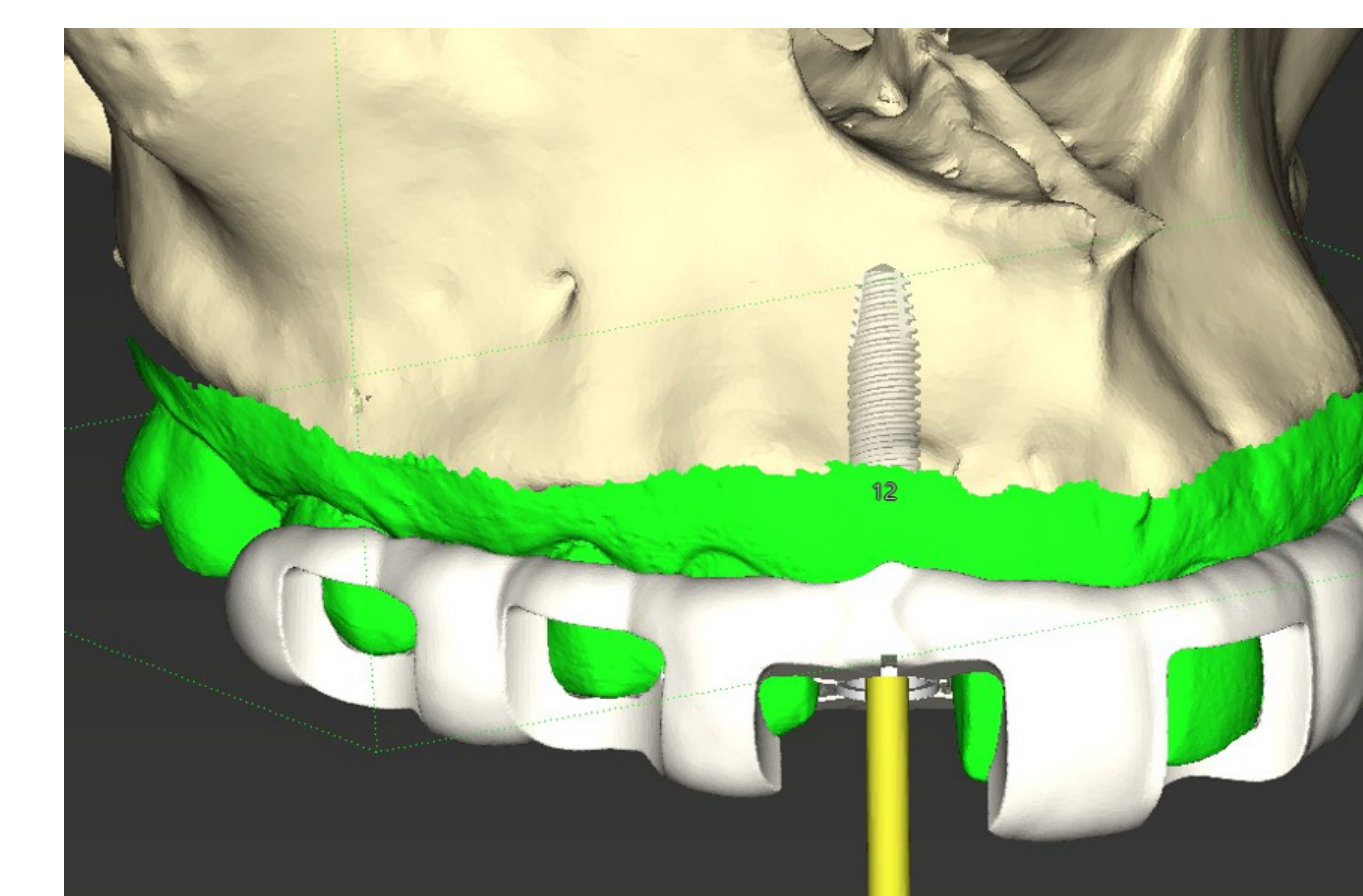
Lower scan (occlusal view)



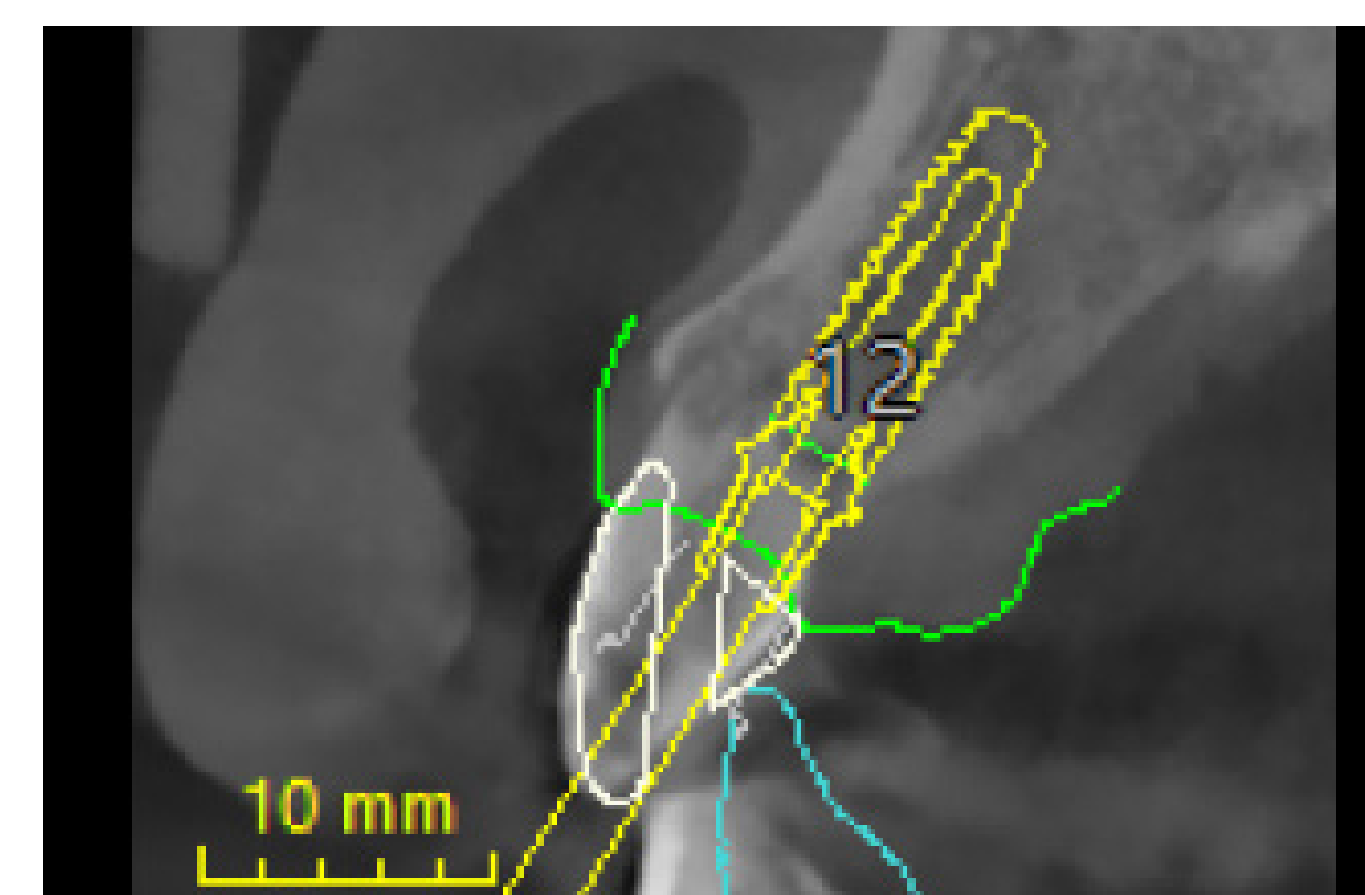
Bite scan



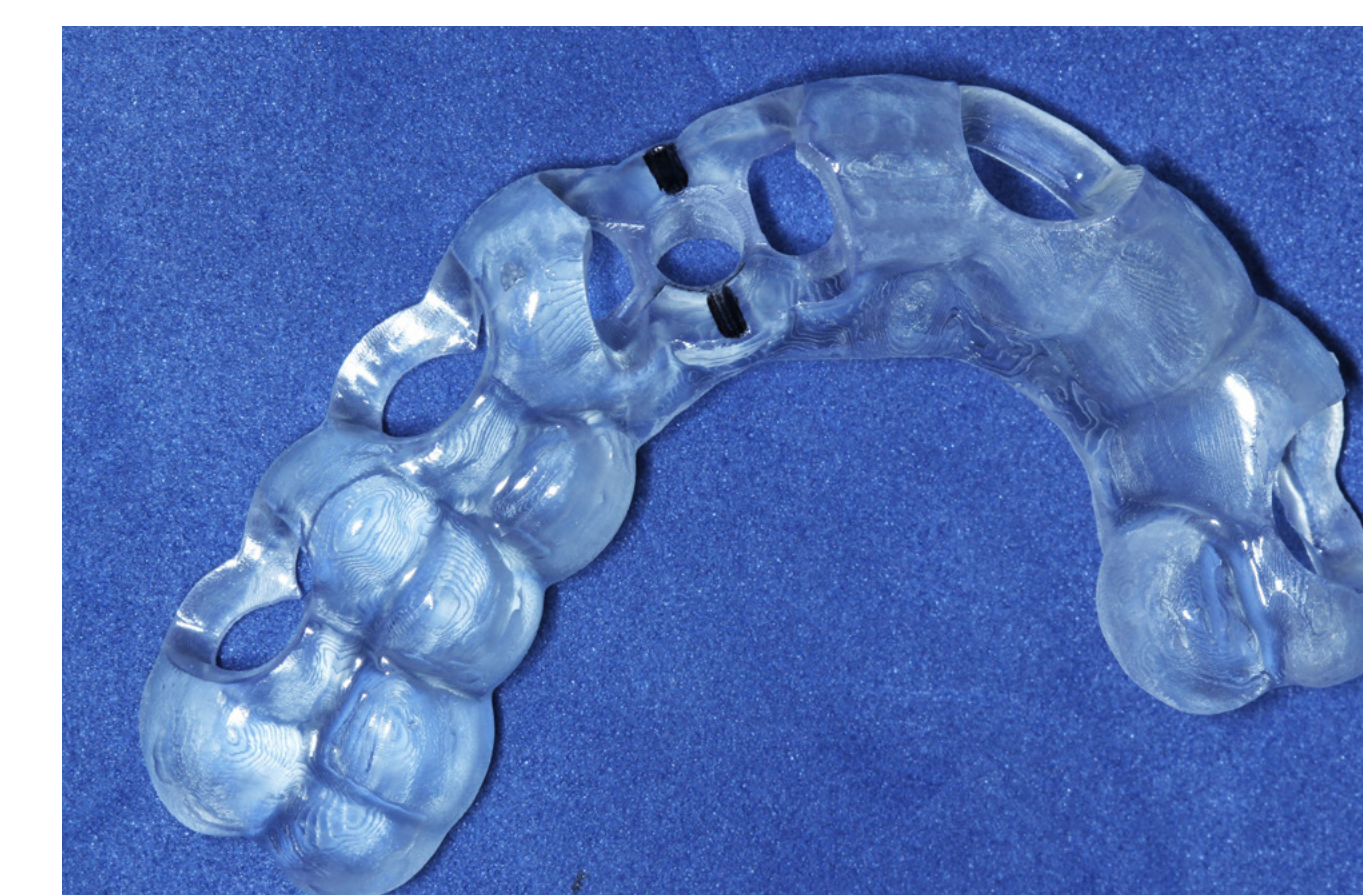
Upper and lower scans in occlusion



Surgical guide design performed on coDiagnostiX® software



CBCT cross section used for guided surgery planning on coDiagnostiX® software on tooth 12



3D printed surgical guide

CLINICAL CASE REPORT 3

GUIDED SINGLE-TOOTH CROWN RESTORATION WITH THE NEODENT® ZI CERAMIC IMPLANT SYSTEM

SURGICAL AND PROSTHETIC PROCEDURES

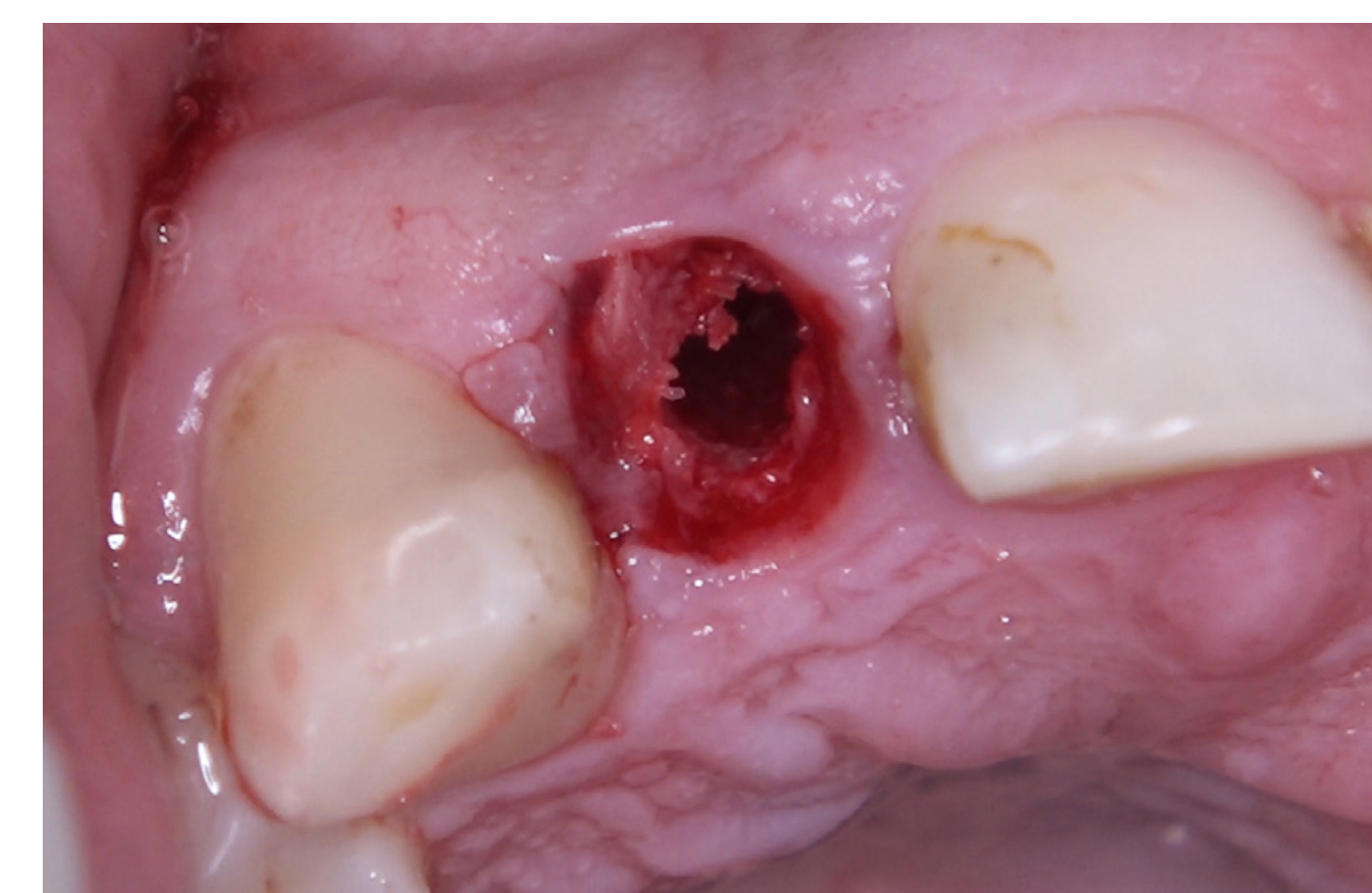
Immediate guided implant placement – tooth 12

Preoperative management included administration of 4 mg dexamethasone to minimize postoperative edema. Local anesthesia was achieved using 4% Articaine. Tooth 12 was atraumatically extracted, followed by meticulous debridement of the socket.

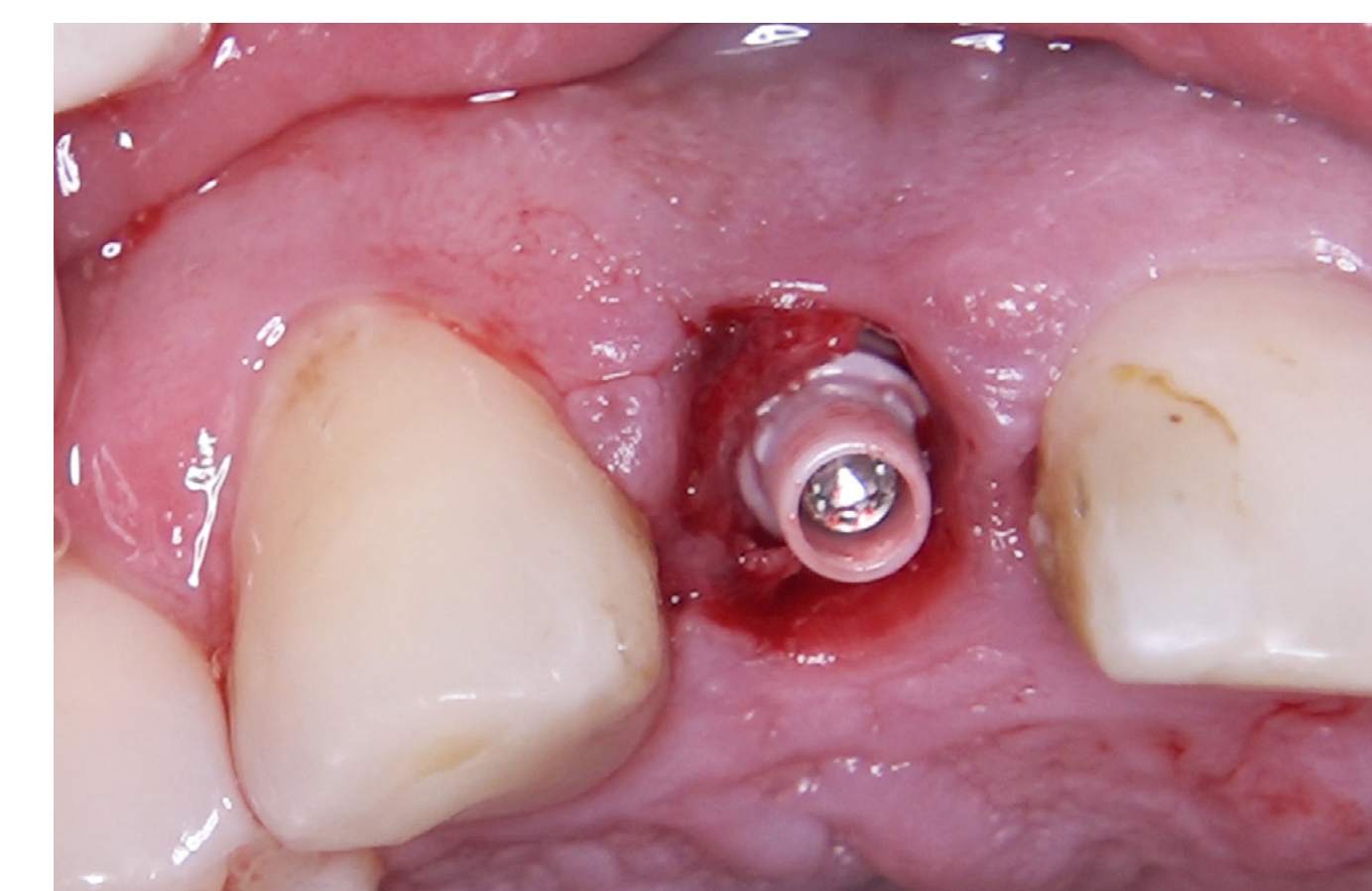
An immediate implant placement was performed using guided surgery. A Neodent® Zi Ceramic Implant (\varnothing 3.75 × 13 mm) was inserted into the extraction site, suitable for bone type II. The drilling protocol adhered to the Neodent® MultiKit Ceramic Implant System. Primary stability was achieved with an insertion torque of 45 N·cm.

A provisional crown was fabricated and delivered using a Neodent® Zi Base (\varnothing 3.75 mm; collar height: 4.0 mm; gingival height: 1.5 mm). The coping was milled using an Ultrasonic machine and cemented extraorally. The Zi Base was torqued to 32 N·cm. Provisional cement was applied, and occlusal adjustments were performed to ensure functional and esthetic integration.

Final periapical radiographs and clinical photographs were obtained to document the procedure.



Surgical pictures after drilling step



Intraoral abutment view



Copping in position



Periapical x-ray taken immediately after implant placement



Periapical x-ray taken after abutment placement



Buccal view of the temporary crown

CLINICAL CASE REPORT 3

GUIDED SINGLE-TOOTH CROWN RESTORATION WITH THE NEODENT® ZI CERAMIC IMPLANT SYSTEM

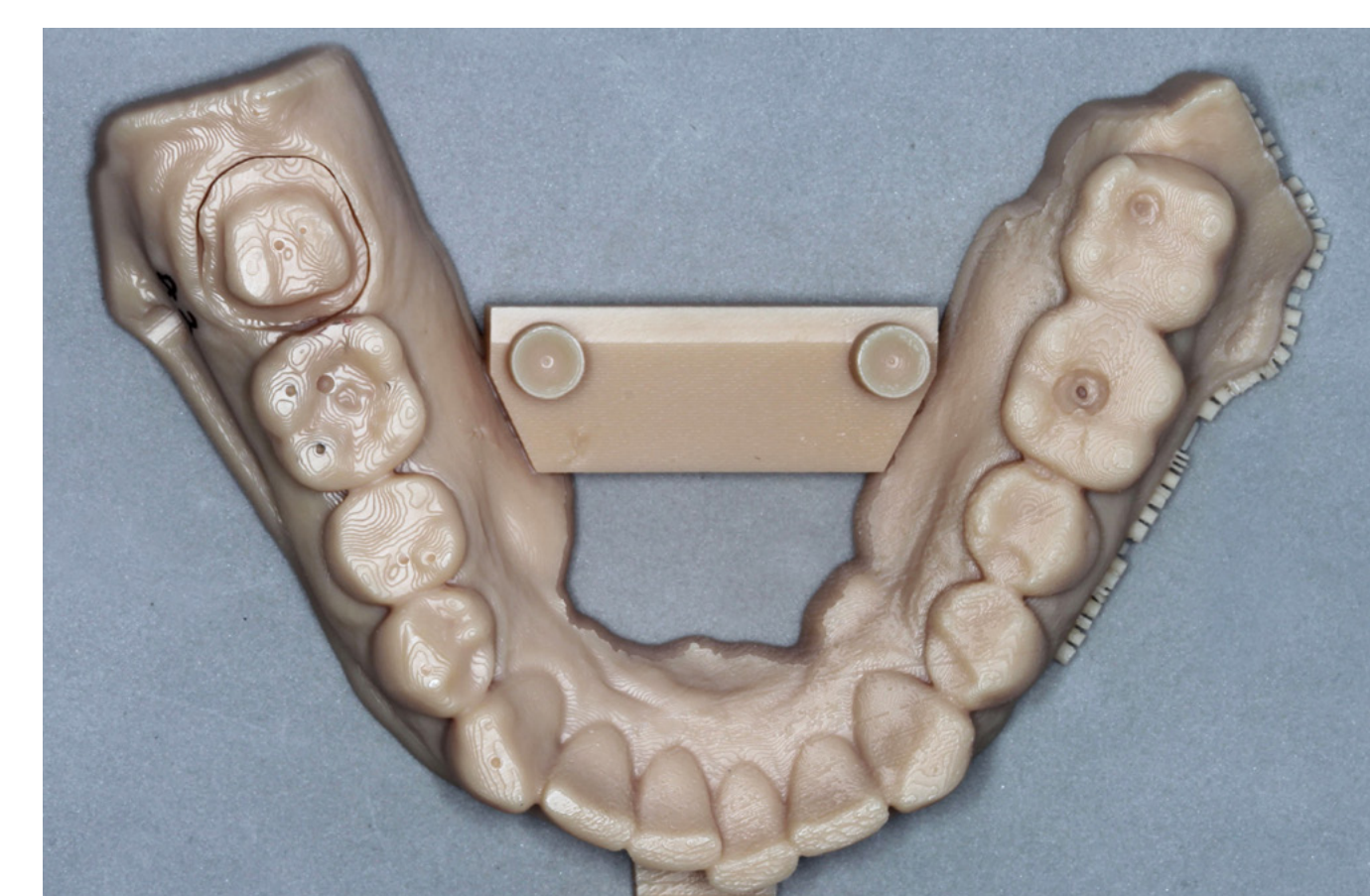
SURGICAL AND PROSTHETIC PROCEDURES

Single tooth crown restoration – tooth 47

Following gingival retraction using retraction cords, the prepared surface of tooth 47 was scanned with the Straumann SIRIOS™ X3 intraoral scanner. Shade selection was performed, and the resulting digital impression file (STL) was sent to the dental laboratory for crown design and fabrication.

The crown was milled from monolithic zirconia. After clinical verification of fit and marginal adaptation, the crown was cemented using dual-cure resin cement.

Occlusal adjustments were completed, and final radiographic documentation was obtained.



Printed model with full crown preparation of tooth 47



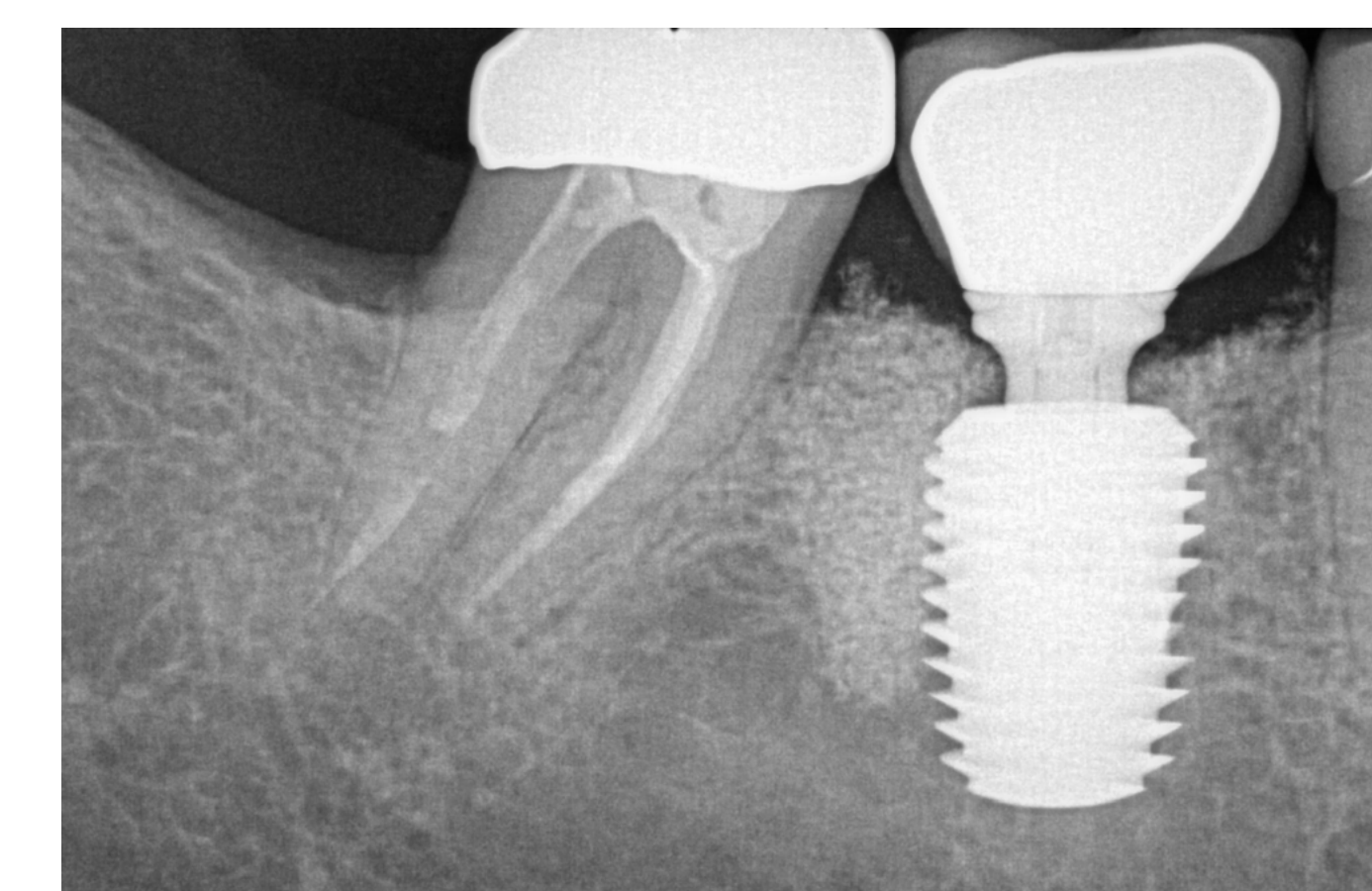
Printed model with Crown in position



Occlusal intraoral view of final crown



Buccal intraoral view of the final crown



Final periapical x-ray

CLINICAL CASE REPORT 3

GUIDED SINGLE-TOOTH CROWN RESTORATION WITH THE NEODENT® ZI CERAMIC IMPLANT SYSTEM

CONCLUSION

The use of intraoral scanners has become increasingly prevalent in modern dental practice, with applications spanning a wide range of treatments involving both natural dentition and dental implants.

The Straumann SIRIOS™ X3 scanner offers a comprehensive portfolio tailored to diverse clinical needs. In this case, guided surgery provided a safe and comfortable treatment experience, delivering predictability for both the clinician and the patient. Furthermore, the ability to perform a single 3D scan for two distinct treatment protocols contributed to optimized chair time, while enhancing procedural accuracy and overall workflow efficiency.

CLINICAL TEAM FEEDBACK

"The ability to utilize the Straumann SIRIOS™ X3 scanner prior to both procedures significantly enhanced workflow efficiency. The digital 3D scan enabled precise image alignment, facilitating the fabrication of both the surgical guide and the provisional restoration.

Additionally, performing multiple 3D scans of the tooth preparation contributed to a more accurate digital impression, supporting improved clinical outcomes."

CLINICAL CASE REPORT 4

IMMEDIATE SINGLE-TOOTH REHABILITATION WITH NEODENT® HELIX SHORT IMPLANT

INTRODUCTION

Preservation of peri-implant tissue architecture is essential for the long-term success of implant therapy, as it plays a critical role in minimizing future complications.

Immediate implant placement following tooth extraction requires meticulous soft tissue management. Intraoral scanning technology supports this process by enabling the design and fabrication of customized healing abutments, which promote optimal tissue preservation and facilitate predictable healing outcomes.

INITIAL SITUATION

A 33-year-old female patient in good general health presented with extensive coronal destruction of tooth 36.

Clinical and radiographic evaluations confirmed the compromised condition of the tooth, and extraction was indicated as the appropriate course of treatment.

PATIENT'S CHIEF COMPLAINT

The patient reported persistent anxiety during mastication, expressing concern that the compromised tooth might fracture at any moment. This ongoing discomfort contributed to a sense of insecurity and impacted daily function.



Initial smile



Initial intraoral buccal view

CLINICAL CASE REPORT 4

IMMEDIATE SINGLE-TOOTH REHABILITATION WITH NEODENT® HELIX SHORT IMPLANT

TREATMENT PLAN

The treatment plan included extraction of tooth 36 followed by immediate implant placement.

Preoperative digital scans were acquired using the Straumann SIRIOS™ X3 scanner, encompassing the maxillary and mandibular arches as well as occlusal registration, to support precise planning and execution of the procedure.

PATIENT INFORMATION

Gender	Female
Age	33
Jaw	Mandible
Health status	ASA I
Bone type	Type III
Smile line	Medium
Local infection	No
Risk factors	None



Initial bite view



Initial occlusal view



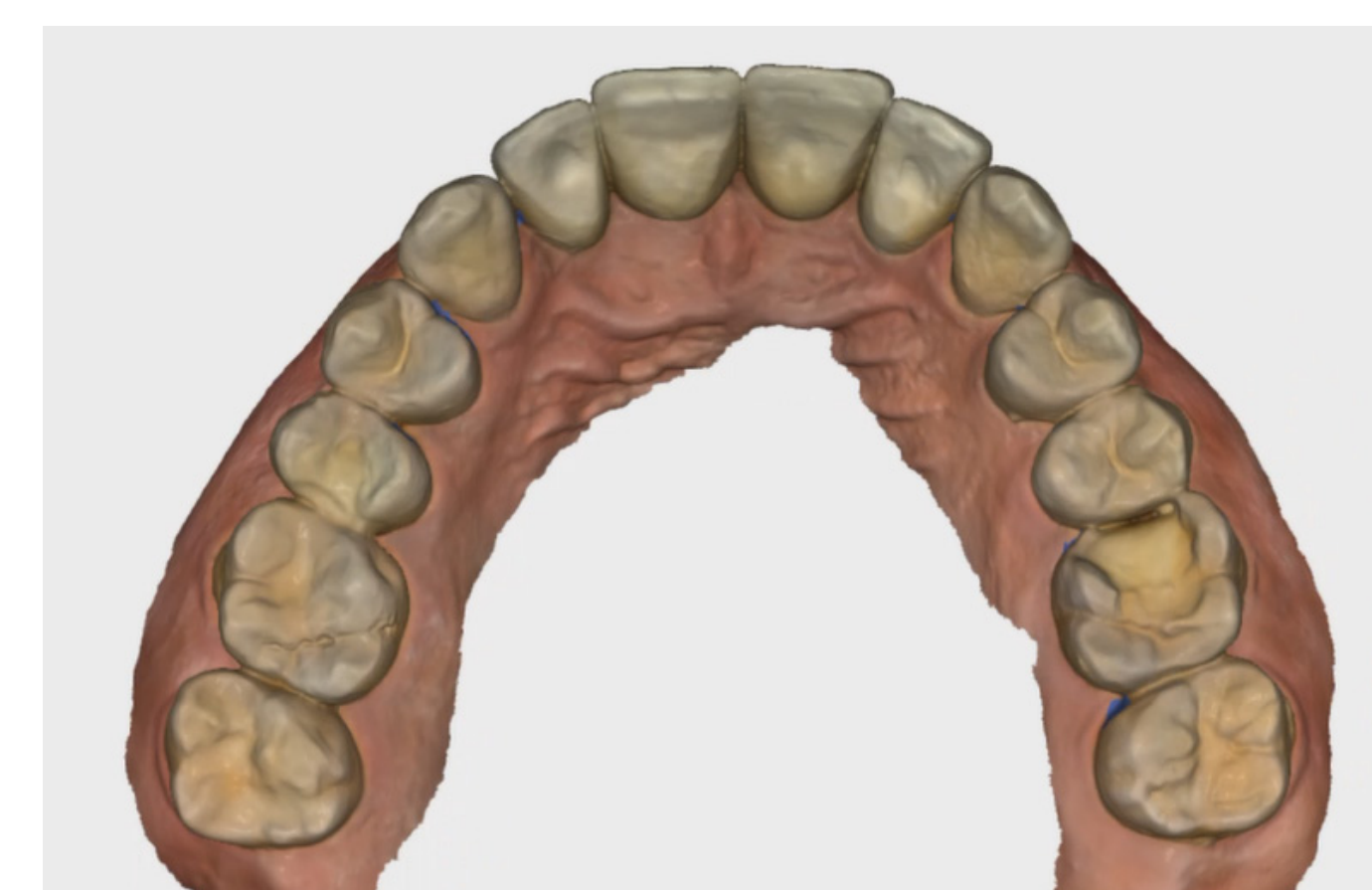
Initial buccal view



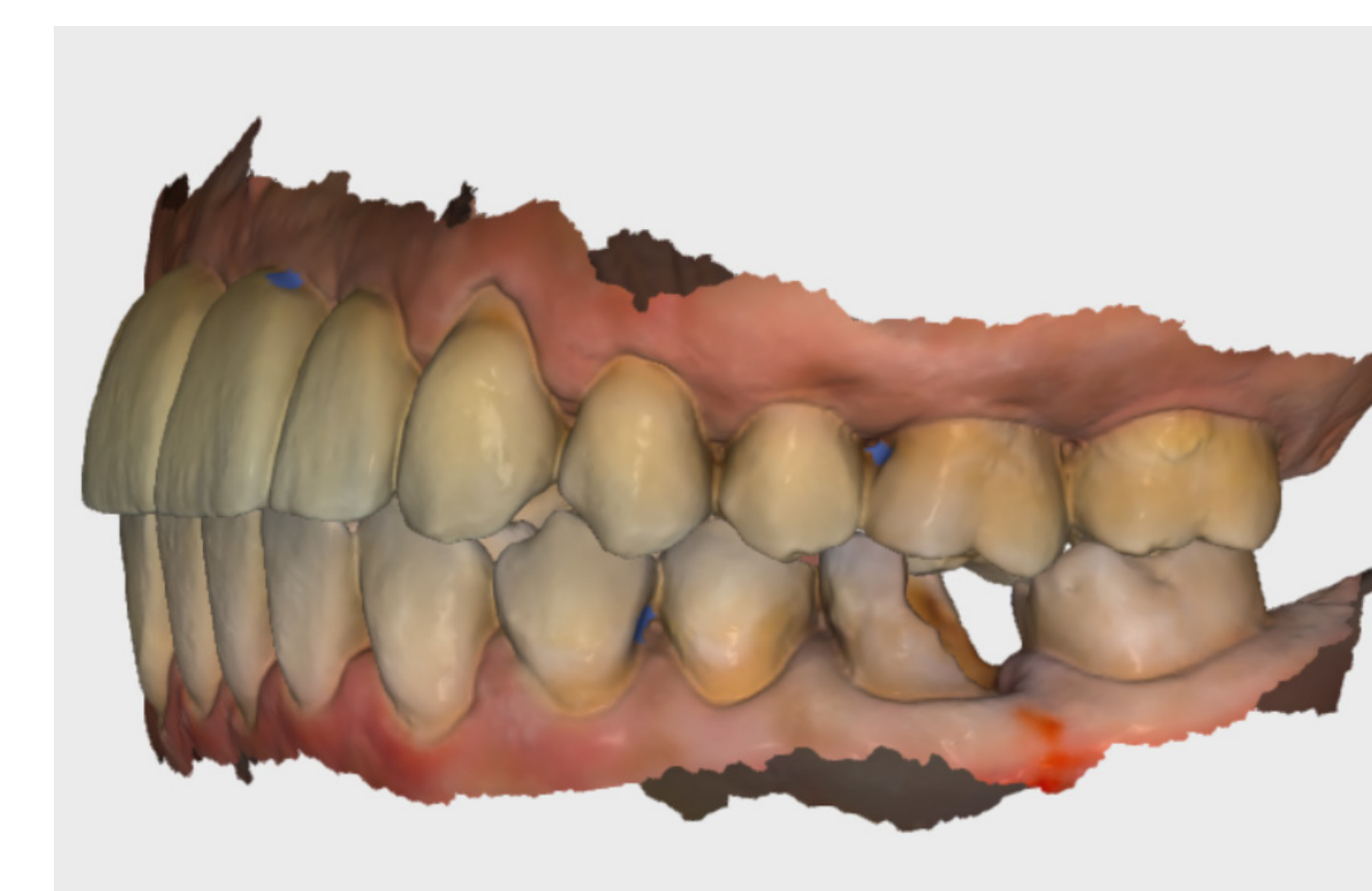
Initial periapical x-ray



Lower scan



Upper scan



Bite scan

CLINICAL CASE REPORT 4

IMMEDIATE SINGLE-TOOTH REHABILITATION WITH NEODENT® HELIX SHORT IMPLANT

SURGICAL AND PROSTHETIC PROCEDURE

Preoperative medication included 4 mg of dexamethasone for edema control. Under local anesthesia with mepivacaine, odontosection was performed, followed by atraumatic extraction of the two roots using a periosteal elevator and forceps. The implant site was prepared for placement of a Neodent® Helix Short implant ($\text{Ø}6.0 \times 8.5 \text{ mm}$), achieving a final insertion torque of 45 N·cm.

A Neodent® scanbody was placed to enable intraoral scanning with the Straumann SIRIOS™ X3 scanner. STL files were transmitted to the dental laboratory for the design of a customized healing abutment using a Neodent® HS Exact Titanium Base ($4.5 \times 1.5 \times 4 \text{ mm}$). The abutment was milled using an ultrasonic machine.



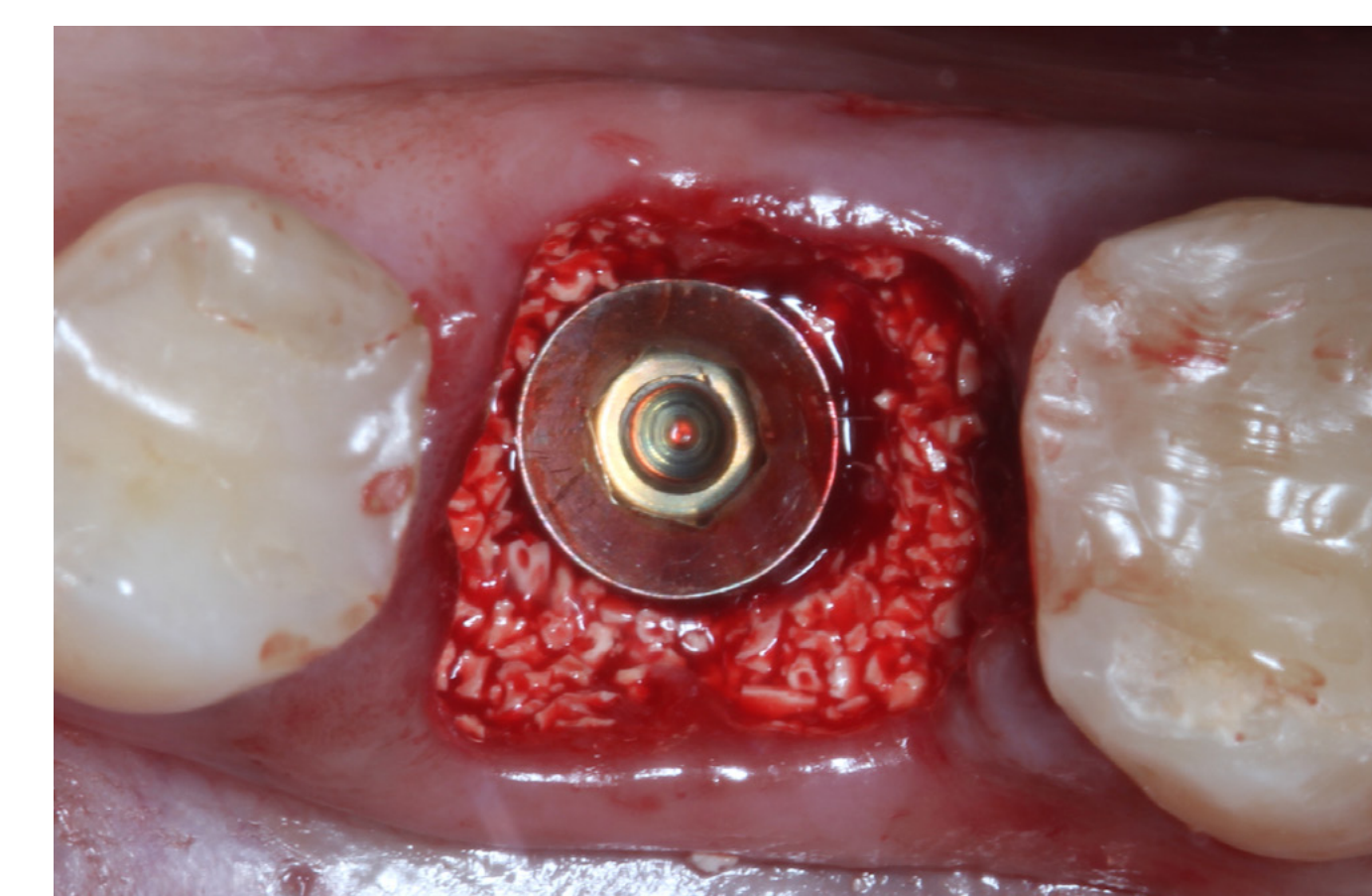
Oclusal view after extraction of tooth 36



Drilling step with Helix Short Tapered Drill 5.0



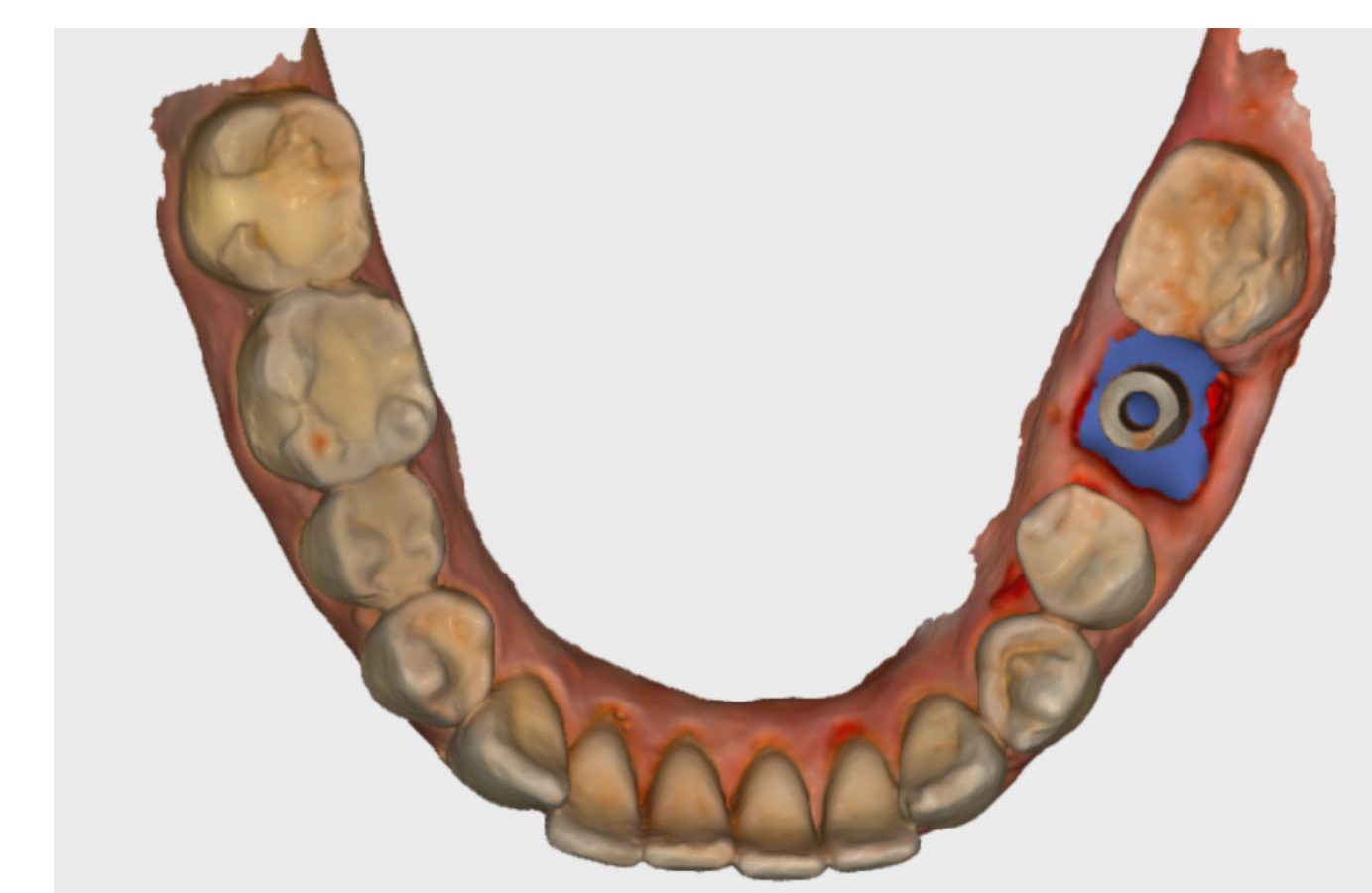
Implant insertion



Implant placed with bone graft



Scanbody in position



Lower scan

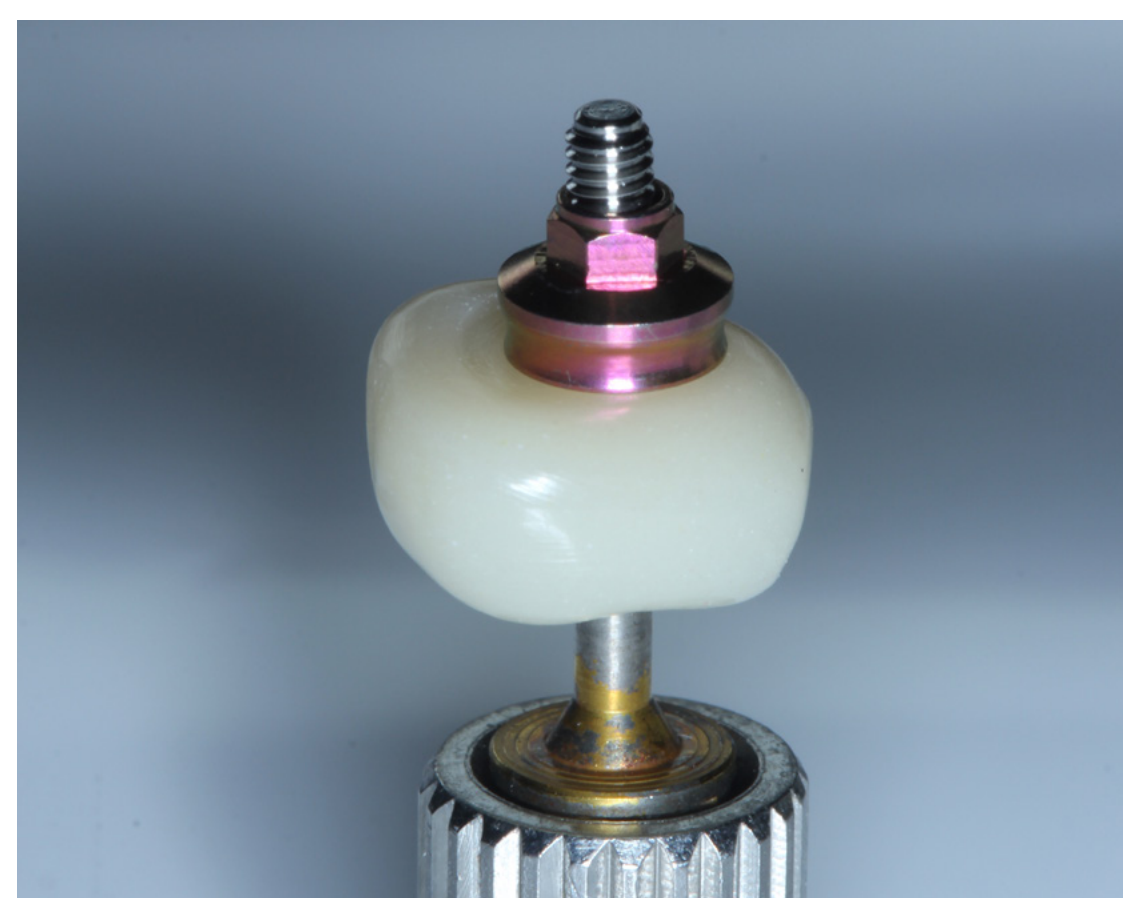
CLINICAL CASE REPORT 4

IMMEDIATE SINGLE-TOOTH REHABILITATION WITH NEODENT® HELIX SHORT IMPLANT

SURGICAL AND PROSTHETIC PROCEDURE

To support socket preservation, the gap between the implant and socket walls was filled with 1.0 cc of Cerabone®. No sutures were required.

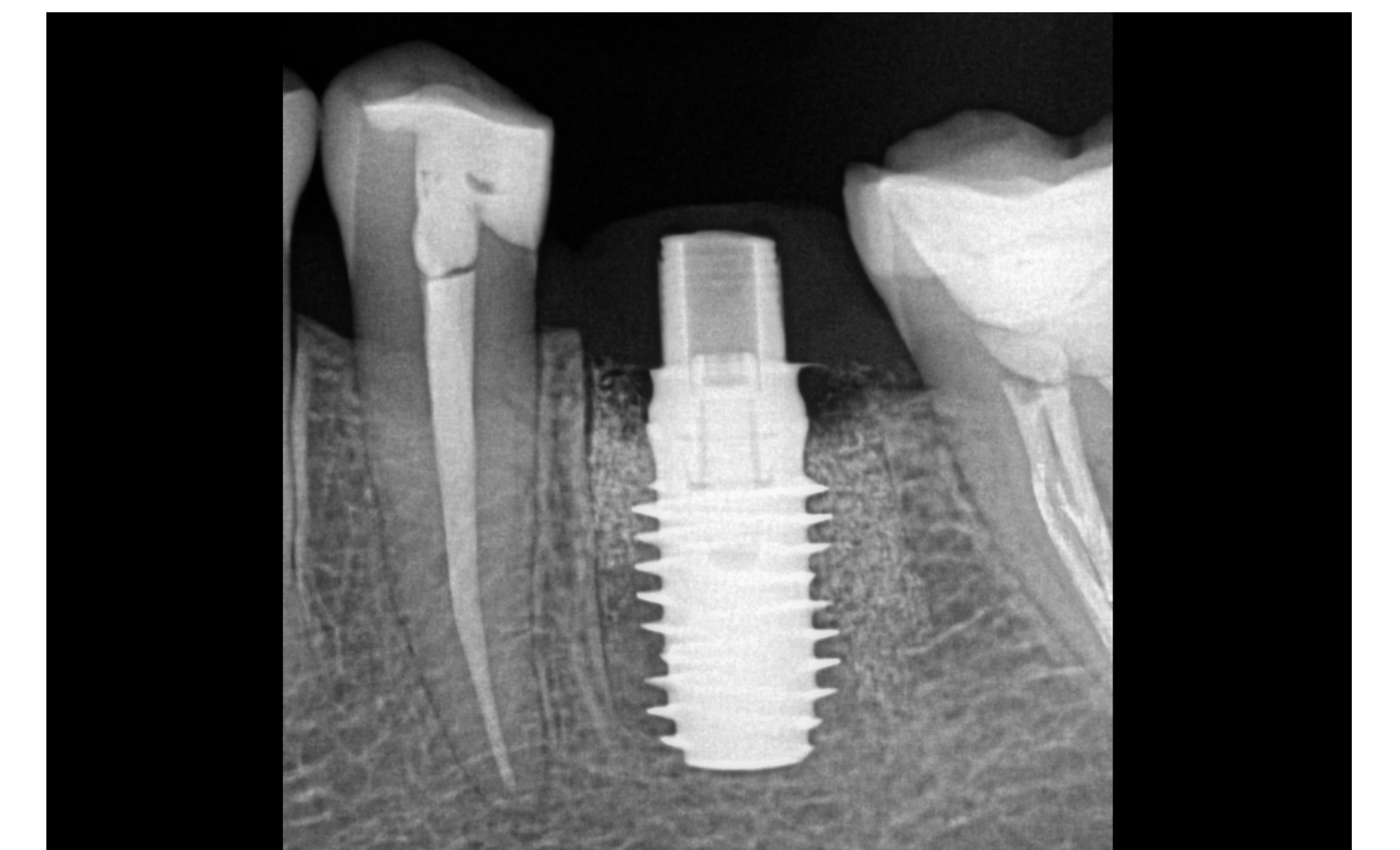
Postoperative medication included Spidufen® 600 mg every 12 hours for three days and Amoxicillin 875 mg every 12 hours for seven days, prescribed for pain management and infection control.



Customized Healing Abutment



Oclusal and buccal views of the Customized Healing Abutment in-mouth



Immediate periapical x-ray

CLINICAL CASE REPORT 4

IMMEDIATE SINGLE-TOOTH REHABILITATION WITH NEODENT® HELIX SHORT IMPLANT

CONCLUSION

The Straumann SIRIOS™ X3 scanner offers versatile applications beyond prosthetic planning, including support for peri-implant tissue maintenance.

In this case, the scanner was utilized to fabricate a customized healing abutment, streamlining the workflow and contributing to a well-polished final restoration. The abutment was specifically designed to preserve the peri-implant tissue contour following tooth extraction and immediate implant placement, promoting optimal healing and long-term stability.

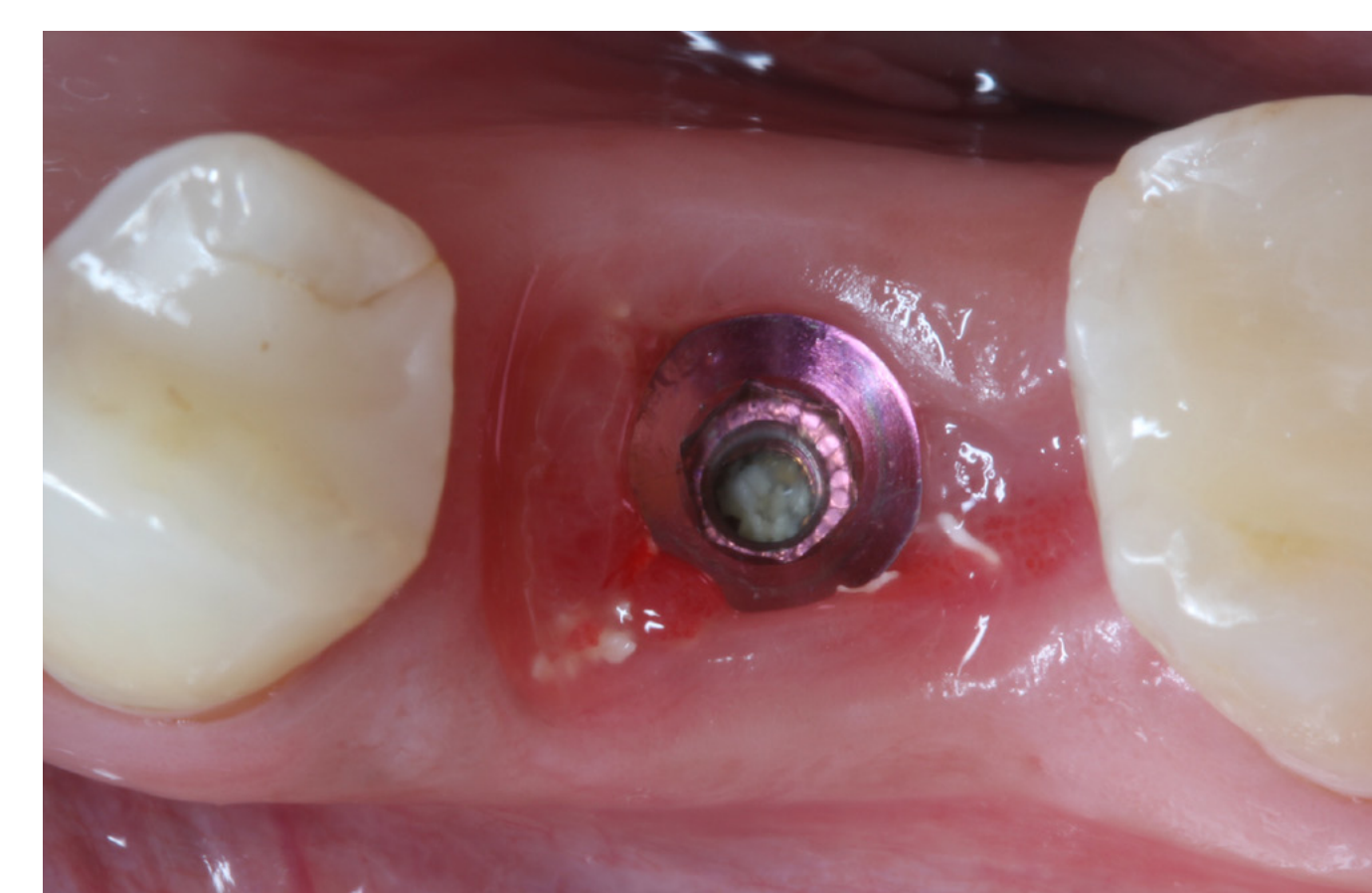
CLINICAL TEAM FEEDBACK

"Intraoperative scanning with the Straumann SIRIOS™ X3 scanner, performed even in the presence of blood, expedited the fabrication of the customized healing abutment by the dental laboratory.

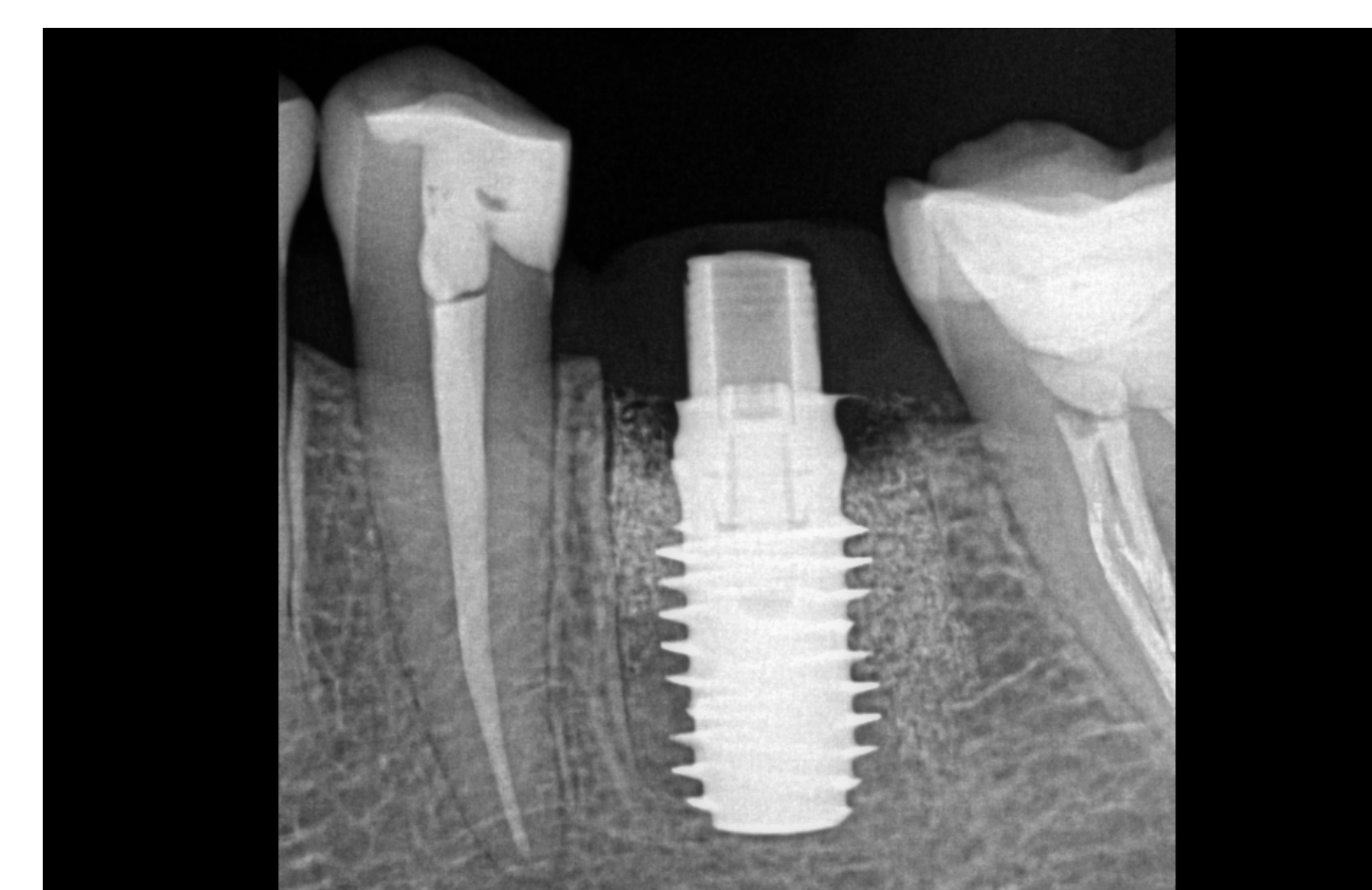
The resulting abutment demonstrated excellent fit and surface finish, significantly contributing to the optimal shaping of the gingival contour and supporting soft tissue preservation during the healing phase."



Oclusal and buccal views - 2-month follow-up



Gingival contour - 2-month follow-up



Periapical x-ray – 2-month follow-up



Scan of gingival healing – 2-month follow-up

CLINICAL CASE REPORT 5

SINGLE-TOOTH REHABILITATION WITH **STRAUMANN BLX™ AND STRAUMANN®** **FAST MOLAR SOLUTION**

INTRODUCTION

Immediate implant placement after tooth extraction is a widely accepted technique to shorten overall treatment time. However, maintaining the soft tissue contours around the implant is essential for achieving both esthetic and functional success.

Digital workflows that utilize scannable healing abutments—such as the Straumann® Anatomic Healing Abutment—enable accurate impression-taking and simplify prosthetic planning. This approach supports more predictable outcomes in immediate implant cases, enhancing both clinical efficiency and patient satisfaction.

INITIAL SITUATION

A 38-year-old female patient, classified as ASA II, presented with persistent spontaneous pain in tooth 46.

The tooth had previously undergone two root canal treatments and was complicated by a fractured endodontic instrument, contributing to the ongoing symptoms.

PATIENT'S CHIEF COMPLAINT

The patient reported experiencing intense pain following endodontic treatment, attributing the discomfort to a fractured instrument retained within the tooth. This ongoing issue significantly impacted daily function and quality of life.



Initial smile



Initial buccal view

CLINICAL CASE REPORT 5

SINGLE-TOOTH REHABILITATION WITH STRAUMANN BLX™ AND STRAUMANN® FAST MOLAR SOLUTION

TREATMENT PLAN

Based on preoperative cone-beam computed tomography (CBCT), extraction of tooth 46 was indicated, followed by immediate implant placement.

The treatment plan also included the insertion of a Straumann® Anatomic Healing Abutment XC (AHA) to support soft tissue contouring and facilitate optimal healing.

PATIENT INFORMATION

Gender	Female
Age	38
Jaw	Mandible
Health status	ASA II
Smile line	low
Bone type	Type III
Local infection	No
Risk factors	Diabetes (well-controlled), high blood pressure



Initial occlusal view



Initial periapical x-ray



Cross-section of planned region

CLINICAL CASE REPORT 5

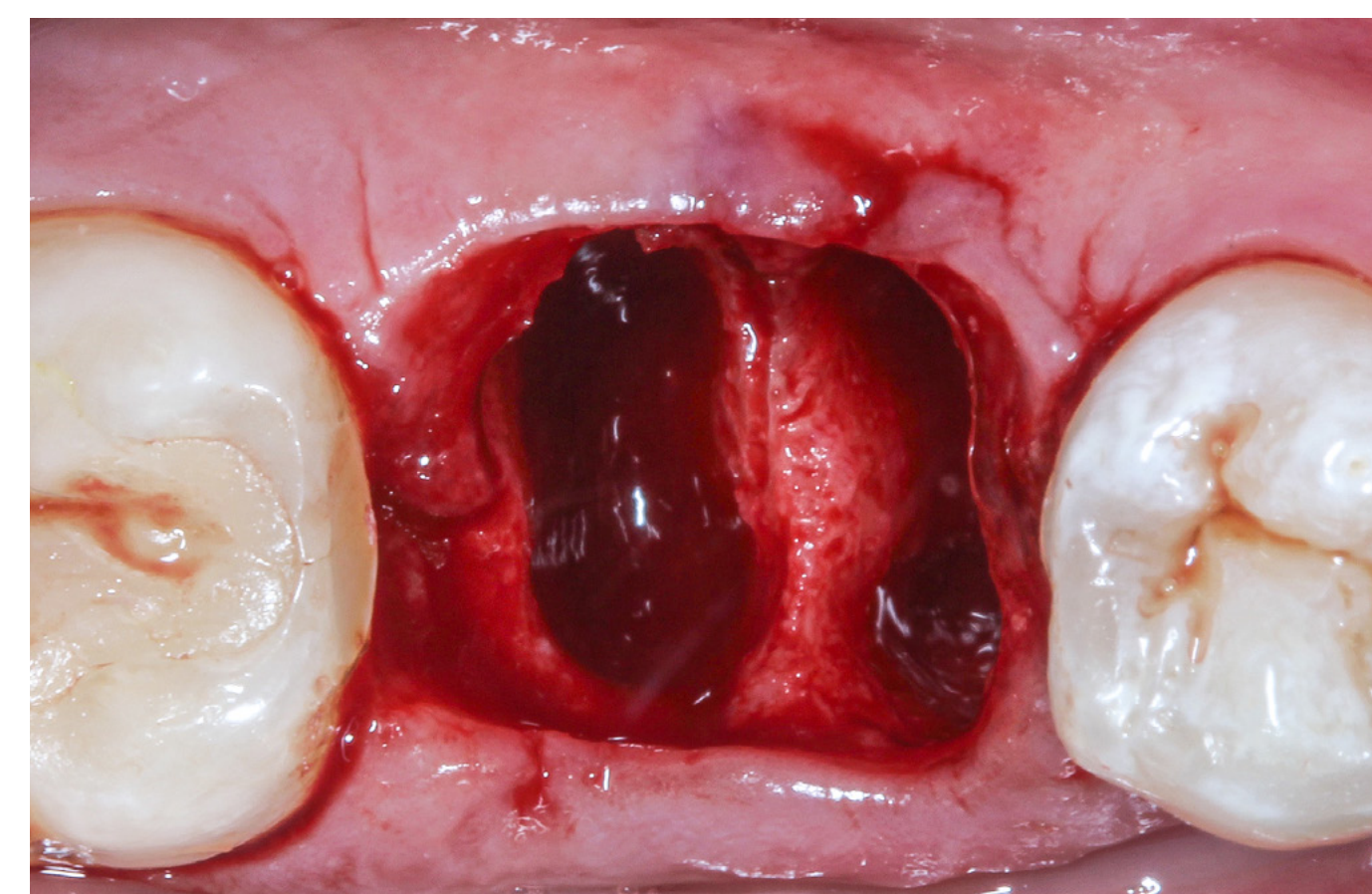
SINGLE-TOOTH REHABILITATION WITH STRAUMANN BLX™ AND STRAUMANN® FAST MOLAR SOLUTION

SURGICAL PROCEDURE

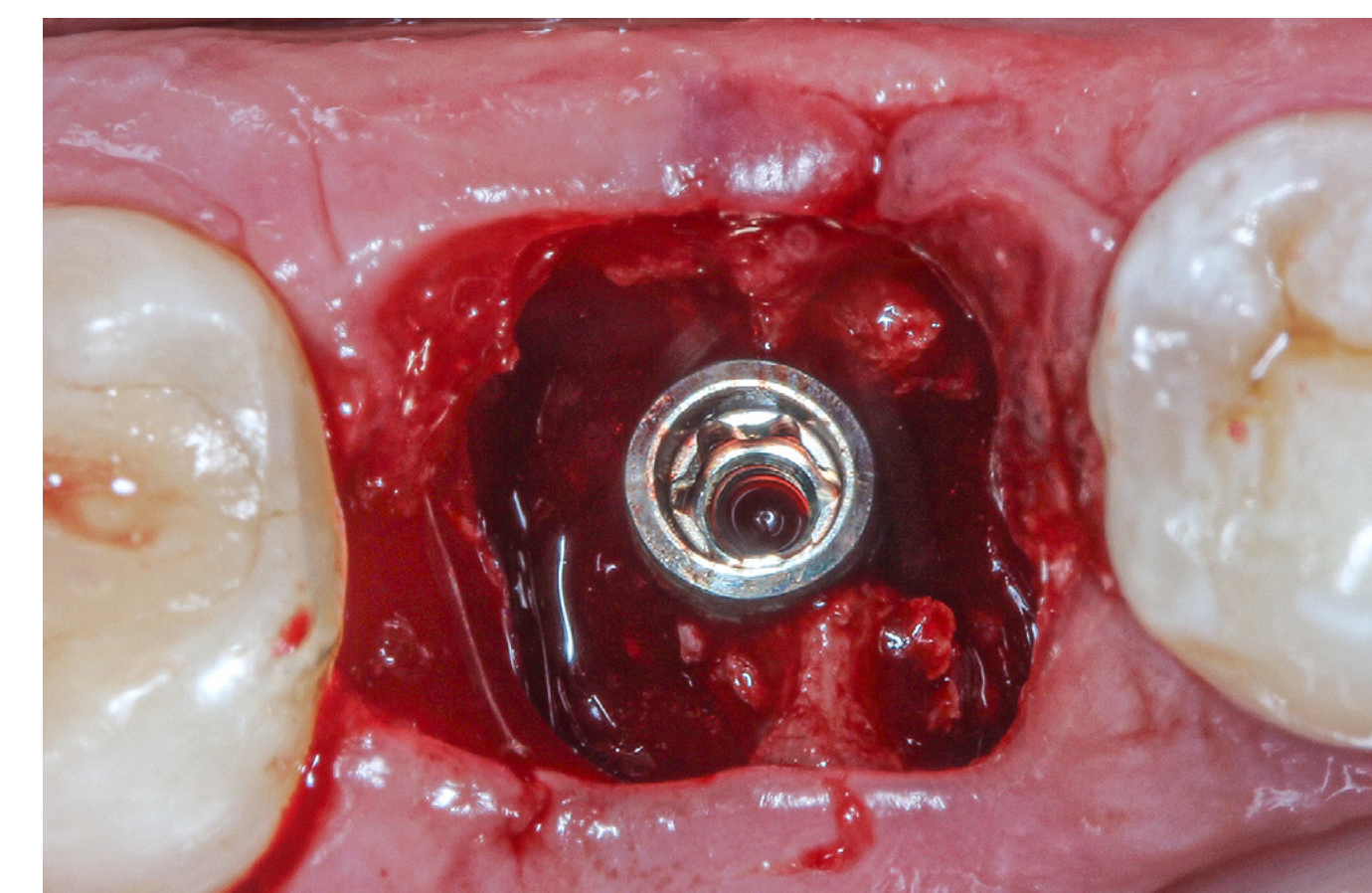
Following the extraction of tooth 46, immediate implant placement was performed using the Straumann® BLX Implant System.

A Straumann BLX™ Roxolid® SLActive® implant (3.75 × 12 mm) was placed in bone type III, achieving a final insertion torque of 35 N·cm.

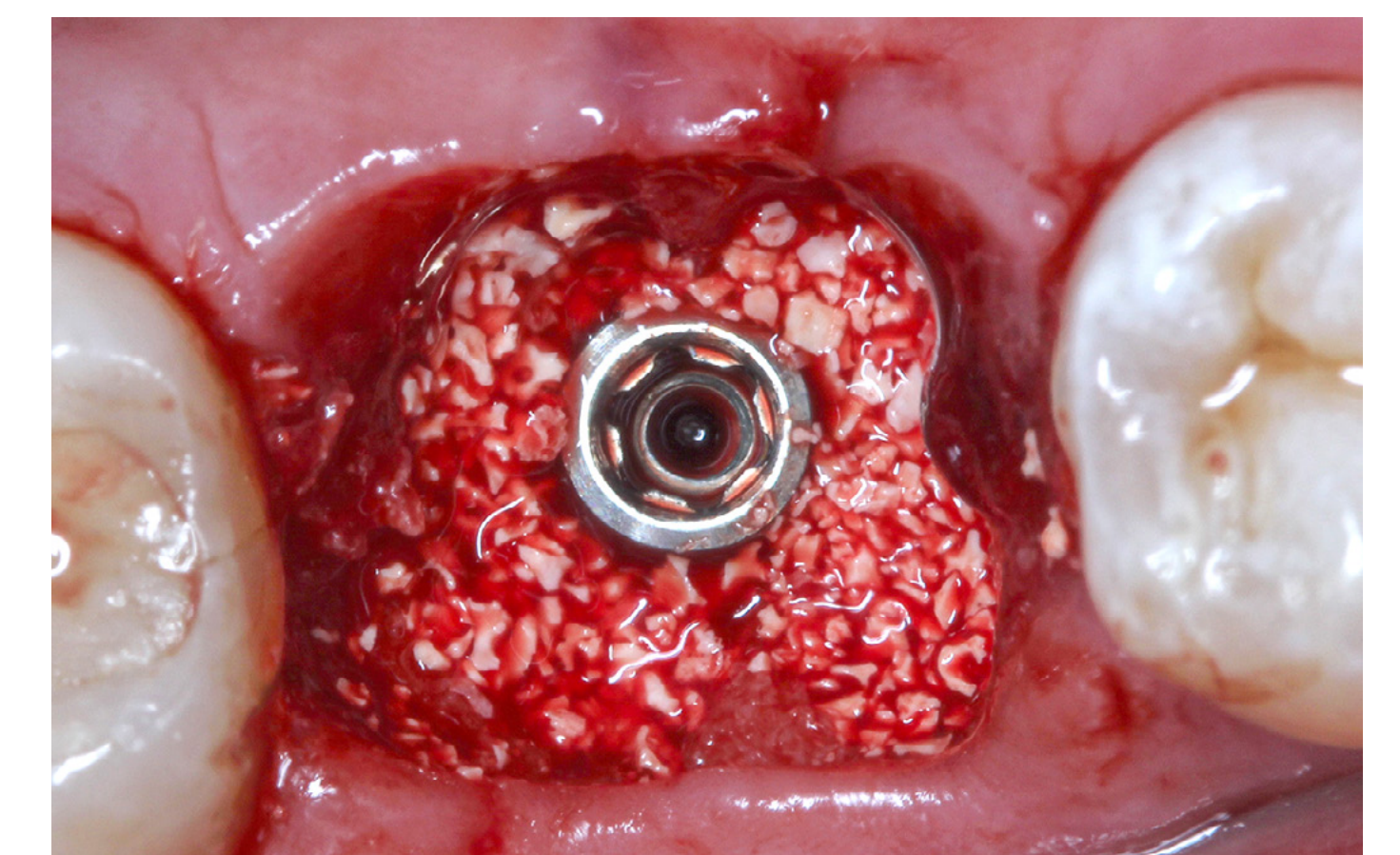
To support socket preservation, a Cerabone® Small bone graft was used to fill the peri-implant gap. A Straumann® Anatomic Healing Abutment XC was then placed to aid in soft tissue contouring and promote optimal healing.



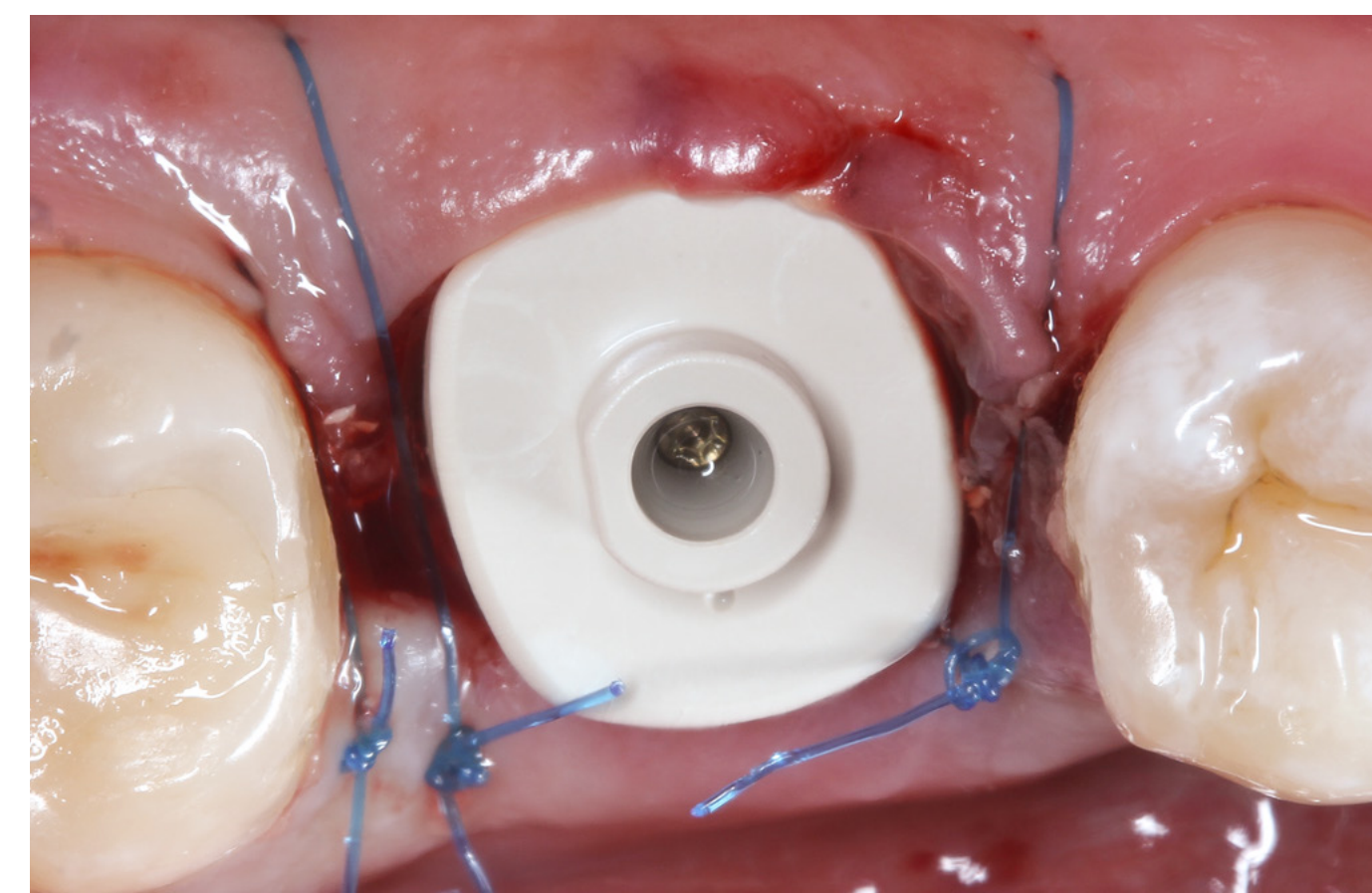
Oclusal view of socket walls preservation



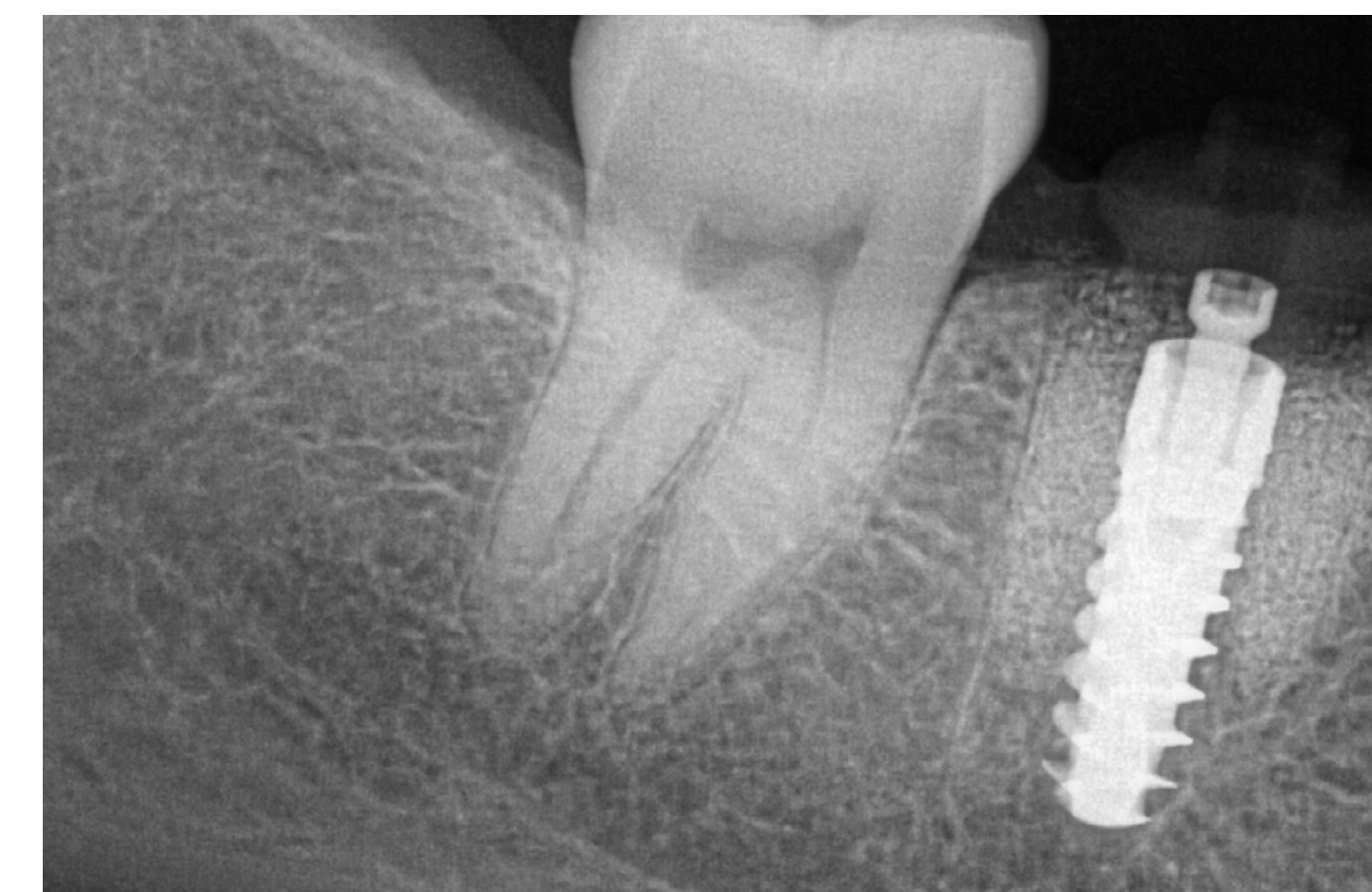
Final implant placement



Filled gaps between implant and socket walls



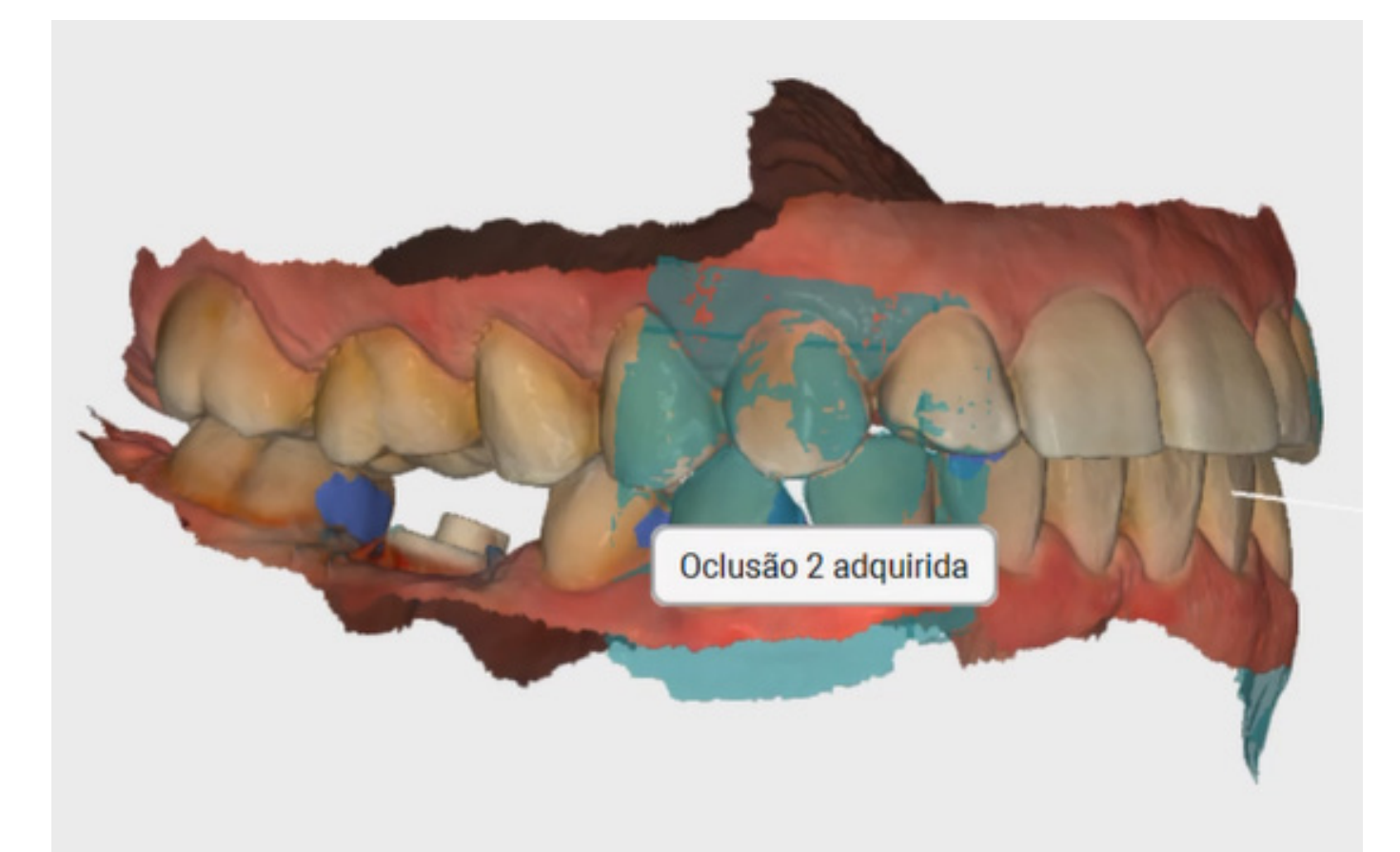
Oclusal view of the AHA in position



Immediate periapical x-ray



Lower, upper and bite scan with Straumann SIRIOS™ X3



CLINICAL CASE REPORT 5

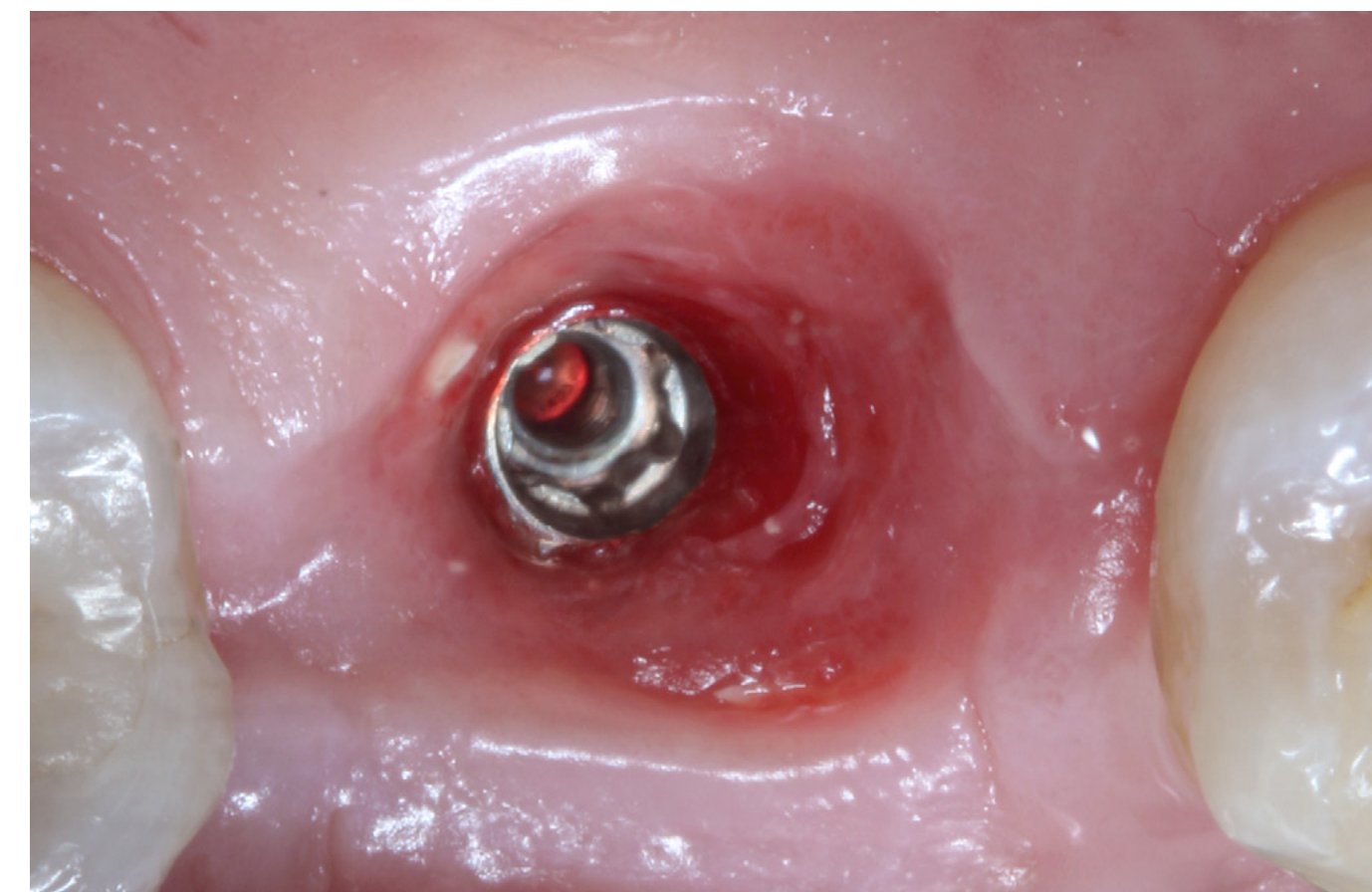
SINGLE-TOOTH REHABILITATION WITH STRAUMANN BLX™ AND STRAUMANN® FAST MOLAR SOLUTION

CONCLUSION

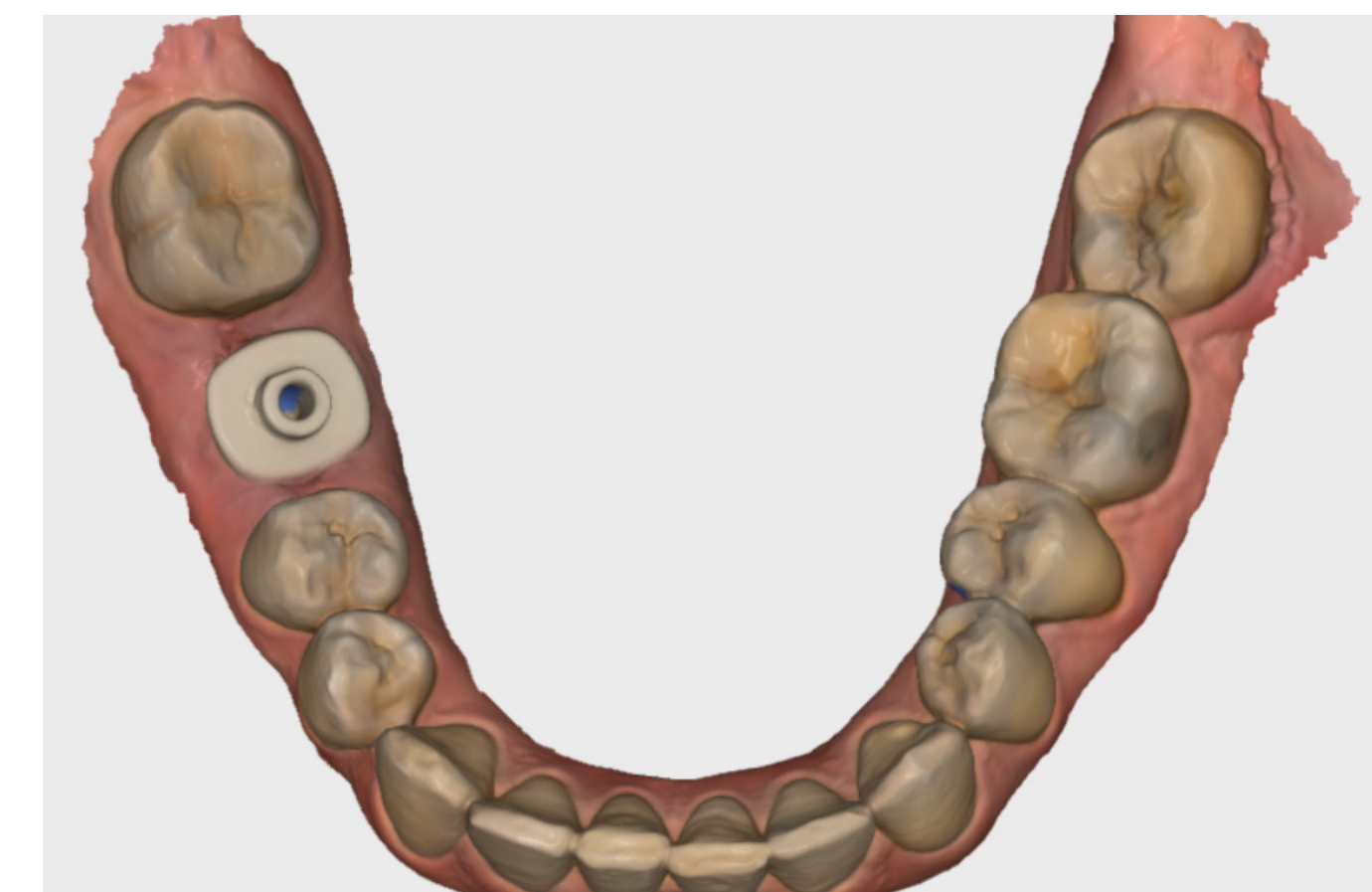
The use of the scannable Straumann® Anatomic Healing Abutment (AHA), together with the Straumann SIRIOS™ X3 intraoral scanner, streamlined the digital workflow by eliminating the need for a separate scanbody.

This combination enabled direct and accurate digital impressions, simplifying the prosthetic planning process and enhancing overall clinical efficiency.

This approach reduced the number of prosthetic component disconnections, thereby minimizing the risk of technical errors and saving valuable clinical time during the restorative phase.



Gingival contour after a 30-day follow-up



30-day follow-up scan with Straumann SIRIOS™ X3



30-day follow-up periapical x-ray

CLINICAL CASE REPORT 5

SINGLE-TOOTH REHABILITATION WITH STRAUMANN BLX™ AND STRAUMANN® FAST MOLAR SOLUTION

CLINICAL TEAM FEEDBACK

The Anatomic Healing Abutment (AHA) represents an innovative solution that significantly streamlined the digital workflow, reducing valuable chair time during the rehabilitation process.

In addition to its functional benefits, the AHA provided an excellent emergence profile, contributing to optimal soft tissue management and esthetic outcomes.



60-day follow-up intraoral scan with Straumann SIRIOS™ X3



Buccal view of gingival contour



60-day follow-up periapical x-ray

CLINICAL CASE REPORT 6

SINGLE-TOOTH ZIRCONIA CROWN RESTORATION ON A NEODENT® GM IMPLANT

INTRODUCTION

Posterior teeth play a vital role in maintaining effective mastication and overall oral health.

However, their replacement is frequently delayed by patients, often due to the complexity of traditional impression techniques in posterior regions, where anatomical constraints and patient discomfort pose significant challenges. The adoption of intraoral scanners within a fully digital workflow provides a more efficient and patient-friendly alternative for capturing dental impressions, enhancing both clinical accuracy and procedural comfort.

INITIAL SITUATION

A 69-year-old female patient, classified as ASA II, presented for prosthetic rehabilitation of a previously placed dental implant in the region of tooth 36.

An immediate loading protocol has been implemented at the time of implant placement, allowing for early functional restoration.

PATIENT'S CHIEF COMPLAINT

The patient expressed anticipation for the final restoration, noting prior experience with conventional impression techniques. They conveyed hope that the digital workflow would offer a faster and more comfortable alternative.



Initial smile



Abutment in position



Initial periapical x-ray

CLINICAL CASE REPORT 6

SINGLE-TOOTH ZIRCONIA CROWN RESTORATION ON A NEODENT® GM IMPLANT

TREATMENT PLAN

Initial diagnostic documentation included clinical photographs and a periapical radiograph.

The treatment plan involved restoring tooth 36 with a monolithic zirconia crown, placed over a previously installed Neodent® GM abutment (gingival height 1.5 mm).

PROSTHETIC PROCEDURE

Prosthetic procedure: An abutment scanbody was installed, and digital impressions were taken using the Straumann SIRIOS™ X3 scanner.

The STL files were sent to the lab for the design and milling of a screw-retained monolithic zirconia crown.

PATIENT INFORMATION

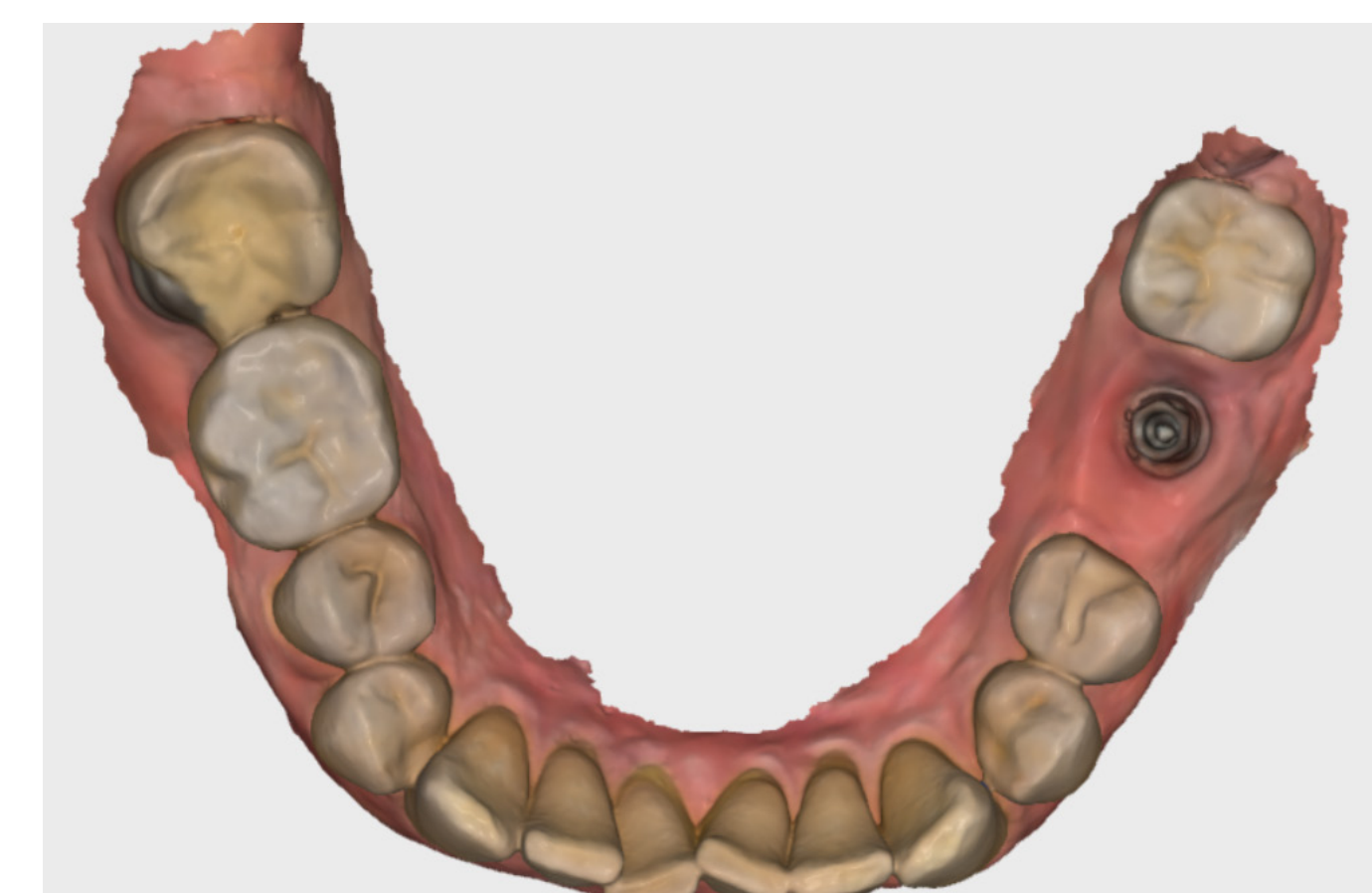
Gender	Female
Age	69
Jaw	Mandible
Health status	ASA II
Smile line	low
Local infection	No
Risk factors	High blood pressure



Scanbody in position



Lower arch scan with scanbody



Lower arch scan with abutment



Upper arch scan

CLINICAL CASE REPORT 6

SINGLE-TOOTH ZIRCONIA CROWN RESTORATION ON A NEODENT® GM IMPLANT

CONCLUSION

The integration of the Straumann SIRIOS™ X3 scanner within a fully digital workflow enabled a highly efficient and precise prosthetic procedure.

This approach allowed the final restoration to be completed in just two clinical appointments, significantly improving patient comfort and reducing overall treatment time.

CLINICAL TEAM FEEDBACK

The integration of the Straumann SIRIOS™ X3 scanner with the Straumann AXS™ platform enhanced the digital workflow by enabling rapid and highly accurate image acquisition.

This approach contributed to the fabrication of a well-adapted prosthesis, demonstrating excellent proximal contact points and a refined emergence profile, thereby supporting both functional and esthetic outcomes.



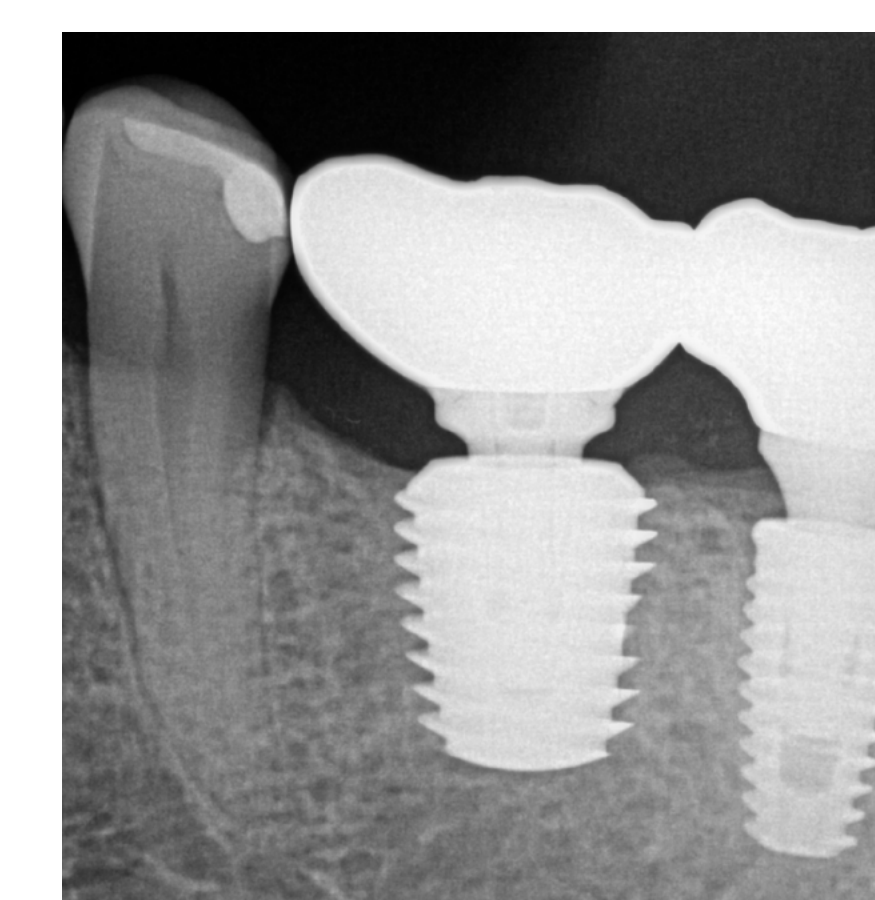
Final smile



Final crown fitting on model (occlusal view)



Final crown fitting in mouth (occlusal view)



Final periapical x-ray

INSTITUTE ILAPEO

World center for research and development of new technologies in dentistry, Ilapeo Institute has more than 20 years of activity and excellence. Over almost two decades, it has developed techniques, explored possibilities, and revolutionized the way dentistry is taught. With a faculty composed of masters, doctors, and professionals engaged in research and clinical practice, Ilapeo Institute also invests in infrastructure, technology, and innovation to shape the future of clinical professionals.

In addition, Ilapeo has partnerships with major companies. This fosters research, strengthens development areas, and provides opportunities for students. Throughout its history, Ilapeo has always believed that it is possible to make health care more humane.



MEET OUR CLINICAL EXPERTS



Dr. Geninho Thomé, PhD, MSc

Focus areas: Oral Implantology, Oral Rehabilitation, Prosthodontics. Graduation in Dentistry from the Federal University of Santa Catarina (UFSC), Brazil. Currently serves as Scientific President and Chairman of the Board at Neodent, and Director of Innovation and Development at the Latin American Institute of Dental Research and Education (ILAPEO) in Curitiba, Brazil. Engaged in teaching, clinical guidance, and research in implantology, prosthodontics, and esthetic dentistry. Frequently participates as a speaker at national and international scientific events. Author of several scientific articles in the fields of dentistry and implantology.



Dr. Sérgio Bernardes, DDS, MSc, PhD, MBA

Focus areas: Oral Implantology, Oral Rehabilitation, Prosthodontics. Graduate in Dentistry from the Federal University of Rio de Janeiro (UFRJ), Brazil. Currently a Professor at ILAPEO and Head of Global Research & Education at Neodent. Engaged in teaching, clinical guidance, and research in implantology, prosthodontics, and esthetic dentistry. Frequently participates as a speaker at national and international scientific events. Author of several scientific articles in the fields of dentistry and implantology. Member of the Editorial Board of the International Journal of Oral and Maxillofacial Implants and Editor-in-Chief of Prosthesis Laboratory in Science.



Dr. Carolina Accorsi Cartelli, DDS, MSc

Focus areas: Implantology, oral rehabilitation, digital workflows. Graduation in Dental Medicine from the Federal University of Paraná, Brazil. Specialist and Master degree in Implantology from ILAPEO, Brazil. Clinical & Scientific Support Manager of Neodent. Teacher and lecturer in national and international level.



Dr. Gabriel Guidio Guarenghi, DDS, MSc

Focus areas: implantology, oral rehabilitation, digital workflows. Graduate in Dental Medicine from the Federal University of Paraná, Brazil; Master's degree in Dentistry from Federal University of Paraná, Brazil; Specialization in Implantology from Prime Curitiba; Clinical Practice Coordinator of Neodent.



Dr. Isadora Rotta, DDS, MSc

Focus areas: Implantology, oral rehabilitation. Graduated in Dentistry from the Federal University of Santa Maria, Brazil. Master degree in Periodontology from Federal University of Rio Grande do Sul (UFRGS), Brazil. Specialist in Periodontology from UFRGS and in Implantology from SLMandic, Brazil. Research Specialist at Neodent.



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