



National Autonomous University of Mexico

Periodontics and Implantology Department

A Complication and its Follow-up of a Maxillary Sinus Lift Procedure and Simultaneous Placement of an Implant. A Case Report.

D.D.S. Paulina A. Rios Martinez*, M.D.S. Pedro A. Lopez Reynoso**, M.D.S. Rodrigo Neria Maguey**



INTRODUCTION

The vertical resorption of the alveolar ridge and pneumatization of the maxillary sinus has become a challenge for implant placement and its prosthodontic restoration in the posterior maxilla.

Maxillary sinus floor lift is a predictable procedure to improve alveolar bone height in the posterior maxilla, before or simultaneously with implant placement.^{1,2}

Misch proposed in cases with 5 to 10 mm of bone height and more than 6 mm of ridge width to use the lateral window technique with the possibility of placing the implant simultaneously.³

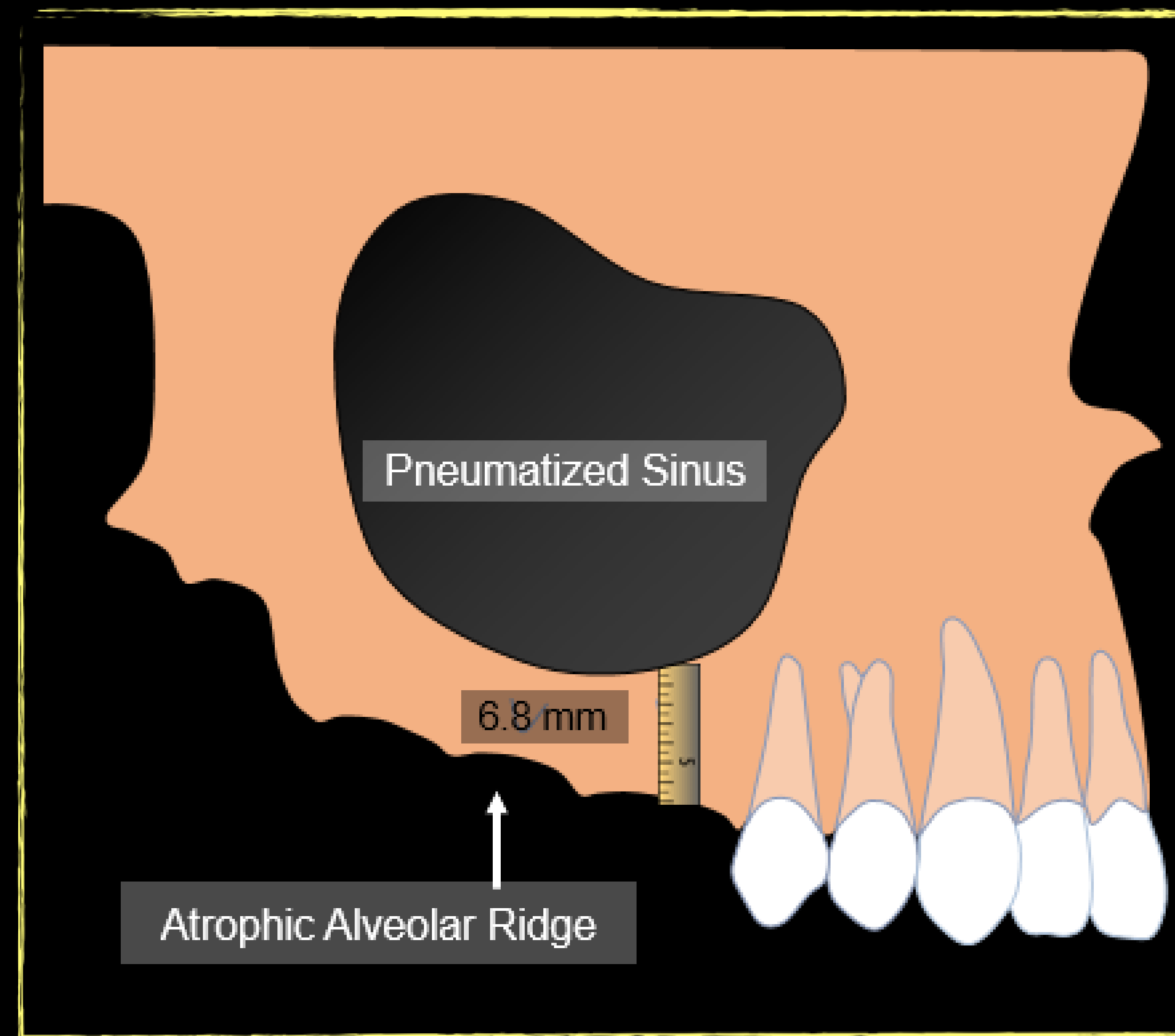


Fig 1. Example of resorption of the alveolar ridge and pneumatization of the maxillary sinus.

Some of the complications associated with sinus lift are: tearing of the Schneiderian membrane, bleeding, swelling, edema, infection, sinusitis; resorption, displacement or loss bone graft, and maxillary cyst.⁴

OBJECTIVE

Evaluation with Cone Beam Computed Tomography (CBCT) of a complication during a 2 year follow up after performing a sinus lift.

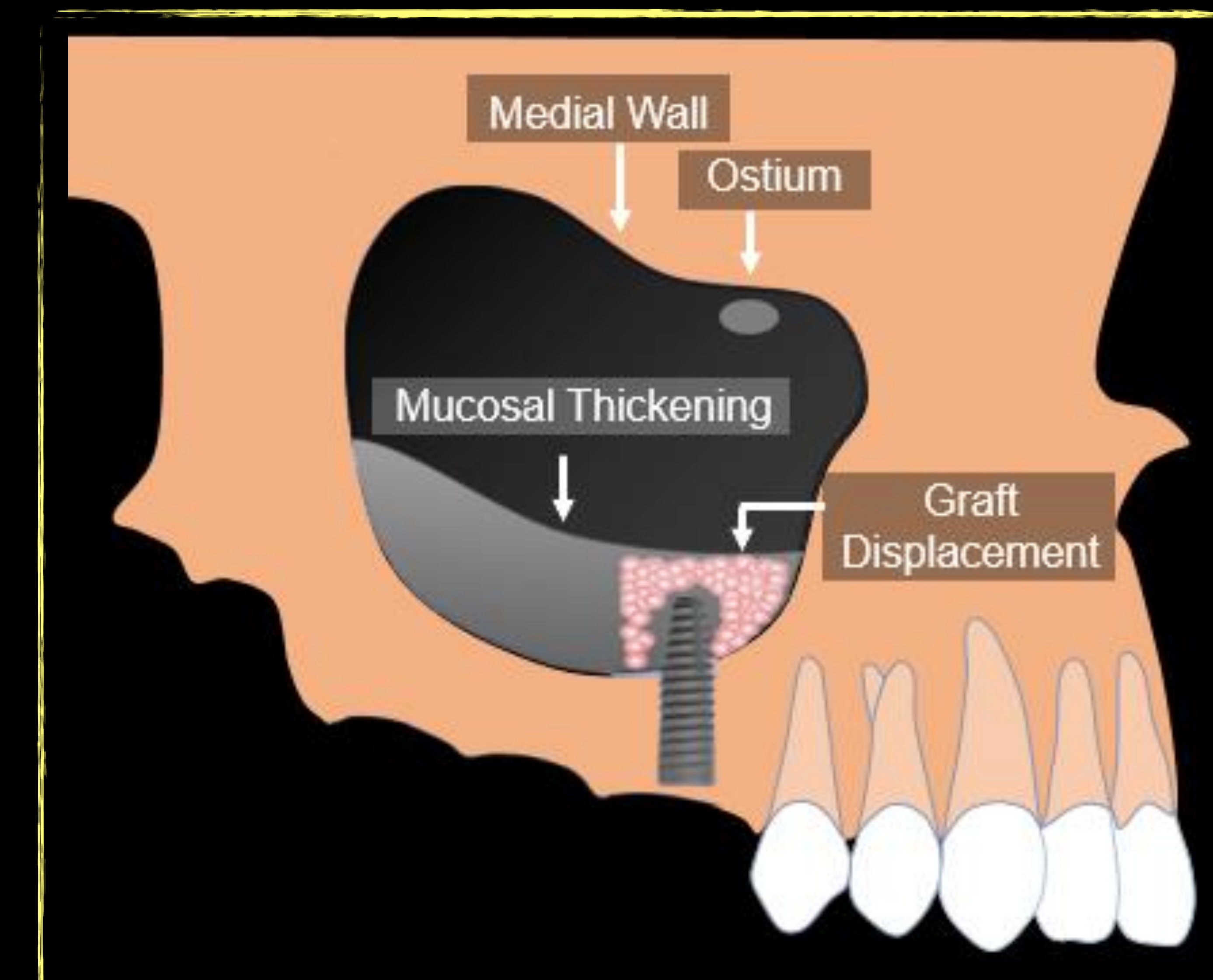


Fig 2. Example of a complication after procedure.



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MATERIALS & METHODS

Diagnosis

A 65-year-old female patient applied to the periodontics clinic with a chief concern of dental absences.

Oral examination Unilateral edentulism of left maxillary molars.

Radiographic examination Pneumatized maxillary sinus.

Tomographic analysis

- ❖ Alveolar ridge height: 6.89 mm
- ❖ Alveolar ridge width: 10.66 mm.

Insufficient alveolar ridge for dental implant placement.



Fig 3. Initial clinical presentation.

Treatment plan

Placement of an implant with a diameter of 4.1 mm and a length of 12 mm, in the OD 14 area with simultaneous sinus floor lift, using the lateral window technique and mineralized particulate cortical bone graft of allogeneic origin.

Subsequently, interim restoration of the implant and its prosthetic rehabilitation.

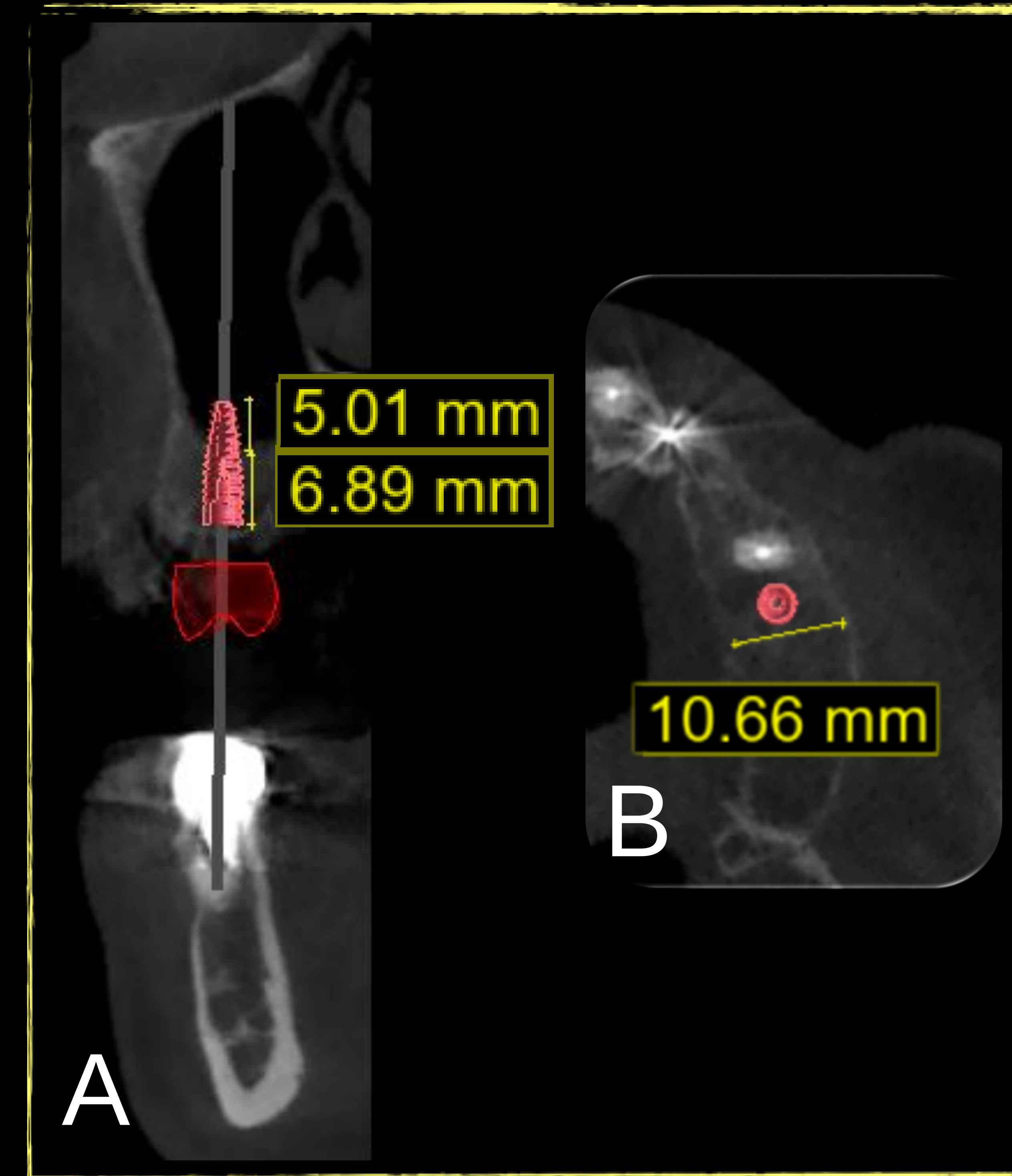


Fig 4. A, Initial sagittal view in CBCT; B, Initial axial view in CBCT.

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Surgical procedure

A crestal incision was made in that area with a mesial and distal vertical releasing incisions, and a full thickness flap was raised.

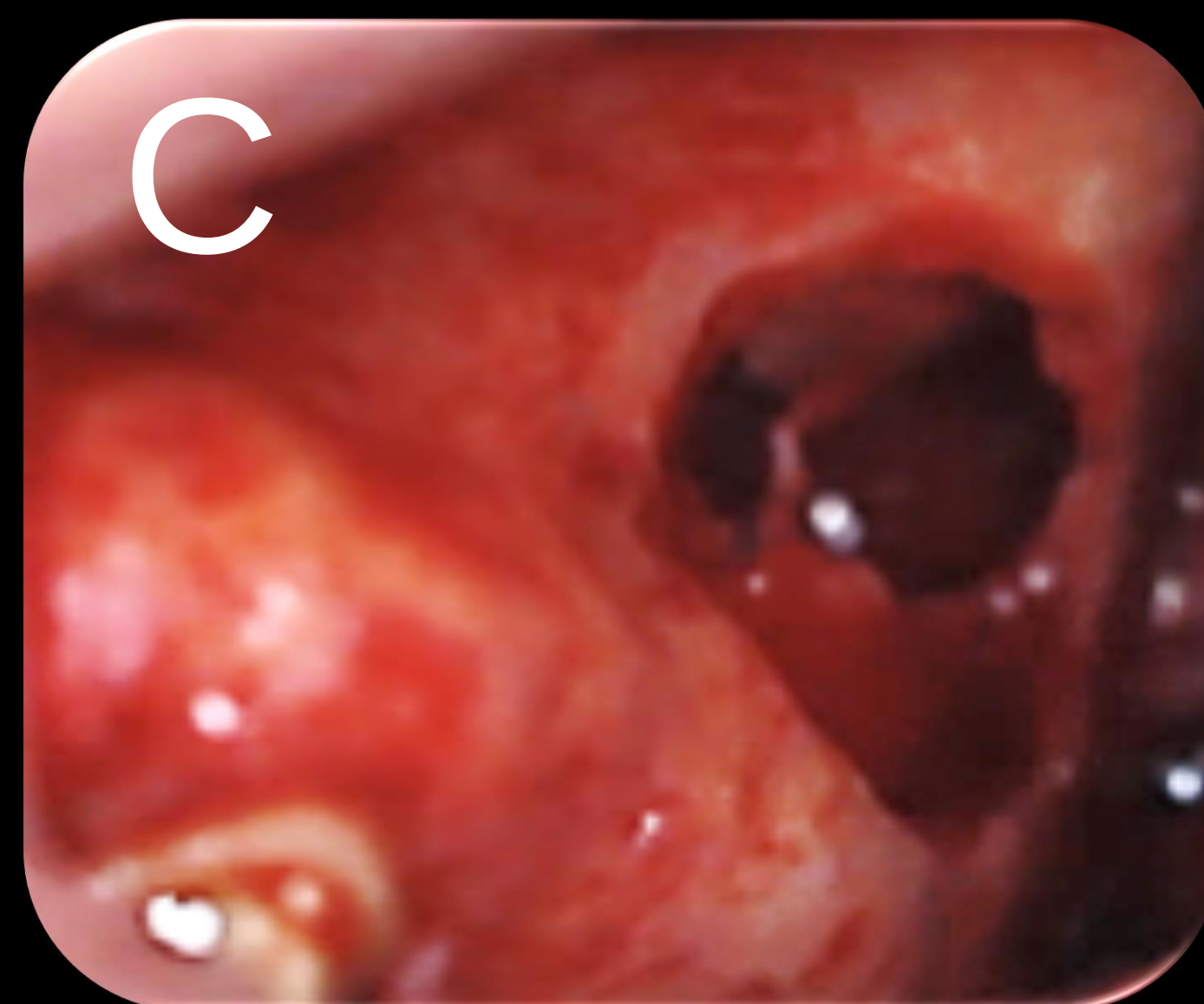
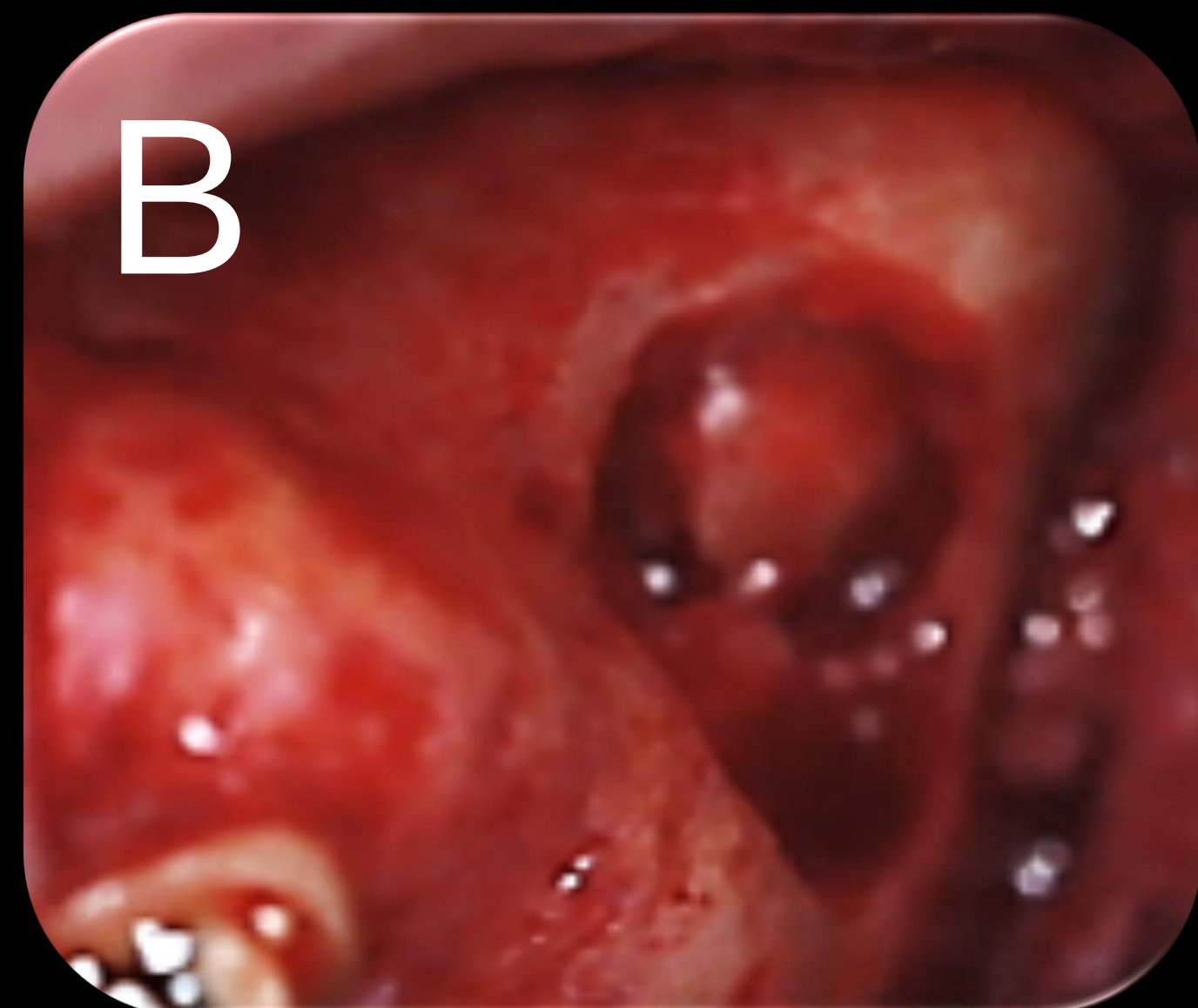
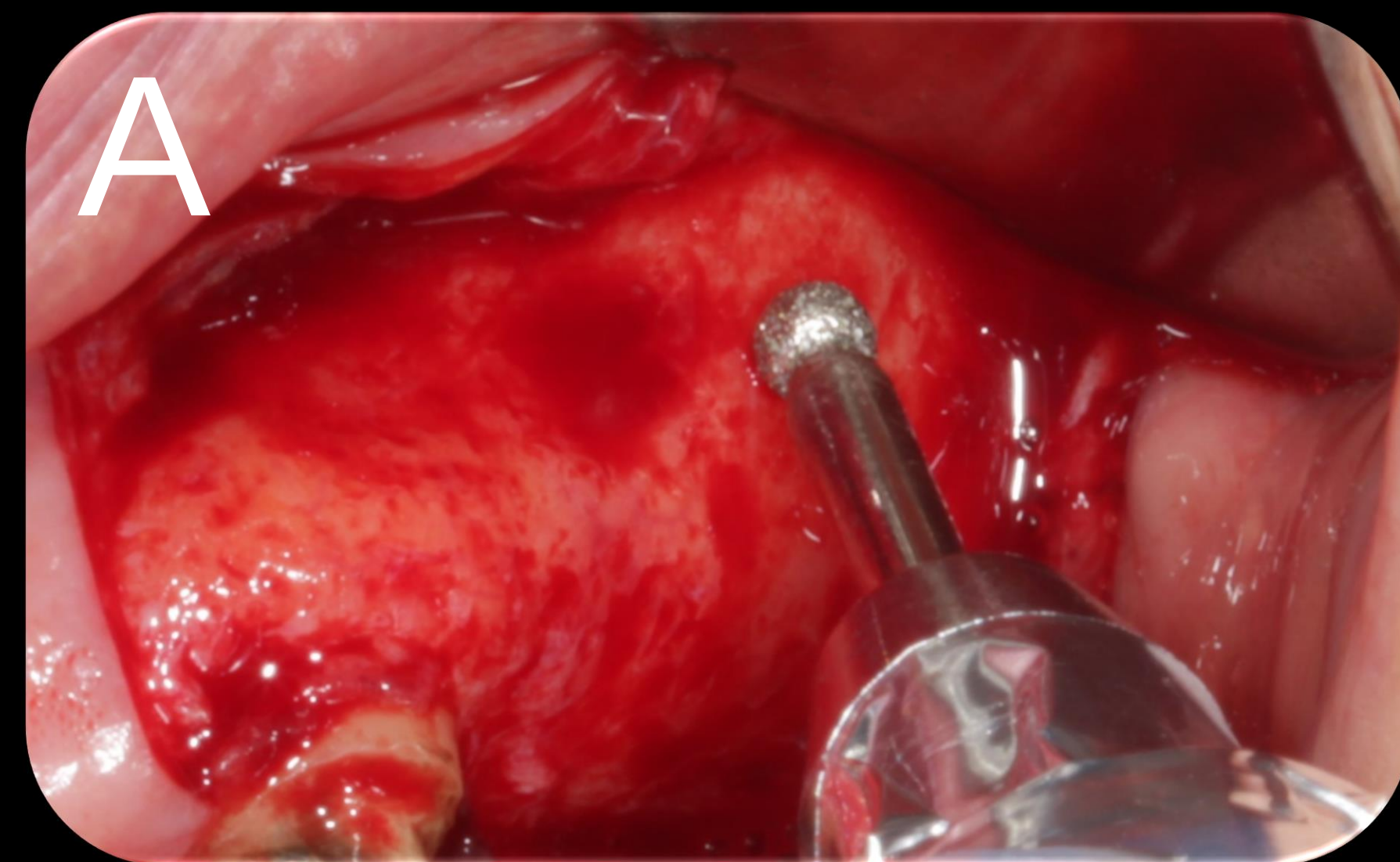


Fig 5. A-C Creation of bone window; B-C, Valsalva maneuver.

The bone window was made in the lateral wall of the sinus and Schneider's membrane was raised.

A Straumann 4.1* 12 mm implant was placed with a insertion torque of 25 Ncm, 1.5 g of allograft was grafted. A collagen membrane was placed and the flap was sutured with interrupted sutures.

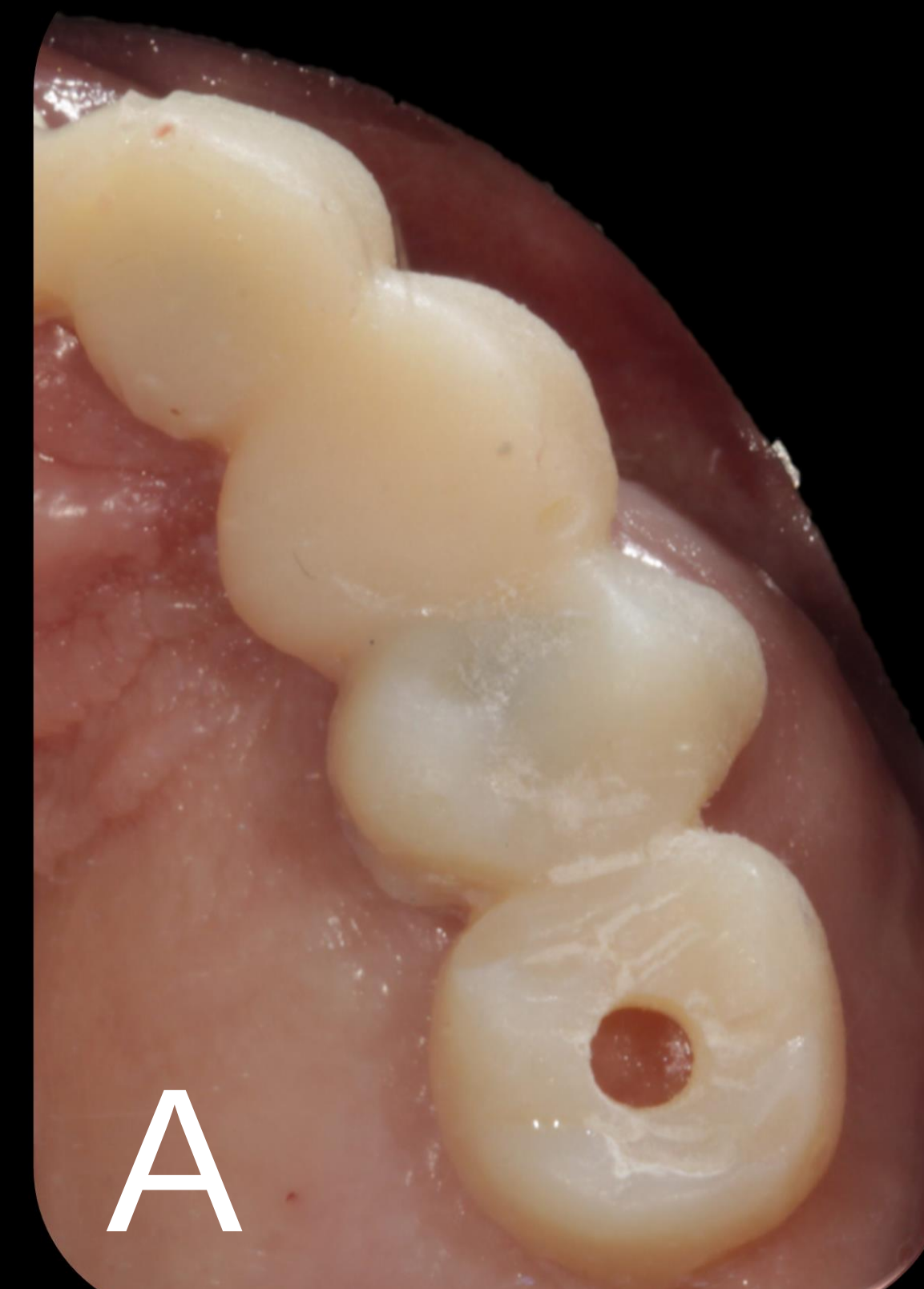


Figure 6. A, Surgical guide; B, Immediate post-operative.

RESULTS

Radiographic At 4 months after the procedure, stability of the graft around the implant was observed.

CBCT Due to the pandemic, the case was re-evaluated at 2 years of follow-up and through a control CBCT the following was observed:

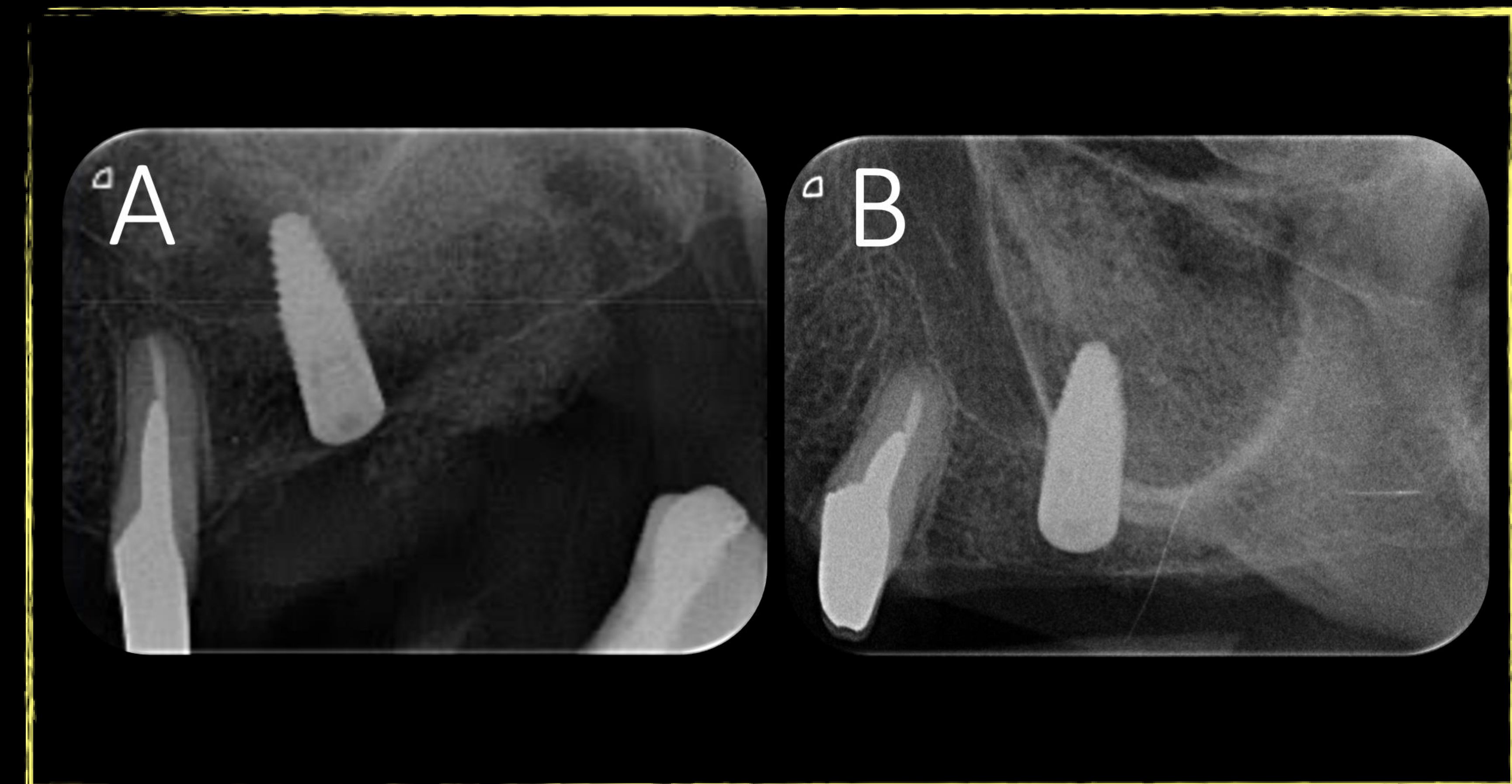


Fig 7. A, Immediate radiography; B, X-ray at 4 months.



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Coronal view 7.10 mm vestibular and 7.24 mm palatal of the body of the implant were in contact with the native bone.

Sagittal view 7.13 mm mesial and 7.50 mm distal of the body of the implant were in contact as well.

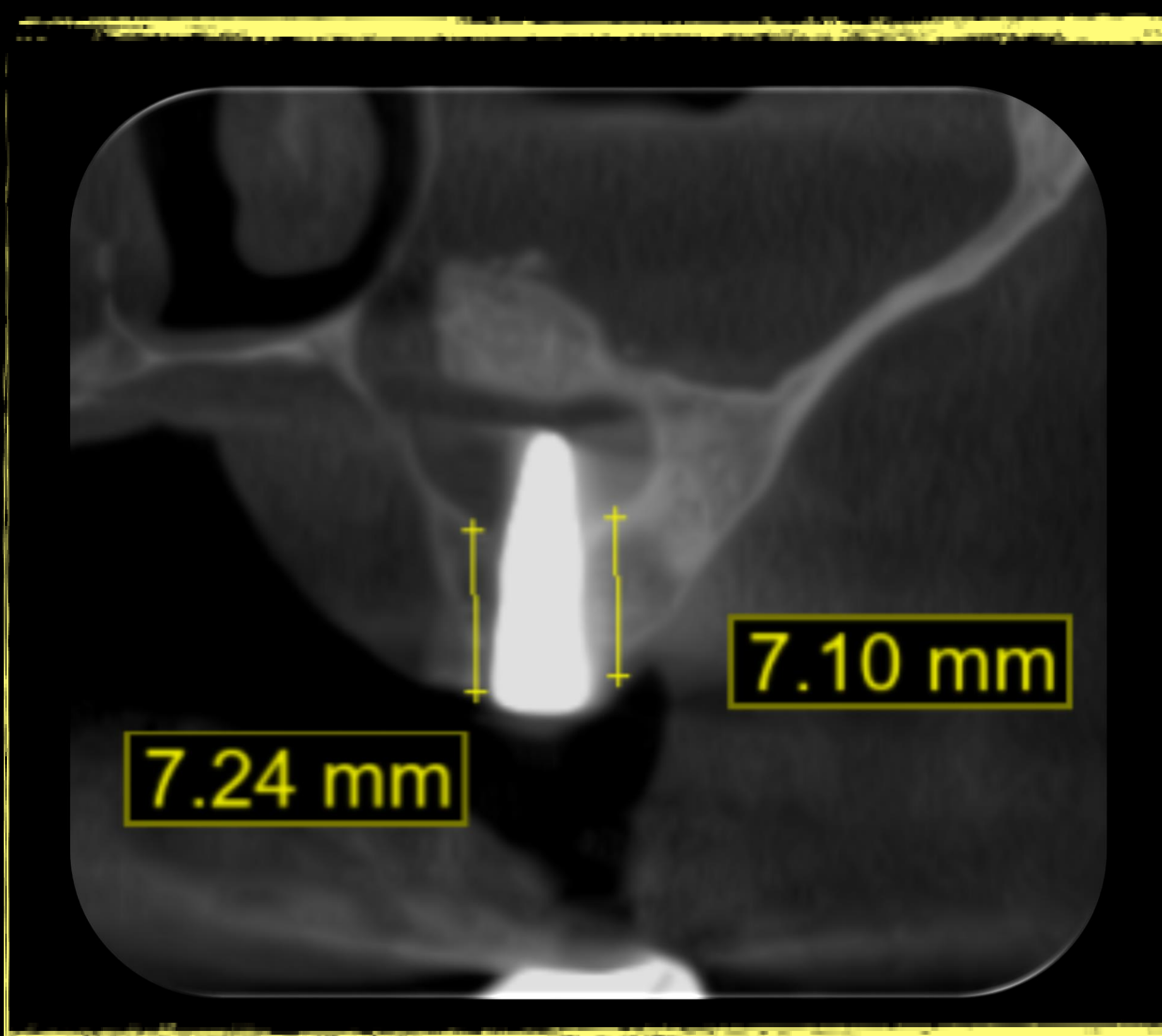


Fig 8. Coronal view of CBCT

Tomographic findings

Displacement and concentration of the graft with a loss of bone graft volume in the apical third of the implant. The ostium is not blocked.

Otorhinolaryngologist diagnosis Thickening of the mucosa on the floor of the maxillary sinus.

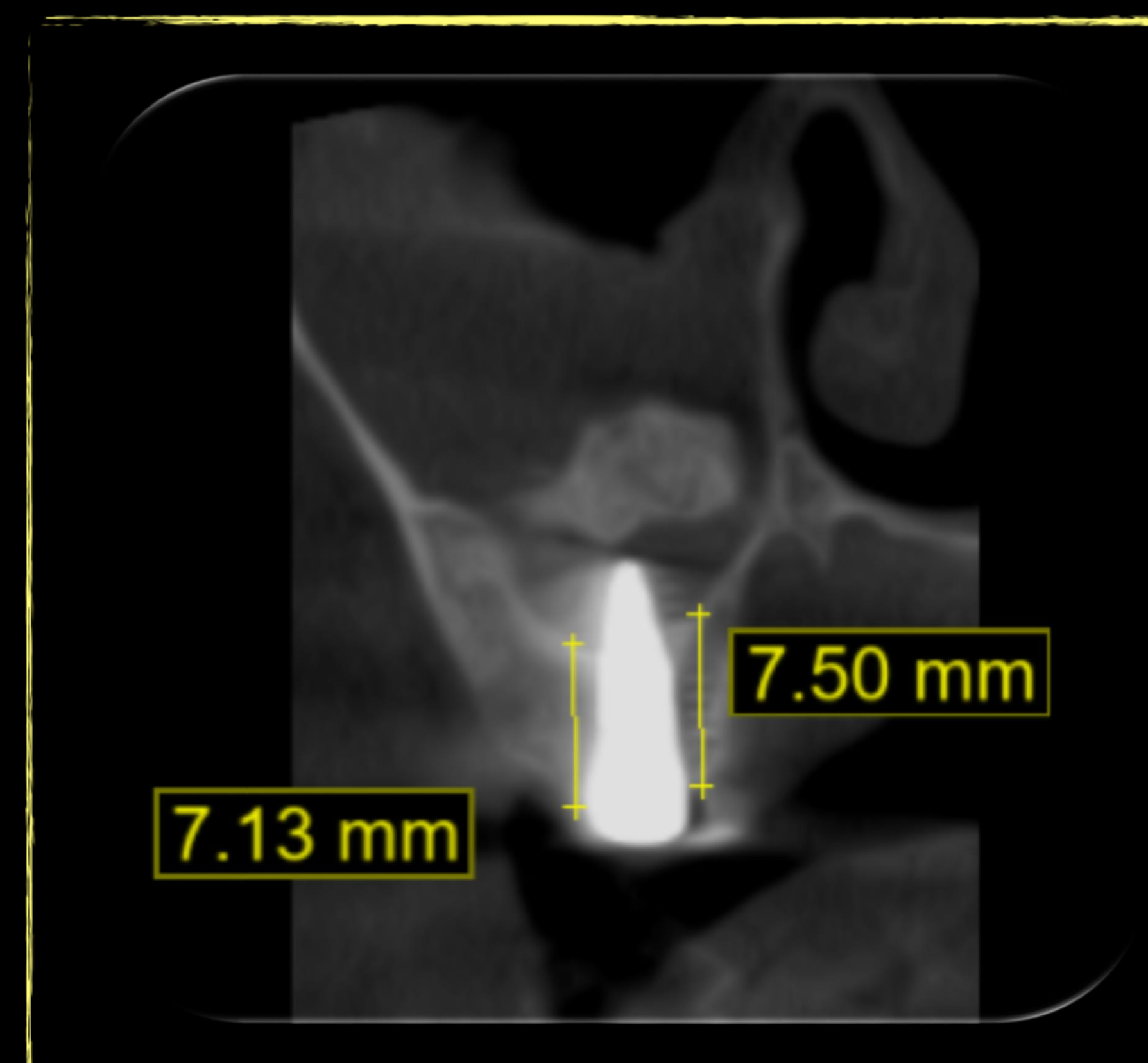


Fig 9. Sagittal view of CBCT

Treatment Nasal washes with saline water and fluticasone for 1 month.

Follow-up At 2 months with tomography of the nose and paranasal sinuses.

Interim Restoration



Fig 10. Immediate interim restoration

Clinical findings There is no presence of any symptoms such as pain, infection or supuration.



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DISCUSSION

The concentration and displacement of the bone graft can be the result of a small bone window that made the visibility difficult and as a consequence insufficient condensation of the bone graft during the procedure.⁵

The displaced graft may act as a foreign body and cause thickening of the mucosa of the floor of the maxillary sinus.^{6,7}

Maintenance

- ❖ Annual clinical and radiographic implant assesment.
- ❖ Evaluation of mucosal thickening and graft displacement at 2 months and 1 year with CBCT and clinical exam of the nose and paranasal sinuses.
- ❖ Treatment will be required only if presenting symptoms and may consist of: antibiotics, sinus drainage or endoscopic surgery.^{8,9,10}

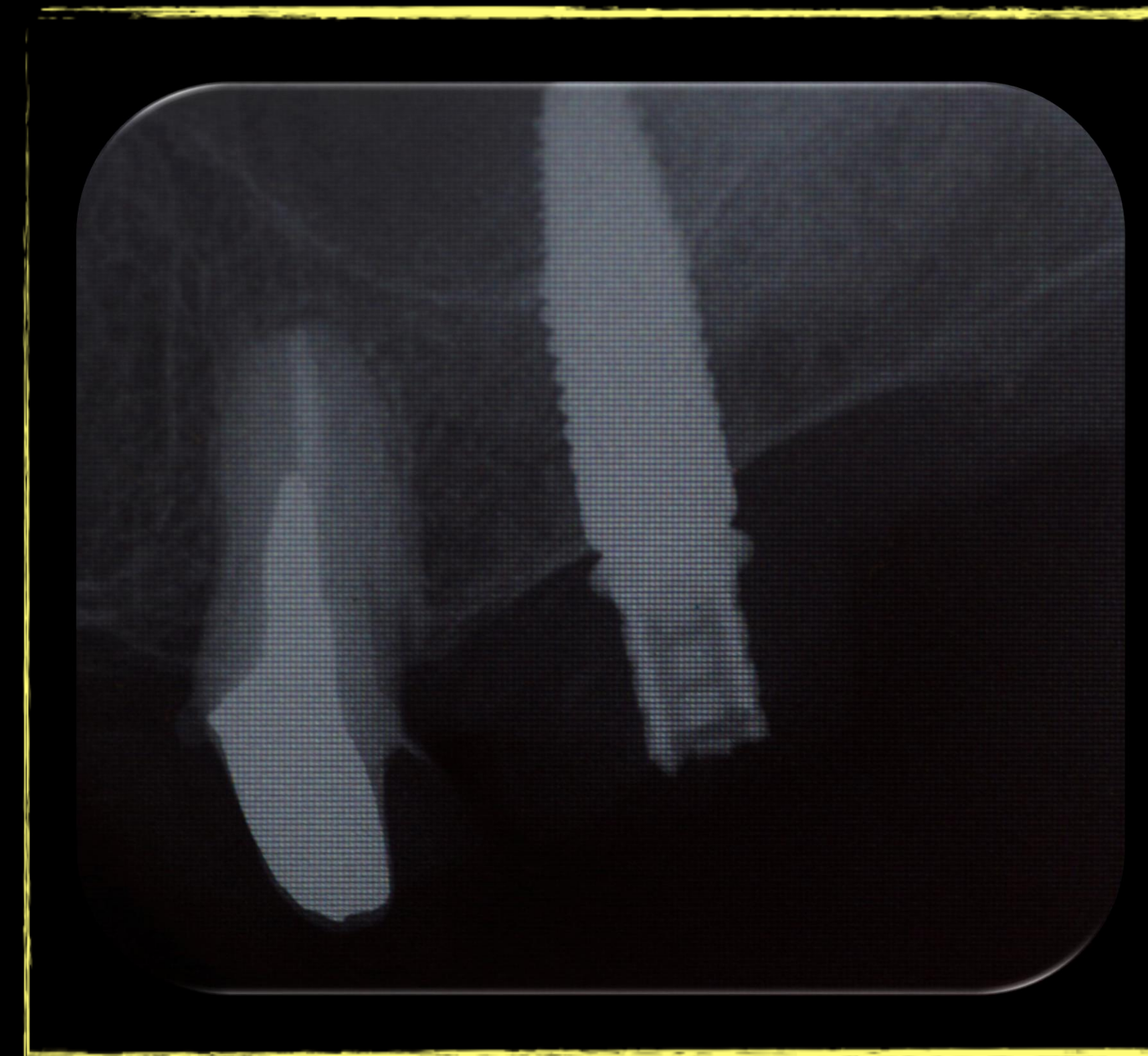


Fig 11. X-ray of interim restoration.

CONCLUSIONS

The displacement of the graft it's not a common complication when a sinus lift is performed.

However, the implant is successfully osseointegrated, 3/4 parts of the implant are in native bone and the implant is asymptomatic (there is no presence of mobility, bleeding or suppuration).

The present complication does not compromise the survival of the implant, its subsequent prosthetic rehabilitation, nor reduce its long-term success rate.

The use of diagnostic aids such as CBCT will assit in the prompt diagnosis of any complication and treatment planning in cases where it is required.

REFERENCES

