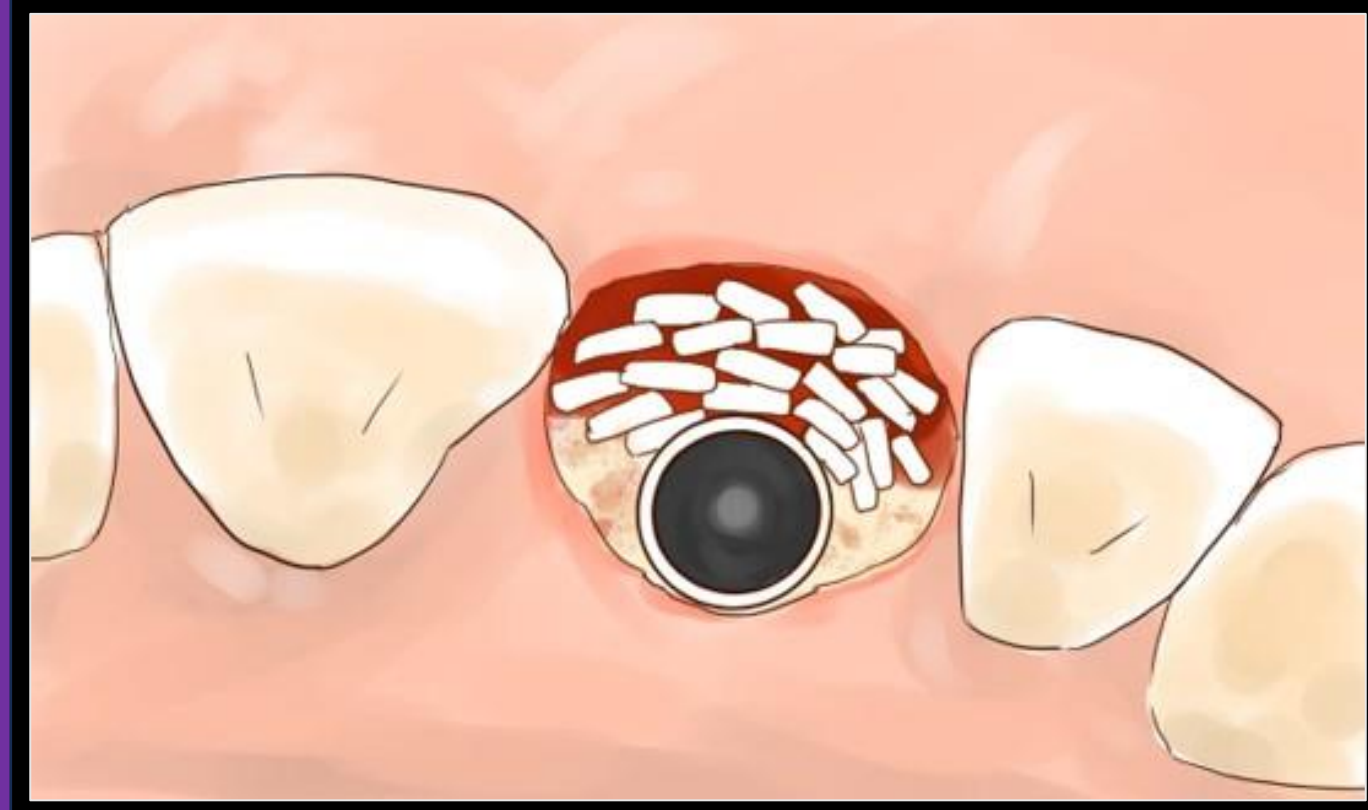


Immediate Implant Placement and Immediate Provisionalization in Infected Sites Using OCP/Col: 2 Case Reports.

T. Miyazawa , K. Takeshita , T. Sumi , Y. Naito , A. Ao , K. Tanaka , R. Yanagioka , T. Takahashi
Oral and Maxillofacial Reconstructive Surgery, Tohoku University Graduate School of Dentistry, Sendai, Miyagi, Japan



Introduction

In immediate implant placement, it is often necessary to perform bone grafting in the gap between the implant body and the bone wall. This case reports present a treatment plan for immediate implant placement in infected sites using Octacalcium phosphate collagen composite(OCP/Col), a biomaterial known for its ease of handling and resistance to infection (T.Kawai, et,al. Clinical safety and efficacy of implantation of octacalcium phosphate collagen composites in tooth extraction sockets and cyst holes. J Tissue Eng. 2016 Jan-Dec;7: 2041731416670770.).



Fig1. OCP/Col is as hard as chalk, but when wet, it becomes sponge like. This will make it easier to cut or mold as needed.

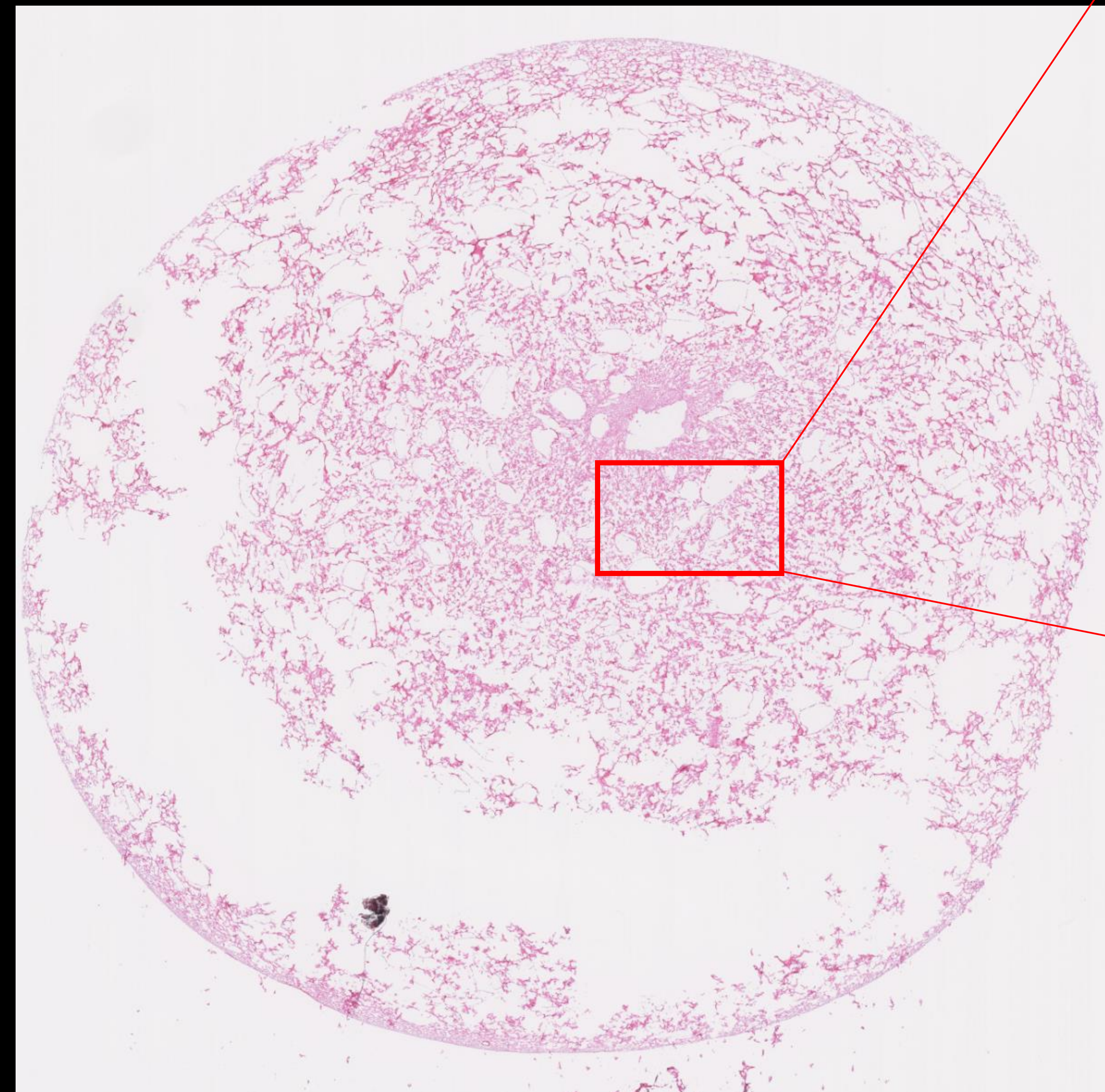
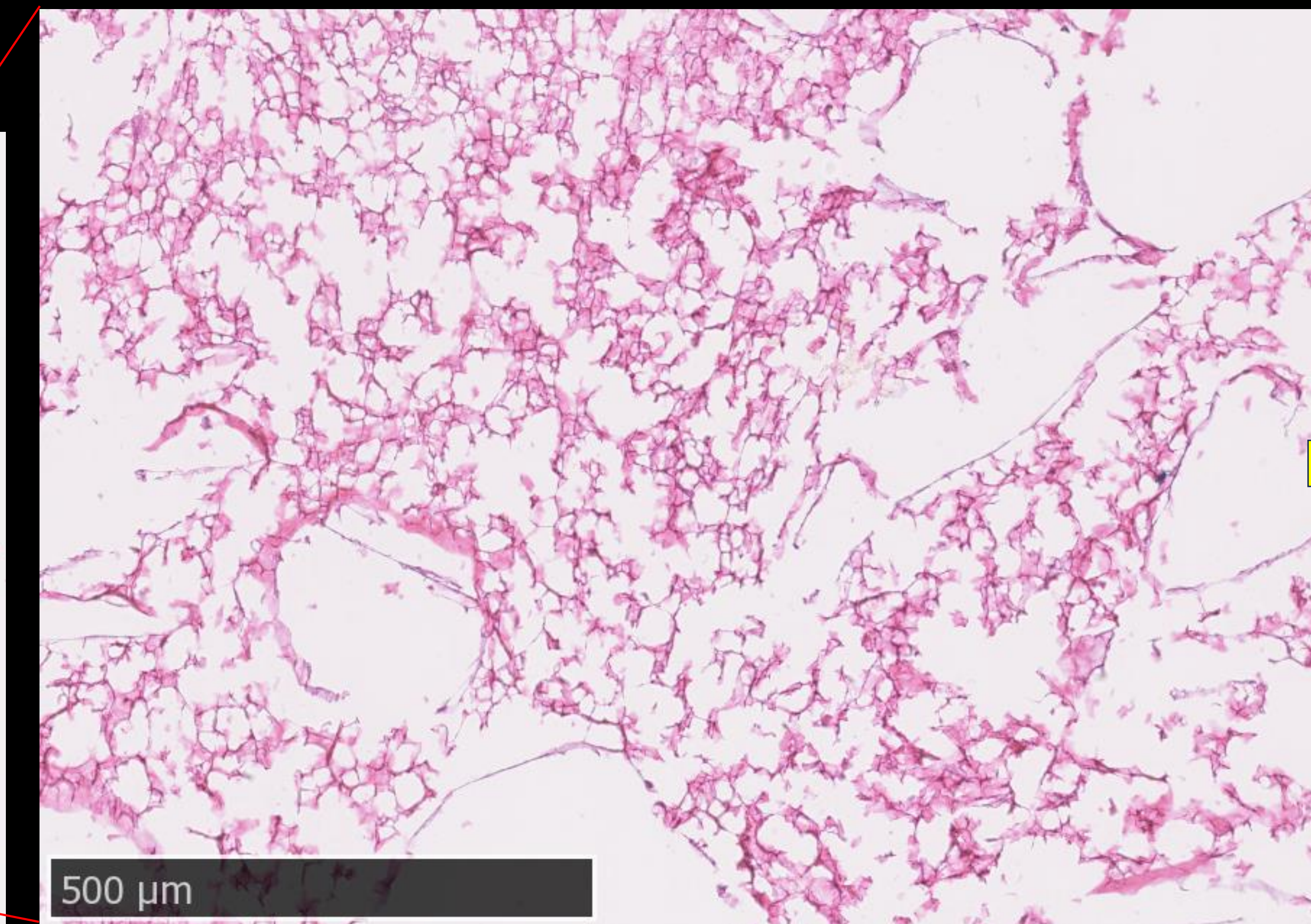
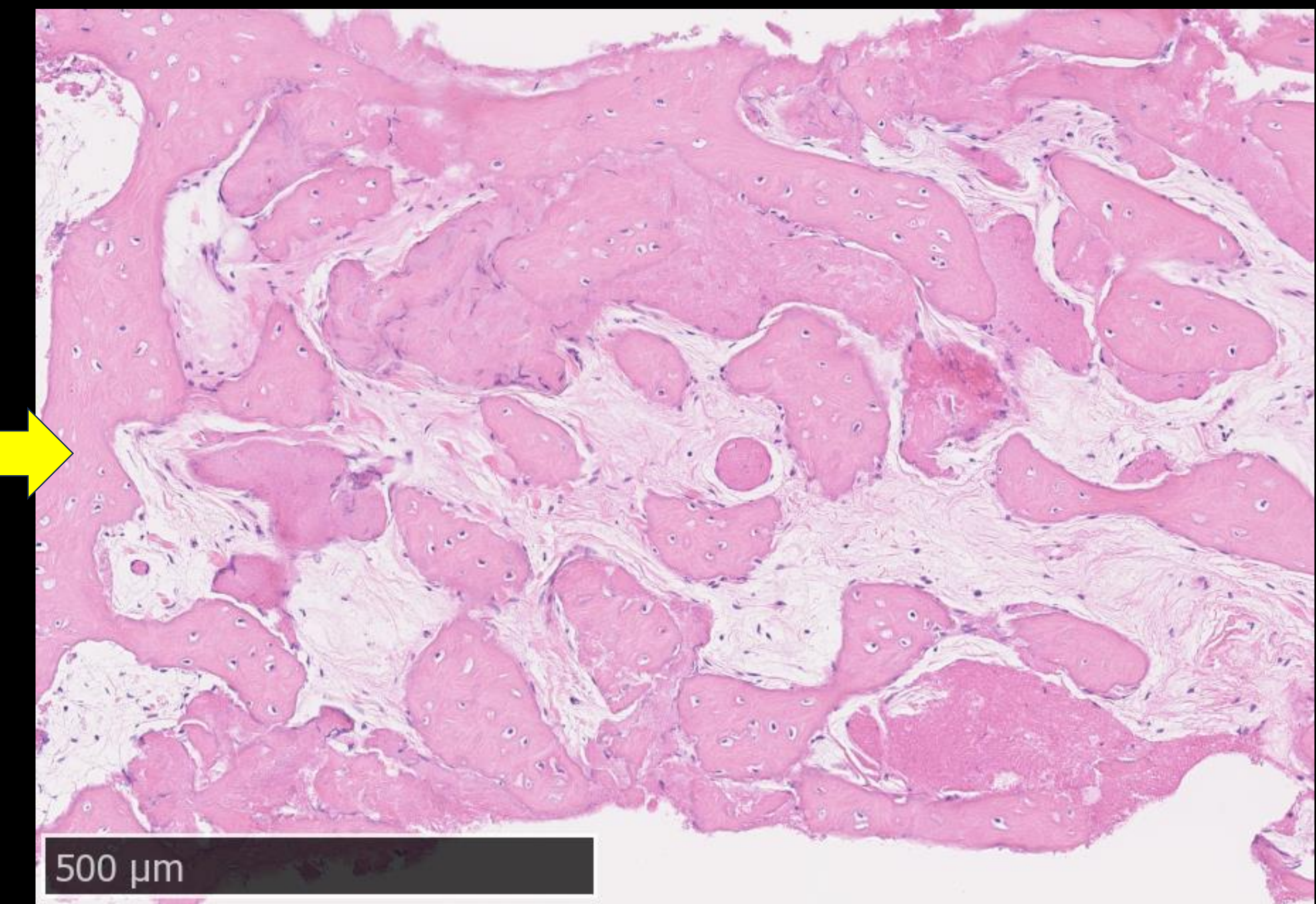
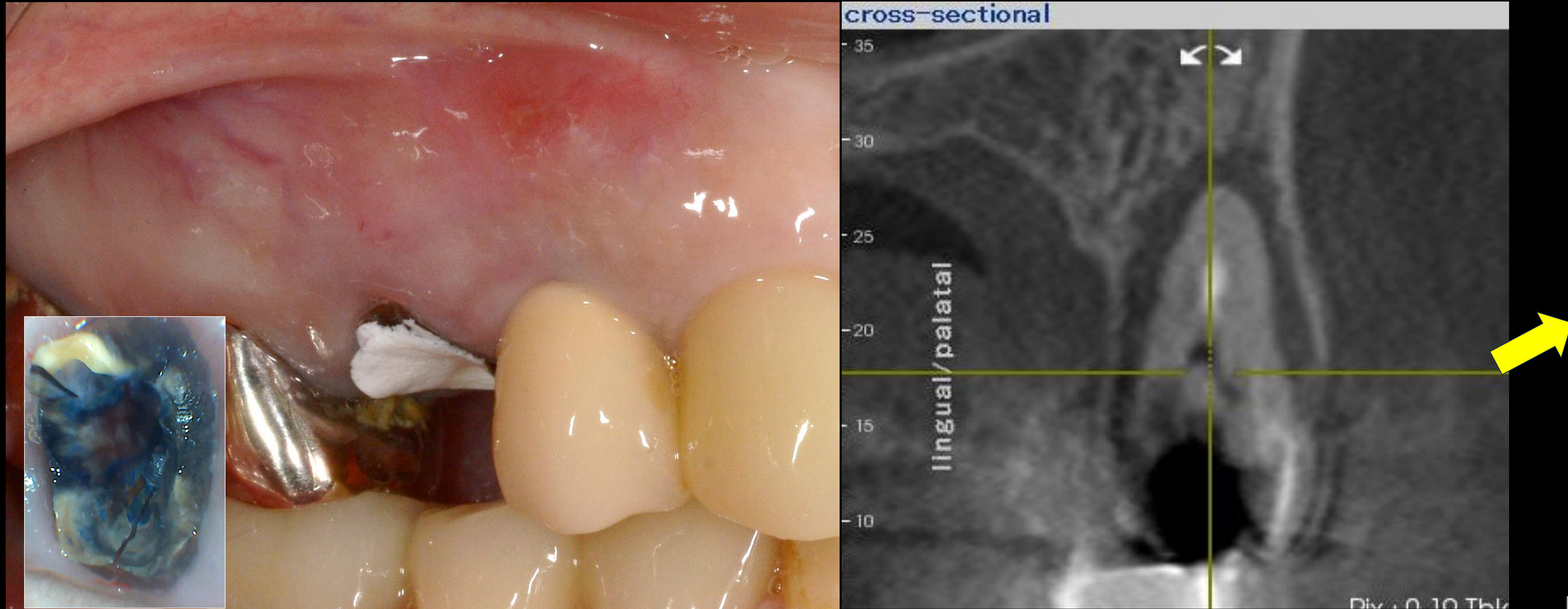
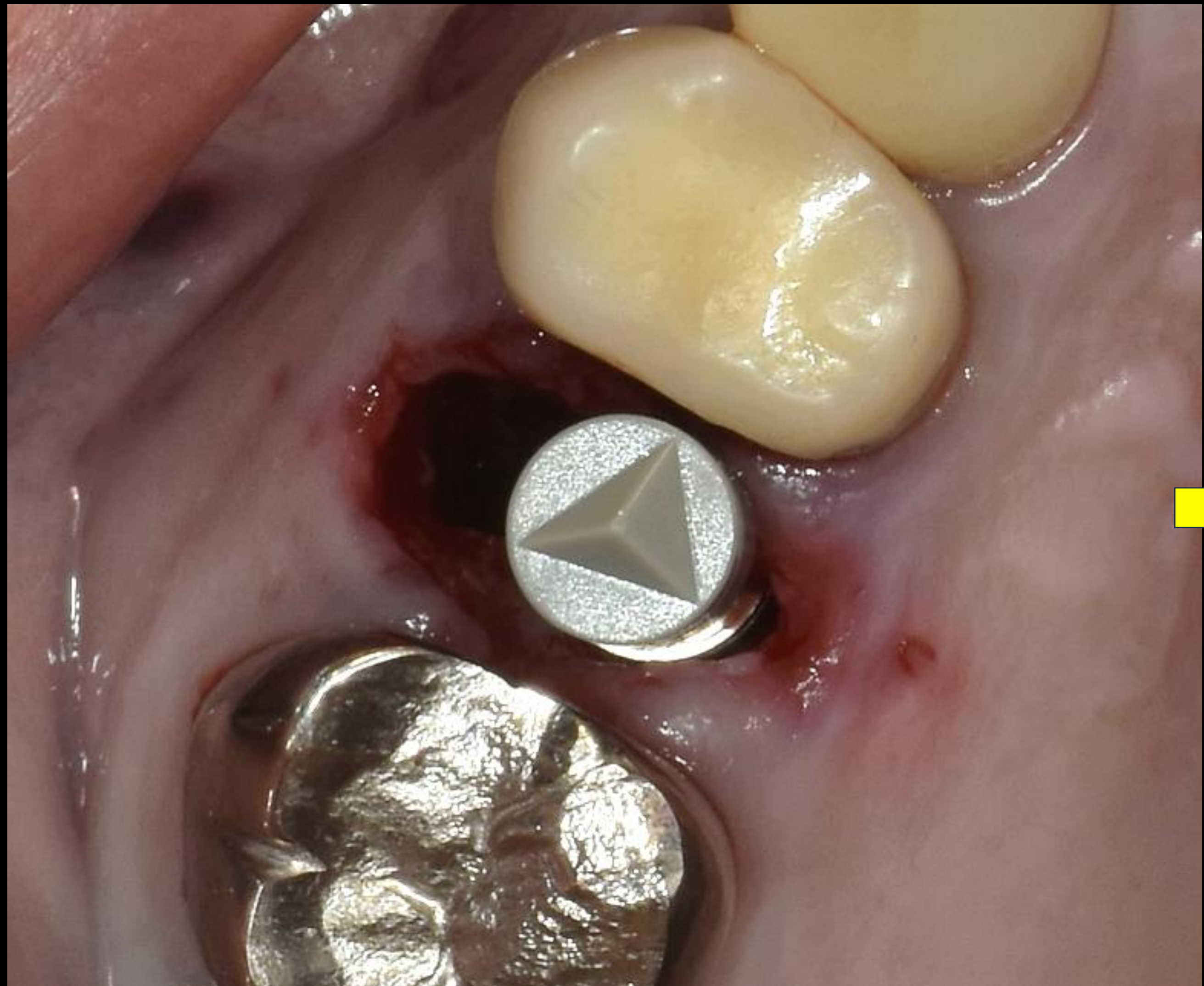


Fig2. HE of OCP/Col and bone biopsy 6 months after socket preservation performed in a patient (78F : right mandibular first molar). The confirmation of OCP/Col's porous structure and replacement with mature autogenous bone can be observed.

Fig3. Case1 : 15 root fracture (72 female) Sinus tract and Significant bone resorption.



3D scanning after
Immediate implant placement.



Easy cutting and filling OCP/Col.

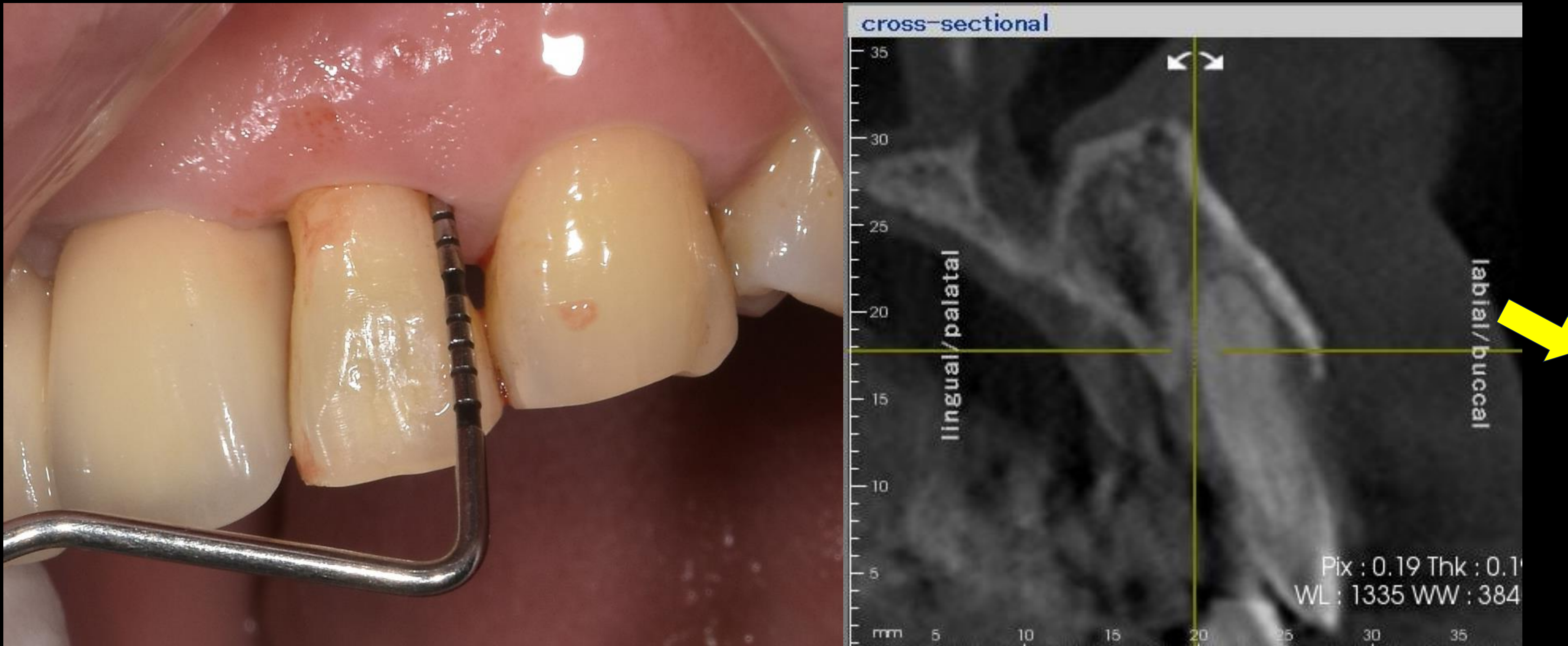
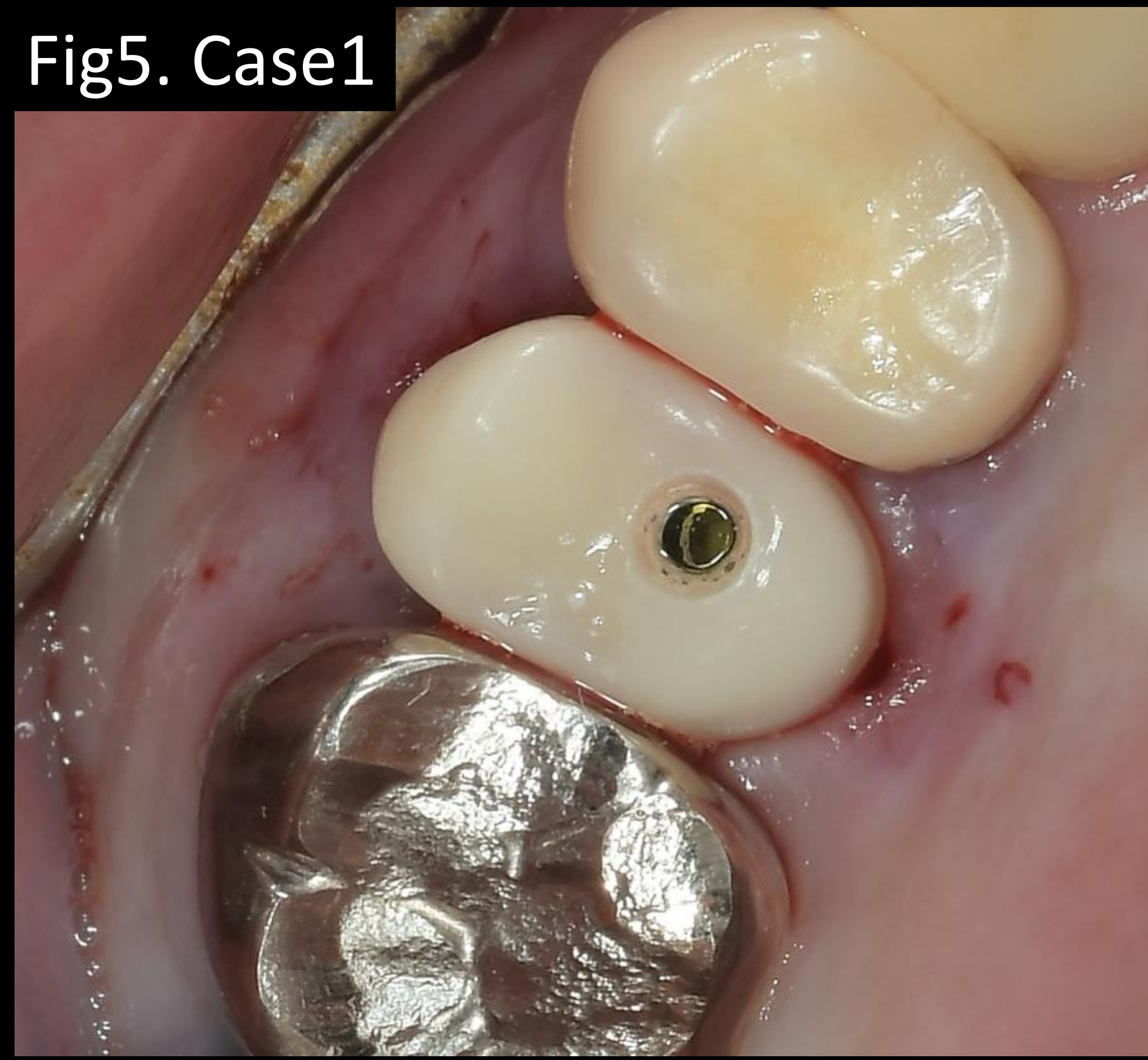


Fig4. Case2 : 22 root fracture (55 male) Sinus tract and Deep periodontal pocket.



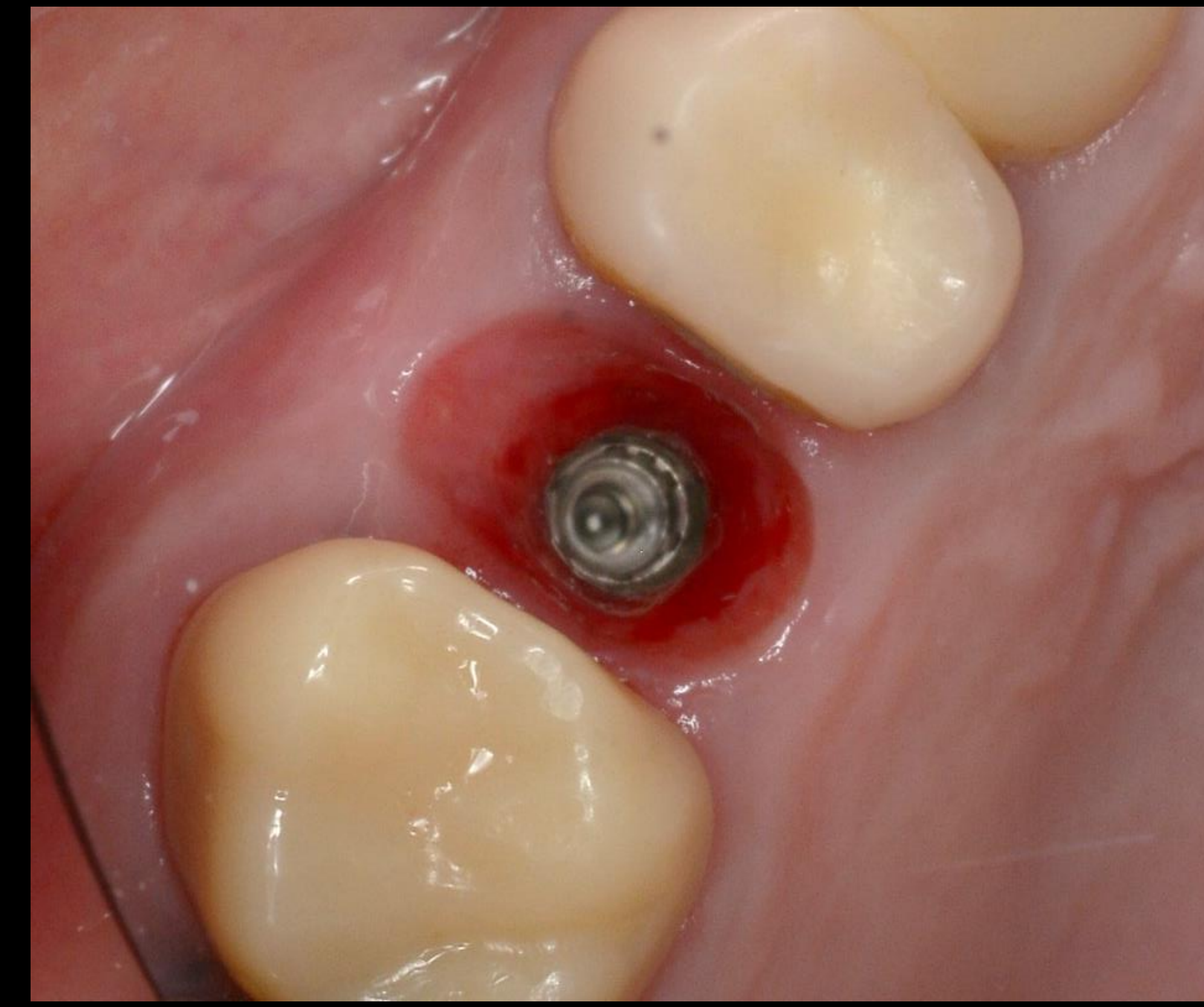
Fig5. Case1



2Weeks



3Months

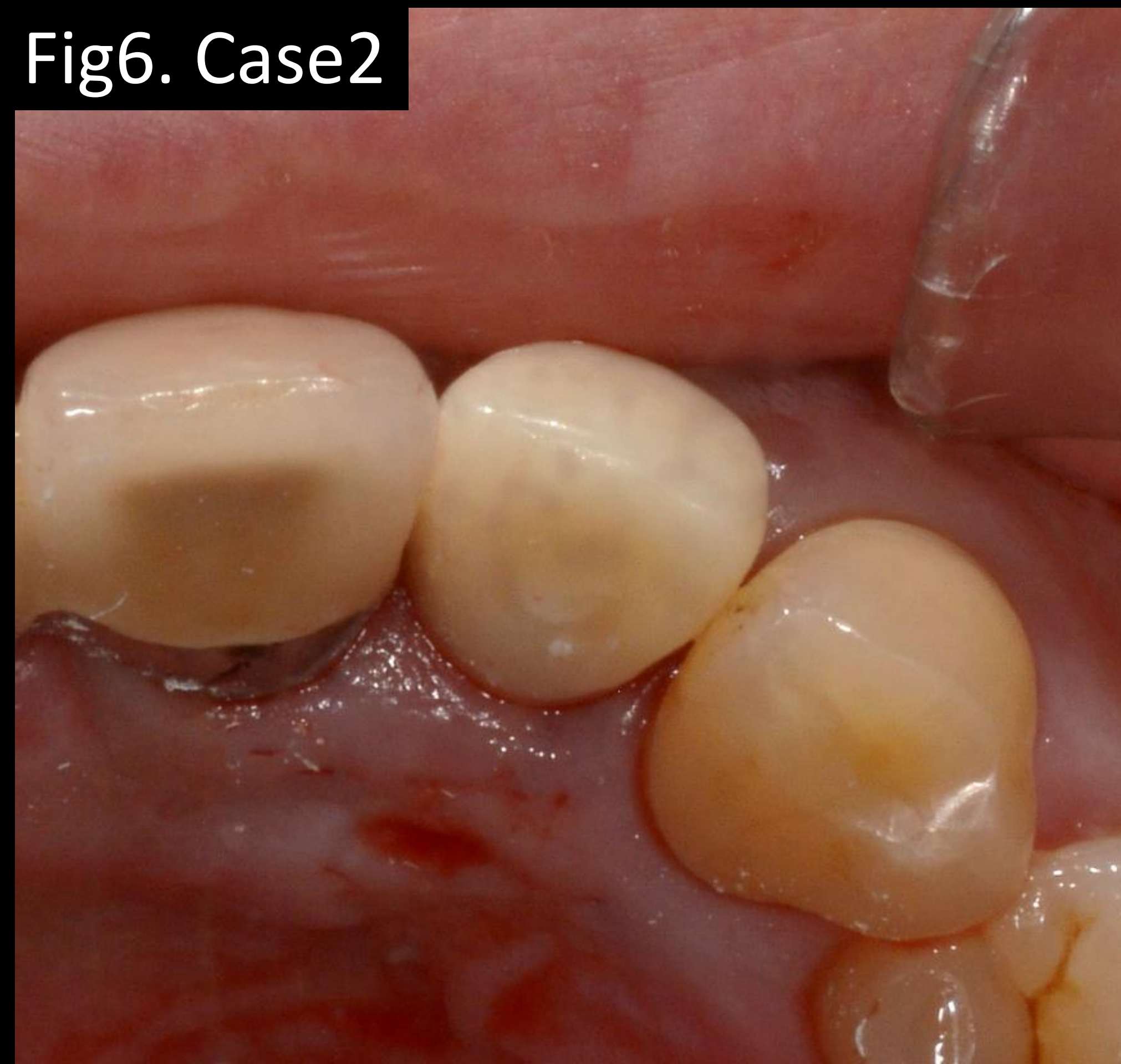


End of surgery : Custom provisional crown, sealing OCP/Col.

Shrinkage of the sinus tract.

Final set : Excellent soft tissue healing.

Fig6. Case2



2Weeks



3Months



Materials & Methods

After tooth extraction and implant placement, OCP/Col was filled between the implant body and the bone wall. The socket was closed with a provisional crown manufactured with CAD/CAM technology. All surgeries were performed flapless. The final restorations were inserted three months after implant placement.

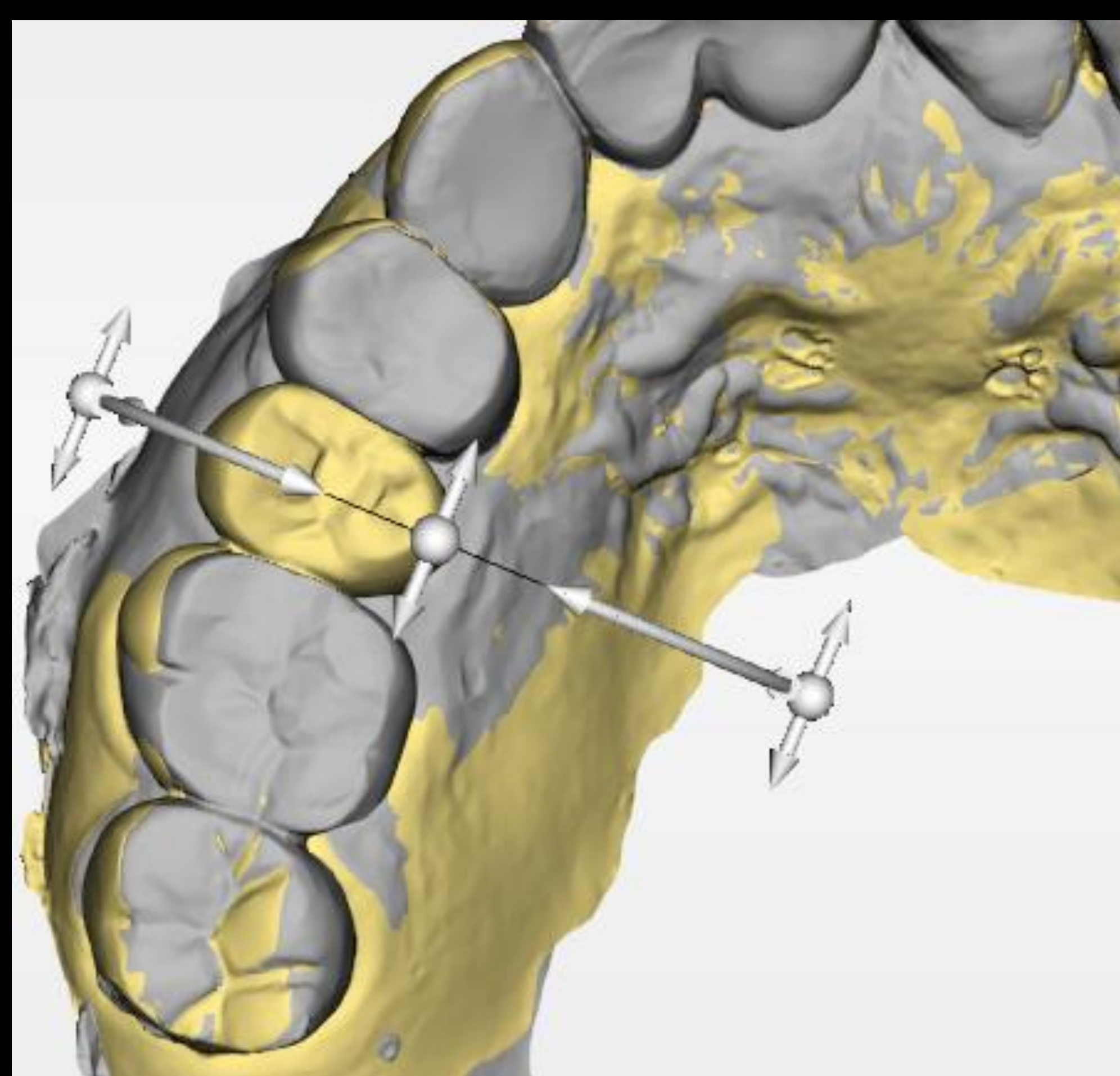


Fig7. Case1 : The matching of 3D scans
The horizontal recession amount was 0.66mm.

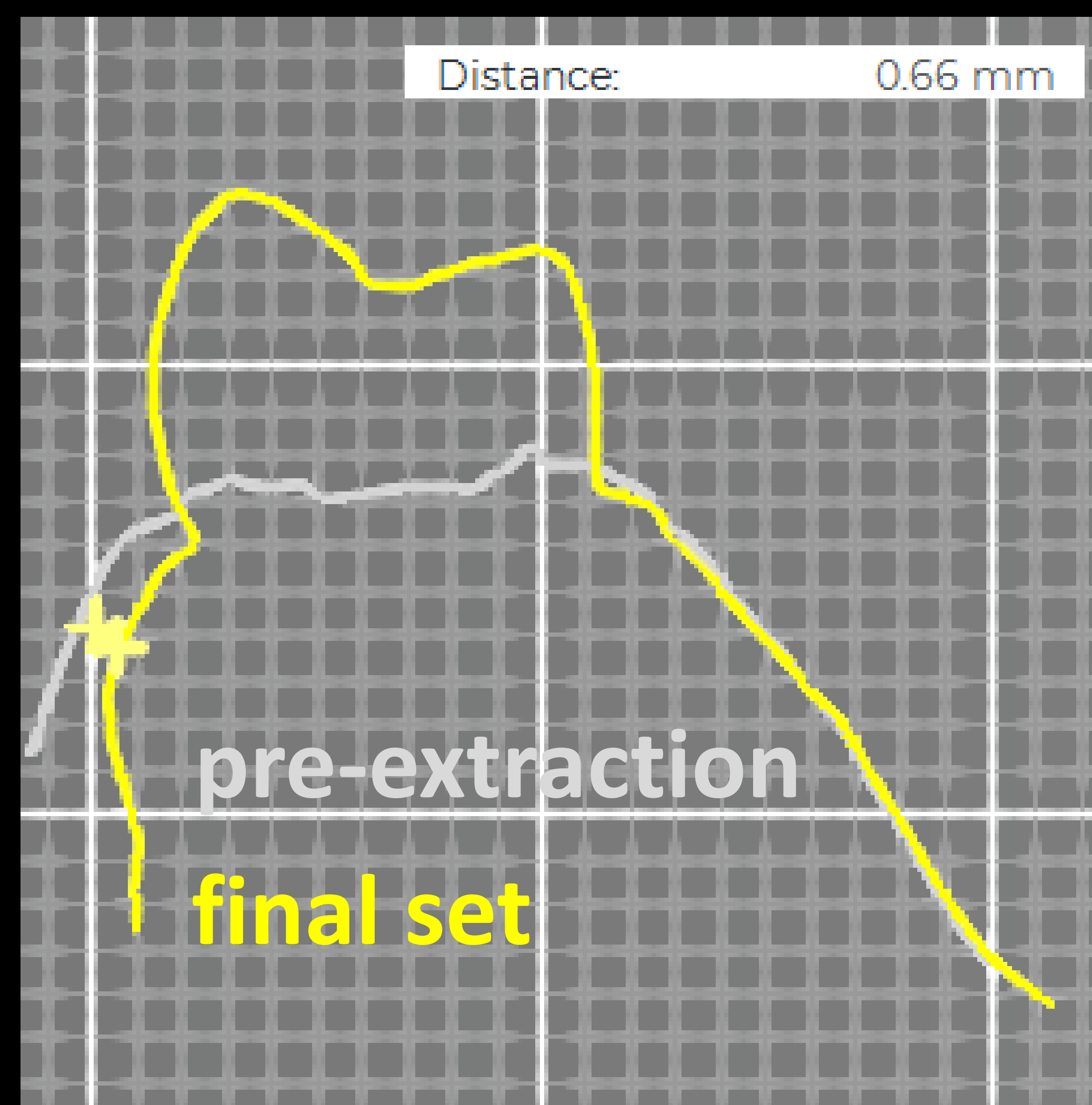
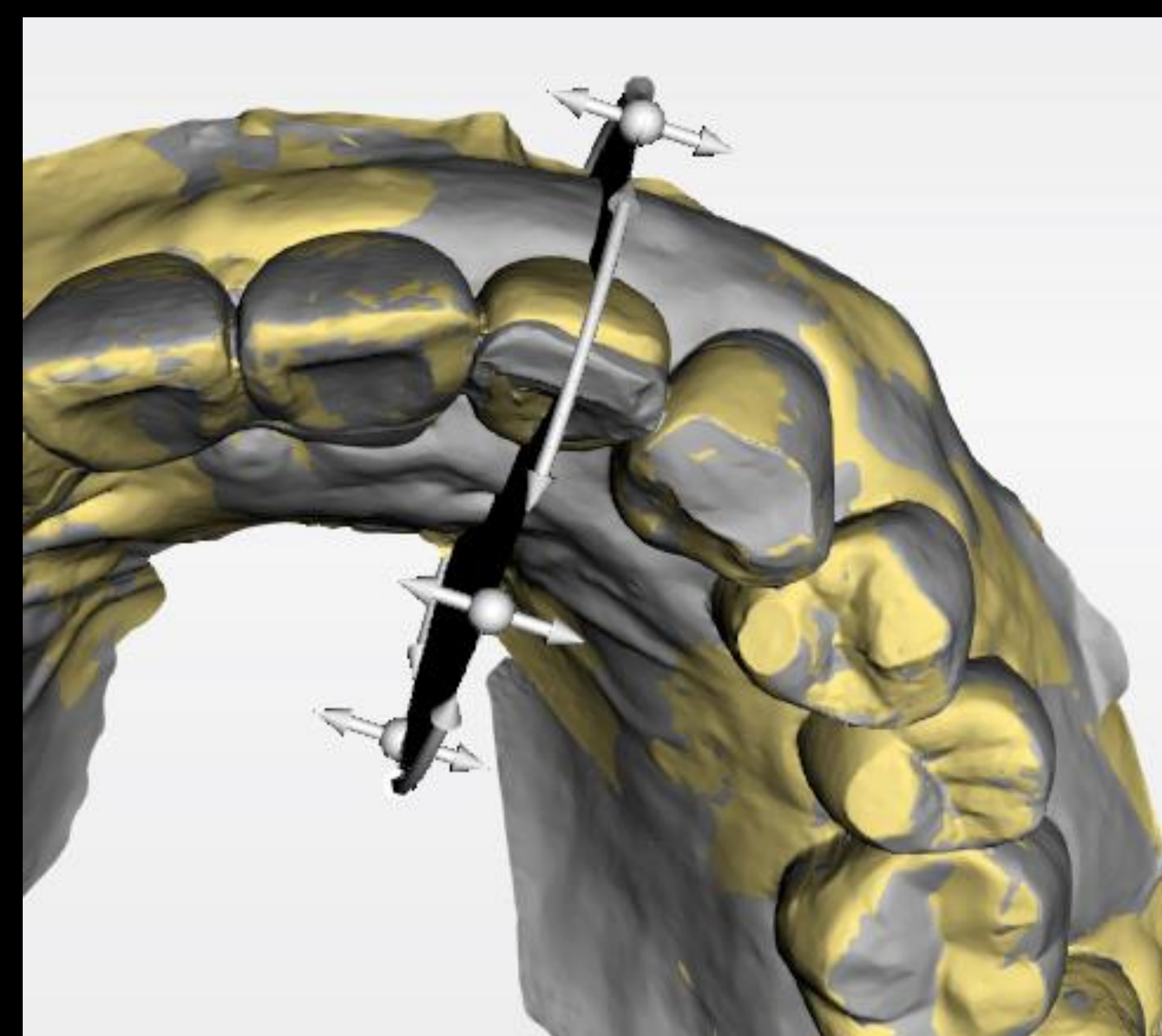


Fig8. Case2 : The matching of 3D scans
The horizontal recession amount was 0.53mm.

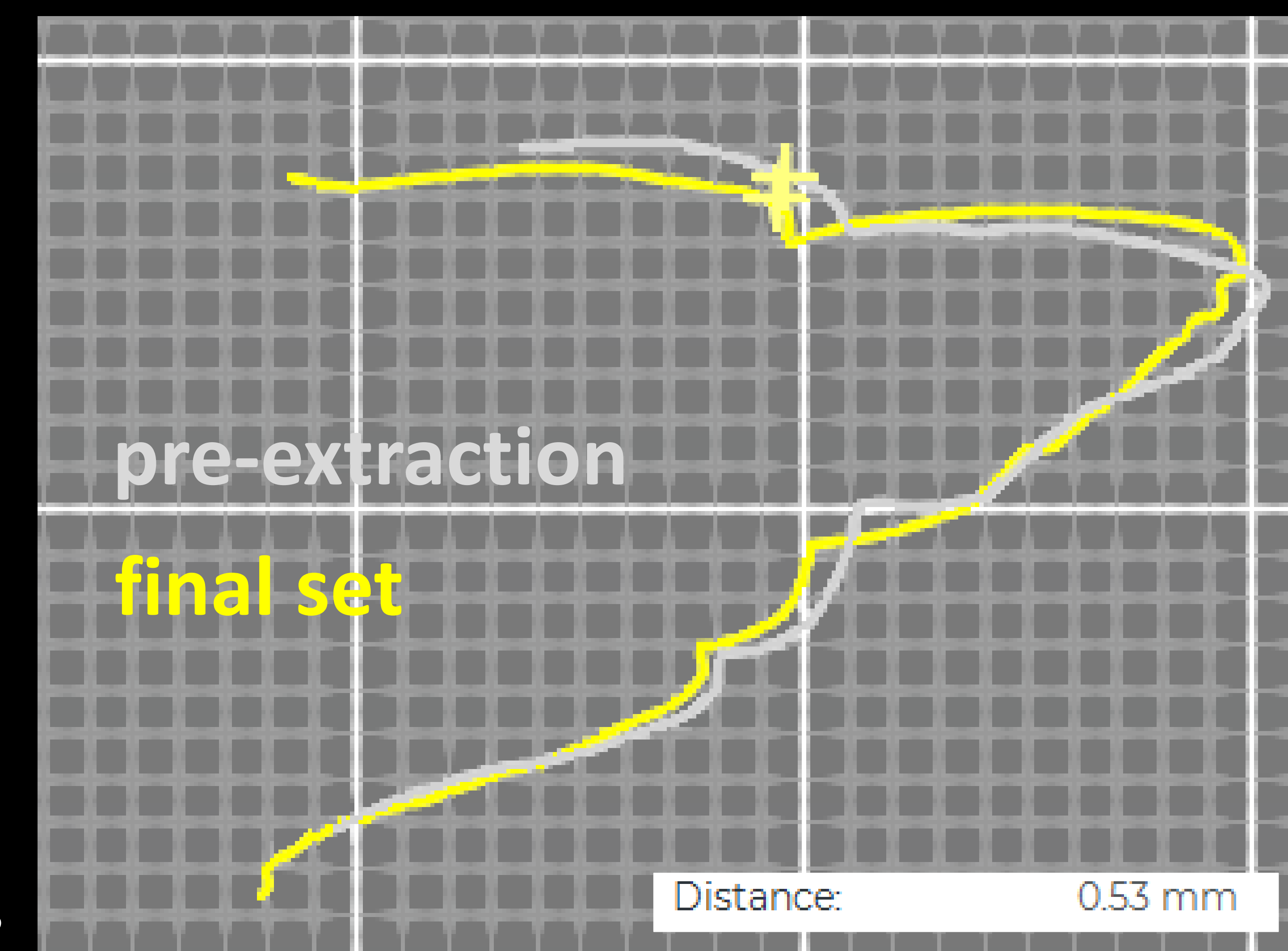
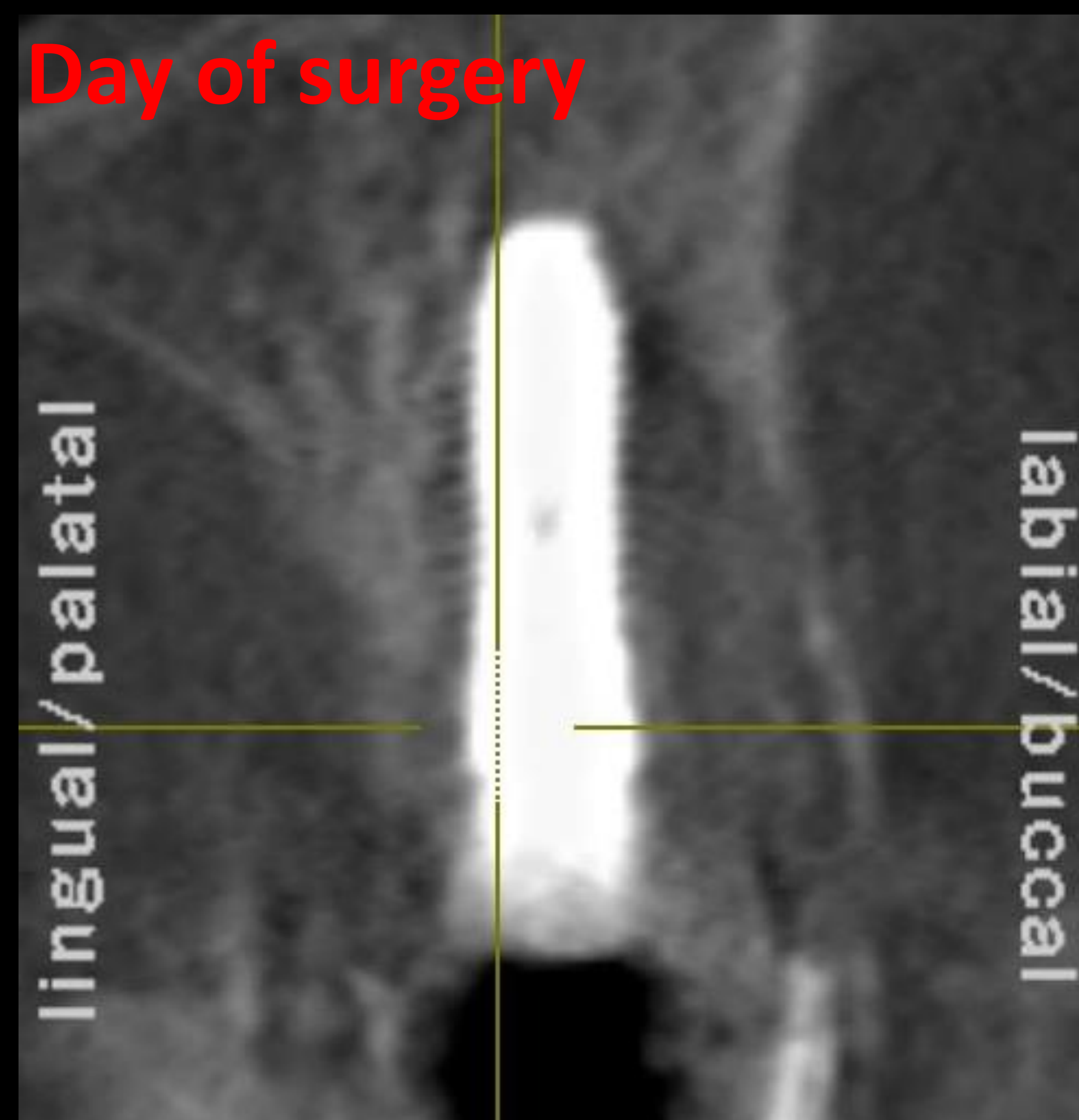
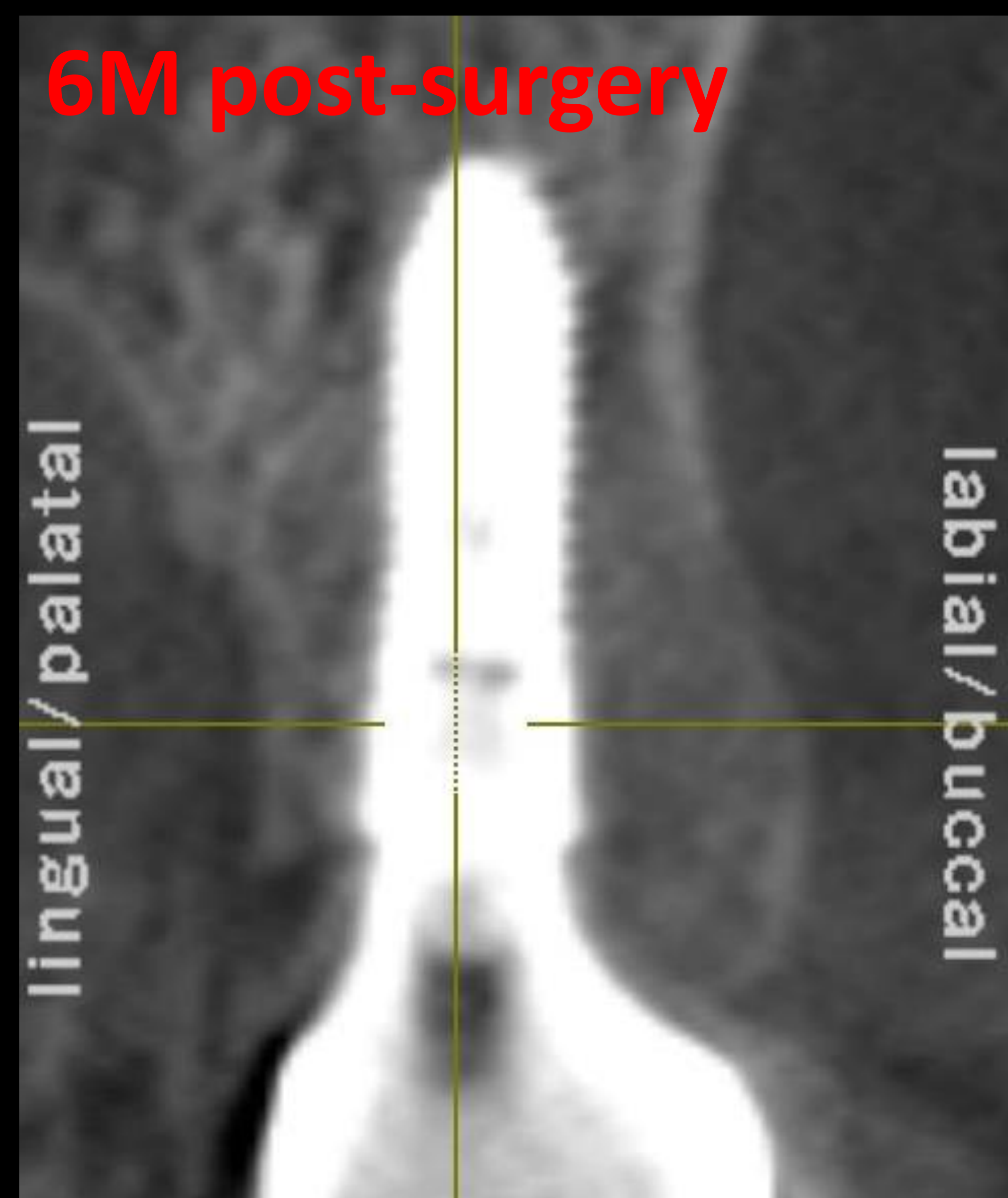


Fig9. Case1 : The Comparison of CT. Buccal bone wall change to intact.

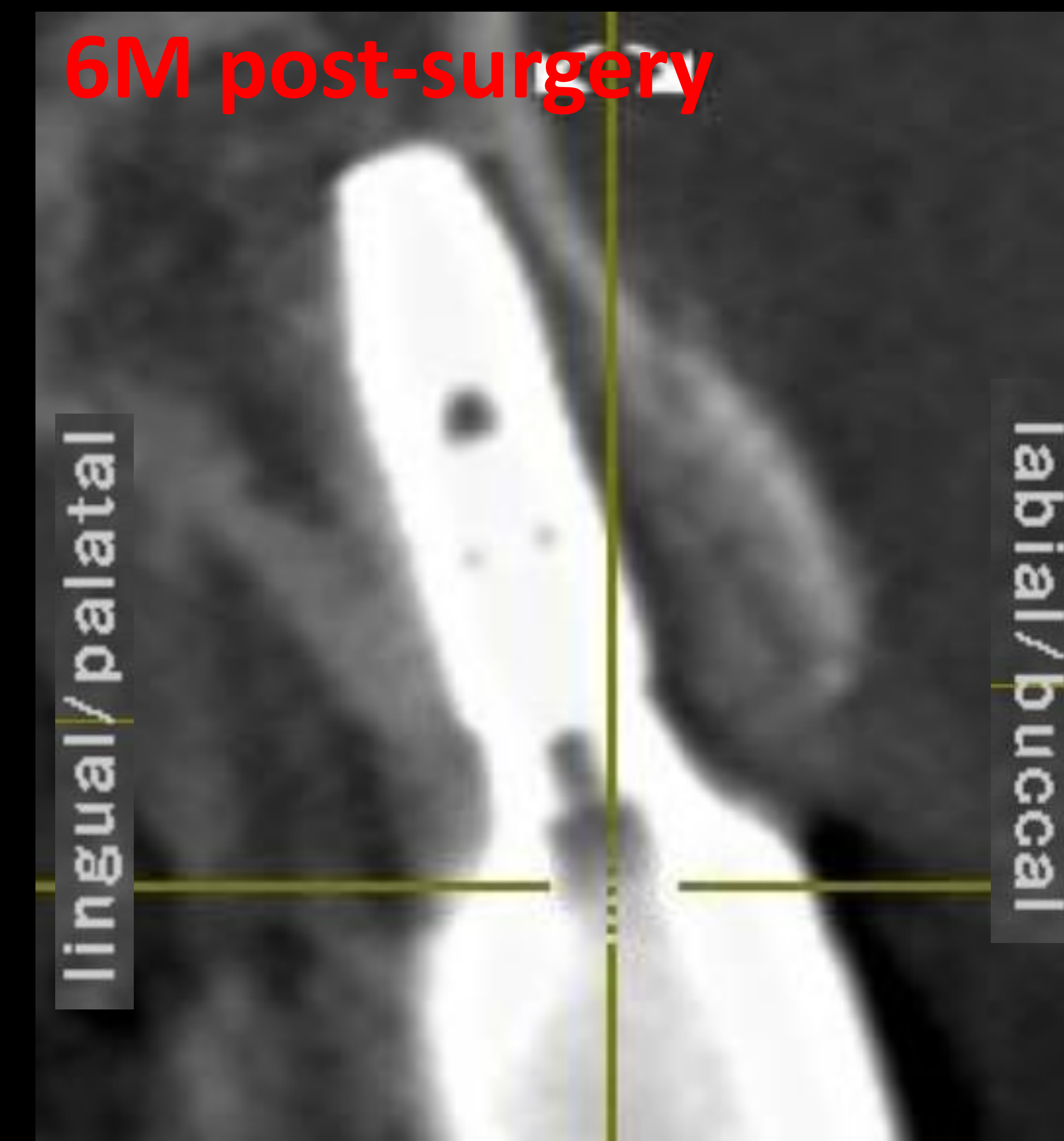


Fig10. Case2 : The Comparison of CT. Bone regeneration in the Gap.



CASE1	Implant Placement	Final Set (3M Post-surgery)
Insertion Torque	23Ncm	-
ISQ Value	68	80
Keratinized gingival width	6mm	6mm
Keratinized gingival thickness	1mm	1mm
PES	-	6/10
WES	-	6/10
OHIP-14	27/56	4/56

Table1 Clinical assessments(Case1)

CASE2	Implant Placement	Final Set (3M Post-surgery)
Insertion Torque	27Ncm	-
ISQ Value	63	79
Keratinized gingival width	6mm	6mm
Keratinized gingival thickness	2mm	1.5mm
PES	-	6/10
WES	-	7/10
OHIP-14	21/56	0/56

Table2 Clinical assessments(Case2)

Result

Both cases demonstrated stable peri-implant tissues without infection, as evidenced by clinical assessments(refer to the table for details).

Conclusion

Under following elements contributed to these good outcomes.

- The prompt conversion into autogenous bone with OCP
- Easy handling and secure fixation to surgical sites not to allow dead space for infection
- Coverage of the defect with a high-polish provisional restoration manufactured using CAD/CAM technology