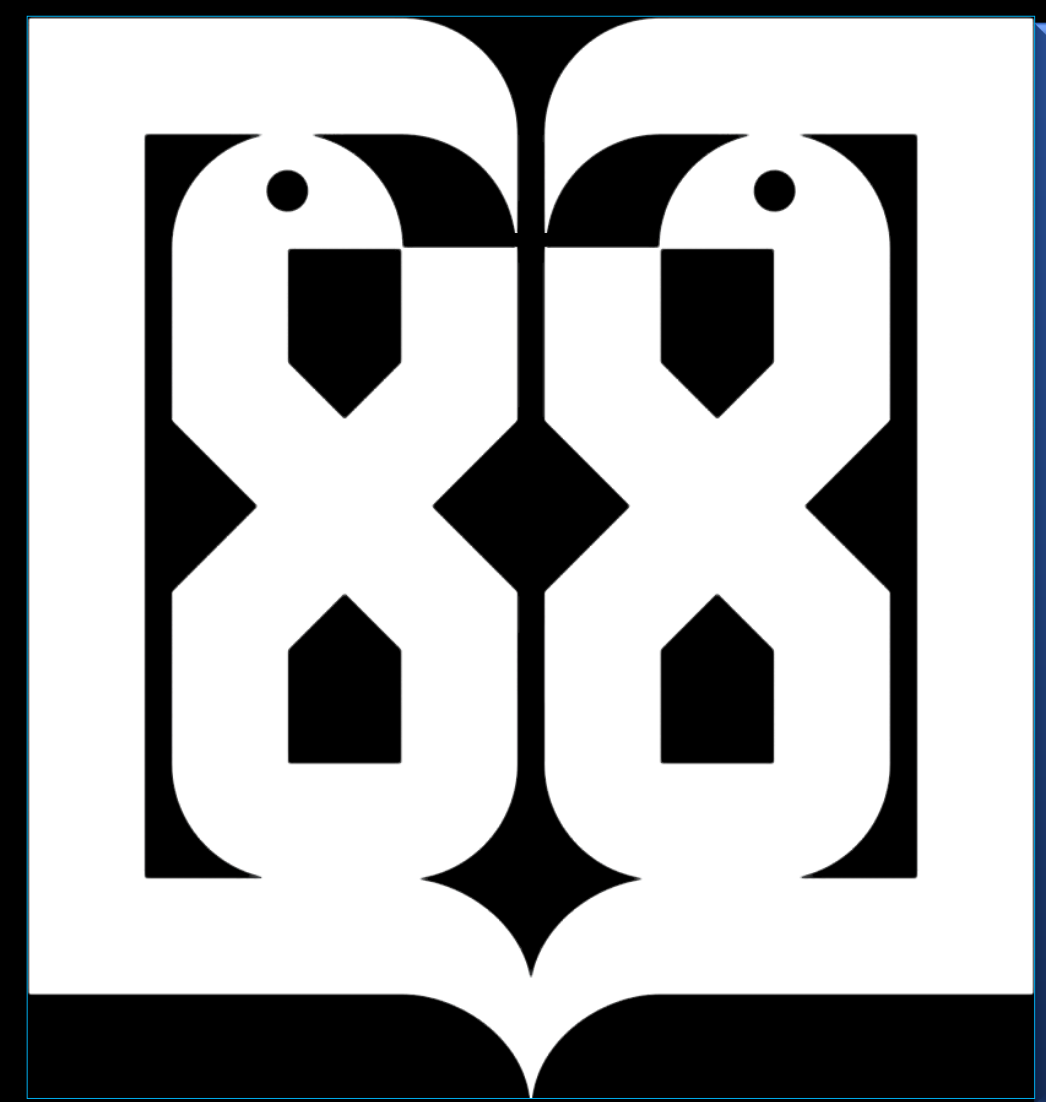




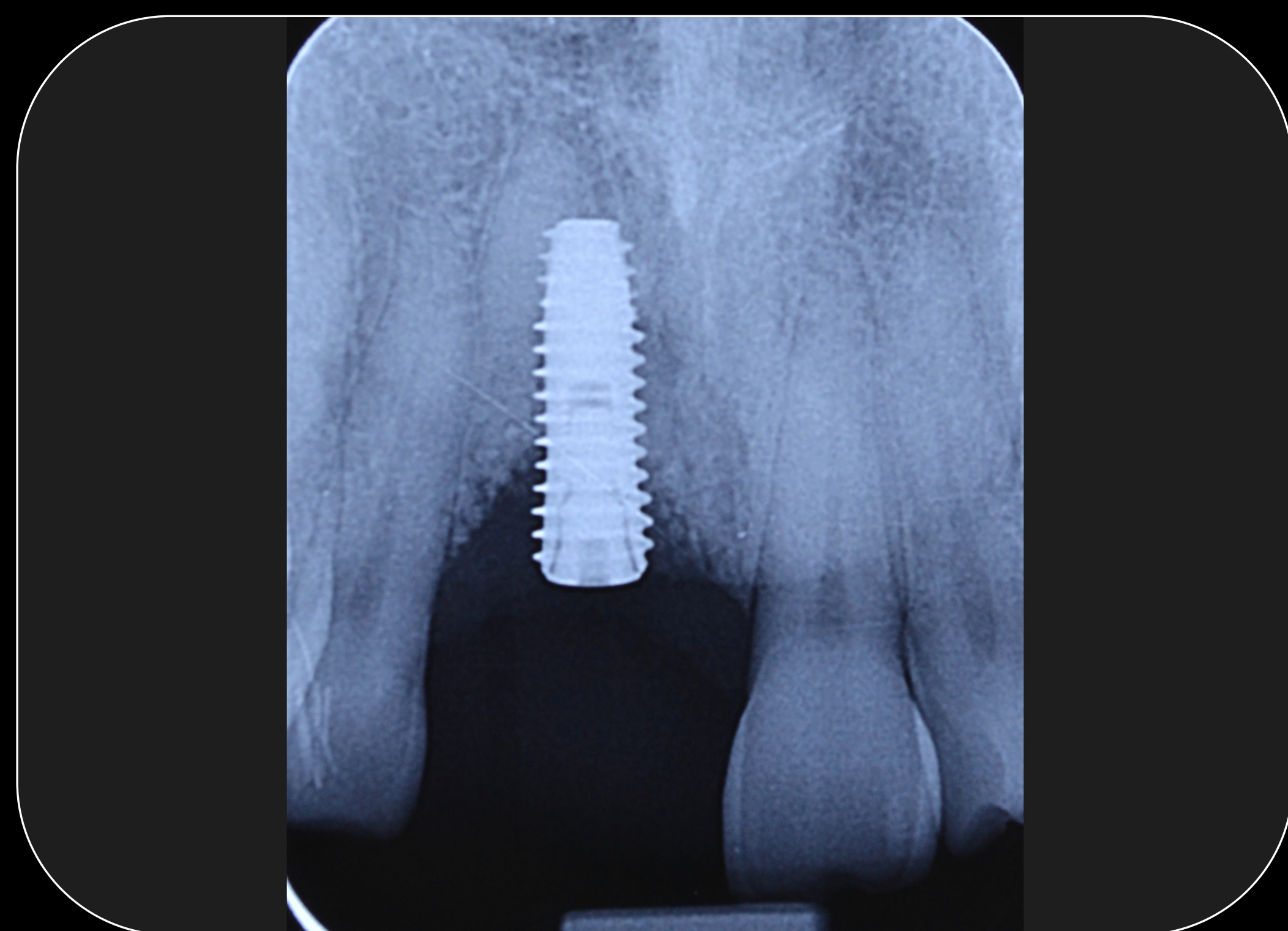
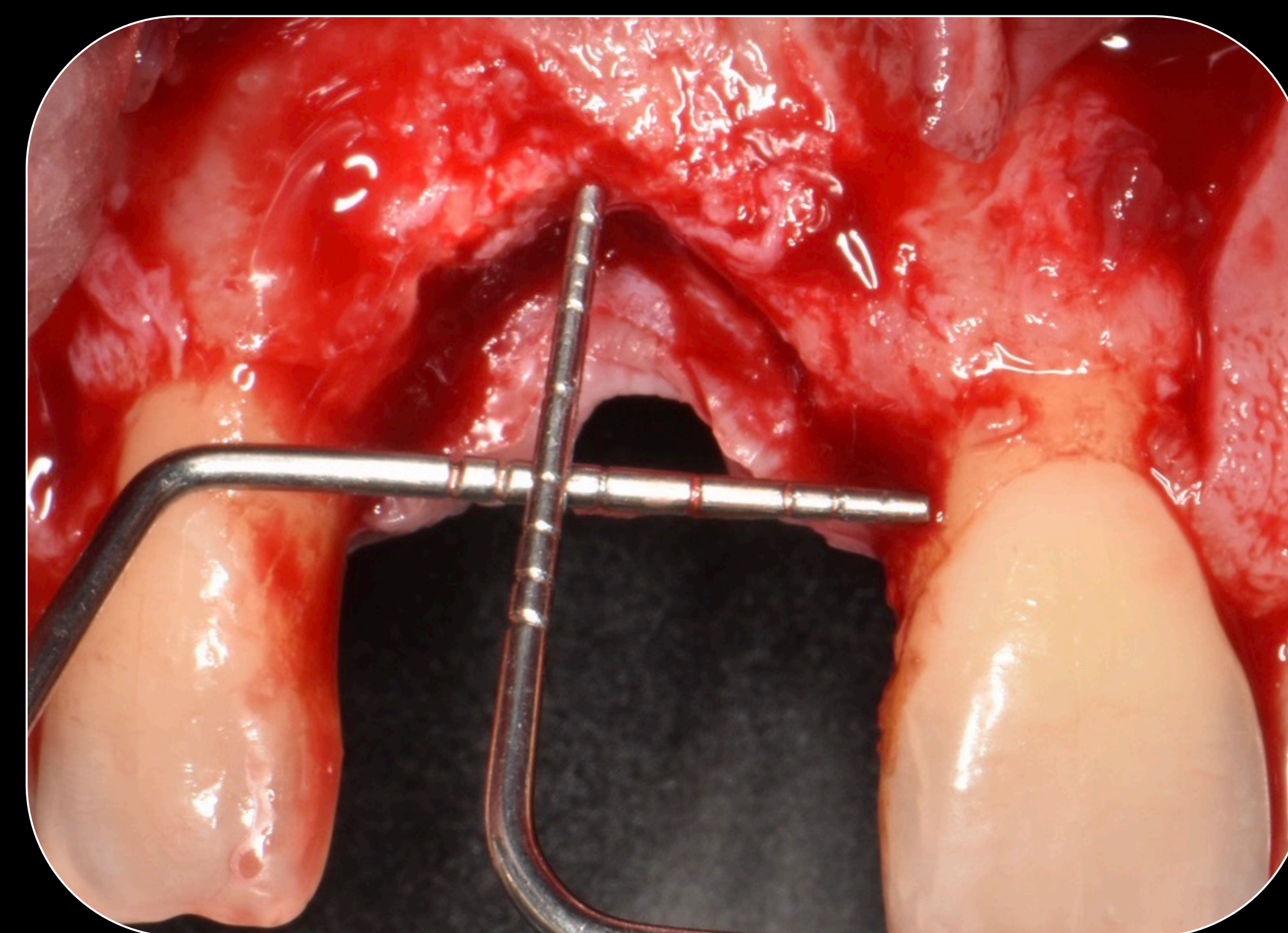
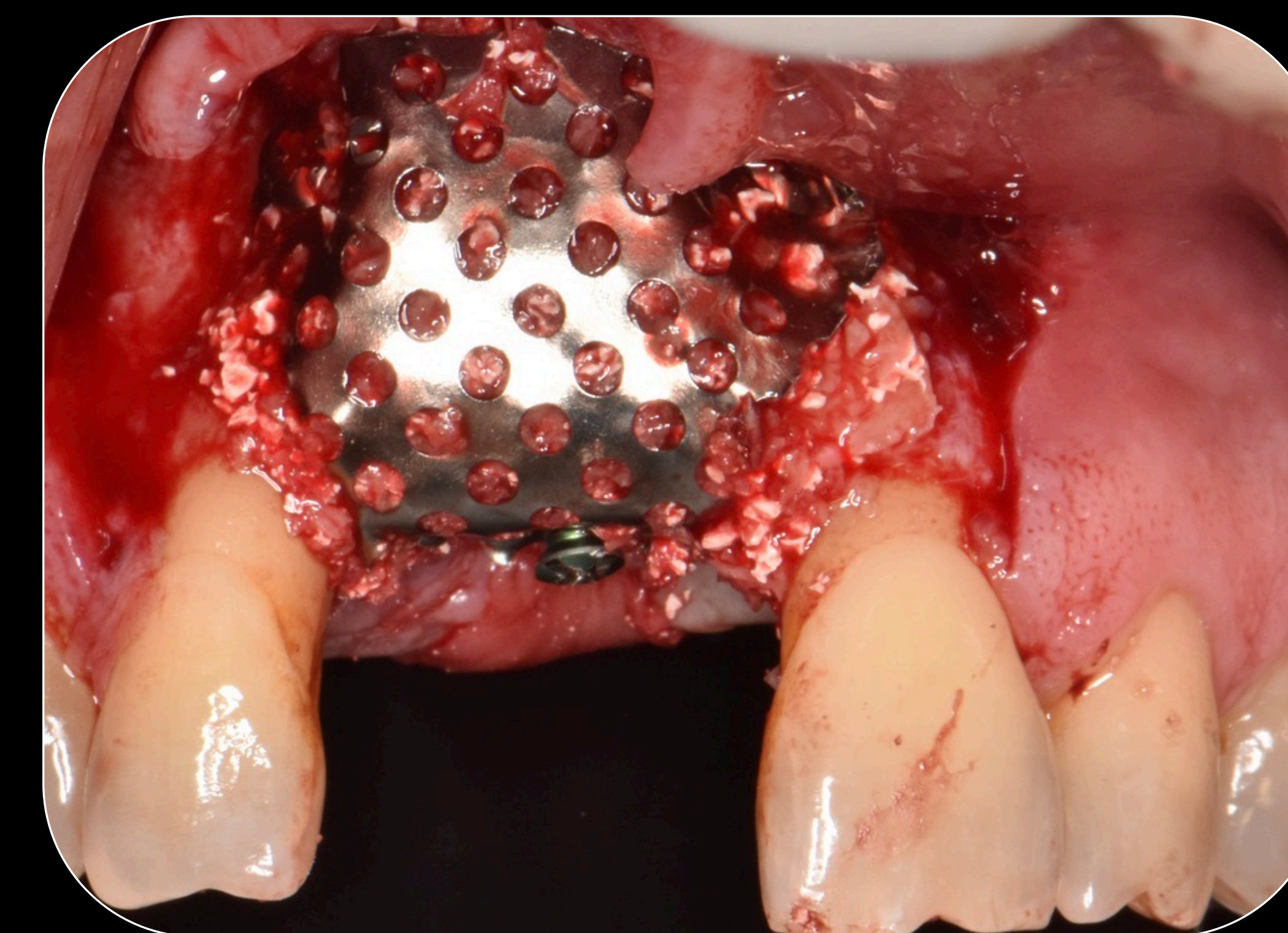
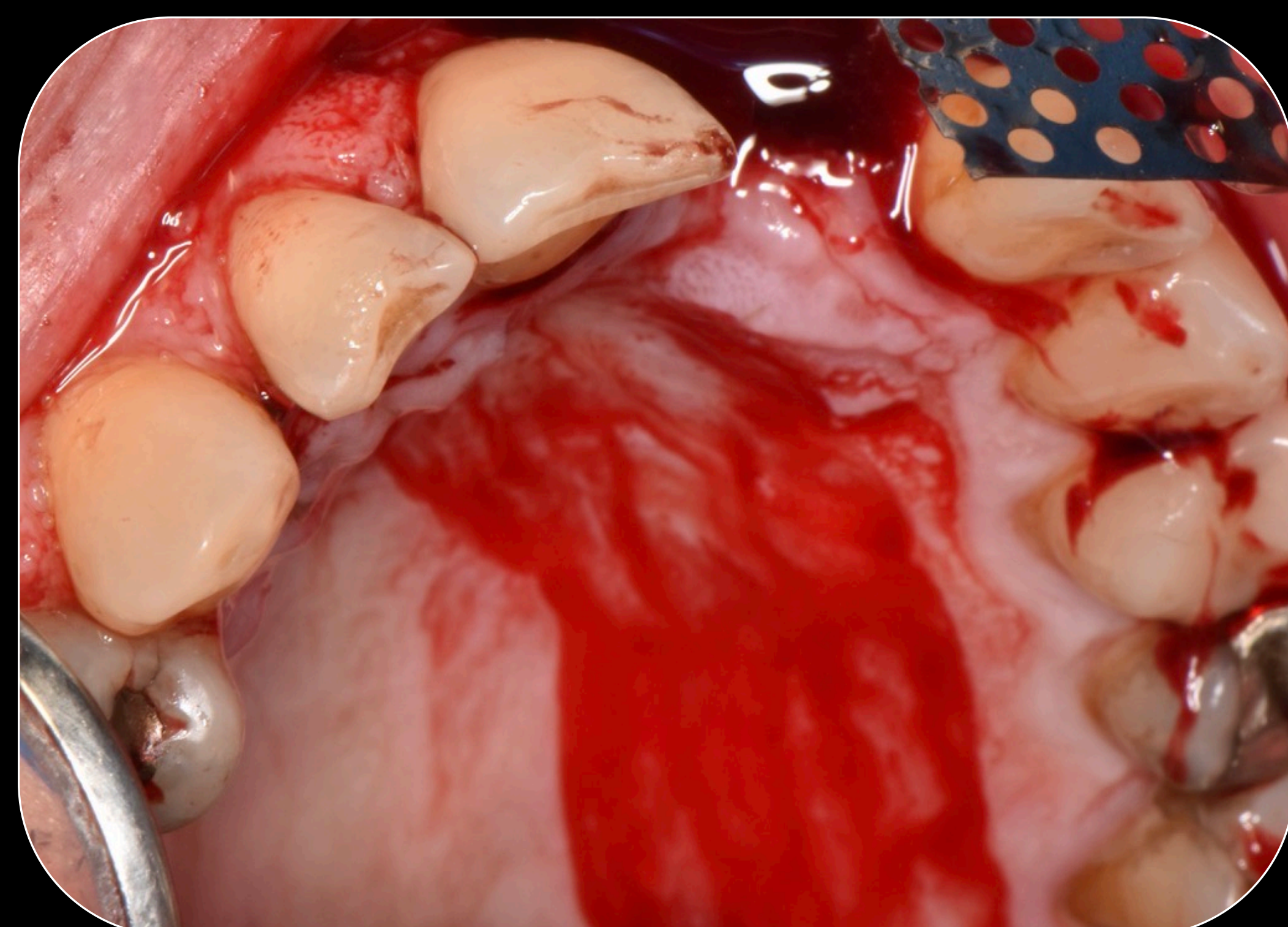
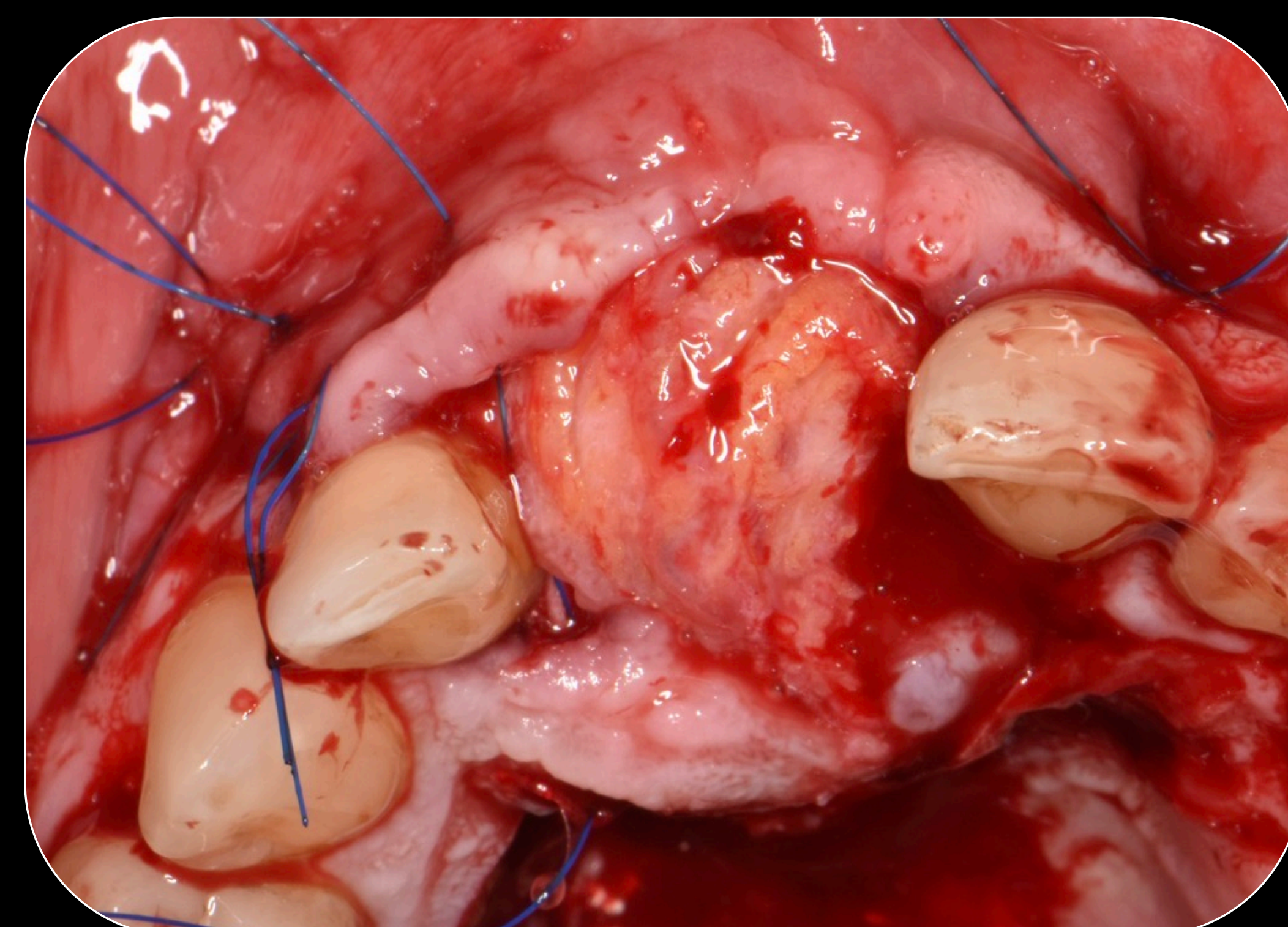
Innovative Technique for Simultaneously Hard and Soft Tissue Augmentation with History of Implant failure in Esthetic zone

Mohseni Salehimonfared, Seyedhossein;* Mahdian, Amir

Department of Periodontology, Tehran University of Medical Sciences, Tehran, Iran Email:salehimo@tums.ac.ir

INTRODUCTION

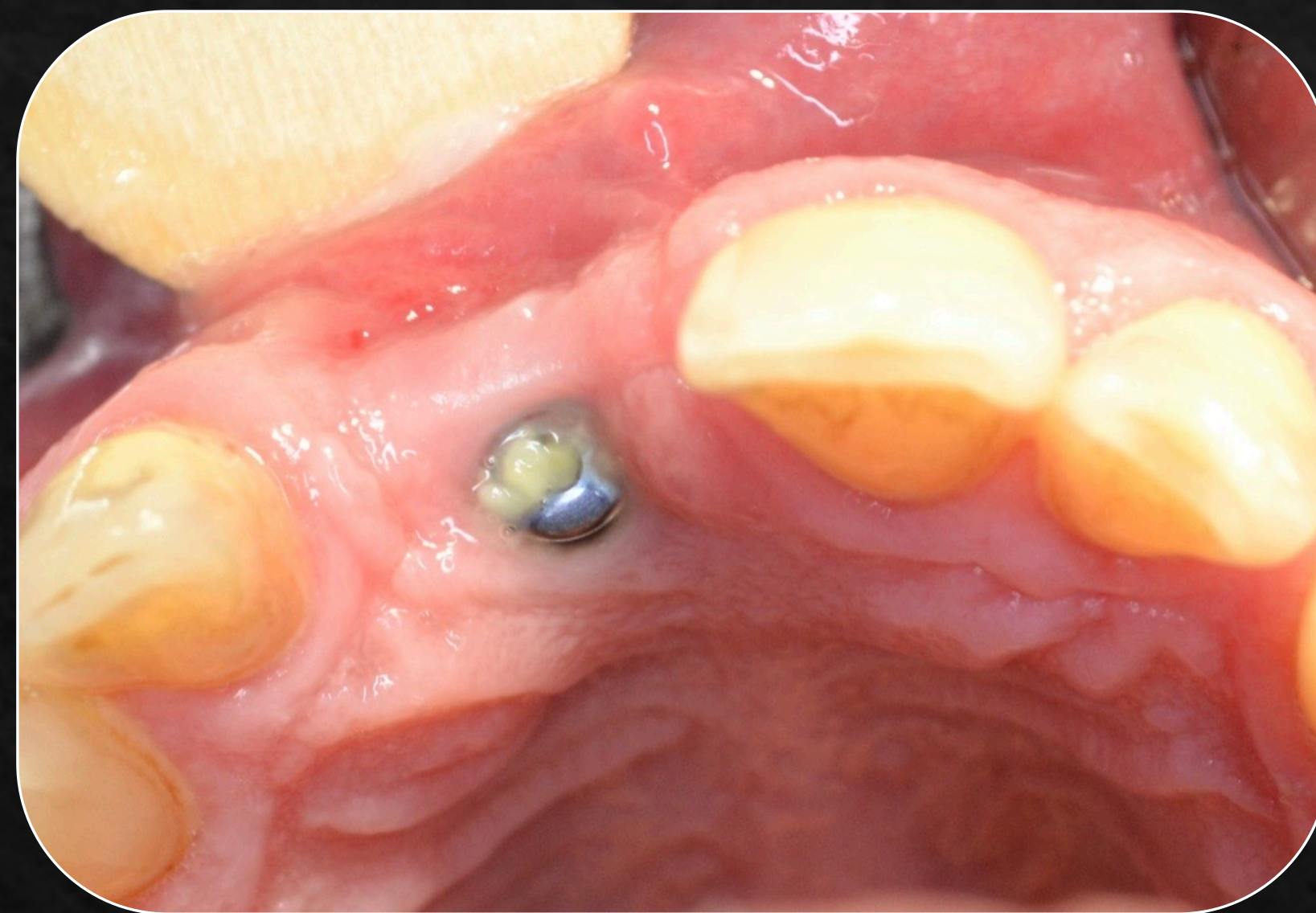
In oral implantology, the quality and volume of alveolar bone in the implant area significantly influence implant positioning, primary stability, soft tissue contour, and overall restoration outcomes. Therefore, reconstructing the alveolar bone in the implant site is crucial for successful implant procedures.



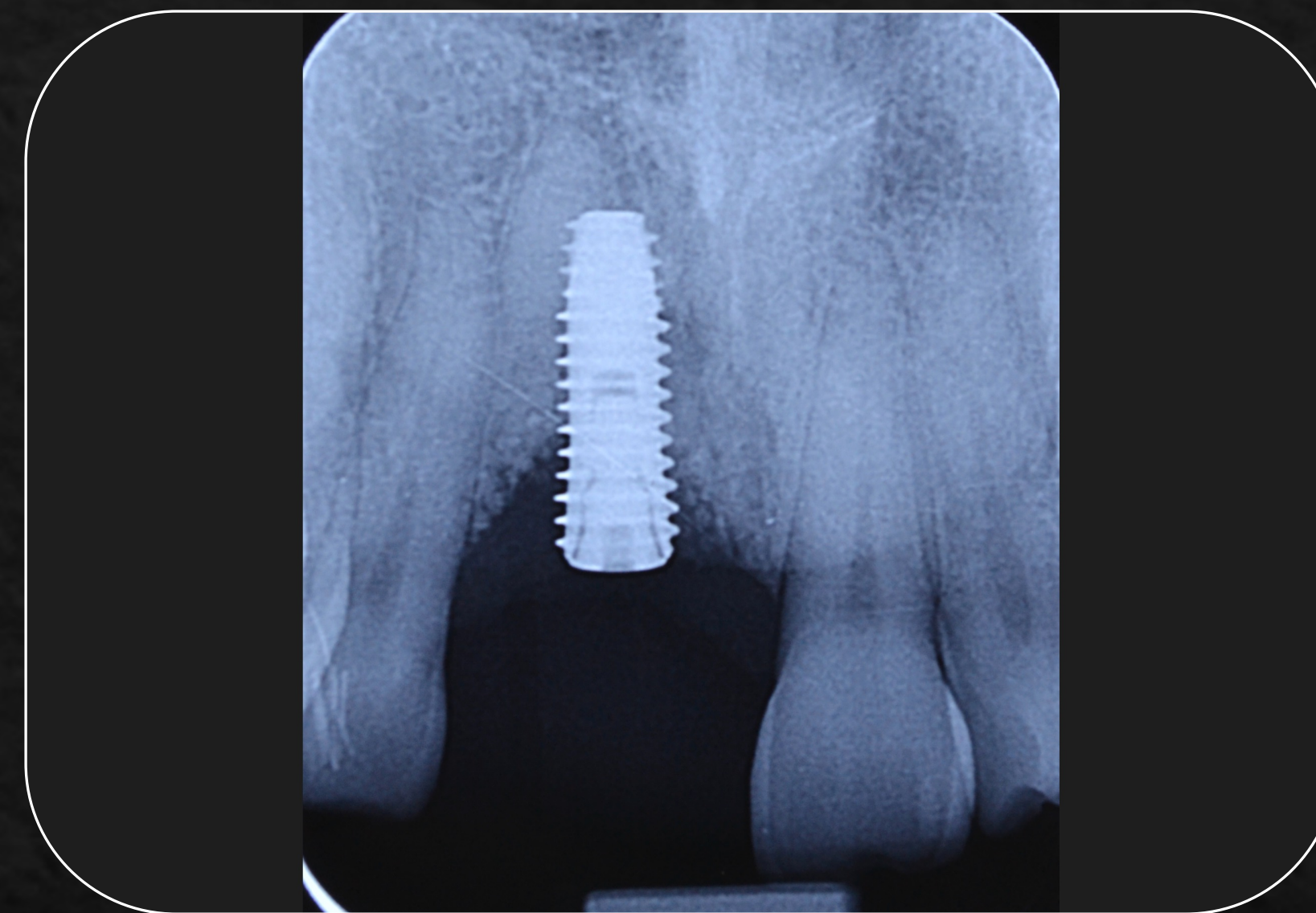
Innovative Technique for Simultaneously Hard and Soft Tissue Augmentation with History of Implant failure in Esthetic zone

METHODS

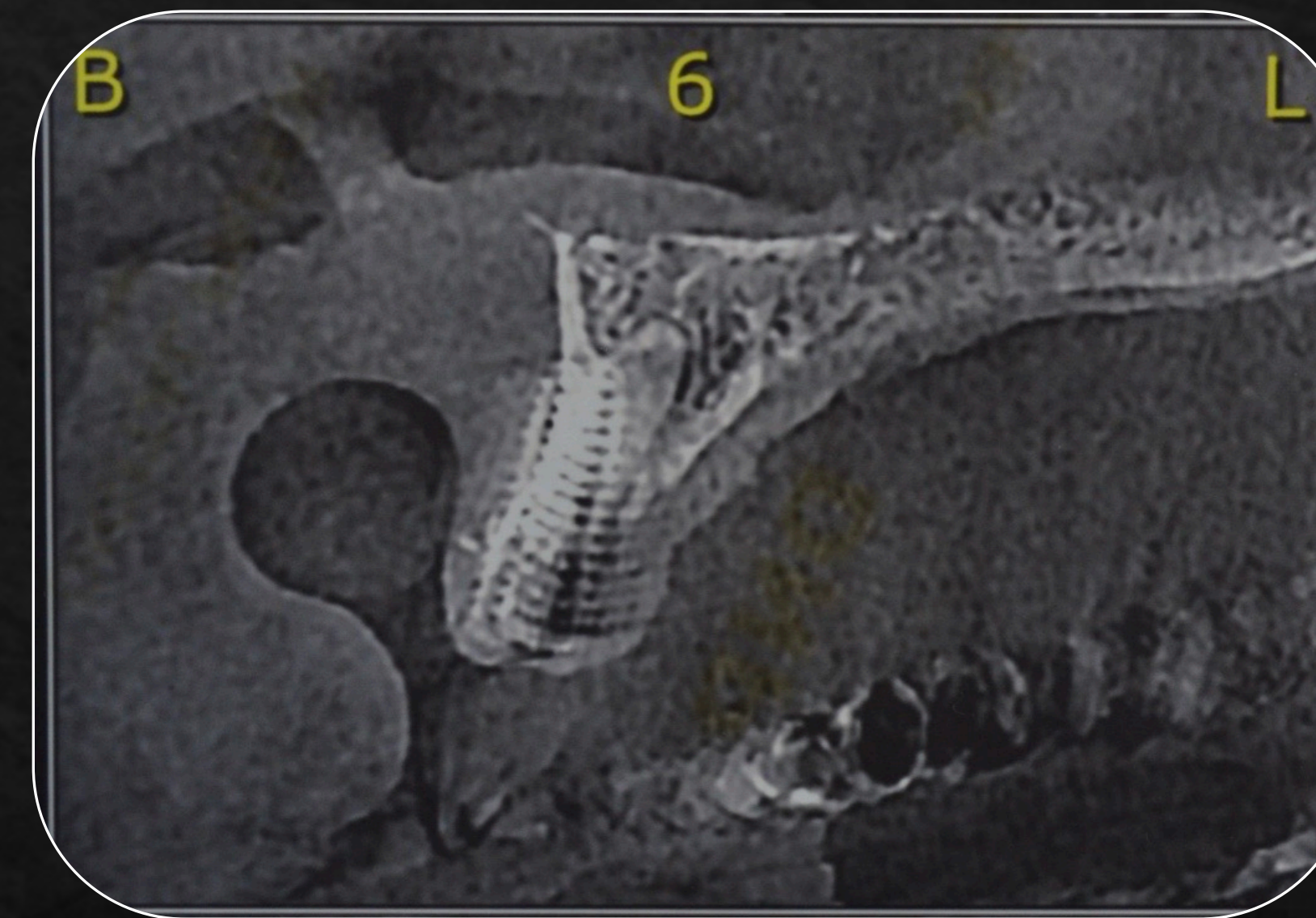
A patient presented with an implant exhibiting clinical signs of pus and discharge. Radiographic assessment revealed a remnant root as the underlying cause. After careful removal of both the implant and the root, titanium mesh was secured in place, and the defect was filled using a composite bone material (sausage technique). Following hard tissue augmentation, de-epithelization was performed using a wheel bur, and a vascular interposition graft was utilized to provide connective tissue for soft tissue augmentation. A collagen membrane was applied to protect the titanium mesh from exposure.



Implant with clinical sign of pus and discharge



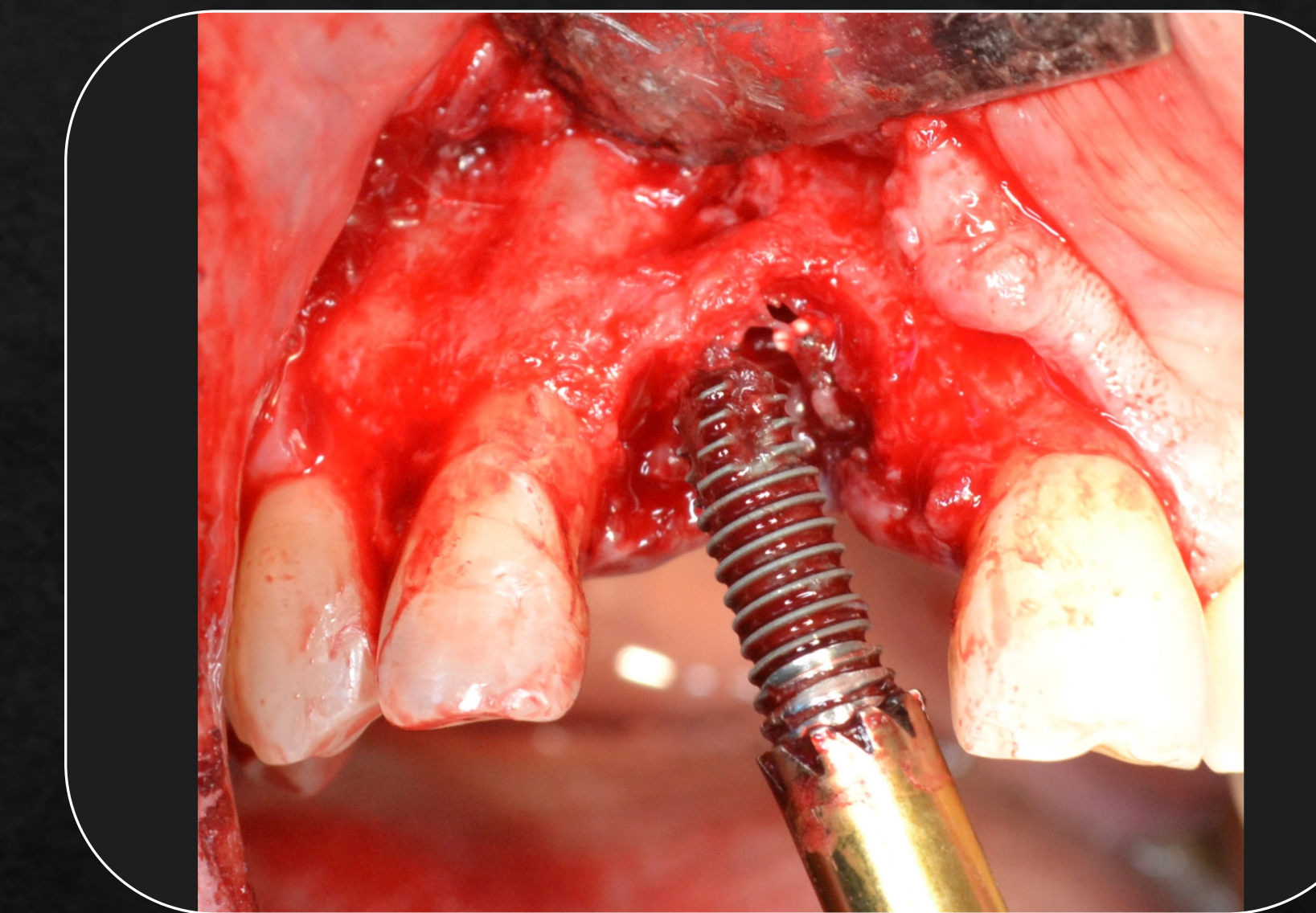
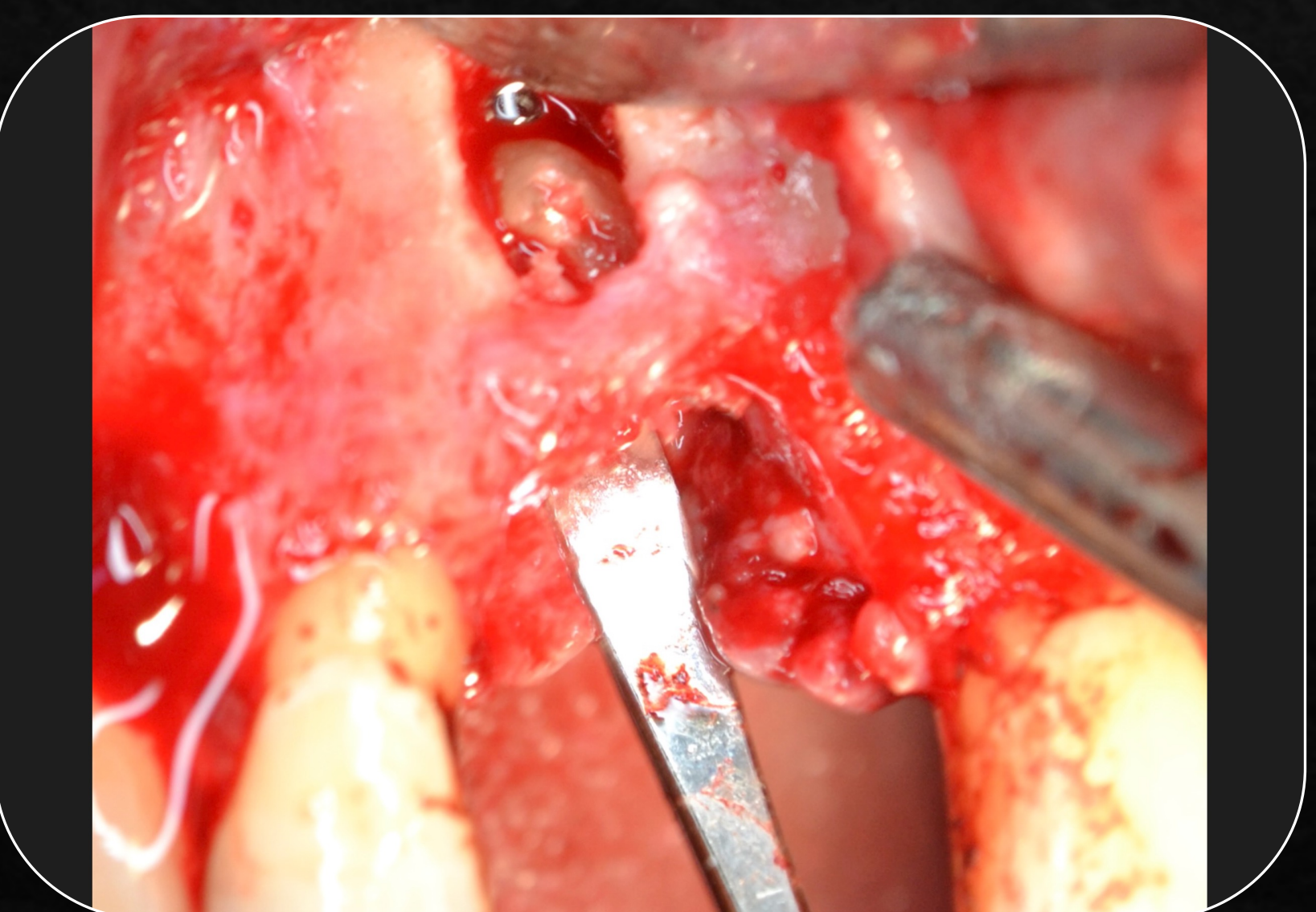
Radiographic view depicting root remanent



CBCT view of the root adjacent to the implant



Explanation of the implant with removal kit



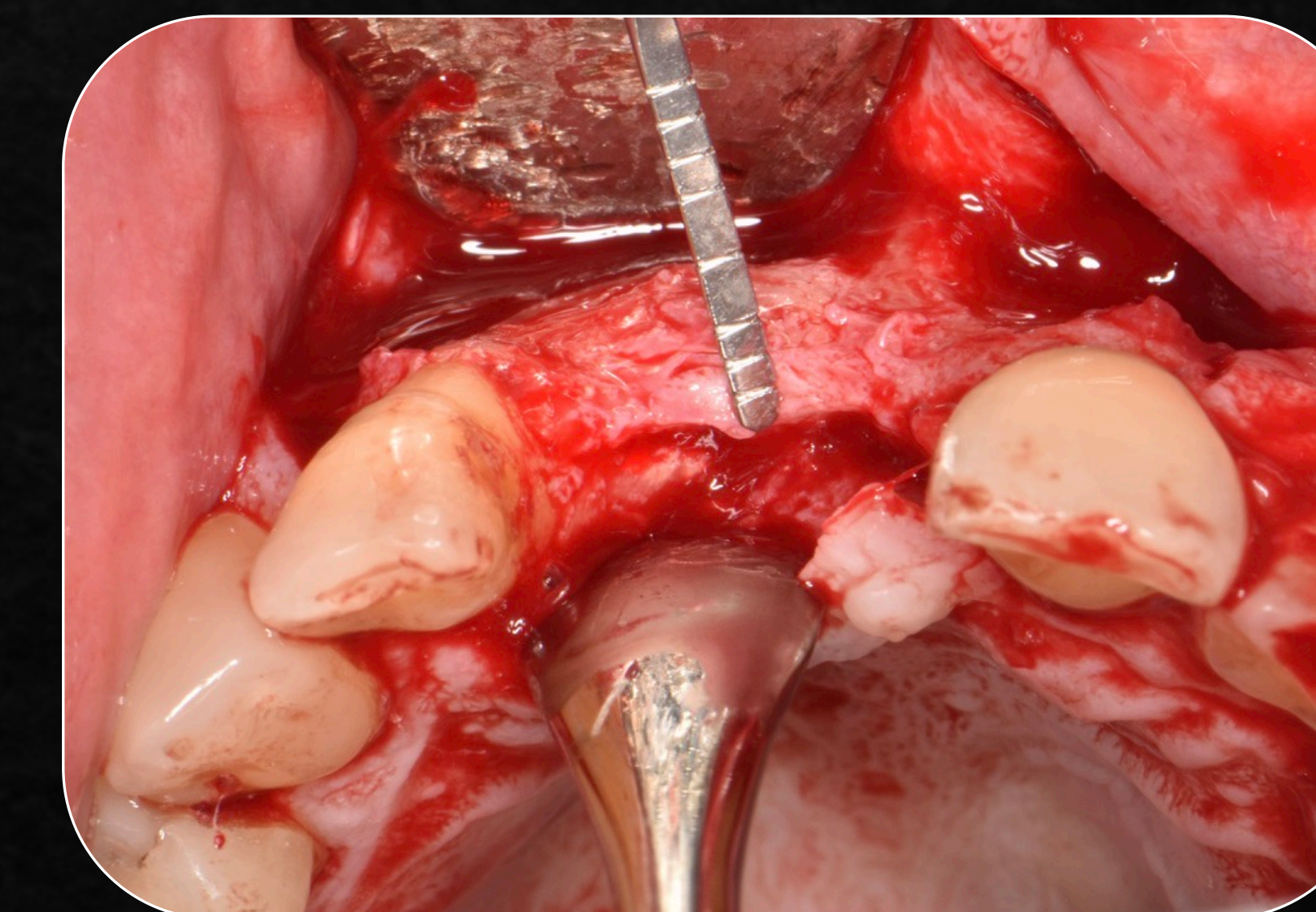
the remanent root was extracted without compromising the buccal plate



Healing after six months



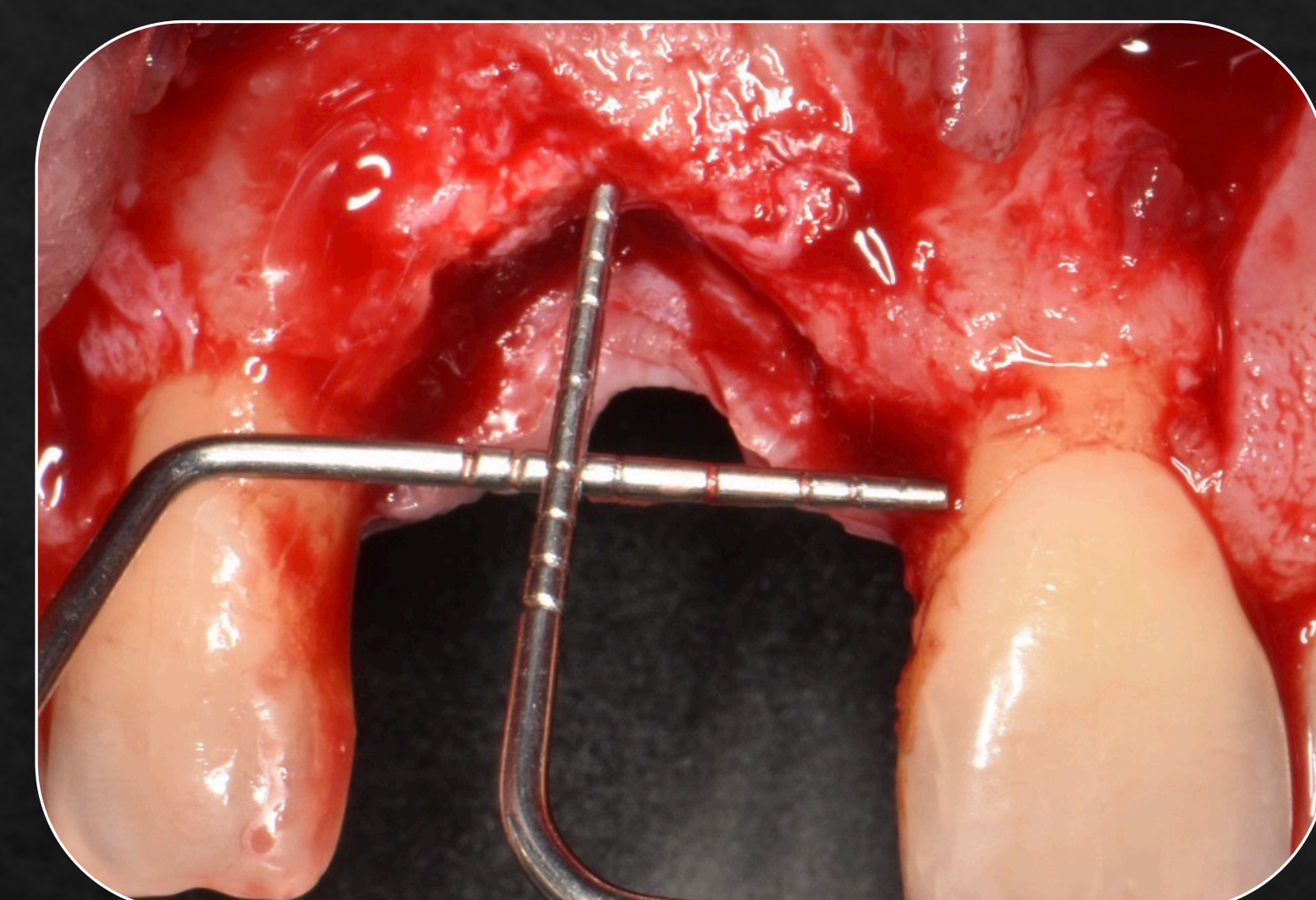
CBCT before augmentation



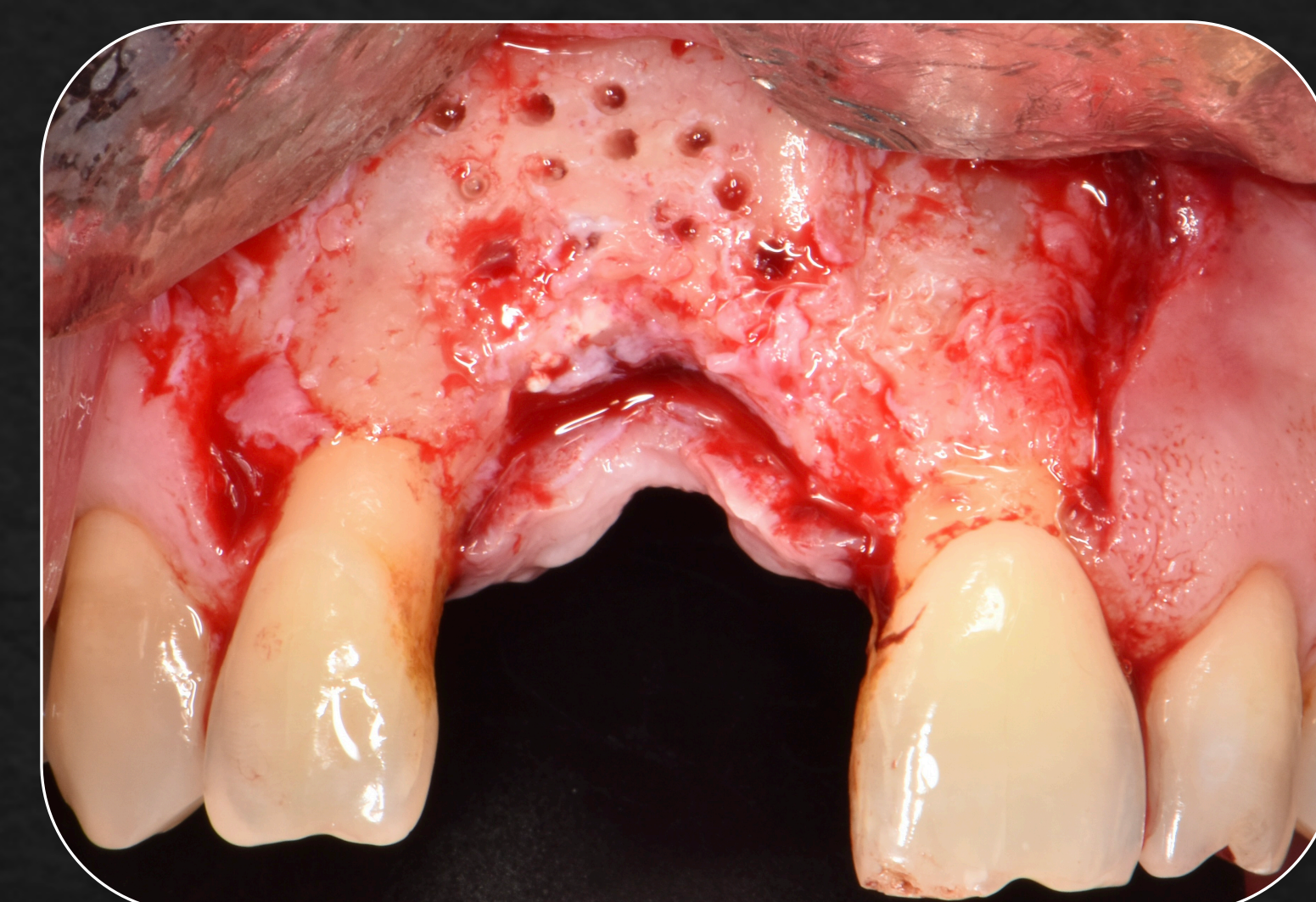
The alveolar defect



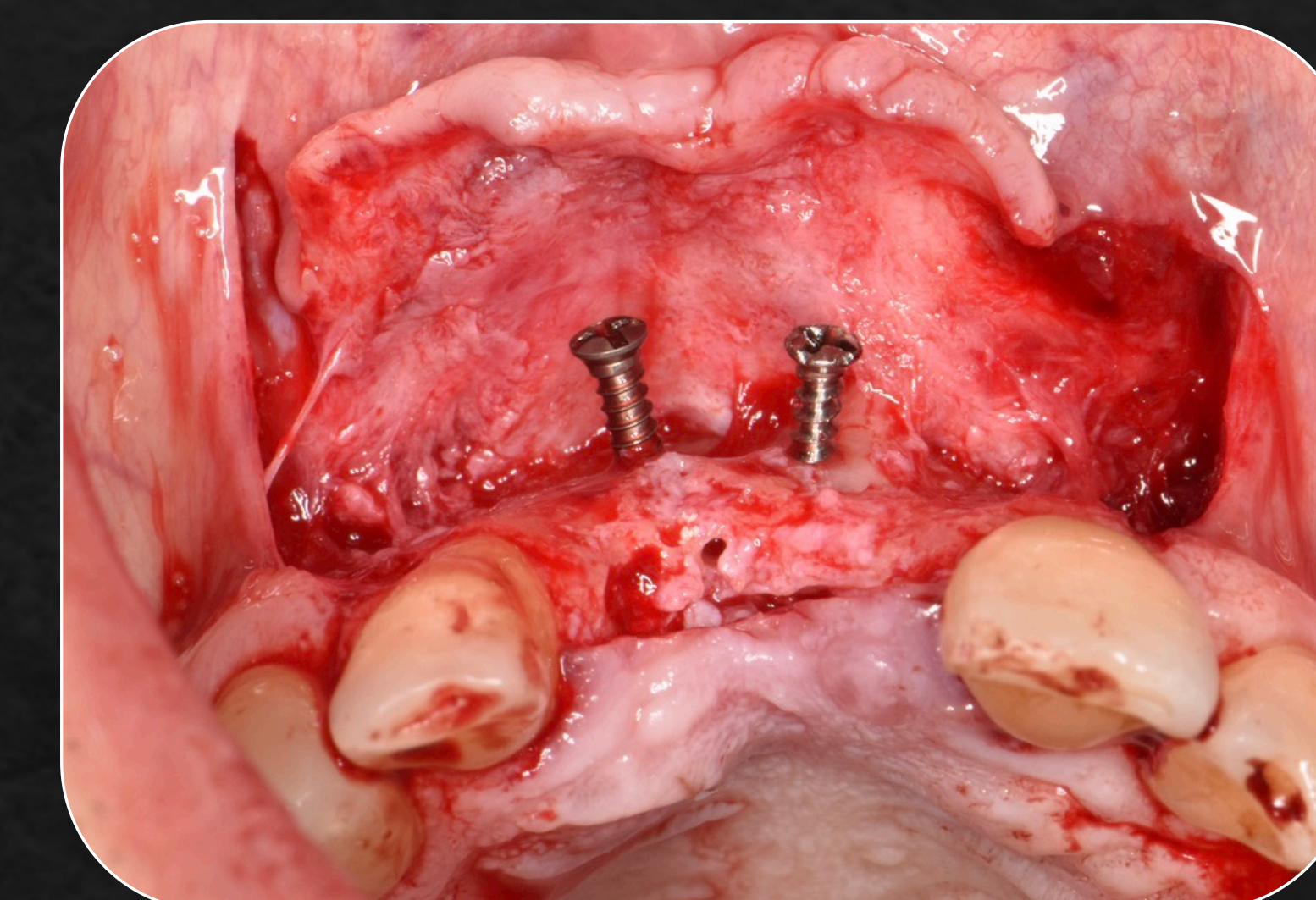
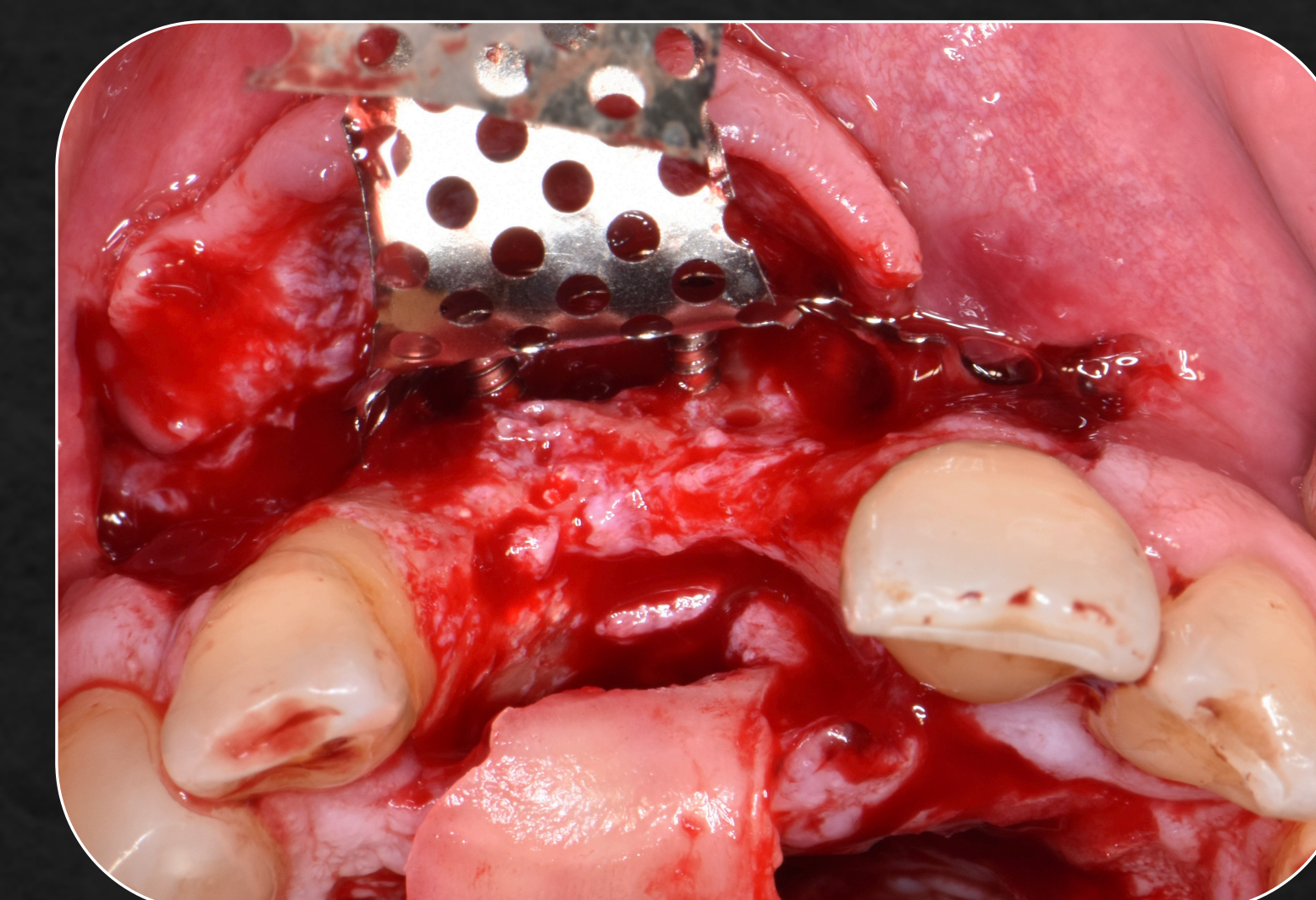
Innovative Technique for Simultaneously Hard and Soft Tissue Augmentation with History of Implant failure in Esthetic zone



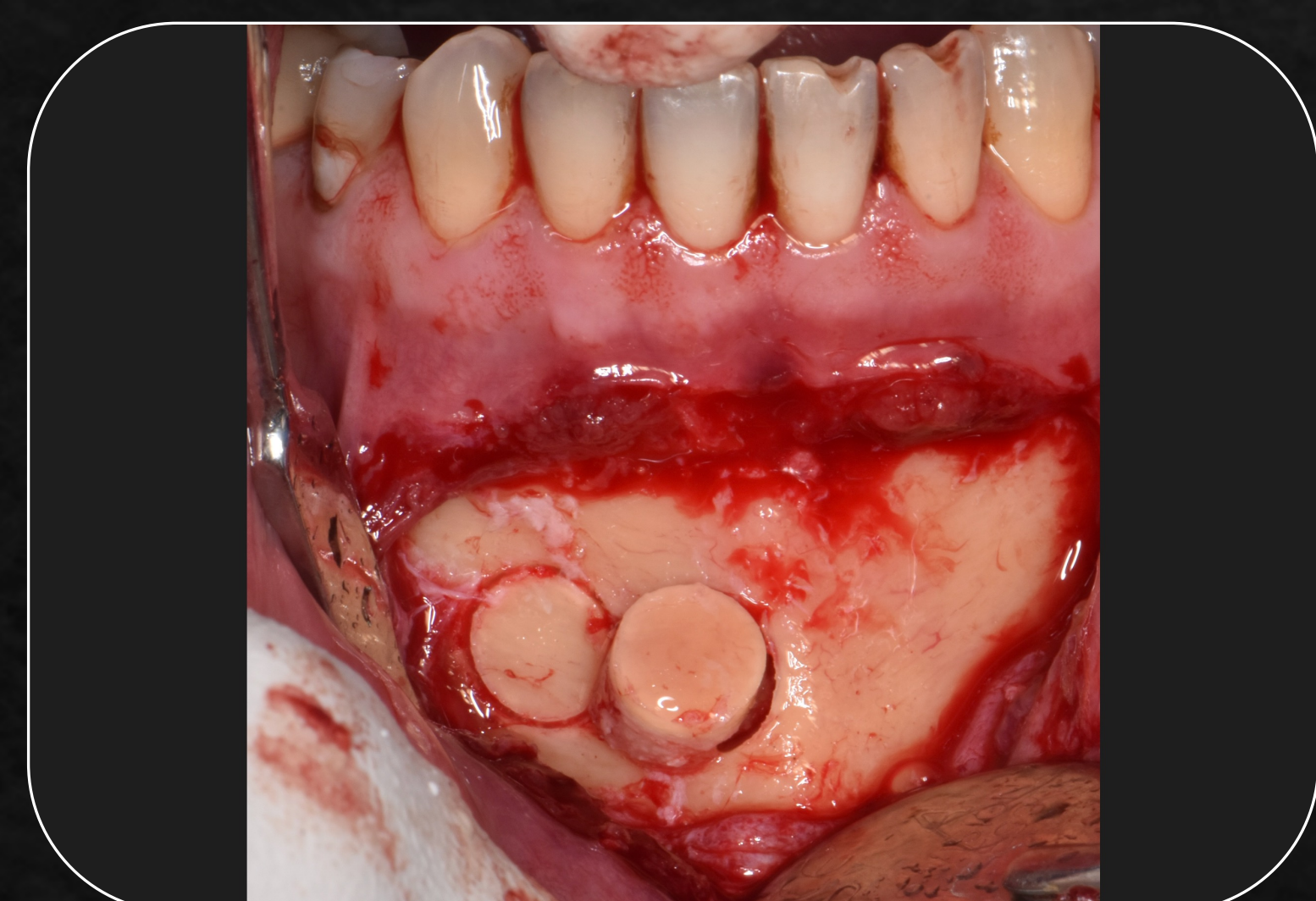
The alveolar defect was evaluated both vertically and horizontally



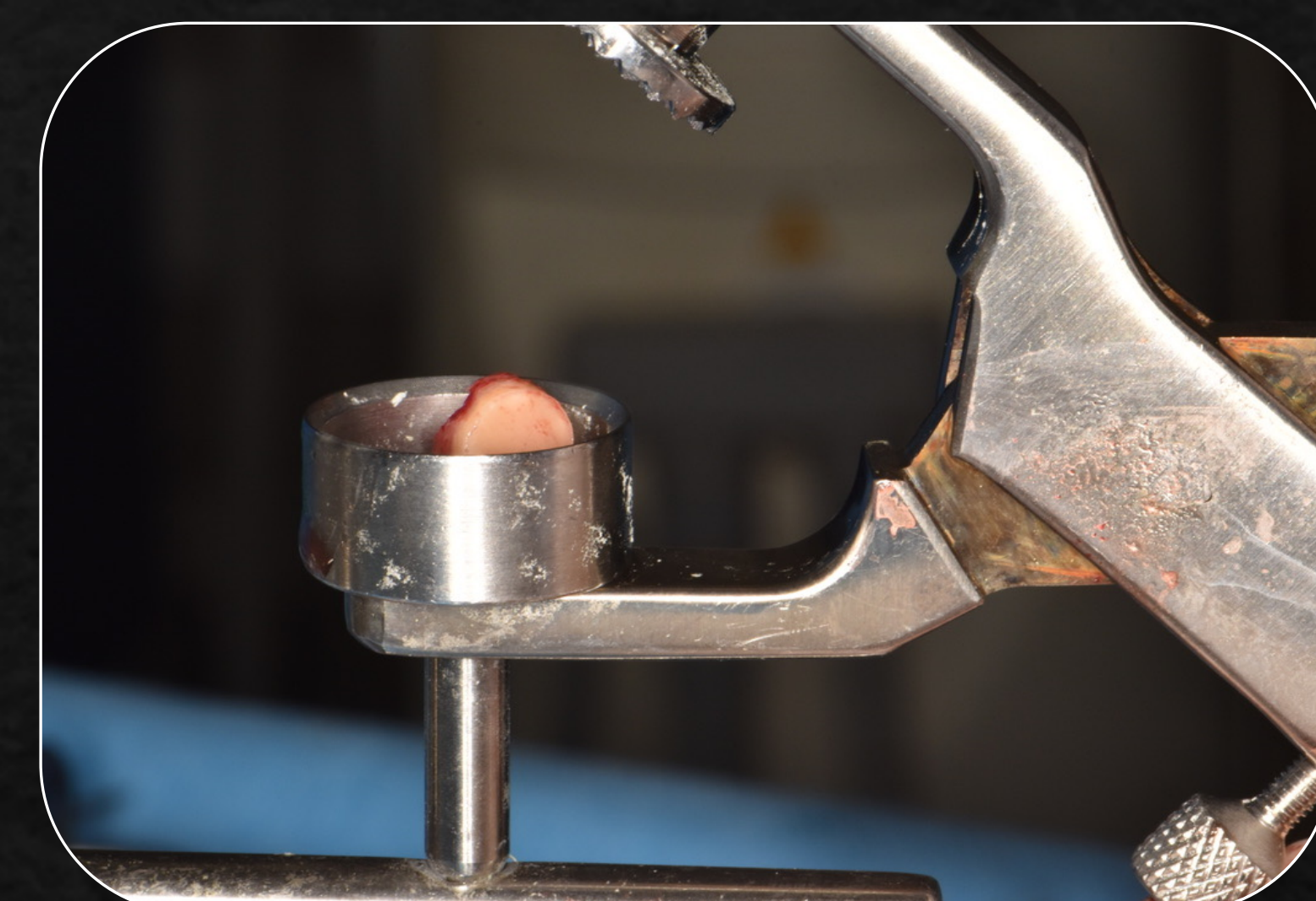
tenting screws were placed



Titanium mesh was placed



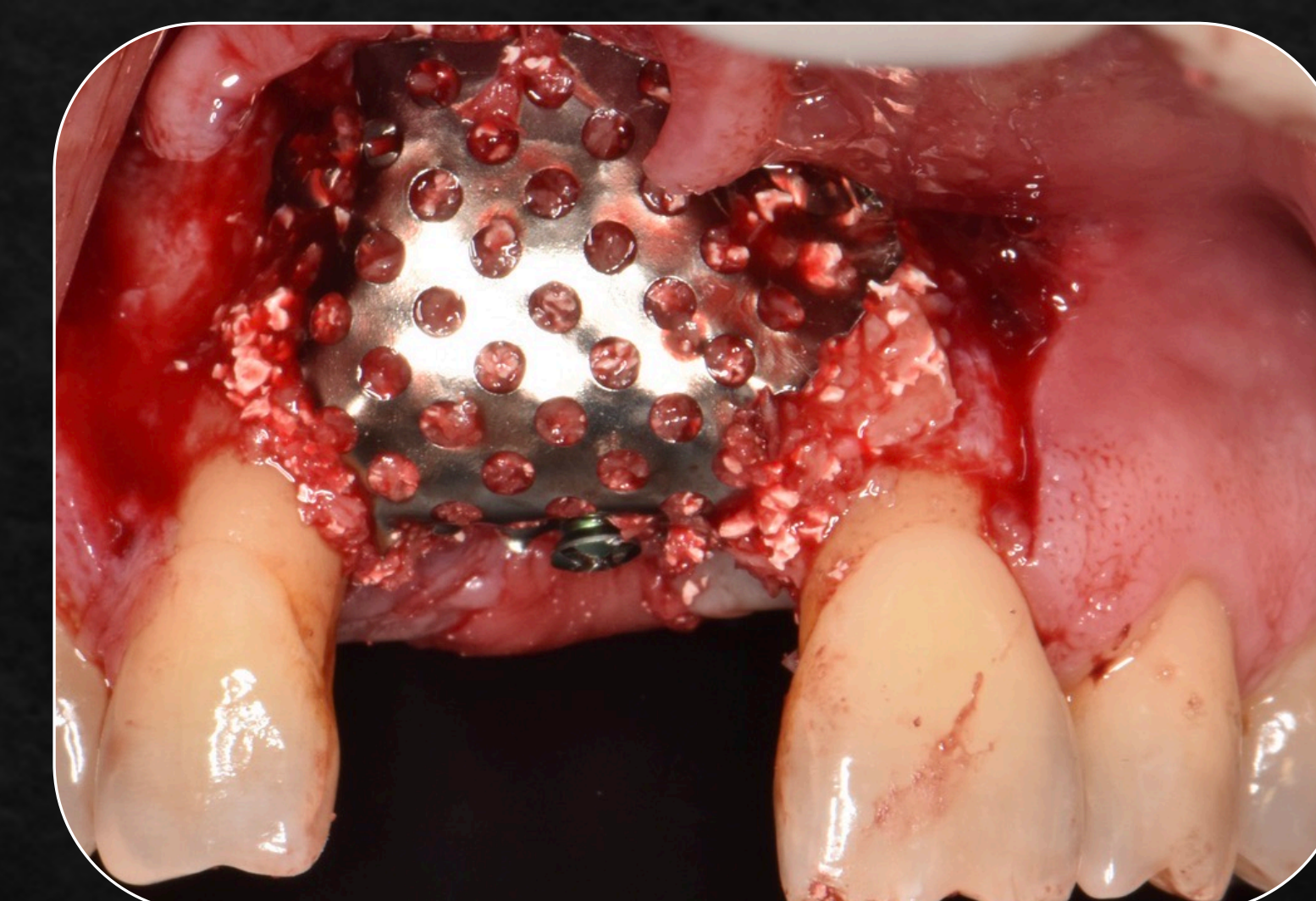
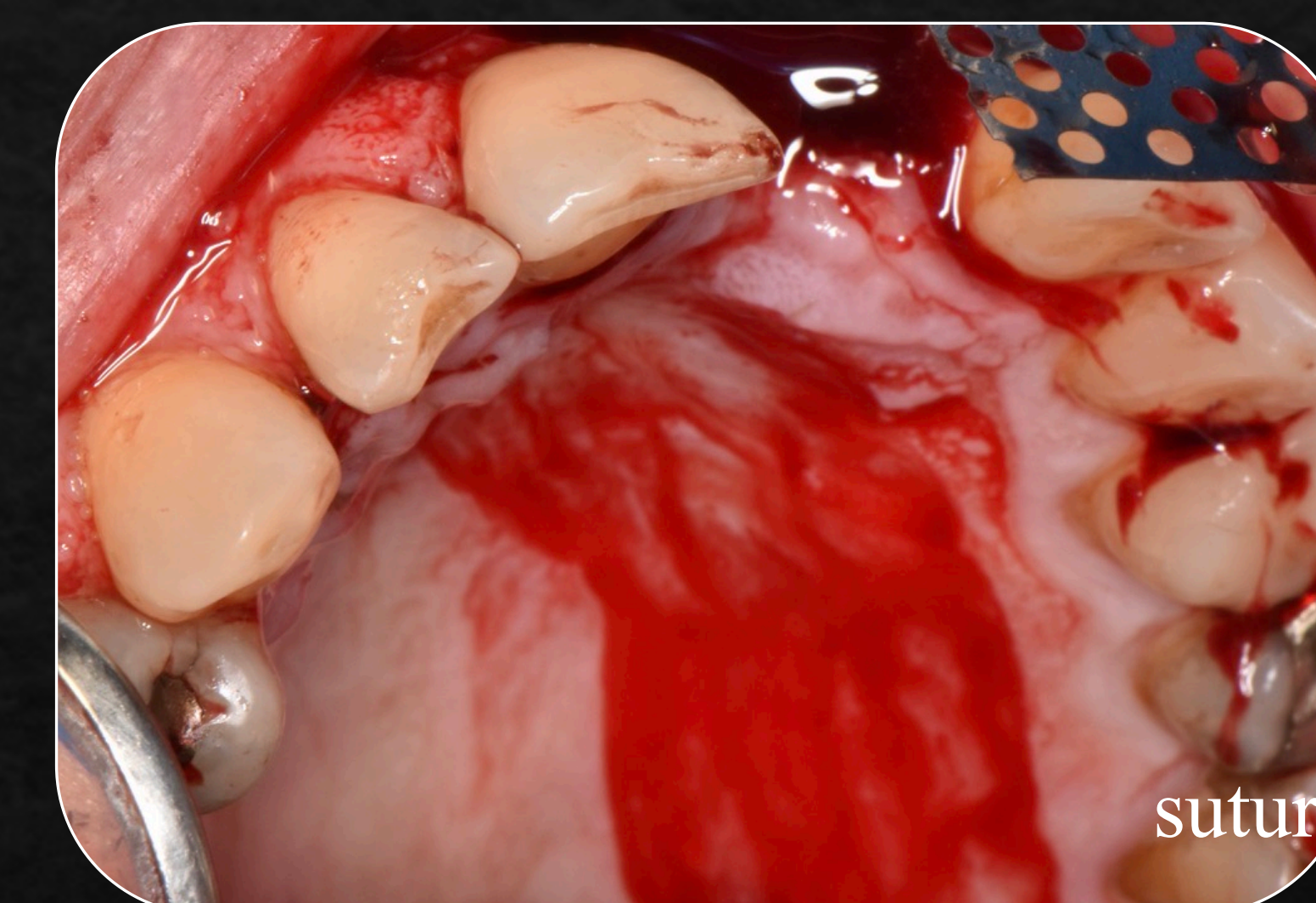
Bone block harvested From chin



Bone block was milled

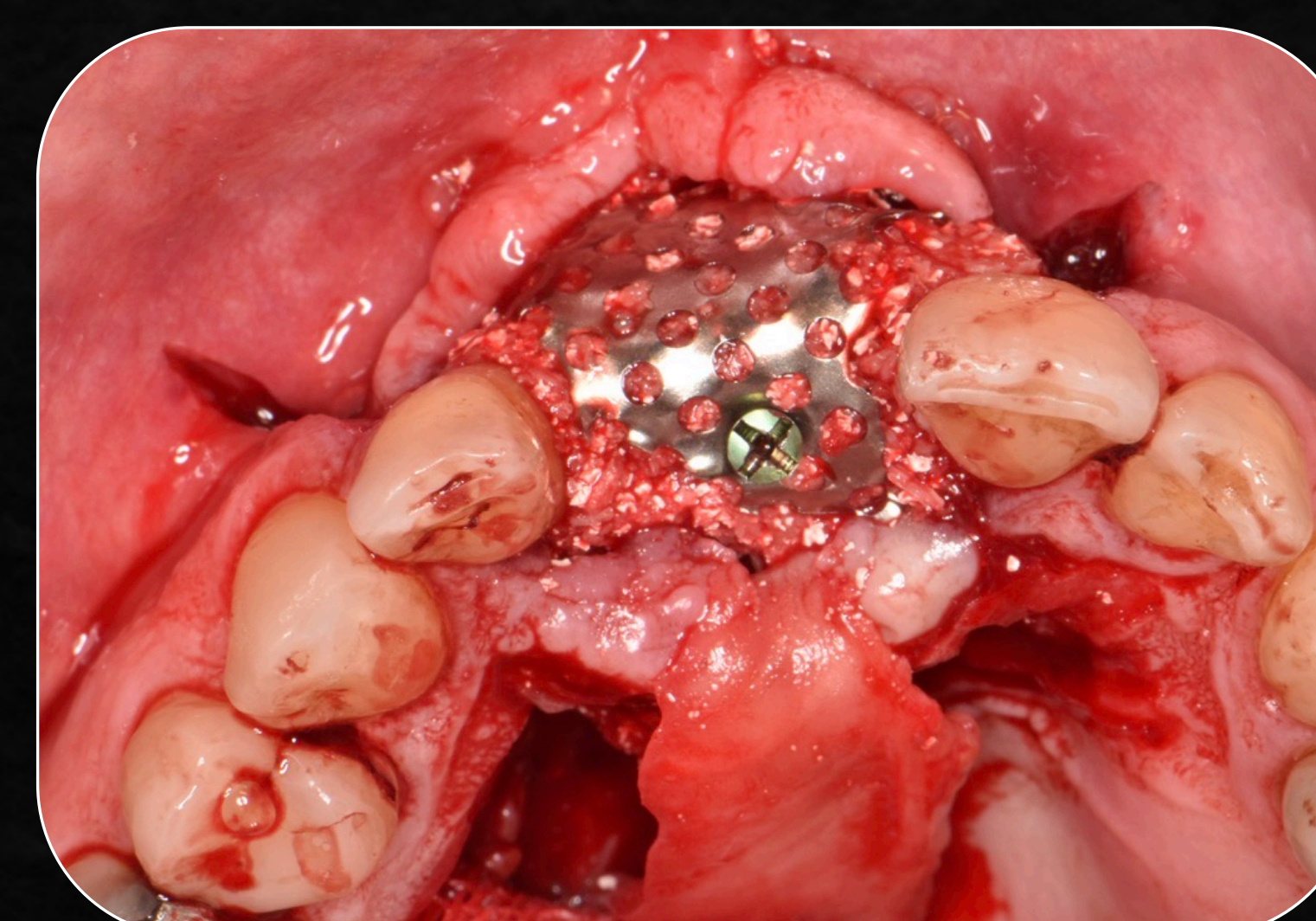


Particulate bone graft filling the defect

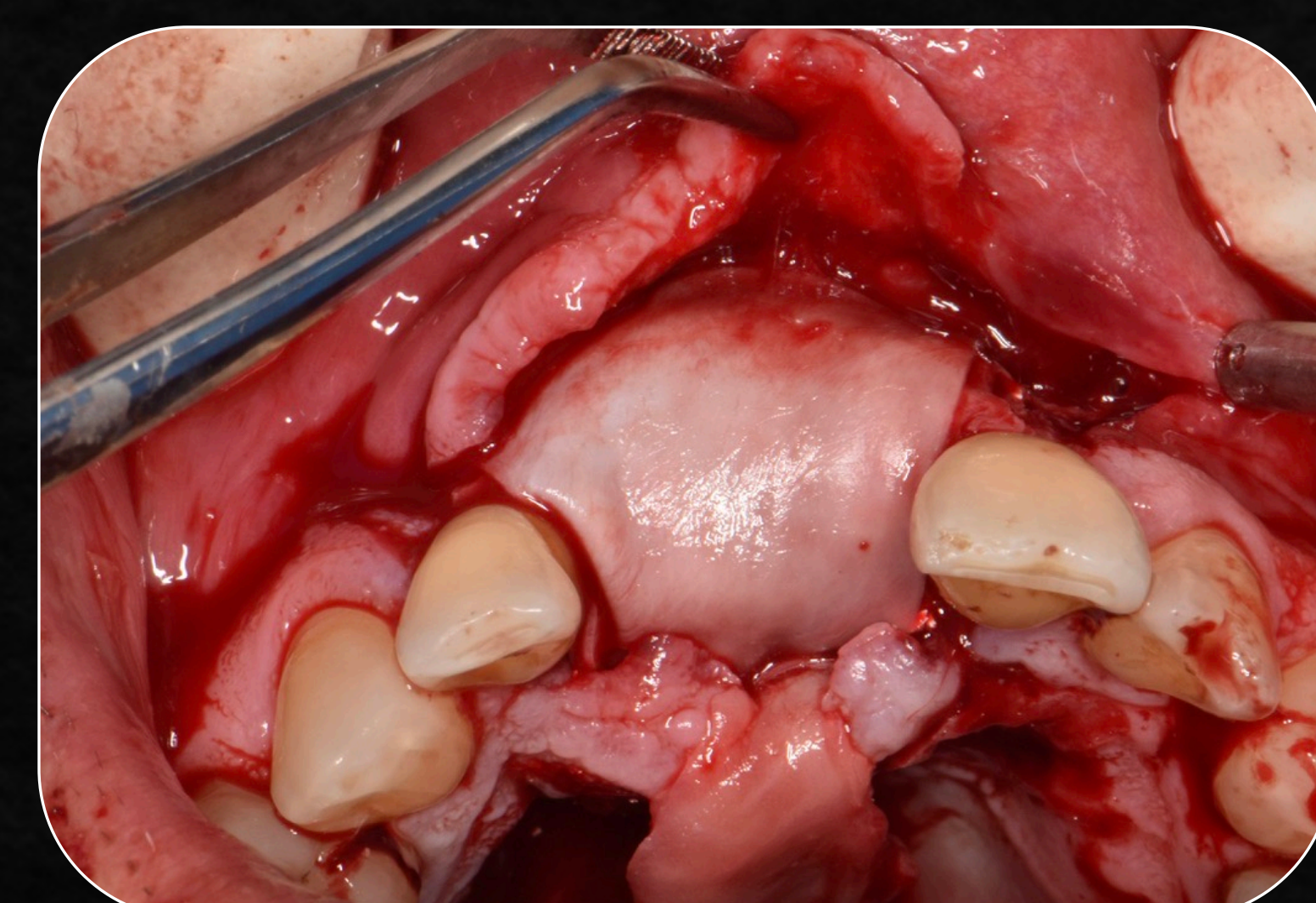


suturing

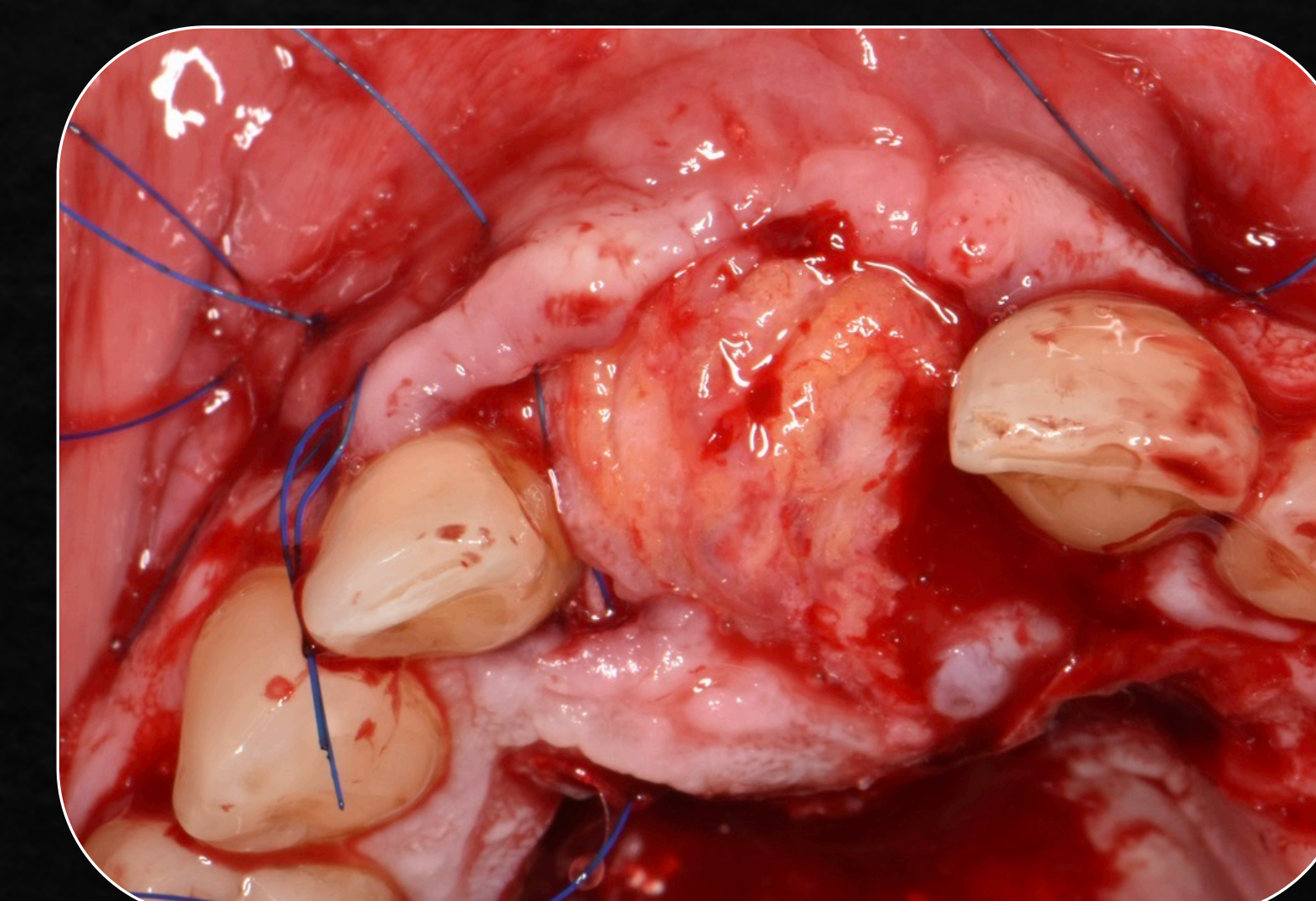
de- epithelization was done



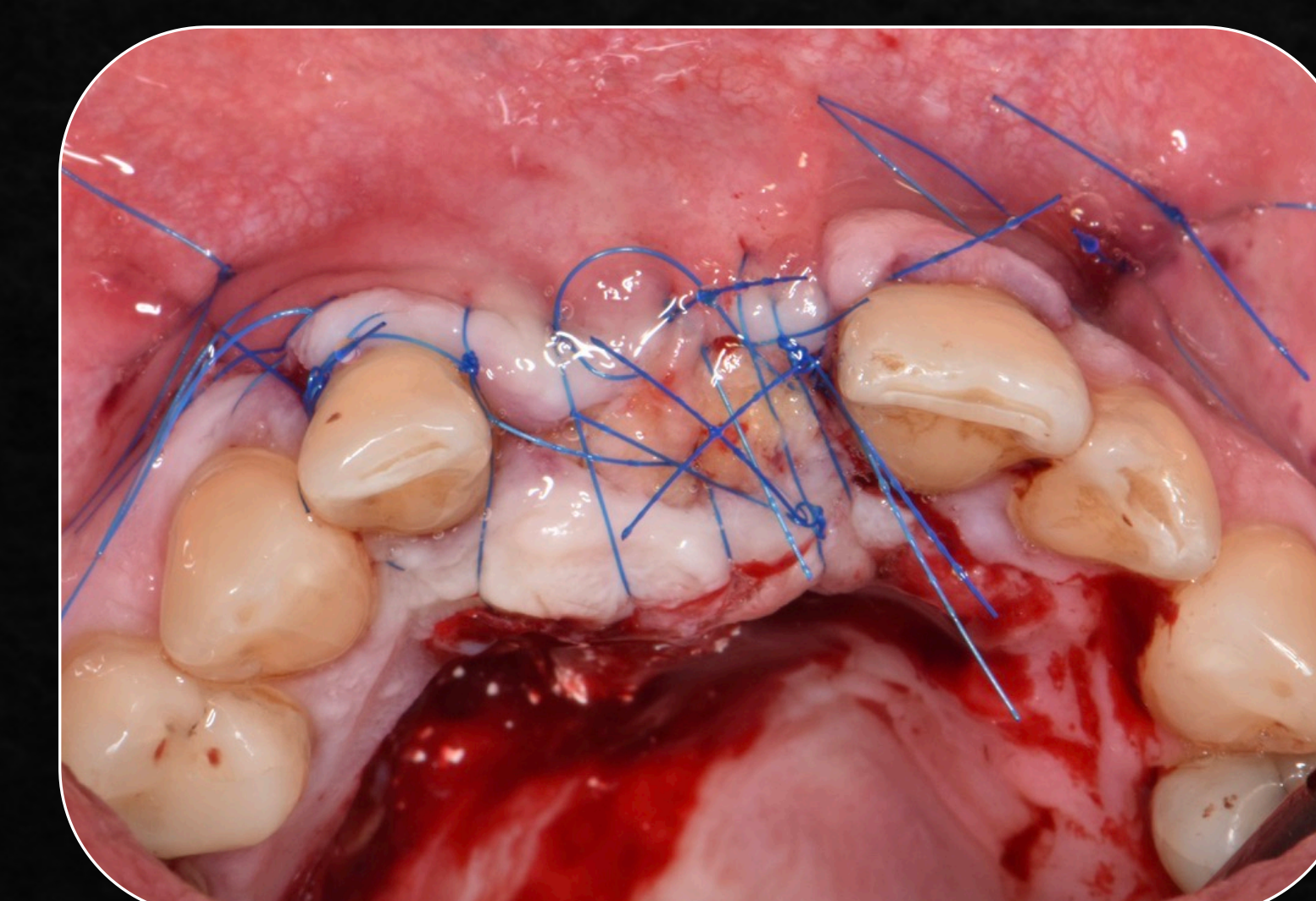
VIP graft as a CTG



The collagen membrane was used to protect the mesh



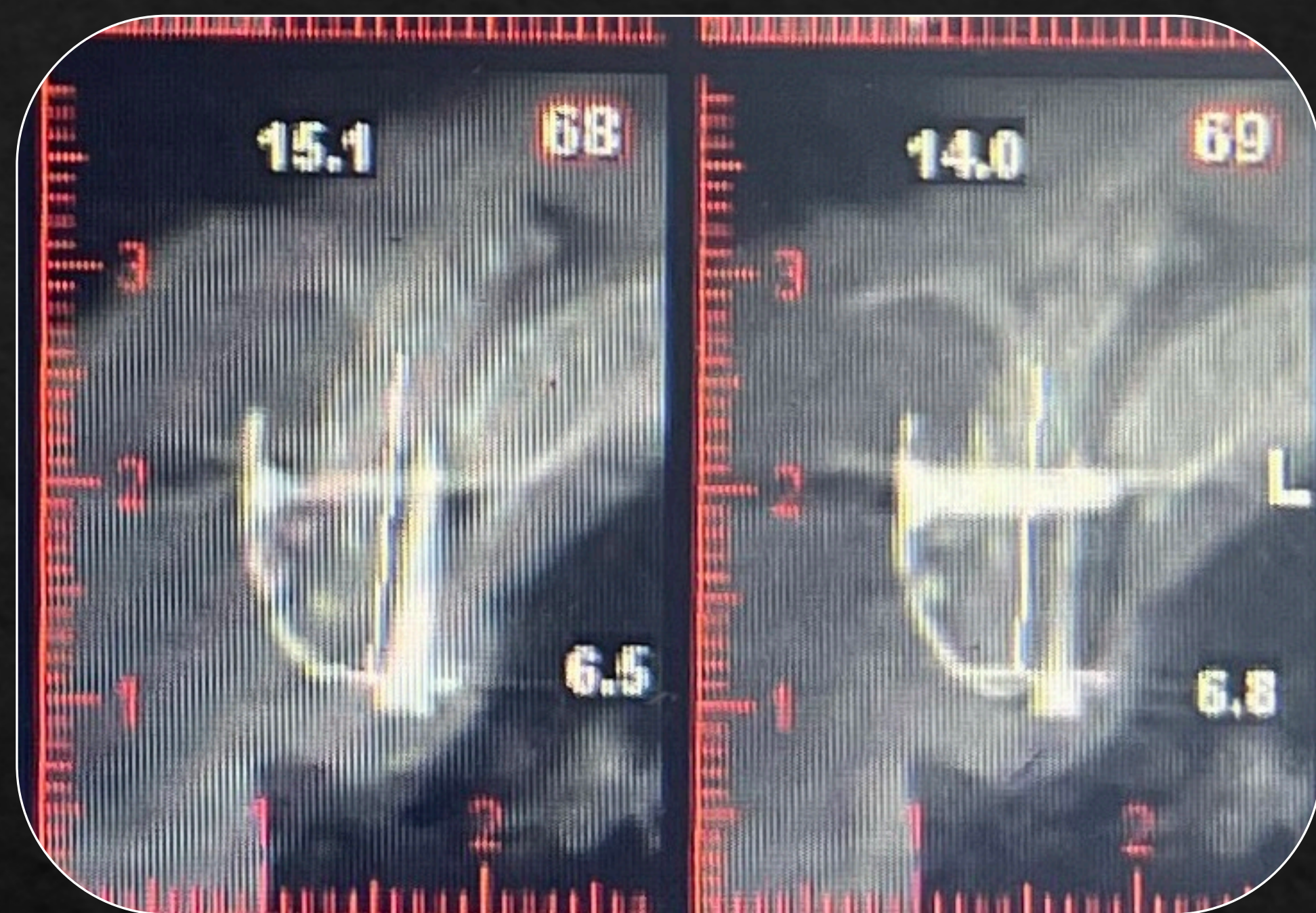
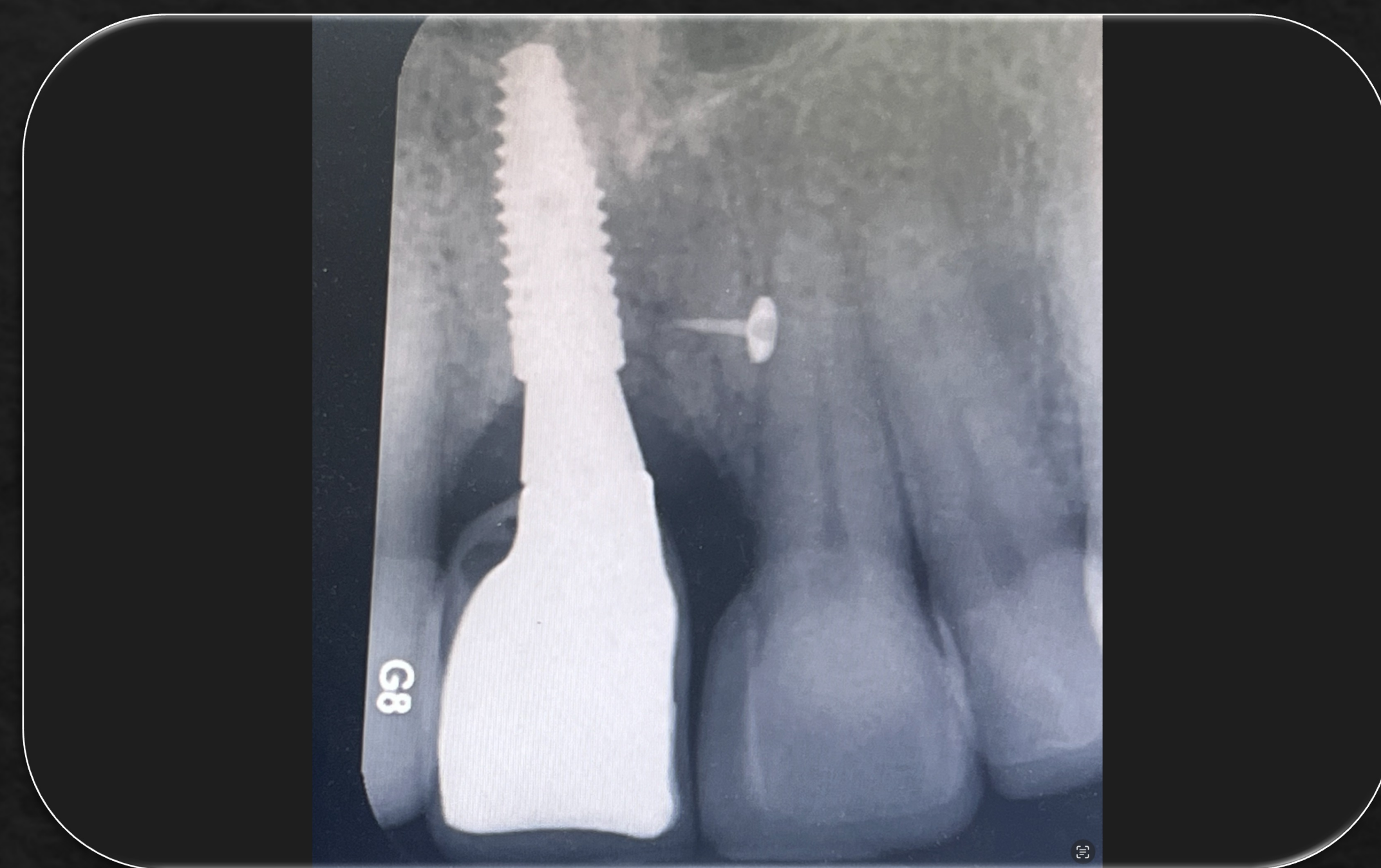
vascular interposition graft was used as a source of connective tissue for augmentation of soft tissue.



CBCT after augmentation



Innovative Technique for Simultaneously Hard and Soft Tissue Augmentation with History of Implant failure in Esthetic zone



Results

The reconstruction of the alveolar defect was successful without any complications, resulting in a sufficient amount of keratinized gingiva in the buccal area. The patient expressed satisfaction with the final outcome.

CONCLUSION

Guided bone regeneration (GBR) technology proves to be a reliable and predictable approach for reconstructing alveolar ridge defects. Titanium mesh, due to its versatile application, suitable elasticity and plasticity, and excellent mechanical properties, effectively meets the bone augmentation needs in various clinical situations, distinguishing it from traditional GBR barrier membranes. The vascular interposition connective tissue graft (VIP-CTG) technique effectively enhanced soft tissue aesthetics in the anterior region.

RESULTS

1. Urban I. Vertical and horizontal ridge augmentation: new perspectives. 1st ed. Germany: Quintessence Publishing 2017. p. 117-46.
2. Meloni SM, Jovanovic SA, Urban I, Baldoni E, Pisano M, Tallarico M. Horizontal ridge augmentation using GBR with a native collagen membrane and 1:1 ratio of particulate xenograft and autologous bone: A 3- year after final loading prospective clinical study. Clin Implant Dent Relat Res 2019;21:669-77
3. Pieroni, S.; Miceli, B.; Giboli, L.; Romano, L.; Azzi, L.; Farronato, D. Efficacy of the Sausage Technique in Rebuilding the Crestal Buccal Bone Thickness: A Retrospective Analysis. Dent. J. 2024, 12, 180. <https://doi.org/10.3390/dj12060180>