Zygomatic PLUS

SCIENTIFIC JOURNAL

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EDITORIAL

Zygomatic implants have gained scientific reputation through studies that prove the applied technique's success, both in the short and long term. Currently, specialists consider this solution an alternative in the therapeutic portfolio, making it possible to achieve the best results in different challenging and complex cases of atrophic maxilla.

ZYGOMATIC EXPLORES THE MAXIMUM EFFICIENCY AND PRECISION IN THE MOST CHALLENGING SITUATIONS IN DENTAL PRACTICE!

Despite its popularity, the installation of zygomatic implants demands a high level of knowledge since there are still dangers and potential complications during the procedure.

With the advent of new digital tools, an evolution in surgical techniques has been seen. Implants started to be positioned with the head, in many cases, on top of the crest of the alveolar ridge. On some occasions, by looking at the work model or clinically in the mouth, it is impossible to differentiate between a well-positioned zygomatic implant and a well-installed conventional implant.

Given that, planned and assertive perforations have drastically reduced the risk of mistakes and deviations in perforations that are potentially harmful to noble anatomical structures.

Sinus problems have been reduced with the possibility of exteriorizing the zygomatic implant, with the proper positioning of the implant's head, always supported by a residual bone bed.

The evolution of the surgical process has been clear and beneficial to patients; for that reason, the development of new geometries for zygomatic implants has been necessary throughout the years.

By: DR. FERNANDO GIOVANELLA

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HISTORY AND DEVELOPMENT

DEVELOPMENT

The initial design with coils and a wider head, ideally developed for the Branemark Technique, is still frequently used. Recently, some changes have been adopted for improvement, meeting the clinical demands within the contemporary notion of correct indications for the proper use of the technique.

CLINICAL INDICATIONS

The zygomatic implant is recommended for complex and challenging situations that arise in the implantologist's practice. It is indicated for severe cases of atrophic maxilla, where the zygomatic implant head is often supported by a bone in the rim, with the implant's body and head sometimes without bone coverage.

At this point, we reach the challenge of the current technique: peri-implant tissue stability in the long term.

PRECAUTIONS

It is not unusual to find well-installed and rehabilitated zygomatic implants; however, they may exhibit tissue dehiscence and exposure of some cervical coils. This dehiscence can cause concern for the patient, making hygiene harder to perform and potentially leading to inflammations or even local infections. Therefore, the search for an optimized implant design for the clinical situation is essential for the solution and surgical procedure of the cases.

Considering this, the contemporary design of a zygomatic implant must take into account osseointegration and primary stability, mainly in the implant's apical area. Additionally, it must present a tissue-friendly design in the cervical area. This means it should have the smallest volume possible at the cervical area and feature a macrostructure that does not irritate soft tissues. Regarding the surface, a specific treatment is something that will further optimize stability and tissue adherence.

HANANO SURFACE

The inclusion of a bioactive surface elevates the product to the next level, increasing predictability and clinical success. The HAnano surface is composed of hydroxyapatite nanocrystals, whose size and form are similar to those of human bone. It has a 20-nanometer width, sintered onto titanium, which promotes a change in the surface energy. In addition, it increases hydrophilicity and provides a substrate that stimulates higher protein adsorption, adherence, proliferation, and differentiation of osteoblasts.

Preliminary studies have shown excellent fibroblast adherence, which is highly desirable in the cervical area. Considering these factors, the new Zygomatic by S.I.N. intends to be a solution in line with modern and updated indications for this type of implant, as well as enabling higher stability, easier osseointegration, and promoting good peri-implant health.

CONCLUSION

Although the External Hexagon is the most studied prosthetic platform regarding zygomatic implants, the use of internal connections has gained the interest of many dental surgeons. The fact that these do not demand the use of assemblers, along with the possibility of personalizing angulations with mini-pillars, are perceived as advantages by professionals. Therefore, having two prosthetic platform options in the portfolio makes sense to serve the global market.

In summary, the technique of zygomatic implants is an excellent treatment alternative, with vast scientific evidence. Its surgical technique has evolved, as has the implant's design, which has followed the development of the technique.

The new Zygomatic by S.I.N. brings characteristics in accordance with the clinical challenge, combined with good practical usability. Its diverse components for prosthetic solutions and proven treatment provide the implantologist with the best zygomatic implant on the market.

Fernando Giovanella, PhD.

CLINICAL CASES

NEW ZYGOMATIC IMPLANTS TO SOLVE THE UNSUCCESS OF CONVENTIONAL IMPLANTS AND MAXILLARY SINUS LIFT

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CASE INTRODUCTION

The case begins with a series of failed attempts at surgeries with conventional implants and maxillary sinus lifts. Given this unsuccessful trajectory, the proposed approach to fully rehabilitate the arch involved the implementation of four zygomatic implants. This sequence of events highlights the complexity of the clinical condition and the need for an innovative solution for the patient's oral restoration.

TREATMENT EXPLANATION

The patient had a history of failed conventional implant surgeries. Subsequently, she underwent a maxillary sinus lift and the placement of new implants, but this treatment was also unsuccessful. Given this situation, the use of four zygomatic implants was proposed and implemented to fully rehabilitate the arch.

PATIENT FILE

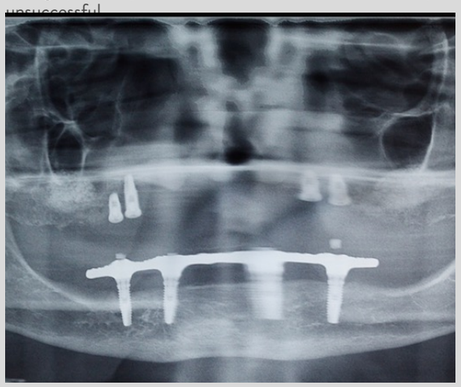
Gender: Female.
Age: 70 years old.
Complaint: Masticatory inability, lack of confidence in social relations, unstable total prosthesis, and frustration with previous treatments.
Anamnesis: Normotensive patient, with no underlying pathologies, in good health.
Planning: Installation of four zygomatic implants to rehabilitate the entire upper arch.

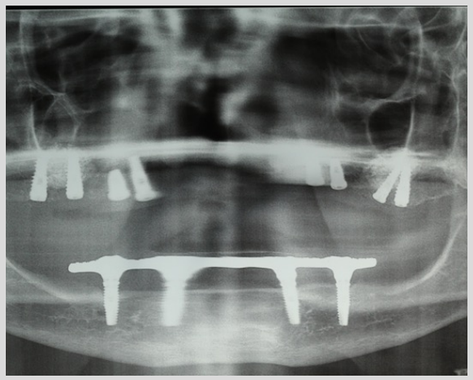
BEFORE

Patient with a remaining implant, severely atrophic maxilla, with history of two treatments with conventional implants and graft, both unsuccessful.

RADIOGRAPHY/TOMOGRAPHY

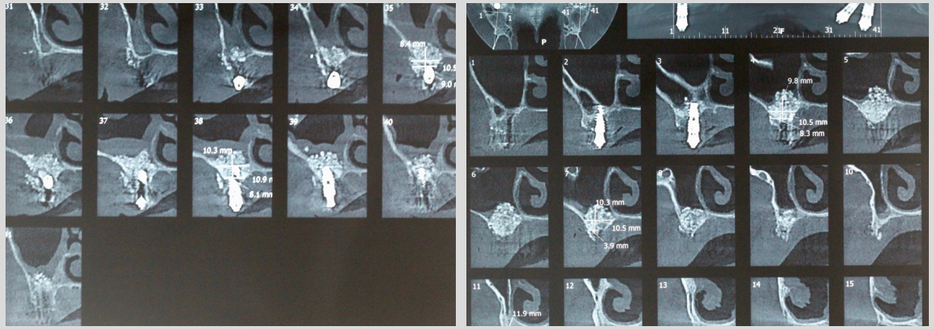
The first radiography shows the presence of 4 installed implants, but insufficient for a total rehabilitation. At the second radiography, it is possible to see the addition of 4 more implants in a procedure of maxillary sinus lift, which was unfortunately unsuccessful.





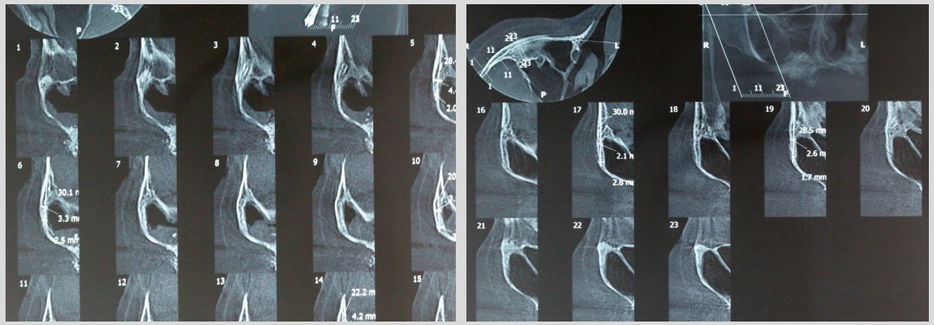
RADIOGRAPHY/TOMOGRAPHY

The tomography show the unsuccessful grafting and the loss of installed implants.



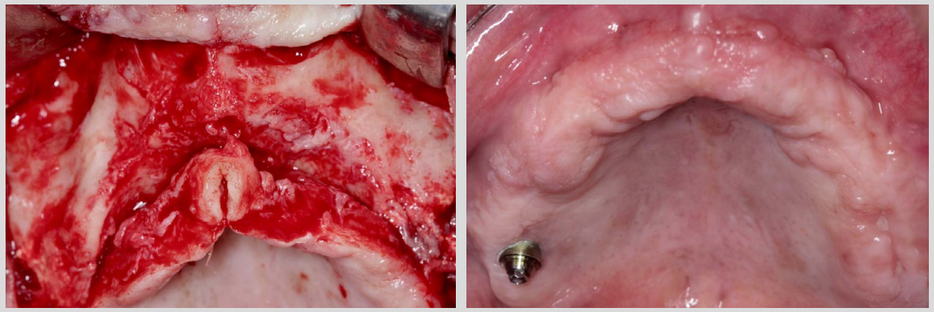
RADIOGRAPHY/TOMOGRAPHY

Tomography of the zygomatic bone used to plan and conduct the case.



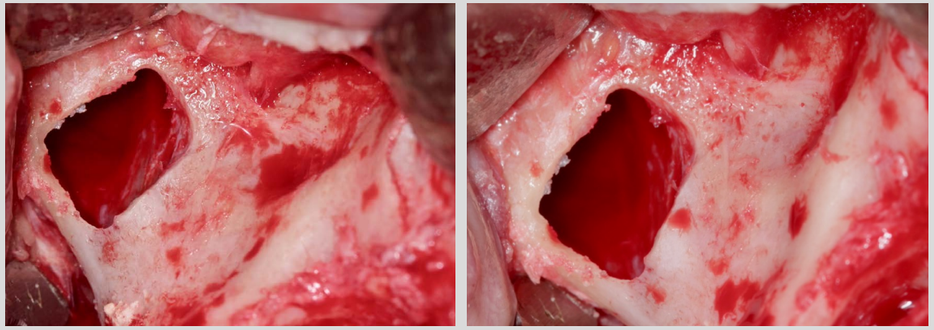
STEP BY STEP PROCEDURE

In the intraoral view and during total detachment, it is possible to observe a severe atrophy in height and width, indicating the need for zygomatic fixations with precision.



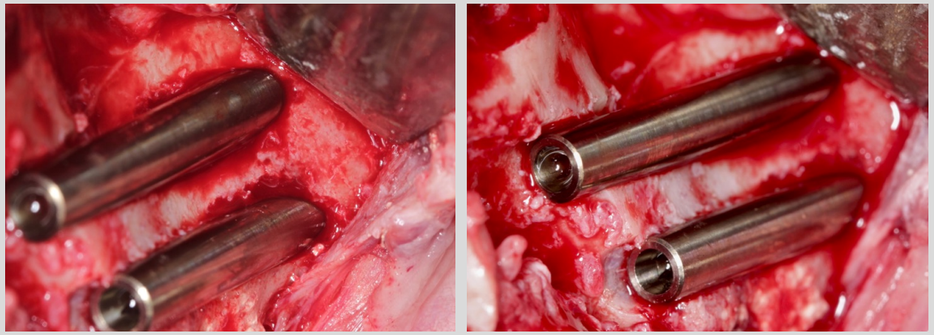
STEP BY STEP PROCEDURE

Full-window approach, with careful detachment of the sinus membrane and access to the zygomatic body.



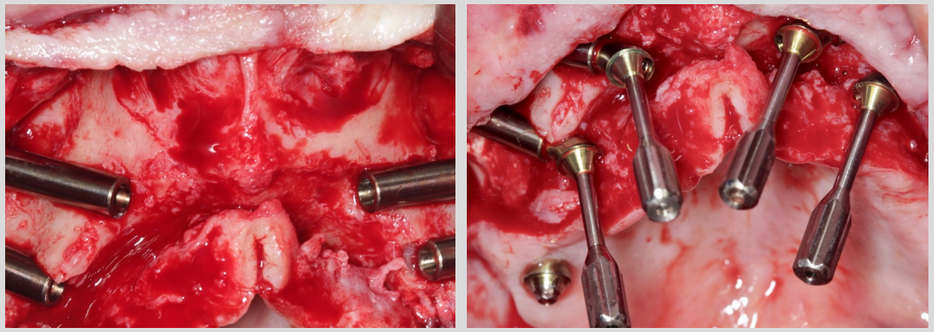
INTRAOPERATIVE

Installation of implants on the right side with close-up view, keeping the integrity of the sinus membrane.



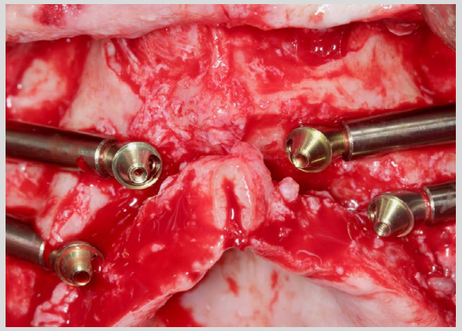
INTRAOPERATIVE

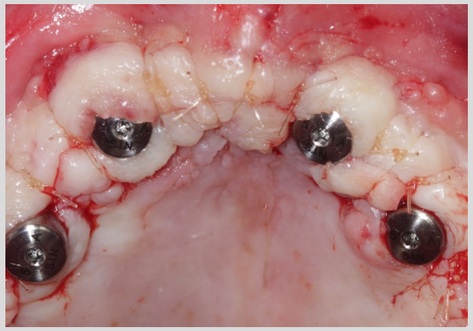
Occlusal view with positioned Mini Abutments, presenting excellent emergency and prosthetic positioning.



INTRAOPERATIVE

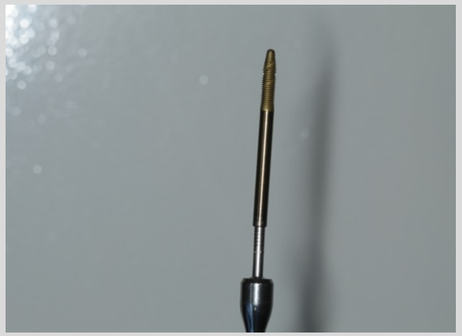
Final photograph of the surgery with performed suture, preserving soft tissues and keeping a healthy gum phenotype.

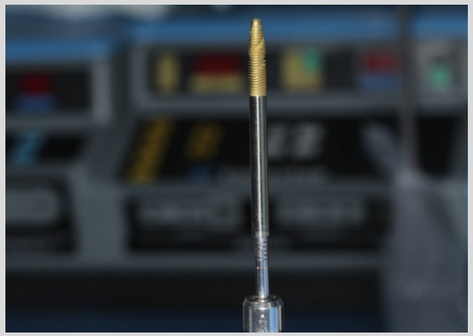




IMPLANT USED

Close-up view of the zygomatic implant that was installed.



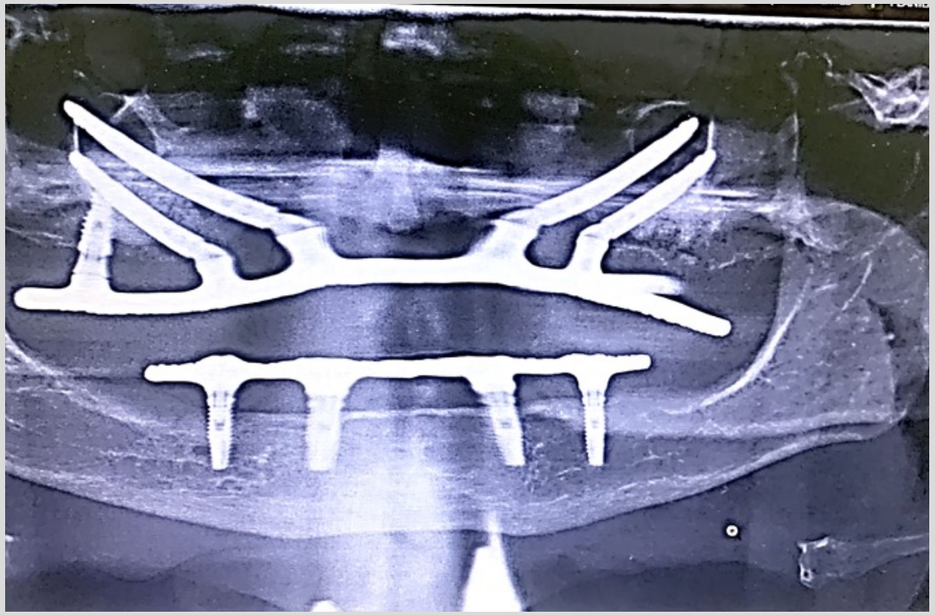


PROSTHETIC PHASE

Bimaxillary protocol prothesis installed, with intraoral photograph of the case finished in 48 hours.

FINAL RADIOGRAPHY

Case finished in immediate load in less than 48 hours, presenting passivity and full settling of the structure.



NEW ZYGOMATIC IMPLANTS TO SOLVE THE UNSUCCESS OF CONVENTIONAL IMPLANTS AND MAXILLARY SINUS LIFT

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CASE INTRODUCTION

The patient, who had previously undergone an unsuccessful implant procedure, chose to undergo a new procedure involving the use of four zygomatic implants. This approach was adopted with the intention of fully rehabilitating the dental arch.

TREATMENT EXPLANATION

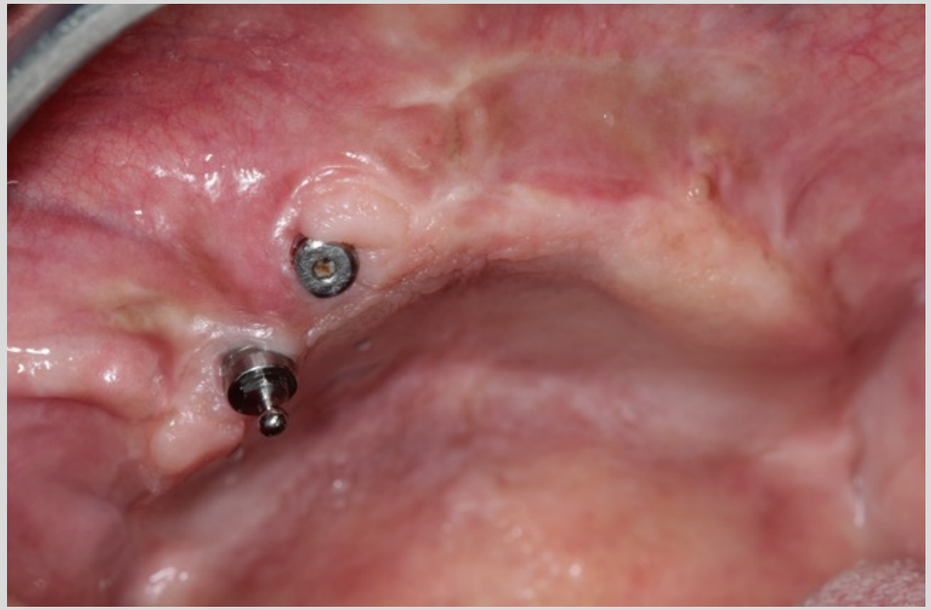
The patient had a history of failed conventional implant surgeries. Consequently, the use of four zygomatic implants was proposed and implemented to fully rehabilitate the arch.

PATIENT FILE

Gender: Female.
Age: 50 years old.
Complaint: Unstable total prosthesis and frustration with previous treatments. The patient desired fixed teeth and improved social life.
Anamnesis: Normotensive patient, with no underlying conditions, in good health.
Planning: Installation of four zygomatic implants to rehabilitate the entire upper arch.

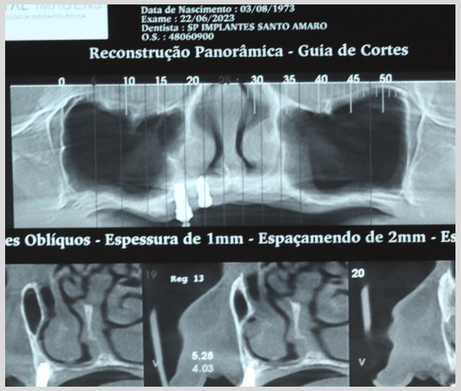
BEFORE

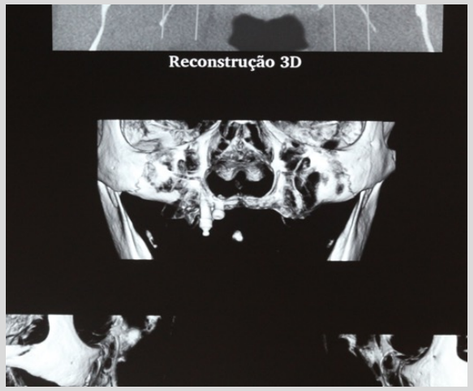
Patient with remaining unsatisfactory implants, severely atrophic maxilla and history of treatment with conventional implants, both unsuccessful.



RADIOGRAPHY/TOMOGRAPHY

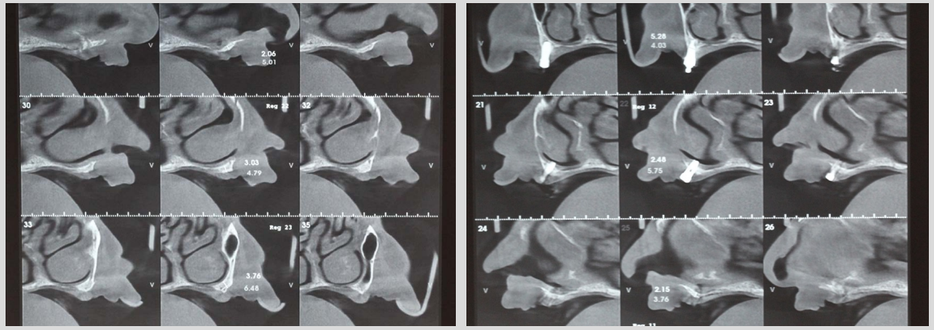
The images show the presence of two installed implants that remain but are insufficient for total rehabilitation.





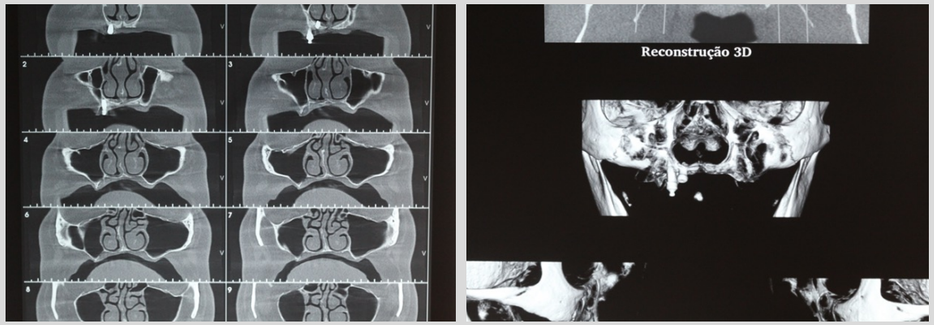
RADIOGRAPHY/TOMOGRAPHY

Tomographic maxilla cuts show the lack of bone availability for the use of conventional implants. It is an extremely atrophic case.



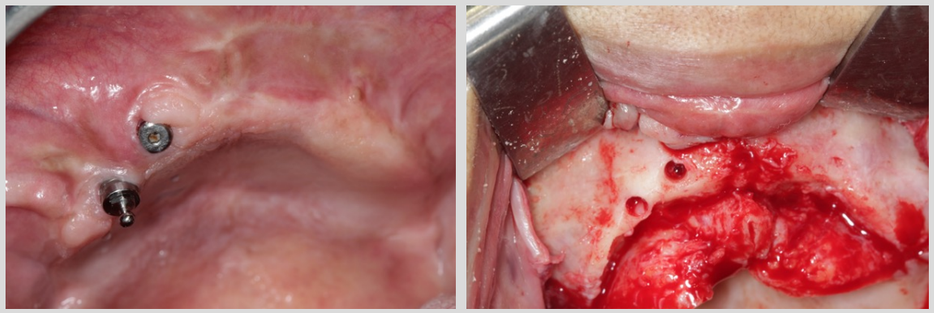
RADIOGRAPHY/TOMOGRAPHY

Tomography of the zygomatic bone used to plan and conduct the case.



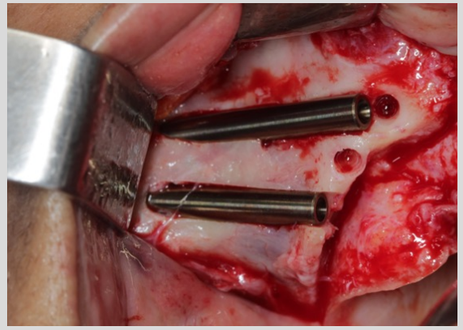
STEP BY STEP PROCEDURE

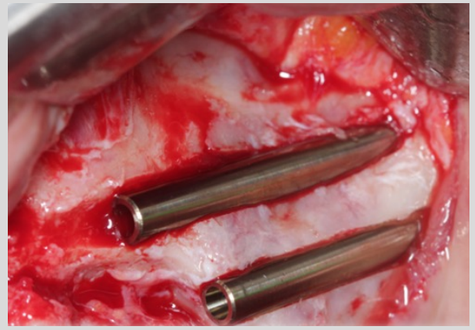
Initial intraoral view, along with the total detachment conducted, reveals a severe atrophy in height and width. The surviving implants were removed, indicating the need to apply the zygomatic fixation technique.



INTRAOPERATIVE

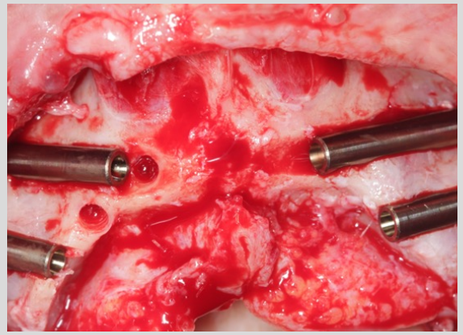
The implants installed on the right and left side, respectively, are in close contact with the bone bed, with settling over the rim.

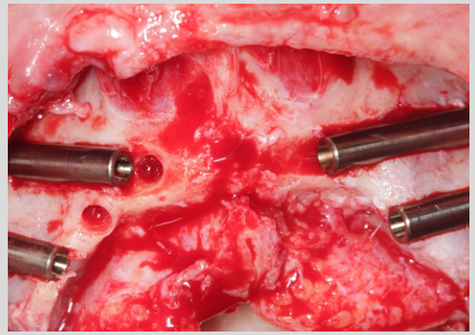




INTRAOPERATIVE

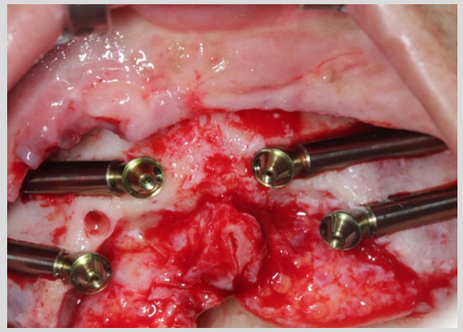
Occlusal view with mini abutments positioned, presenting excellent emergency and prosthetic positioning.

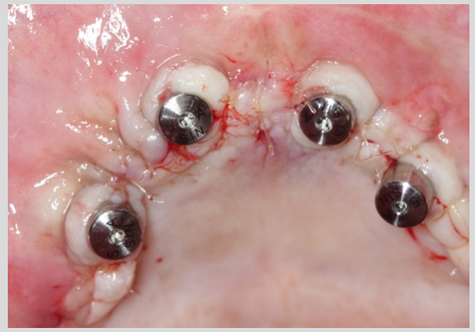




INTRAOPERATIVE

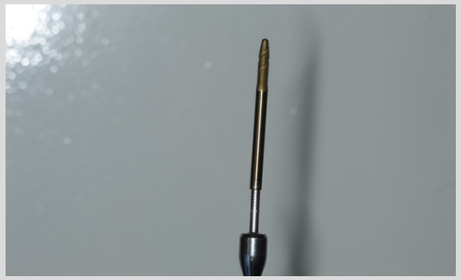
Final photograph of the surgery with the suture performed, preserving soft tissues and keeping a good gum phenotype.

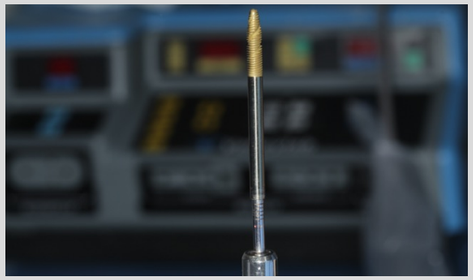




IMPLANT USED

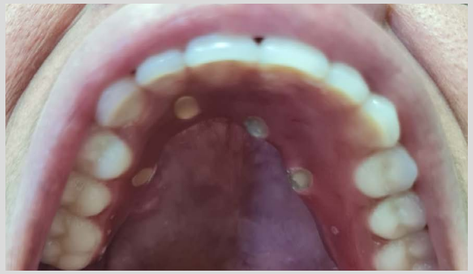
Close-up view of the Zygomatic implant that was installed.





PROSTHETIC PHASE

Bimaxillary protocol prothesis installed. Intraoral photograph of the case finished in 48 hours.



FINAL RADIOGRAPHY

Case finished in immediate load in less than 48 hours, with full passivity and settling of the structure.

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