

Complex Treatment Failure-Immediate Provisionalization Solution?

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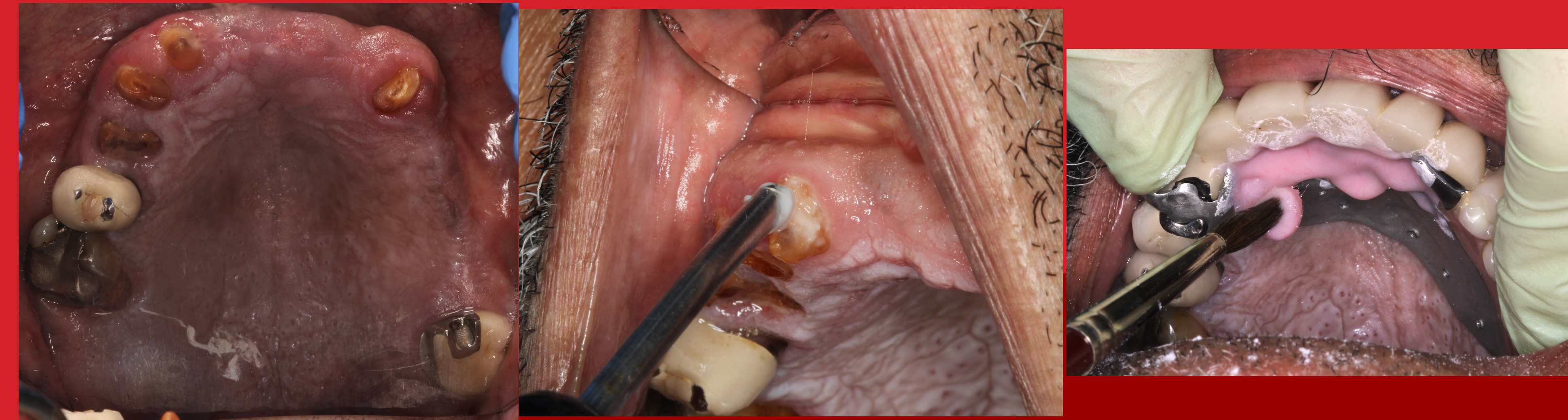


Introduction

Fixed-removable prosthetic combination treatment can have unexpected outcomes: failure of a clinical Fixed Dental Prosthesis (FDP) retainer often results in a failed prosthetic treatment. Resolving this dilemma quickly and efficiently is an indicated prosthetic treatment goal.

Intraoral Treatment & Laboratory Activity

A 73 YO M presented to the clinic with a failed 7-unit fixed partial denture with retainer abutments: 5, 6, 7, 8, & 11. The RPD had conventional cast circumferential clasps (5, 6, 15). The anterior abutment teeth (6, 7, 11) tested vital using electric pulp testing. The fixed prosthesis had an extracoronal Brendent VKS semi-precision attachment at 11D to assist in retaining the maxillary removable partial denture (RPD). As an interim solution the FDP was connected to the RPD using autopolymerizing acrylic resin (APAR). Retention holes were made in the existing RPD CrCo cast framework. The existing conventional clasp on the molar stabilized the 3D prosthesis position intraorally for the pick-up impression using irreversible hydrocolloid which was cast with type III dental stone. The cast allowed for addition of a wrought wire and ball clasp for increased retention. Autopolymerizing acrylic resin was added incrementally, engaging all retention holes on the cast framework which had been air particle abraded and metal-primed. The prosthesis was polished, finished, and delivered, providing immediate cosmesis for the patient.



Complications: Literature Review

Combined removable and fixed (CFR) dental prostheses can be connected to one another via a precision or semi-precision attachment mechanism. Precision attachment approach has a prefabricated metal-to-metal male/female connection. Semi-precision can be milled wax or plastic manufactured patterns. Another classification is rigid versus resilient. Rigid attachments allow no movement of the attachment parts during function, while resilient attachments permit movement of the denture base under function. This theoretically, minimizes the force applied on the abutment teeth, but may compromise on support and bracing needed for the prosthesis. The longevity of a CFR restoration varies. There are few studies that investigate fixed-removable combination treatment. One concludes that a semi-rigid attachment has up to 98% survival rate after 5 years, while another finds that a rigid attachment study population had a 5-year survival rate of only 53.6%. Theoretically, a rigid attachment converts the distal extension of the RPD into a cantilever, increasing the stress on the FDP.

Conclusions

The most frequent failures of CFR involve the fixed partial denture, or their abutment teeth. In the current treatment, failure resulted from root caries on one of the abutment teeth of the FDP, and finally a root fracture of the two remaining canine abutments. The new final restoration will include utilization of the vital canines' (6, 11) tooth structure as coping units for an RPOD. Since both tested vital, no endodontic treatment will be prescribed. Instead, clinical crown extension surgery will be implemented to establish adequate preparation retention.. The carious root of tooth #5 will be extracted. The preservation of the canines permits biomechanical linkage between tooth and prosthesis using a MicroERA attachment for retention of the definitive MxRPOD.