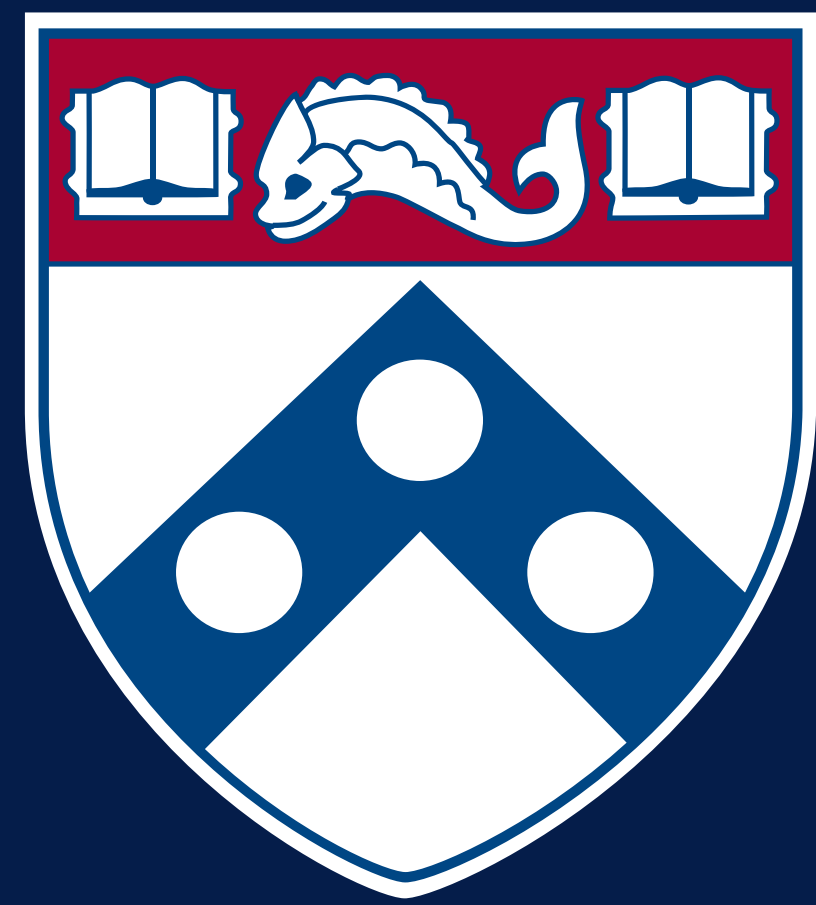




The Closure of Sinus Membrane Perforation Using Platelet-rich Fibrin

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Background

An oroantral communication (OAC) is a gap that develops between the maxillary sinus and oral cavity due to tooth extraction, infection, or several other issues. Plasma-rich fibrin (PRF) is a leukocyte- and cytokine-rich second-generation mesh created from concentrated autologous platelets. PRF is suitable for sealing Schneiderian membrane perforations, accelerating the healing process, and potentially serving as the material for new bone development in the maxillary sinus. The fibrin network in PRF gives it a high resistance, which may keep graft particles from escaping through the sinus membrane.

CASE REPORT A

A 50-year-old, Female was referred to the Periodontics Department at the University of Pennsylvania for extraction of tooth #2 after the failure of transplantation of tooth #2. Present and past medical histories were unremarkable, and specifically, the patient did not report any sinus pathologies. The clinical evaluation revealed a grade 2 mobility in tooth #2. The periapical radiography revealed root amputation and a dome-shaped radiolucent lesion. The tooth was extracted, and granulation tissues were removed; size 10 x 9 mm communication with the sinus was detected, PRF membrane was placed in the perforation, and the socket was grafted with 1 cc mix pours sticky bone mixed with PRF membrane. Then 20 x 30 mm pericardium membrane was used. Three months follow-up CBCT showed complete healing of the sinus wall and successful ridge augmentation; a 4.8 x 9 mm implant was planned.

CASE REPORT B

A 72-year-old male was referred to the Periodontics Department at the University of Pennsylvania for implant removal #14. Present and past medical histories were unremarkable, and specifically, the patient did not report any sinus pathologies. The clinical evaluation revealed suppuration around implant #14. The CBCT and periapical radiography showed severe bone loss around implant #14. The implant was removed, and 15 x 18 mm sinus perforation was detected; lateral window access was created to repair the defect. The sinus wall was lifted, and the perforation was amended with ossix plus membrane. PRF plug was placed through the lateral sinus window and the socket. Then the socket was covered with the second half of ossix plus membrane.

Conclusion

Plasma-rich fibrin can be considered an alternative material for repairing sinus perforations. These cases proved that using PRF membrane is a viable option for treating OAC after tooth extraction.



Figure 1a: Pre-operative view

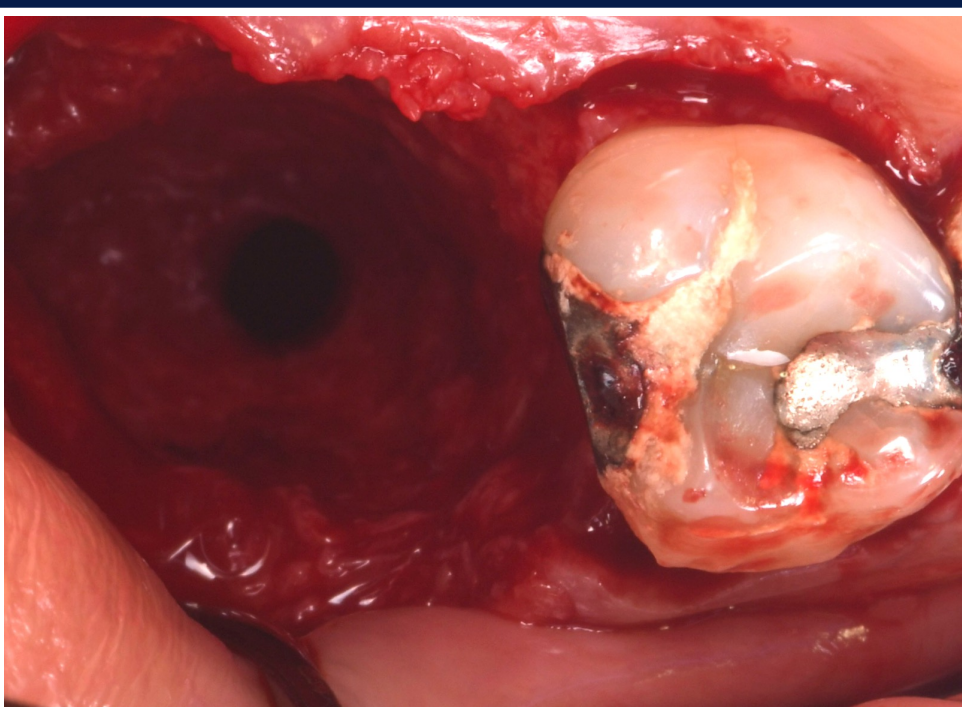


Figure 2a: oroantral communication



Figure 3a: PRF membrane placed



Figure 4a: 1 cc mix pours bone

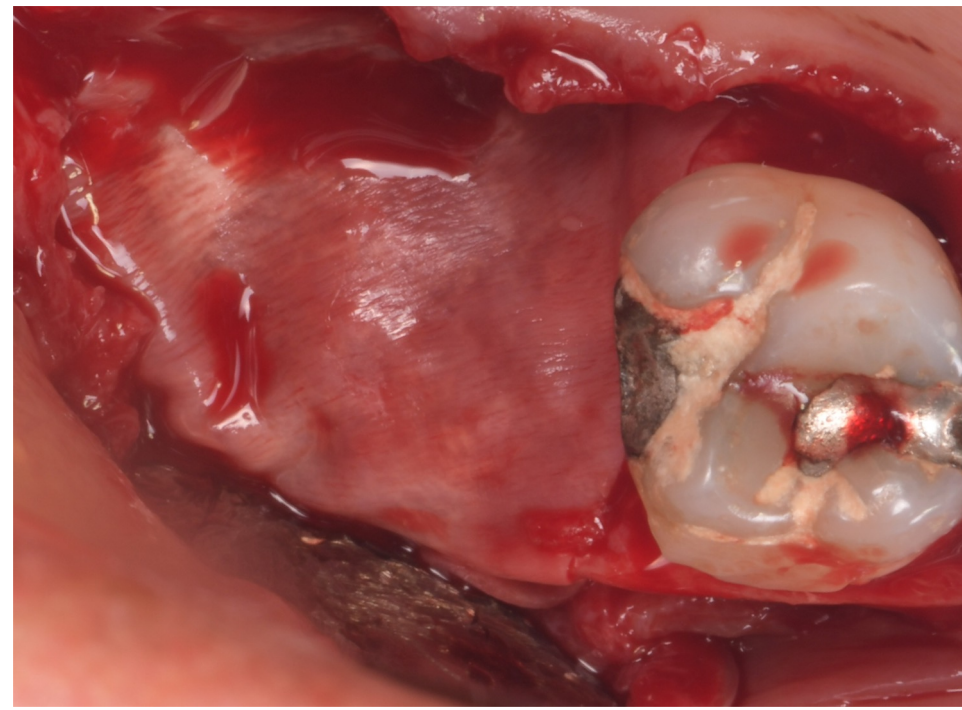


Figure 5a: 20 x 30 mm pericardium membrane

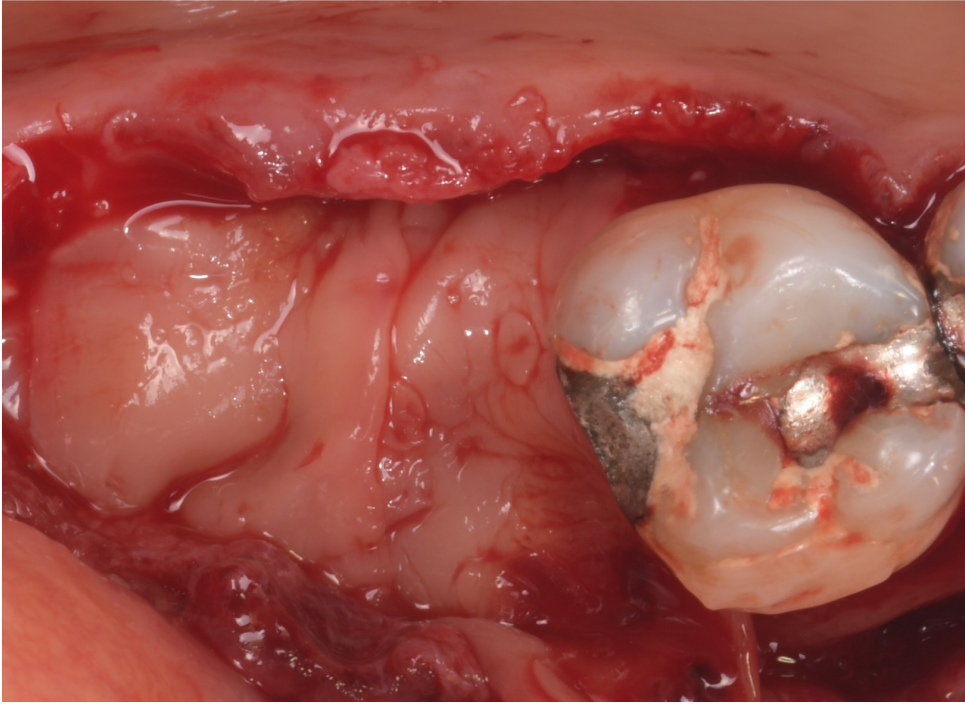


Figure 6a: PRF membrane placed

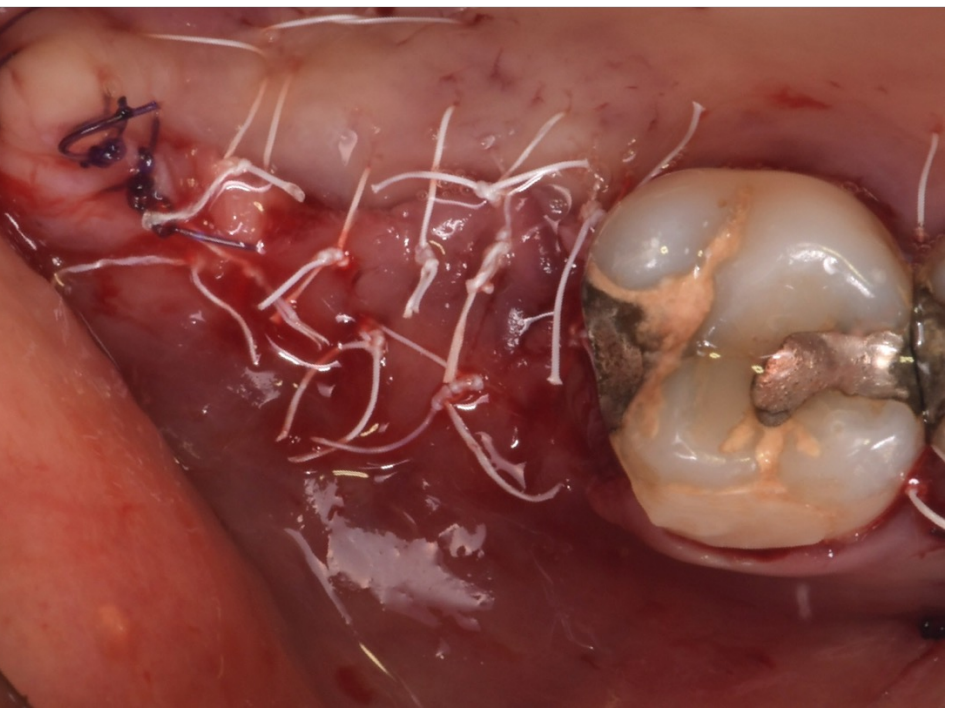


Figure 7a: Suture



Figure 8a: 3 months postoperative



PRF membrane

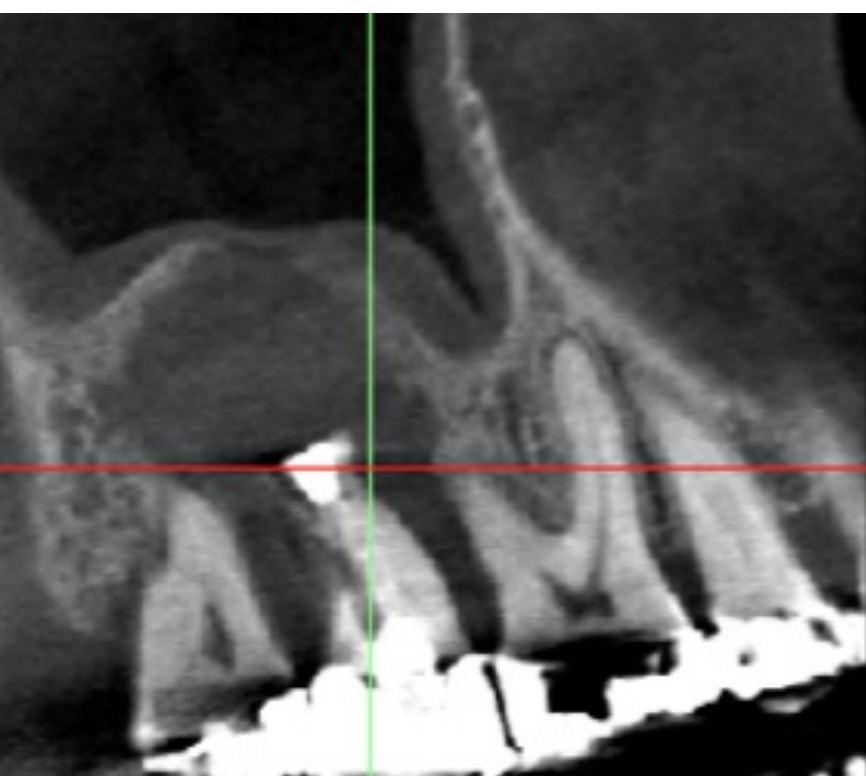


Figure 9a: Pre-operative CBCT



Figure 10a: Post-extraction PA

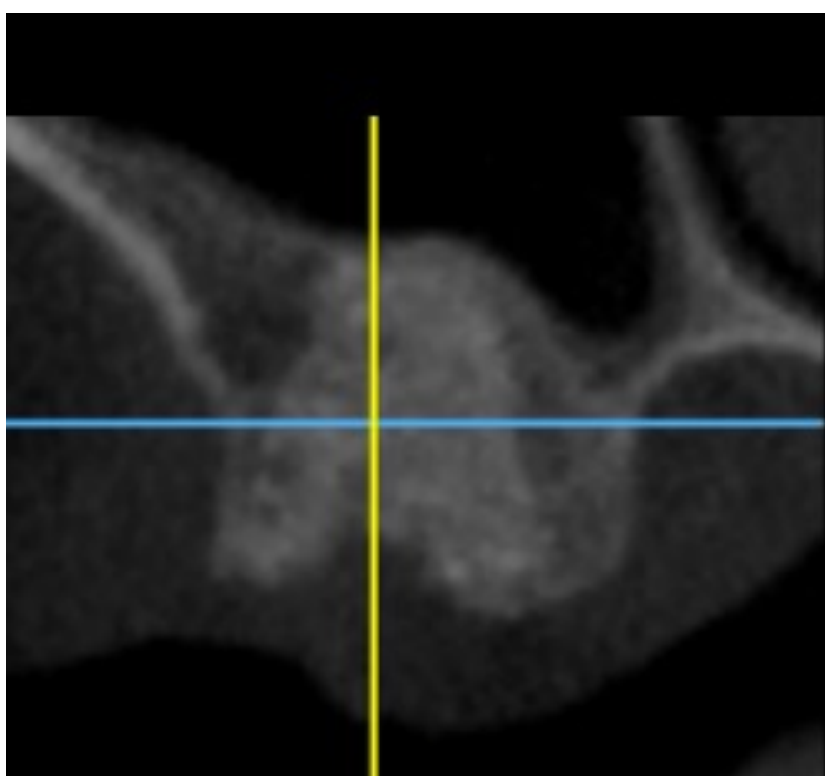


Figure 9a: 3-months CBCT

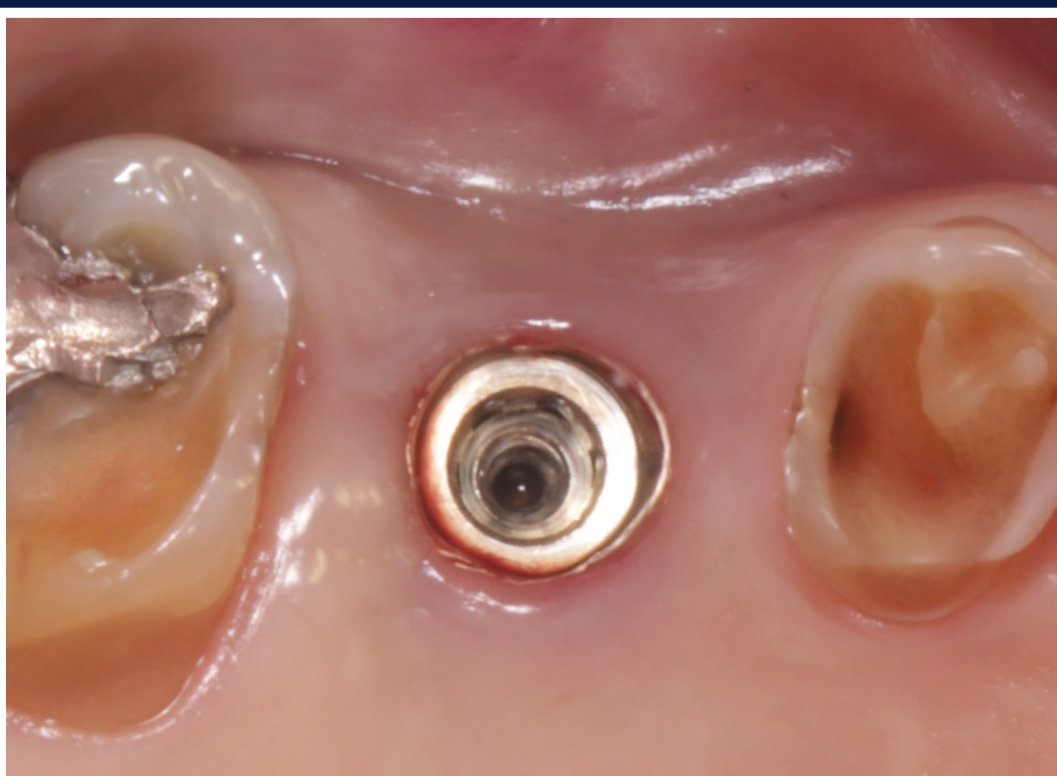


Figure 1b: Pre-operative view

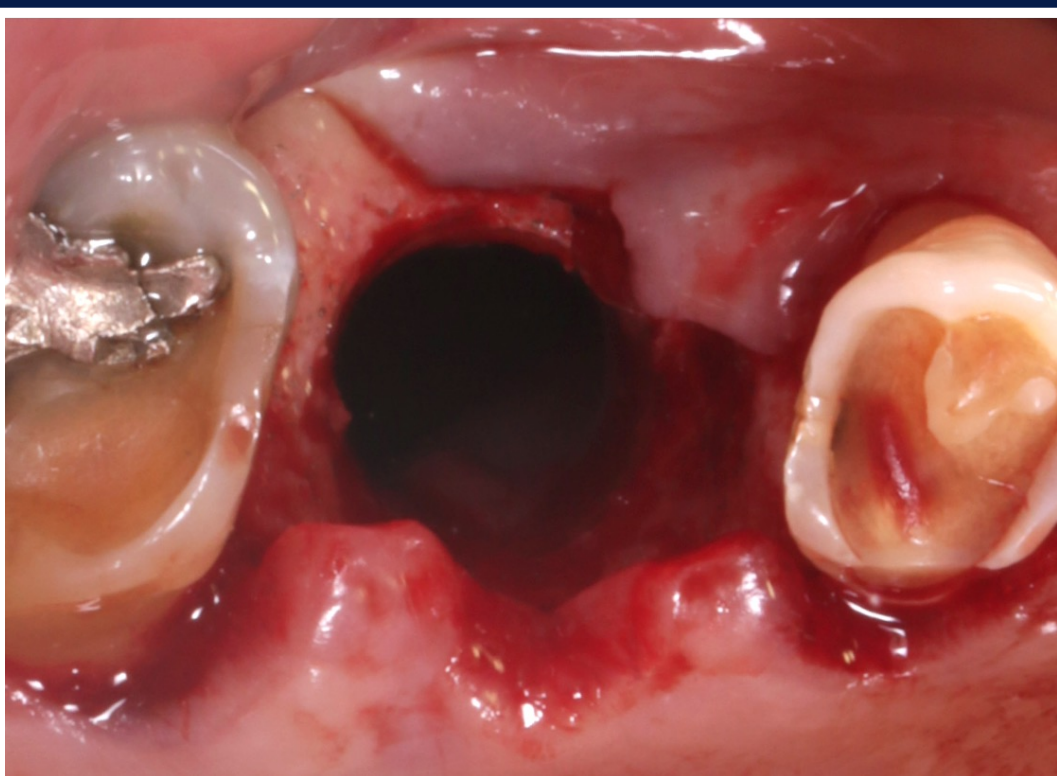


Figure 2b: oroantral communication

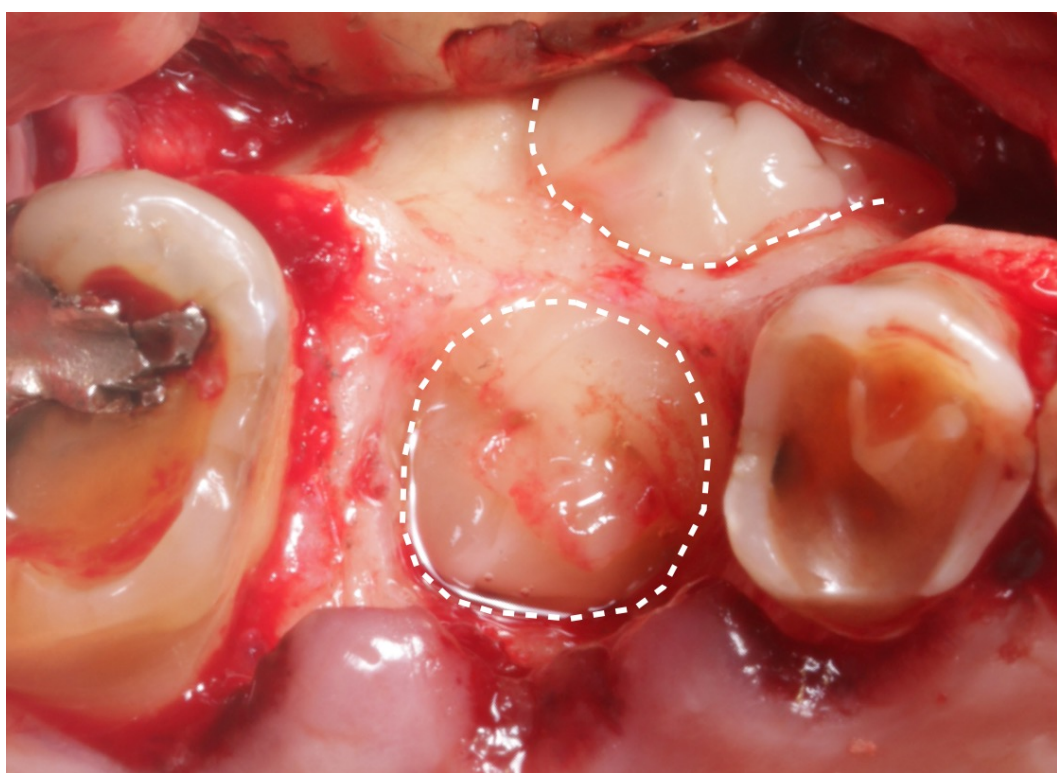


Figure 3b: PRF membrane placed

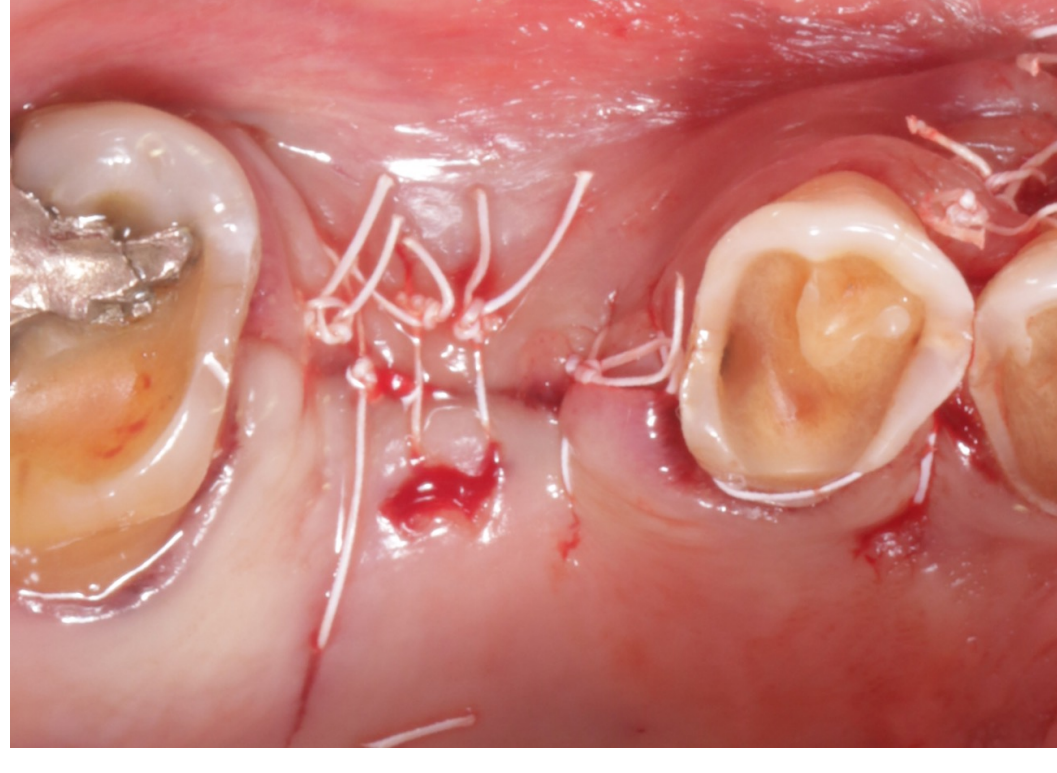
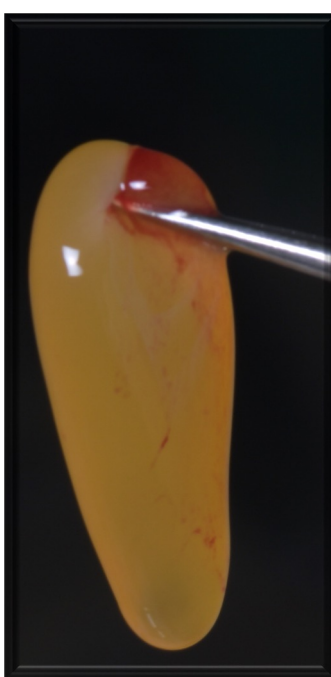


Figure 4b: suture



Figure 5b: 4 months postoperative



PRF clot



Figure 6b: Pre-operative PA

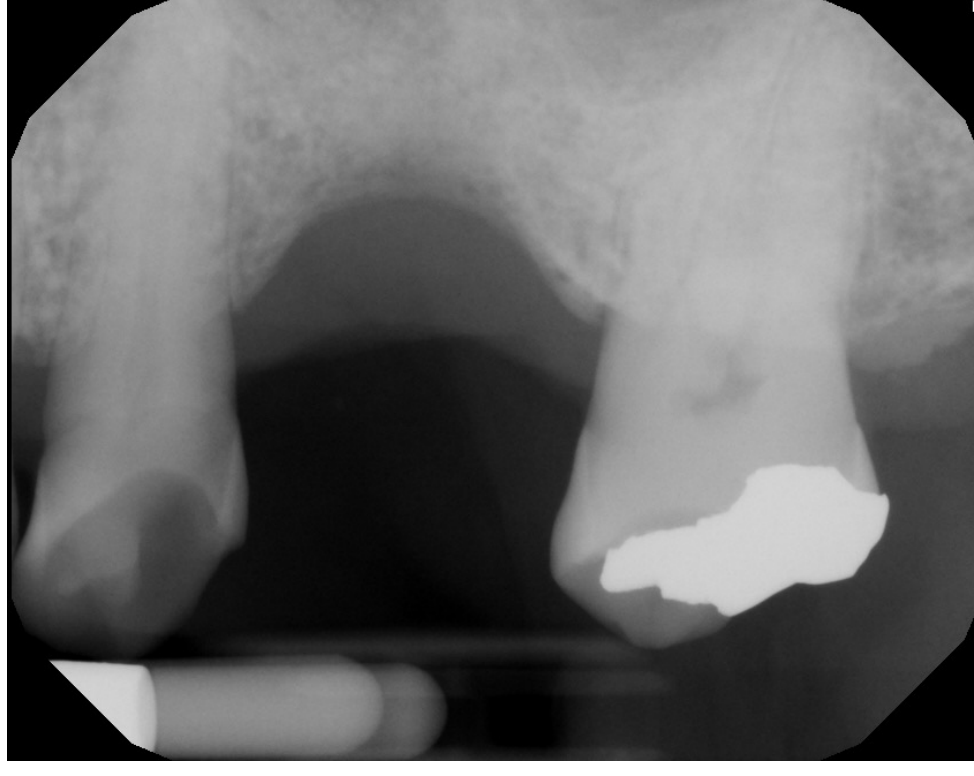


Figure 7b: Post-extraction PA

References

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