



Management of Peri-implant Tissues with a Customized Abutment in Immediate Implant Placement: A Case Report.



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Introduction

Tooth extraction produces dimensional alterations of the alveolar ridge that can compromise prosthetic rehabilitation and patient hygiene.

Objective

To present tissue management of the alveolar ridge with a customized abutment in immediate implant placement for the substitution of the lower right first molar to maintain soft tissue morphology which facilitates patient hygiene.

Methods

A 59-year-old male came up to the Periodontics and Implantology dental clinic with a chief complaint of replacing a perforated mandibular molar during root canal treatment.

The diagnosis was an endo-periodontal lesion with root damage caused by perforation of the pulp chamber floor.

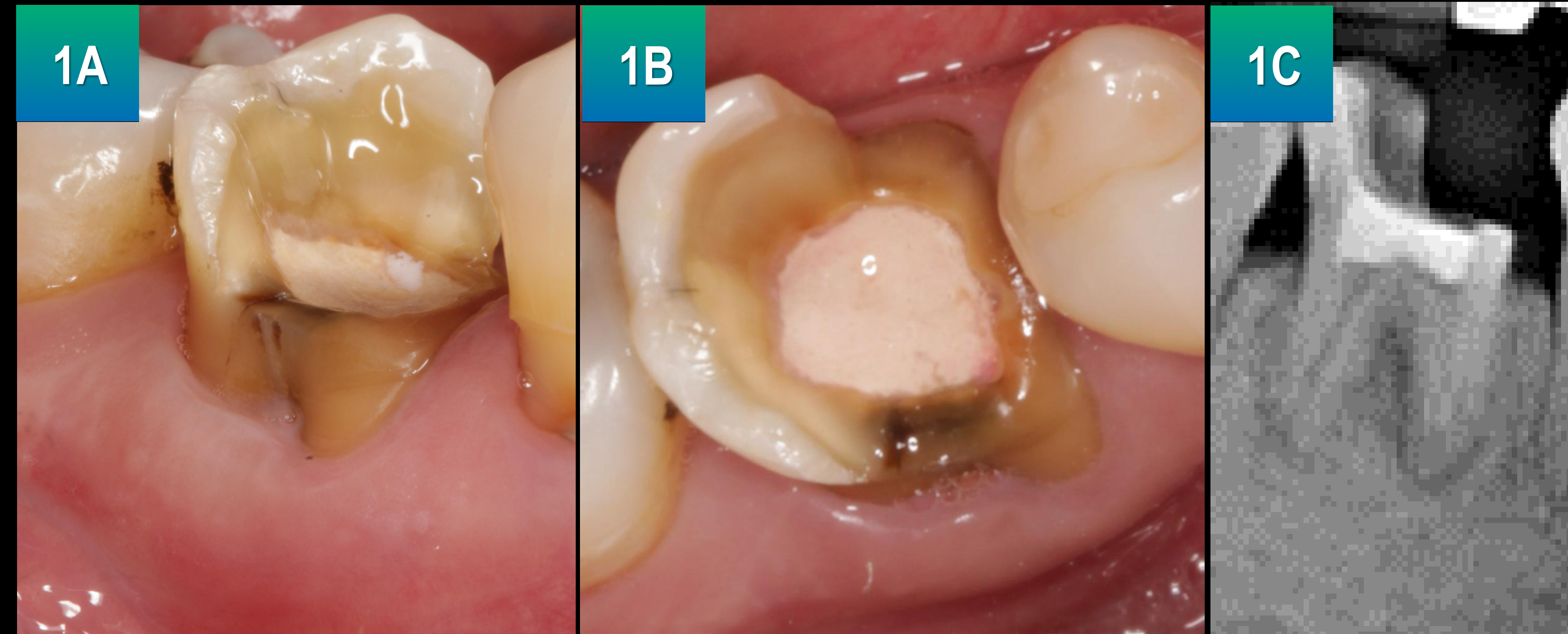


Figure 1. Initial conditions.

A, B) Crown fracture of lower right first molar, 4-mm vestibular keratinized tissue, complete interdental papillae. C) Short roots, interdental bone and periradicular radiolucent lesion.

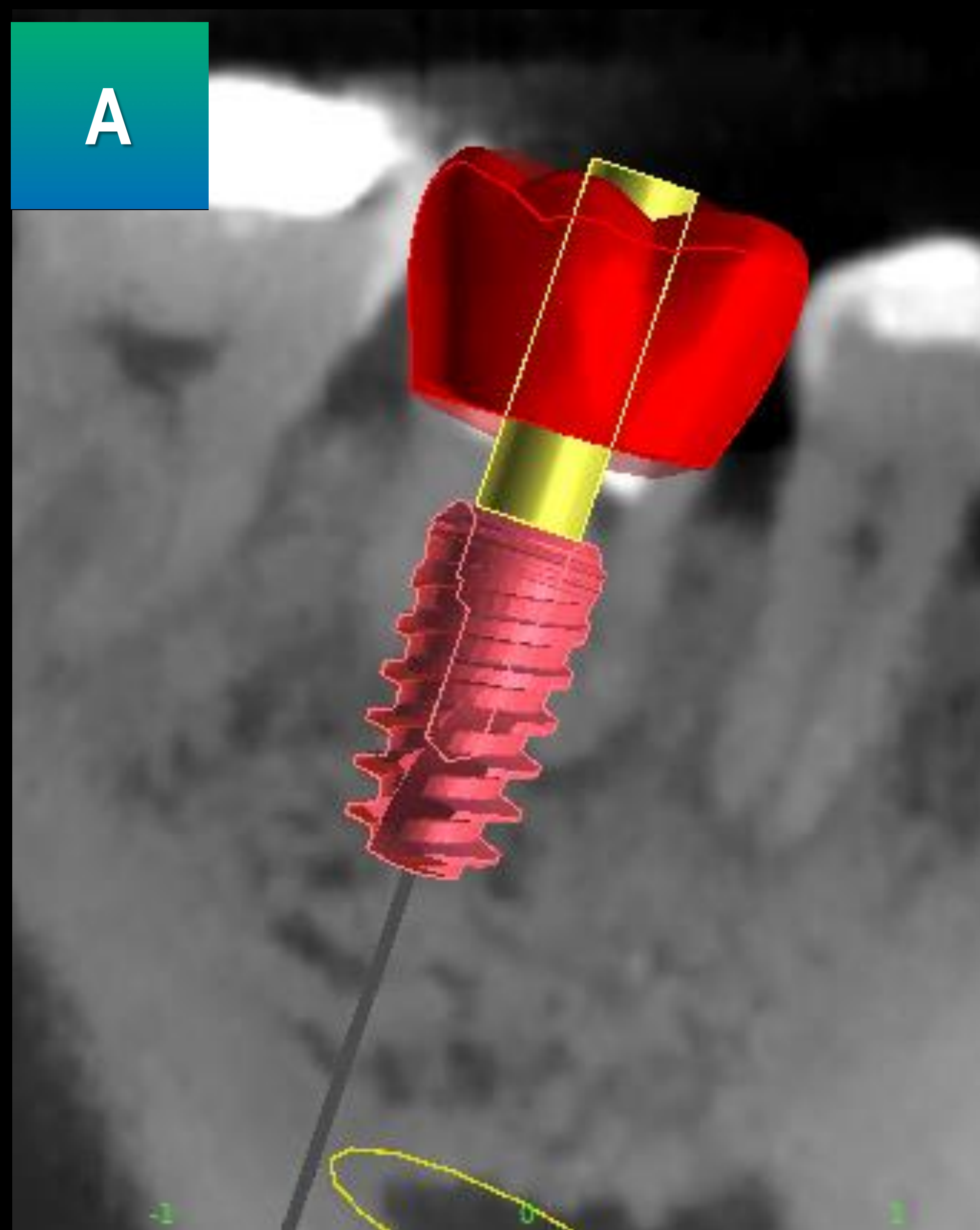
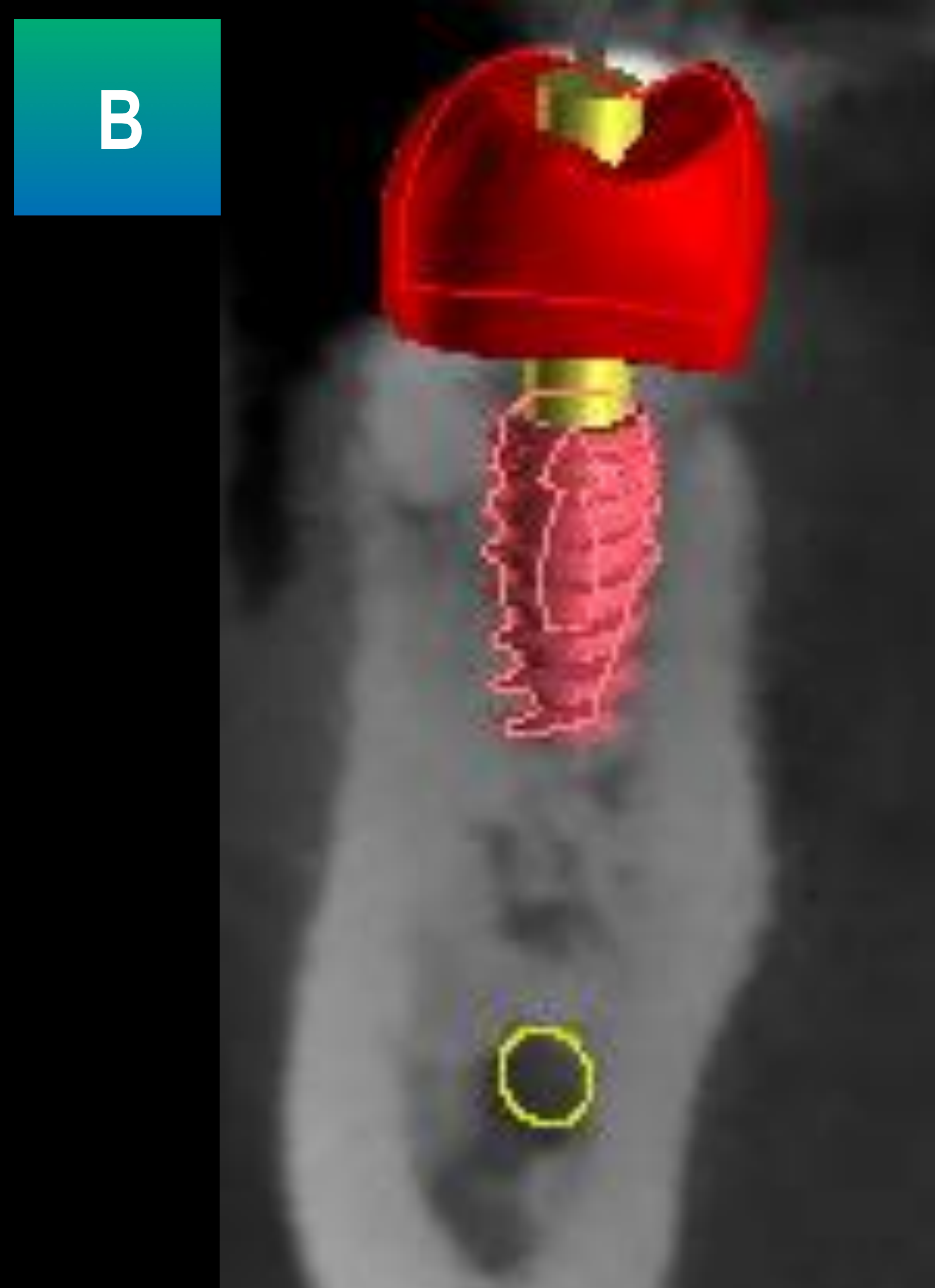
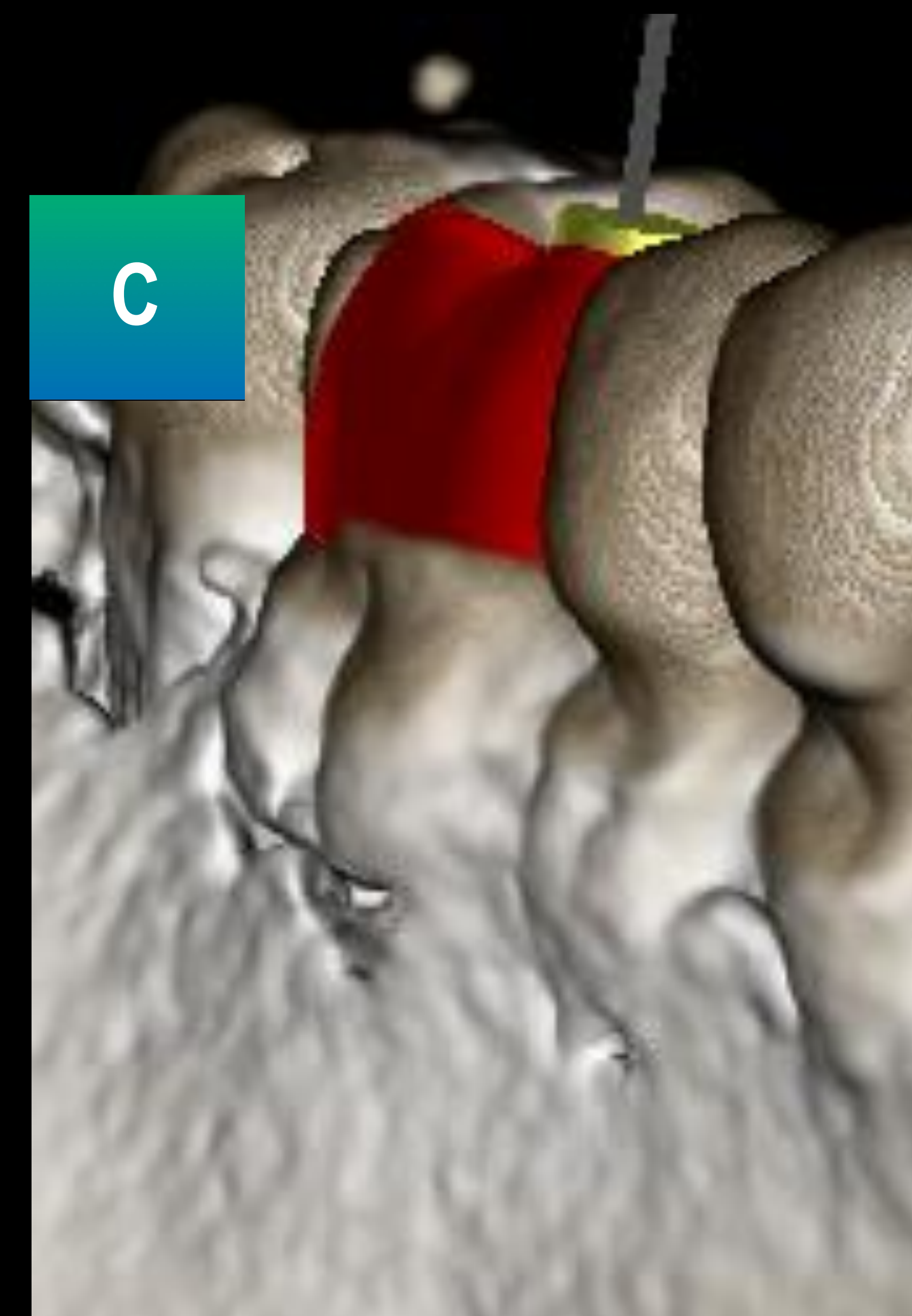
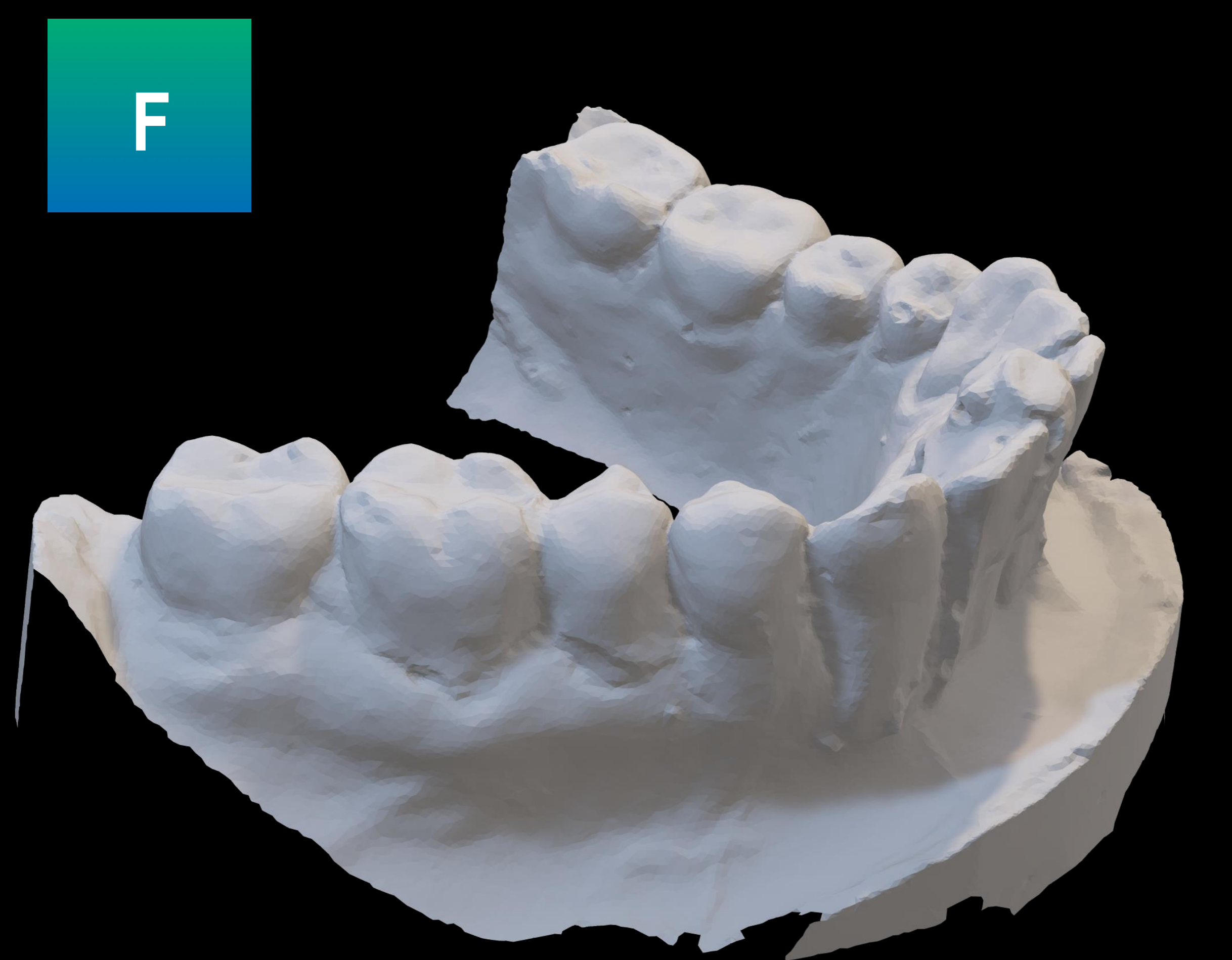
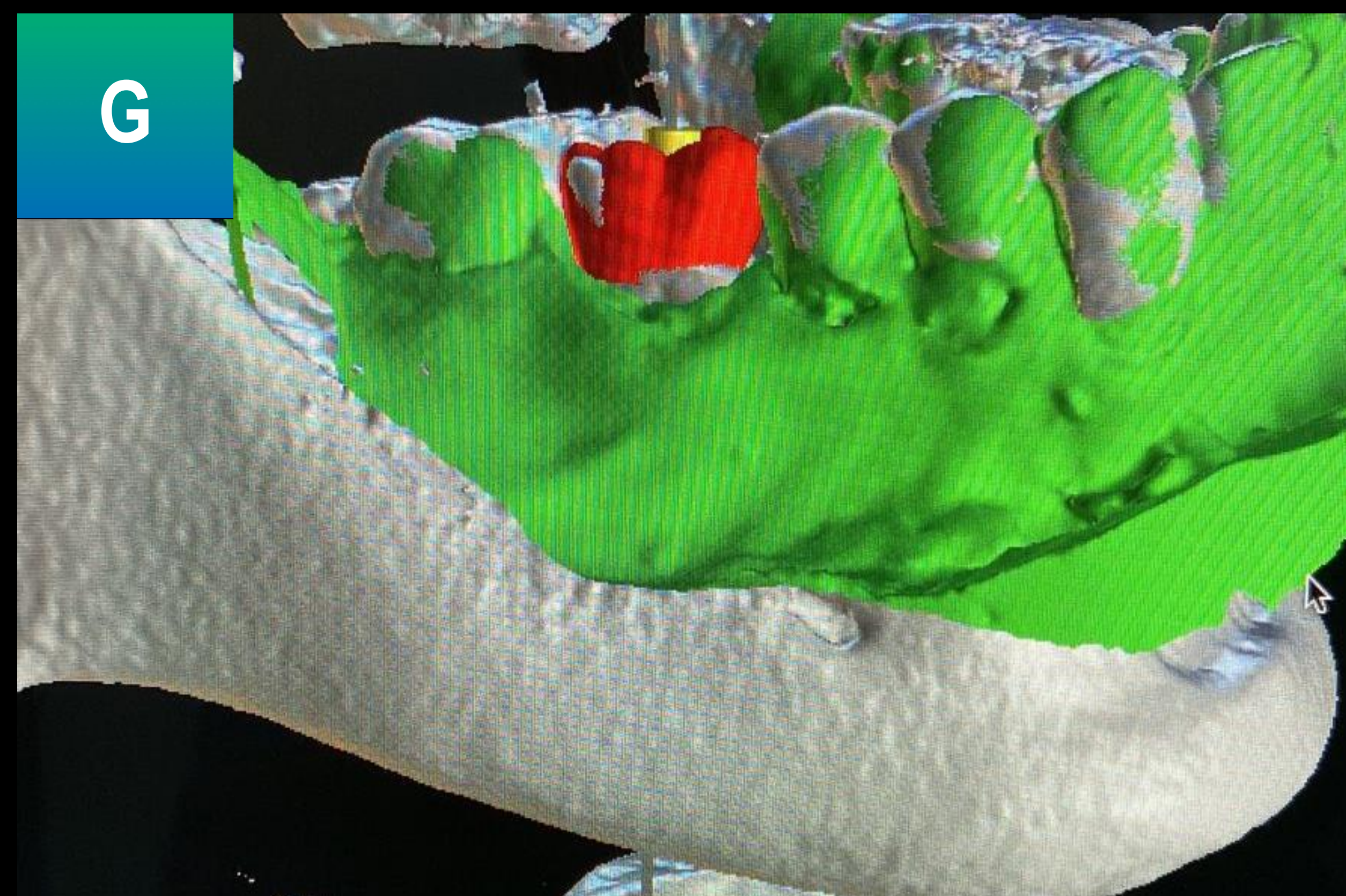
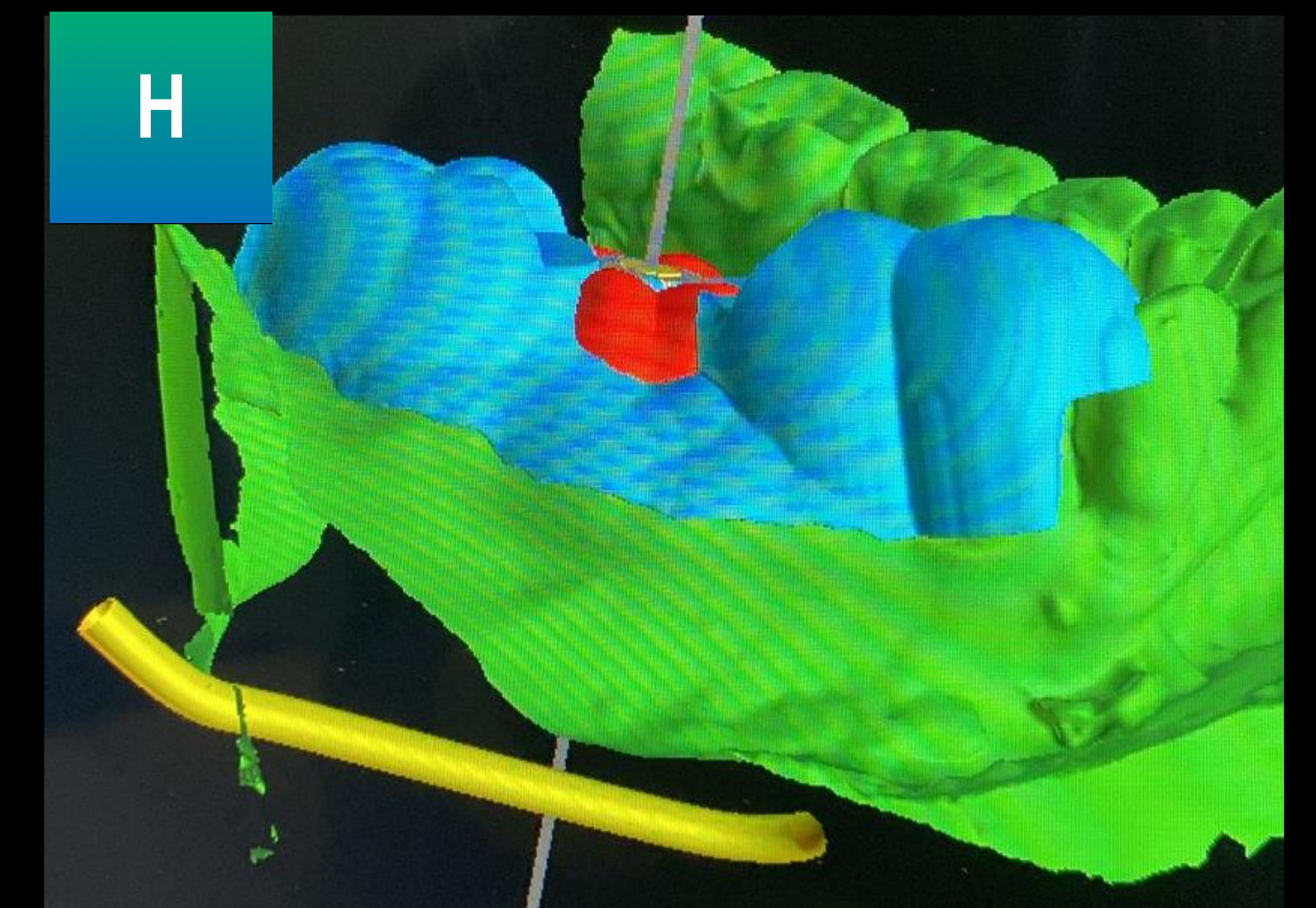


Figure 2. Digital planning and analog wax-up

A, B, C) Superimposition of the digital crown over the natural molar crown and interradicular placement of the dental implant. D, E) Acrylic crown based on analog wax-up. F) Scanned model in STL format. G) Superimposition of scanned model over Cone Beam Computed Tomography. H) Digital surgical guide planning.

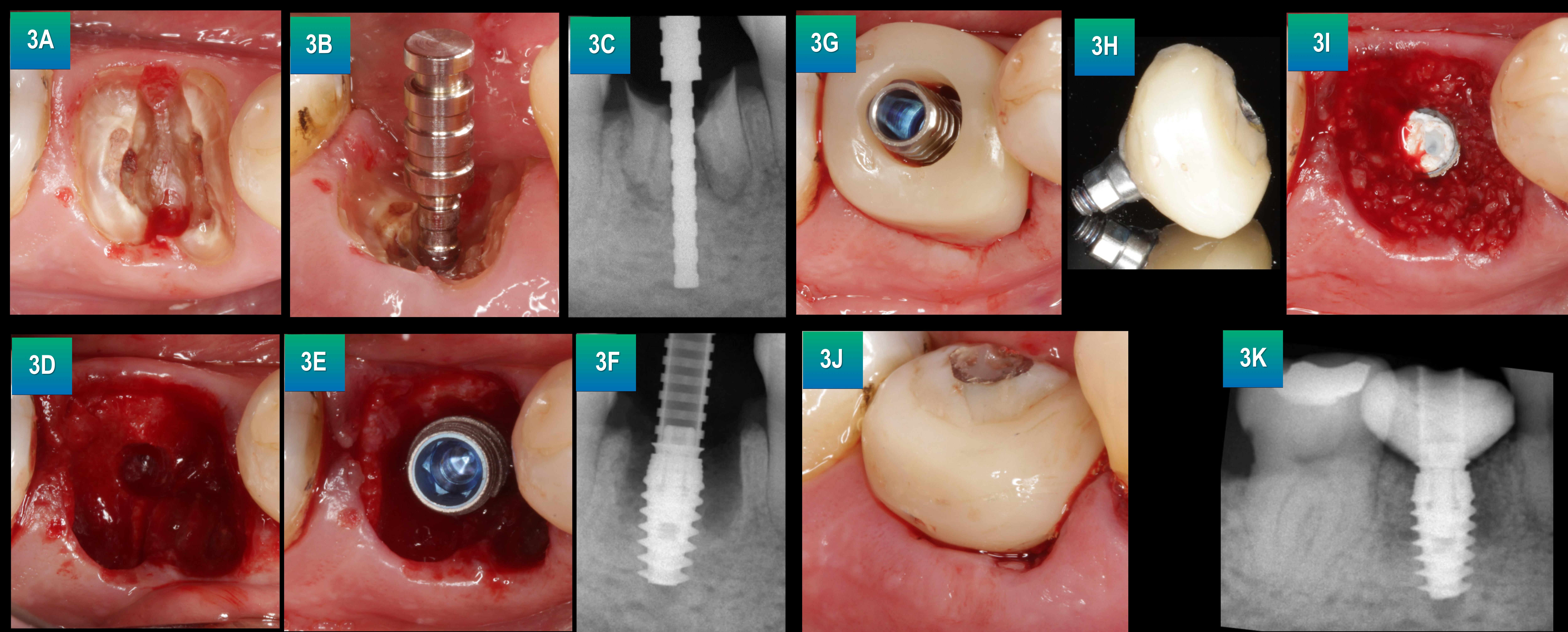


Figure 3. Post-extraction implant placement and immediate provisionalization.

A) Root separation. B, C) Initial osteotomy. D) Roots extraction. E, F) 2 mm subcrestal implant placement at interradicular septum bone.

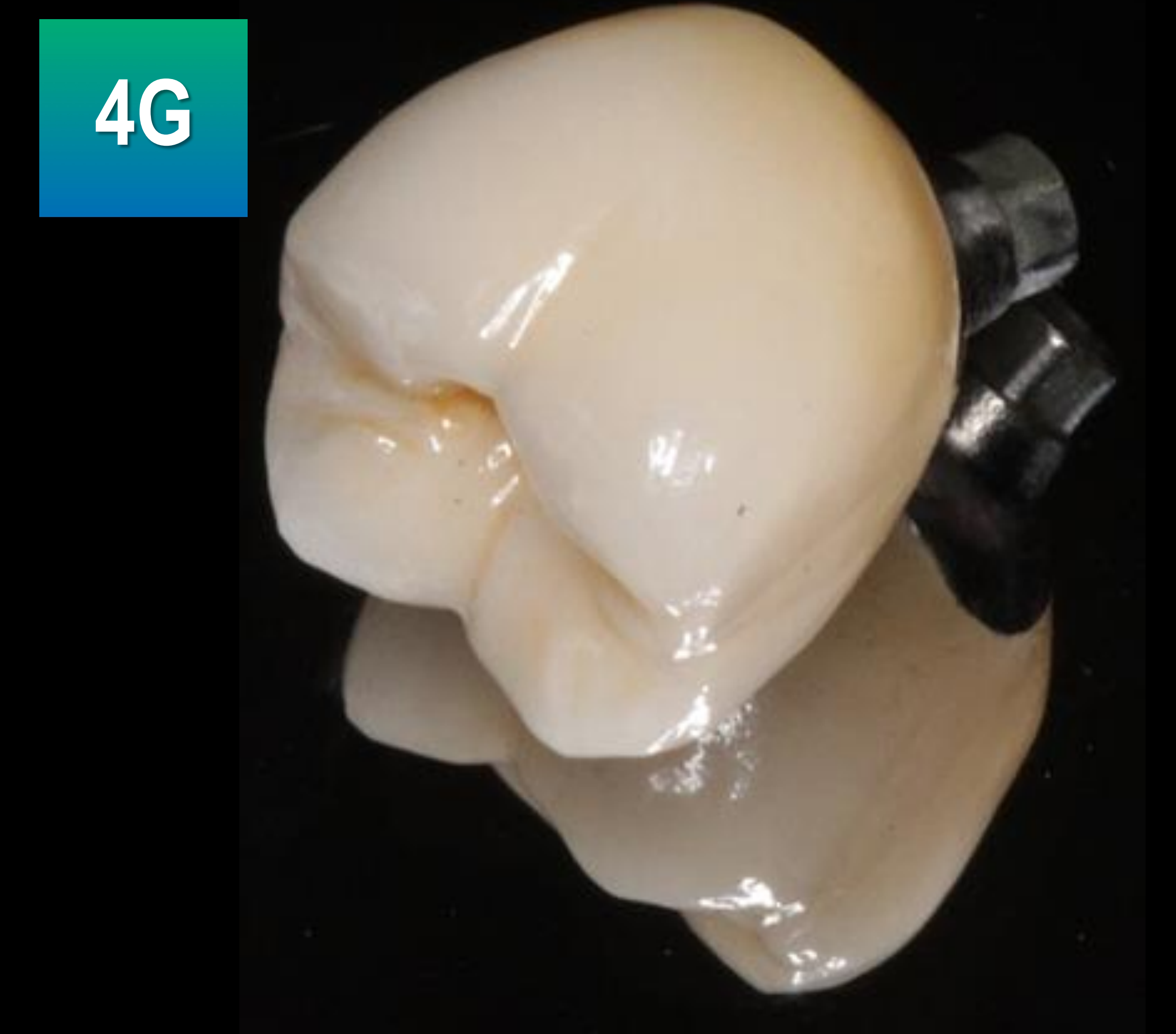
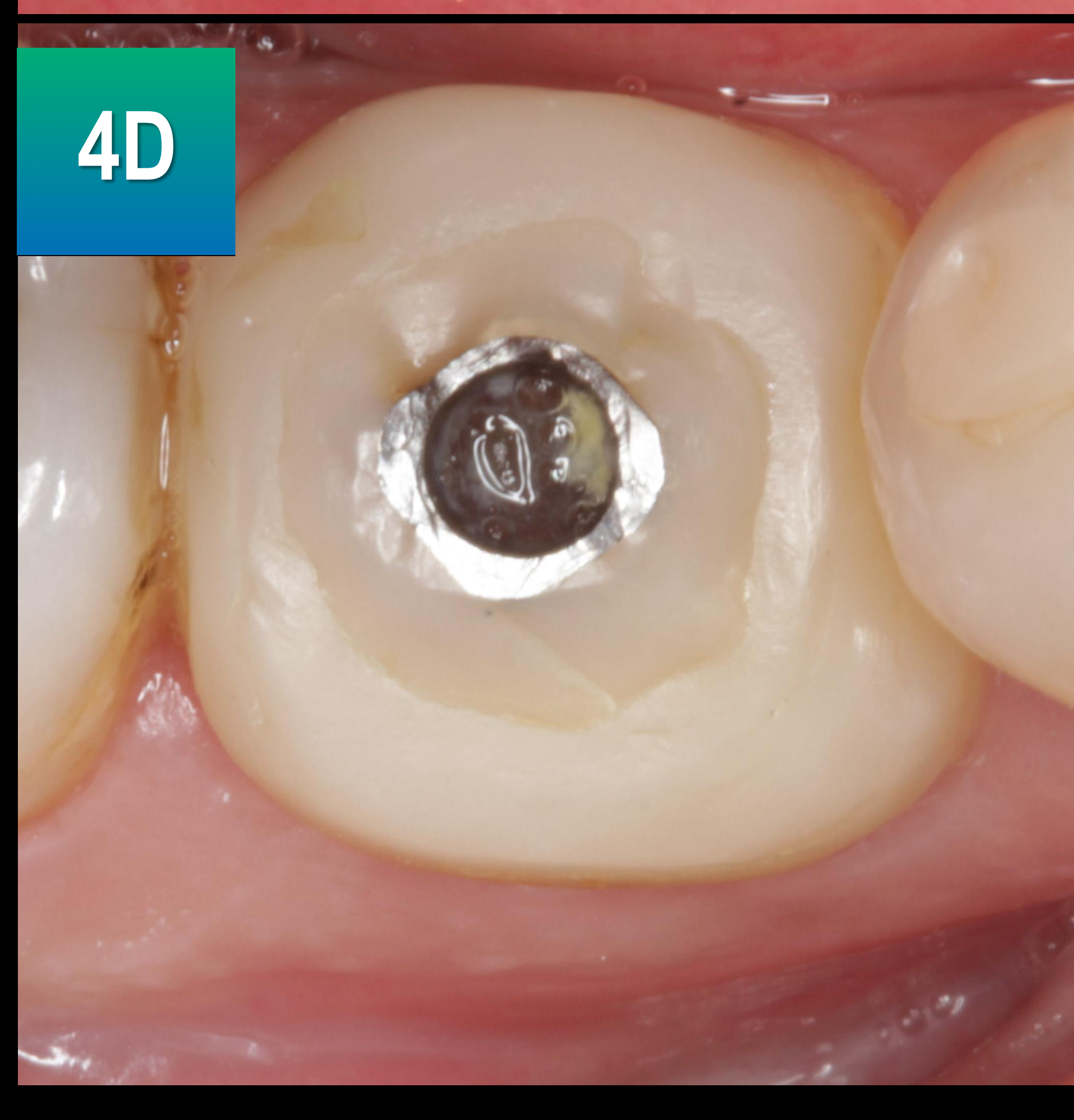
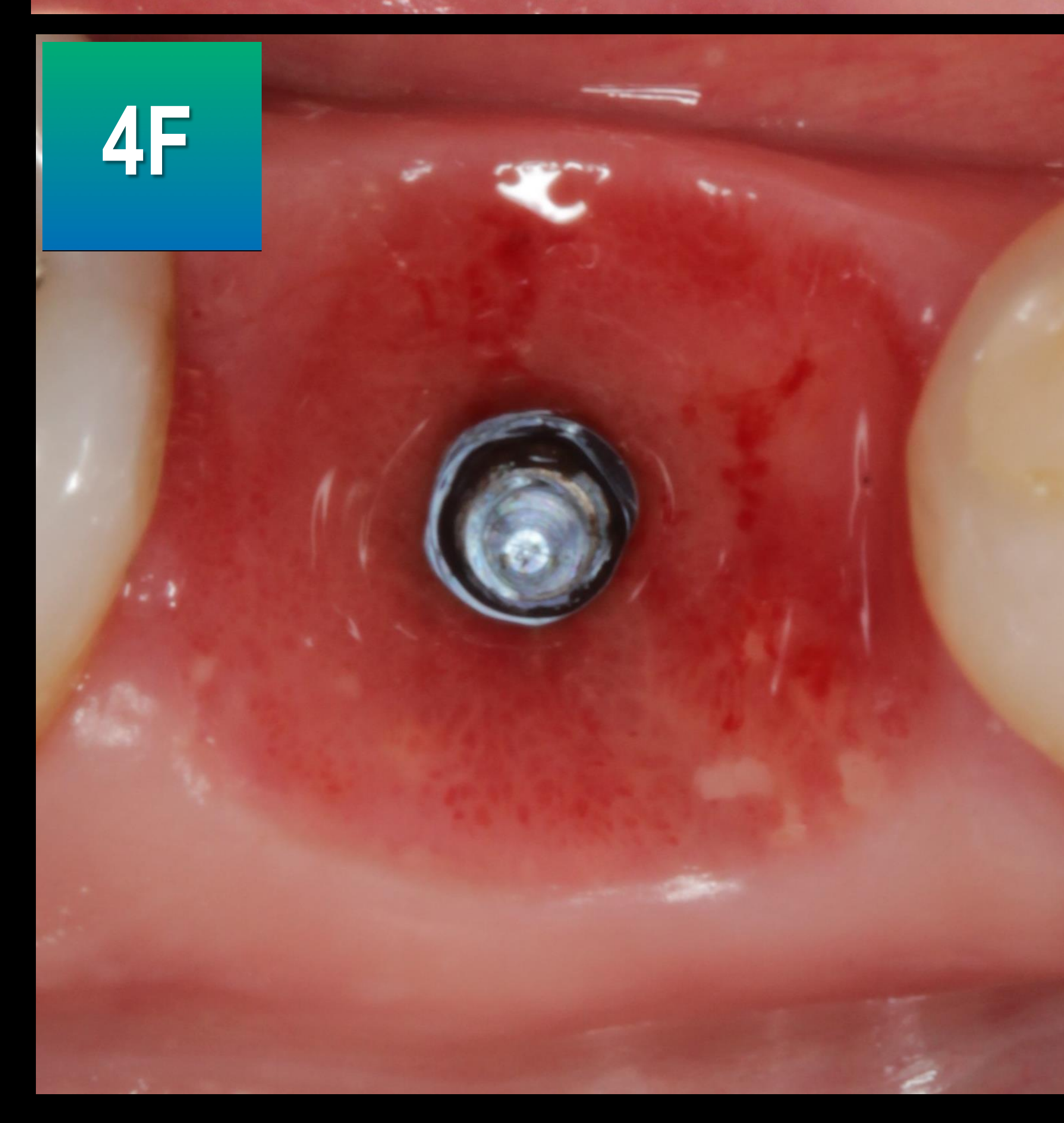
G) Provisional placement and flowable composite added around the provisional. H) Temporary abutment was removed for the creation of critical and subcritical contours. I) Gap was filled with bovine bone xenograft. J) Provisional placement to seal the socket, no flap advancement and suture was needed. K) Final x-ray.

Results

Immediate

3 months

6 months



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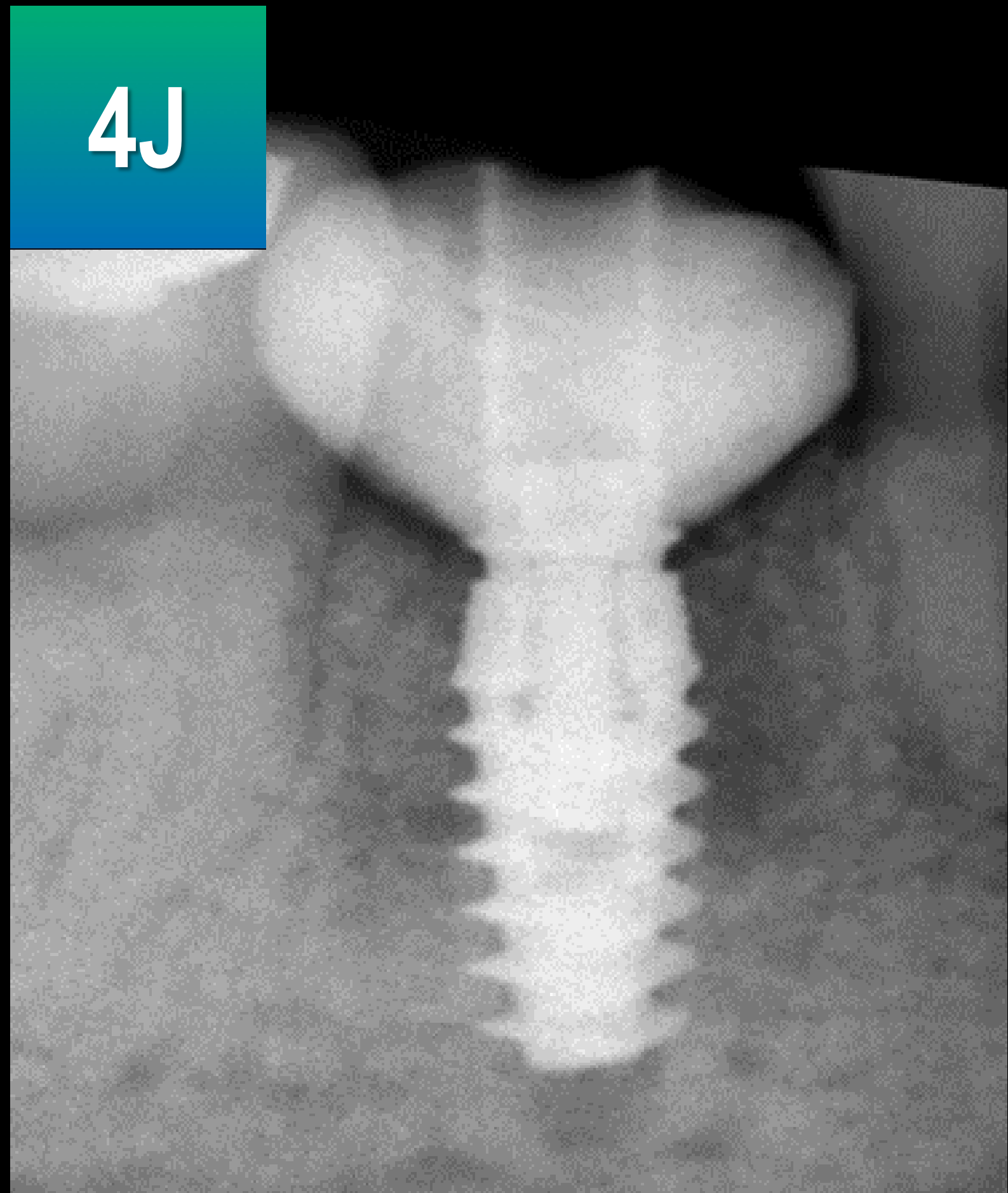
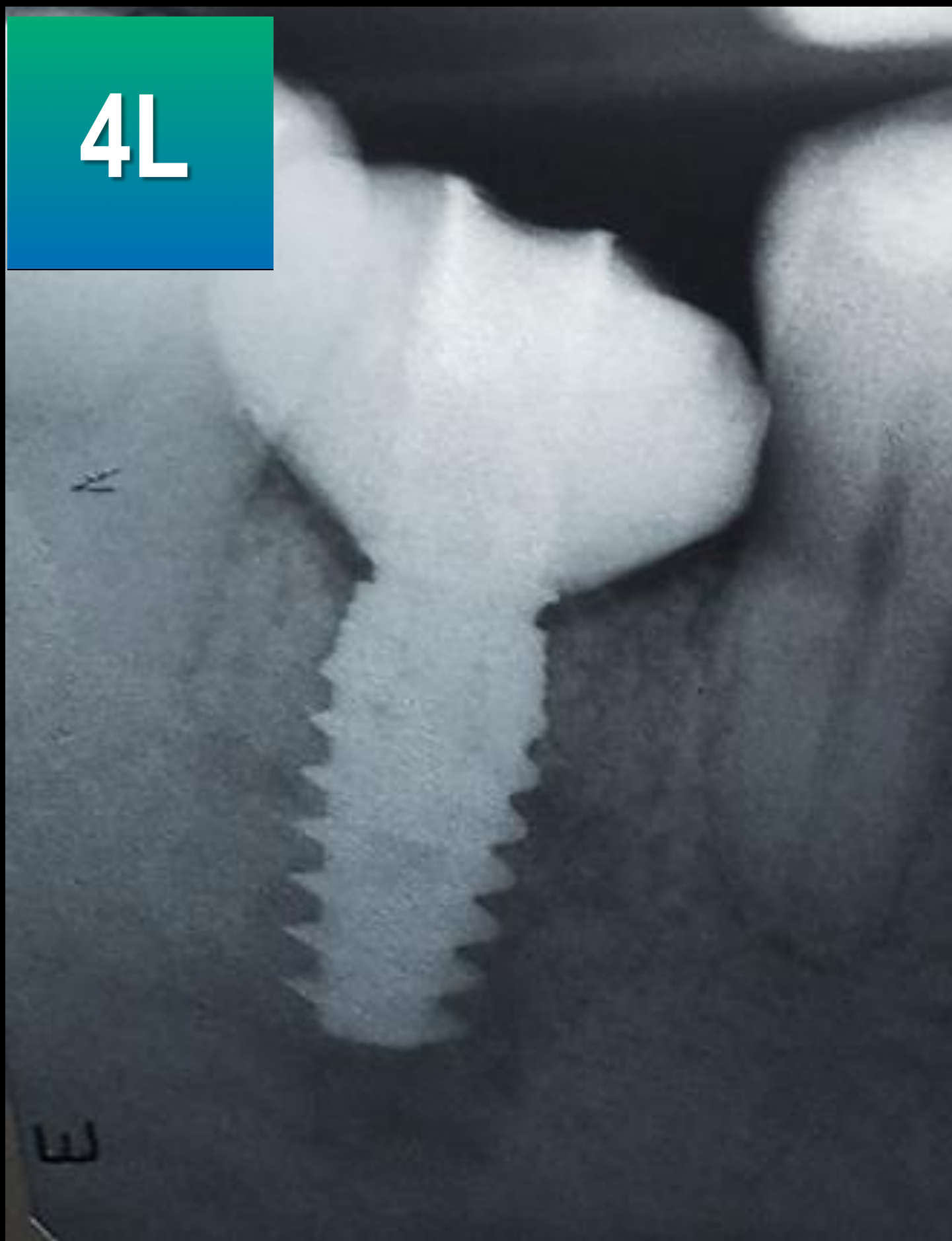
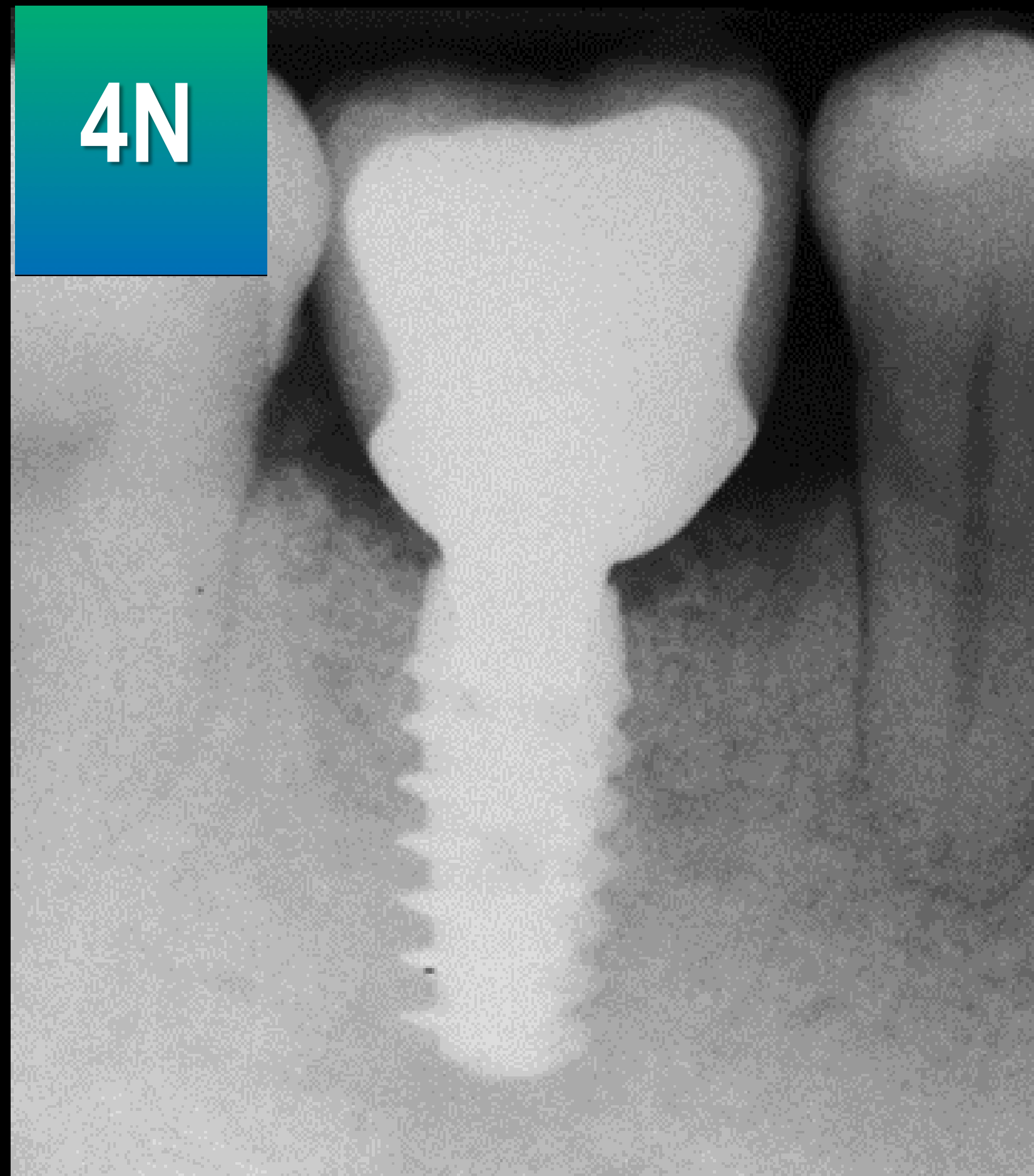
Figure 4. Clinical soft tissue conditions since post extraction implant placement and immediate provisionalization to definitive crown placement.

A, B) Immediate provisionalization. C,D) 3 months follow up after provisionalization. E,G,H) Definitive metal-ceramic crown placement. F) Maintained soft tissue contours.

Immediate

3 months

6 months



Variable	Score
Mesial papilla	1
Distal papilla	2
Level of soft-tissue margin	2
Soft-tissue contour	2
Alveolar process	2
Soft-tissue color	2
Soft-tissue texture	2
Total	13

Table 1. Pink Esthetic Score. 13 of 14 points were obtained reflecting almost a perfect match of the peri-implant soft tissue.

Conclusions

Immediate implant placement with a customized abutment and alveolar ridge preservation maintains the dimension of the alveolar ridge and a natural emergence profile of the prosthetic restoration that facilitates patient hygiene which decreases peri-implantitis risk. Therefore, it is a predictable and efficient protocol for prosthetic rehabilitation of molars with implants.

References



I,J) Provisionalization and final x-ray after immediate implant placement. K,L) Hard and soft tissues 2 months follow up after provisionalization. M,N) Hard and soft tissues after definitive crown placement.