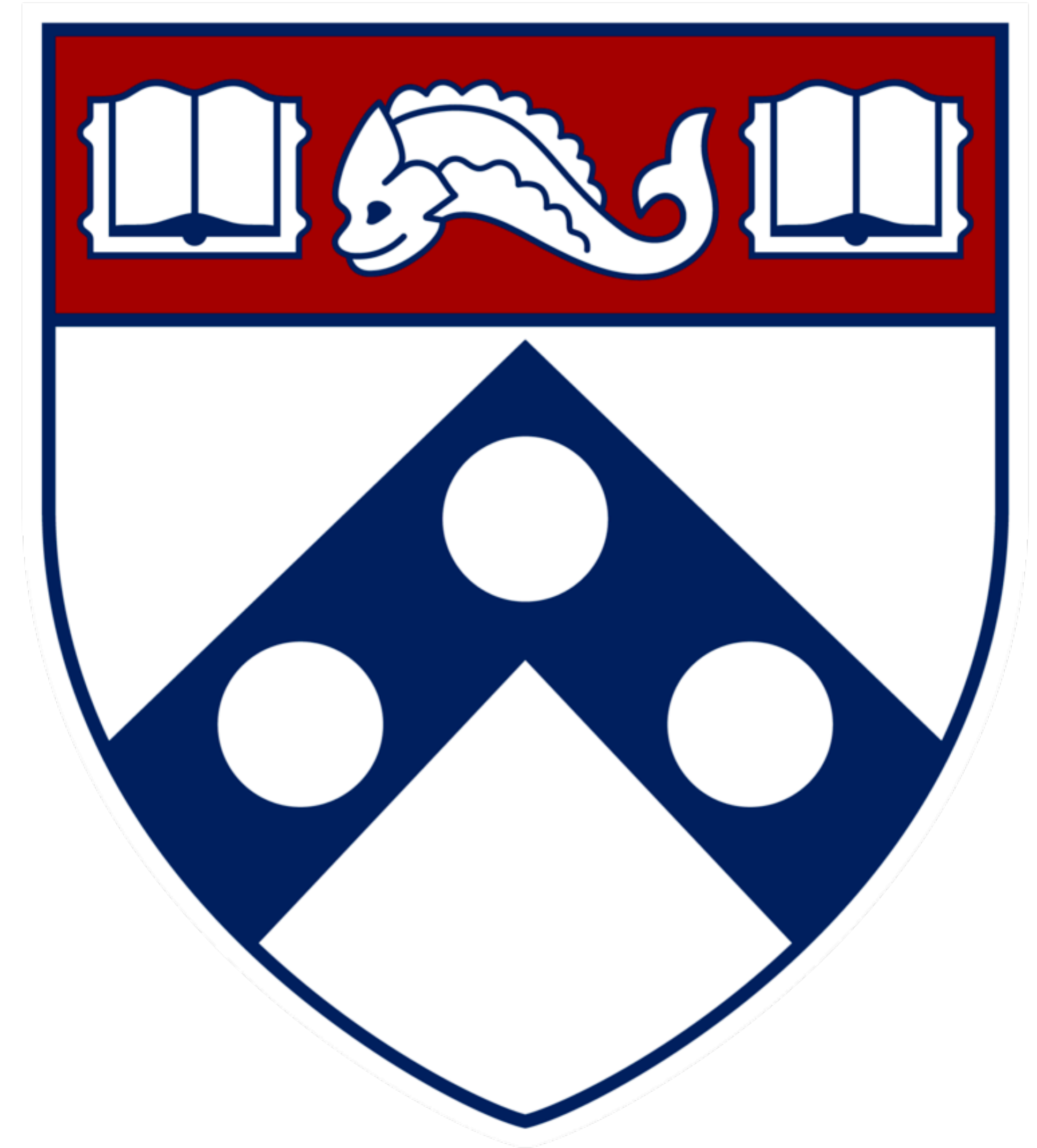
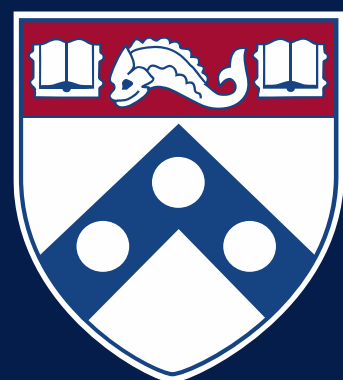


Implant Site Development in the Esthetic Zone

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Introduction

Achieving an esthetic outcome by replacing a single tooth with an implant in the esthetic zone is one of the most challenging feats in implant dentistry. Common problems include apical migration of the gingival margin, loss of bucco-palatal bone width, and poor emergence profile. When indicated, immediate implant placement and provisionalization can help achieve a predictable functional and esthetic outcome. However, in cases where immediate implant placement is contraindicated, clinicians need to use an alternative strategy. This case report describes a combination of a minimally traumatic extraction, ridge preservation, and a fixed interim restoration that was used to develop the site for future implant placement in the esthetic zone. The socket-sealing concept provides the biologic rationale for using an immediate pontic approach¹. The pontic stabilizes the fibrin clot and allows for initiation of wound healing².



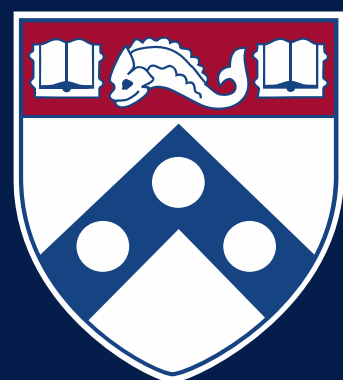
Figure 1: Pre-op



Figure 2: Atraumatic extraction #8



Figure 3: Immediate post-op after grafting



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Materials and Methods

A 50 year old female presented to the periodontics clinic with tooth #8 with external resorption and grade 3 mobility. Cone Beam Computed Tomography (CBCT) imaging showed insufficient bone for immediate implant placement. A minimally traumatic extraction of tooth #8 was performed. The buccal tissue was carefully elevated from the bone around the buccal dehiscence to provide a pouch-like space for a collagen membrane to be placed, cortical-cancellous allogenic particulate graft was placed in the extraction site, and a collagen dressing was placed on top of the grafted socket. The graft and the collagen dressing was secured using monofilament restorable sutures in a criss cross pattern. A polymethyl methacrylate (PMMA) provisional shell was milled and bonded using etch, prime, bond, and flowable composite to palatal side of the adjacent teeth.



Figure 4: Immediate post-op with provisional



Figure 5: 2 week follow-up

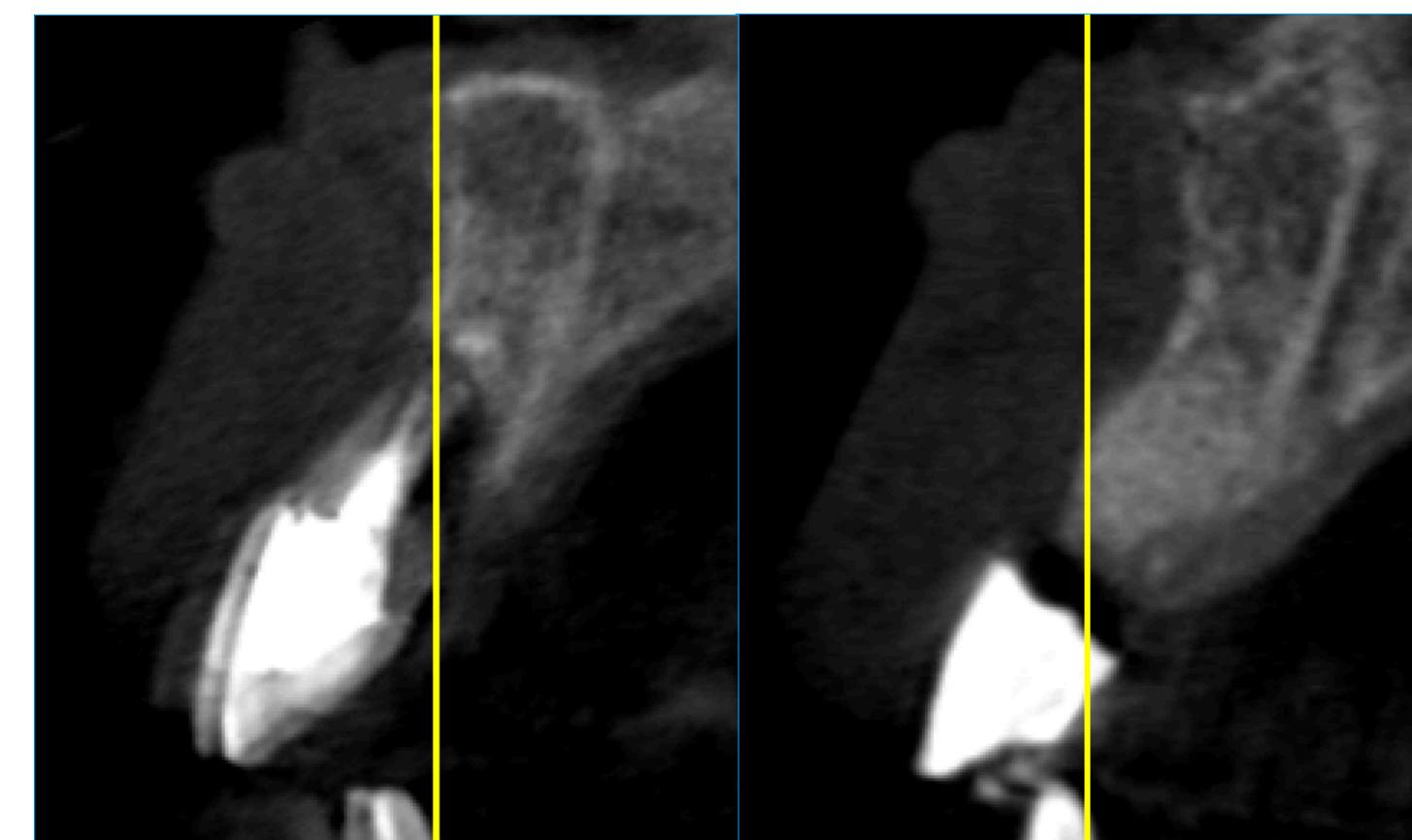
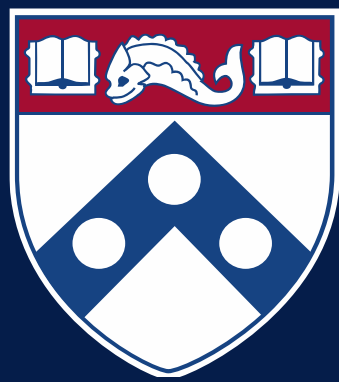


Figure 6: Pre-op CBCT and post-op CBCT



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Results and Conclusion

Results: A minimally traumatic extraction with socket preservation and a fixed provisional is an effective solution to simultaneously maintain esthetics and function during the healing period and develop the implant site for proper esthetics.

Conclusion: Even when a socket in the esthetic zone is not suitable for immediate implant placement, site preparation and provisionalization with an anatomically shaped crown can be rendered to create the proper emergence profile for a future implant. Furthermore, unlike an interim removable prosthesis, an interim resin bonded fixed prosthesis prevents applied pressure from occlusal forces on the grafted area. By bonding an interim fixed restoration with an ovate pontic, the soft tissues can be developed and the patient is able to have a functional and esthetic temporary solution until the hard tissue is healed for implant placement.



Figure 7: 4 month post-op



Figure 8: 4 month post-op

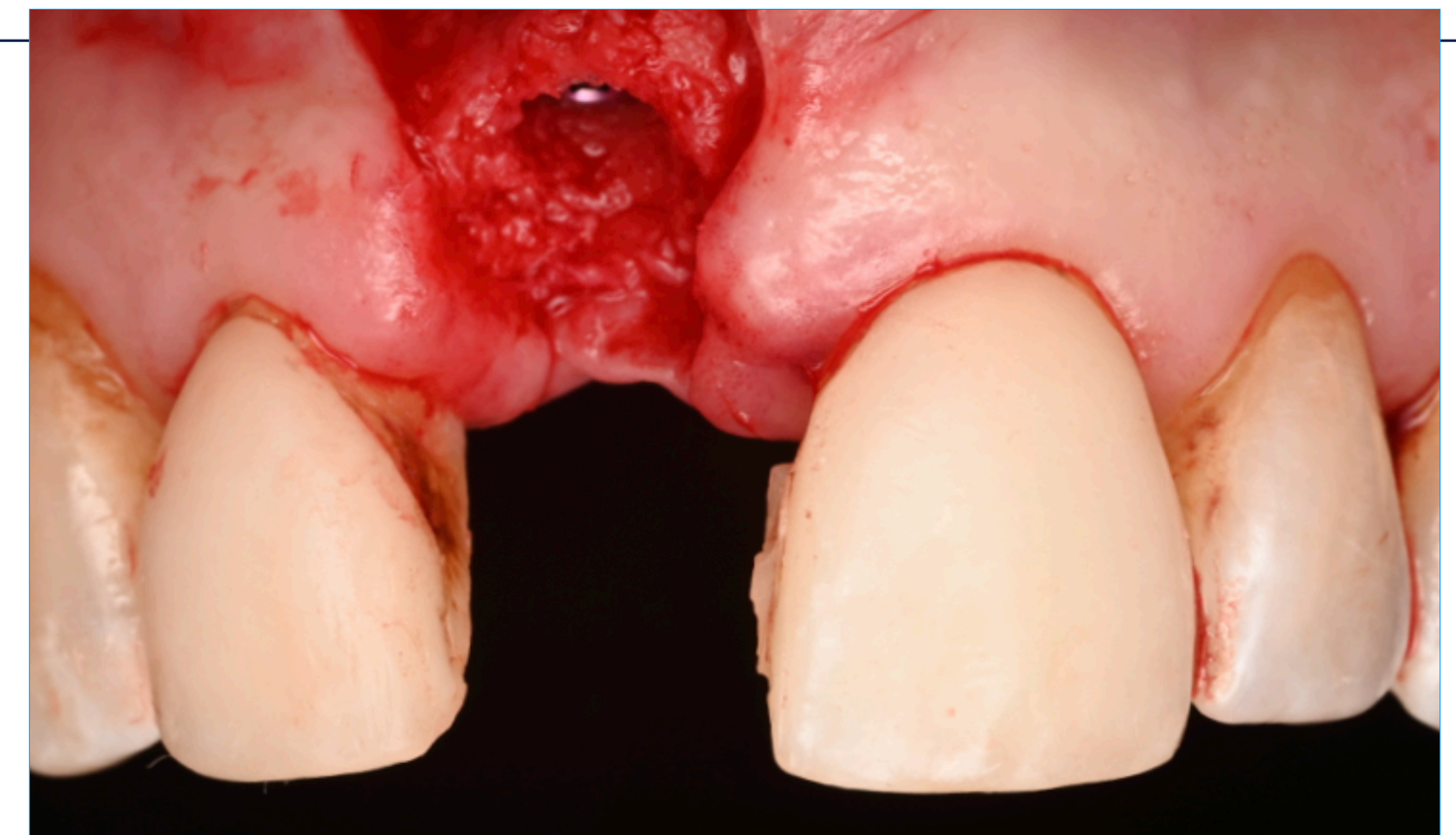
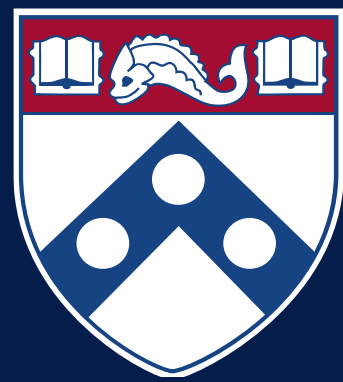


Figure 9: Implant placement



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2. Timpou G, Weigl P, Krebs M, Parvini P, Nentwig GH. Rationale for esthetic tissue preservation of a fresh extraction socket by an implant treatment concept simulating a tooth replantation. Dent Traumatol 2010;26:105–111.