

Fabricating crowns that fit both an implant and an existing removable partial denture



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Abstract

- Fabricating a crown to fit both a tooth and an existing removable partial denture (RPD) using many different techniques has been described.
- However, in the event of abutment loss, information regarding the clinical and laboratory steps used to fabricate a crown that fits both an implant and an RPD is lacking.
- This report describes the use of either an impression coping or an interim abutment attached to the implant to which a composite resin interim restoration material is flowed and the RPD then seated to form a resin pattern of the required crown form. The process allows the implant crown to be made without retaining the patient's RPD during crown fabrication.

Patient Presentation: A 57-year-old patient presented with a nonrestorable maxillary right canine RPD abutment. Tooth extracted, implant placed with healing abutment, denture tooth added to clasp assembly. Crown fabricated to fit RPD and implant while patient wears RPD.



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Technique Using Impression Coping

1. Remove healing abutment; attach open tray impression coping (Biomet 3i; Zimvie) to implant. Seat RPD ensuring full seating of rests; confirm coping doesn't interfere. Add wax (Wax Square Ropes; Kulzer GmbH) around abutment screw.



2. Inject resin interim material (Protemp Plus; 3M) around coping with RPD seated to shape clasp, distal guiding plane, and cingulum rest. Quickly remove excess resin from screw access, clasp, or framework.

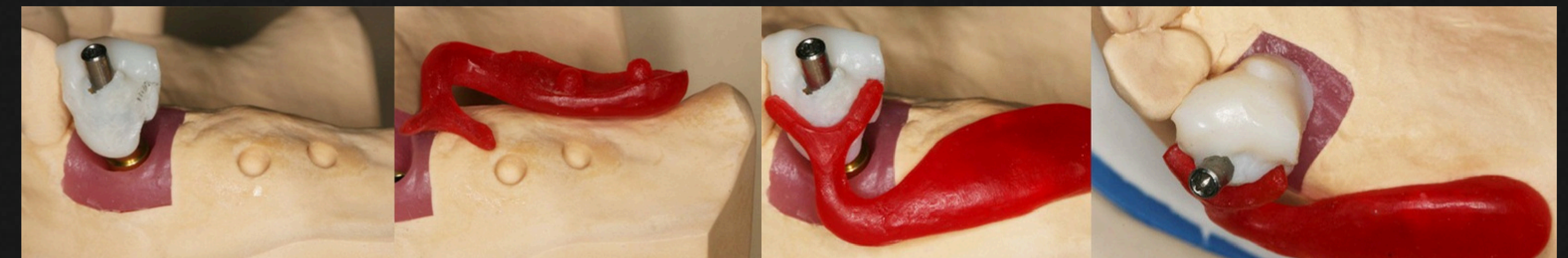


3. After polymerization, remove RPD; make implant-level impression. Send impression and resin-patterned abutment to lab for crown shaping.

• Key Notes: Resin records retentive clasp, proximal plate, and lingual plate locations.



4. On definitive cast, fabricate resin clasp indexed with 2 dimples, contacting resin pattern at clasp location.



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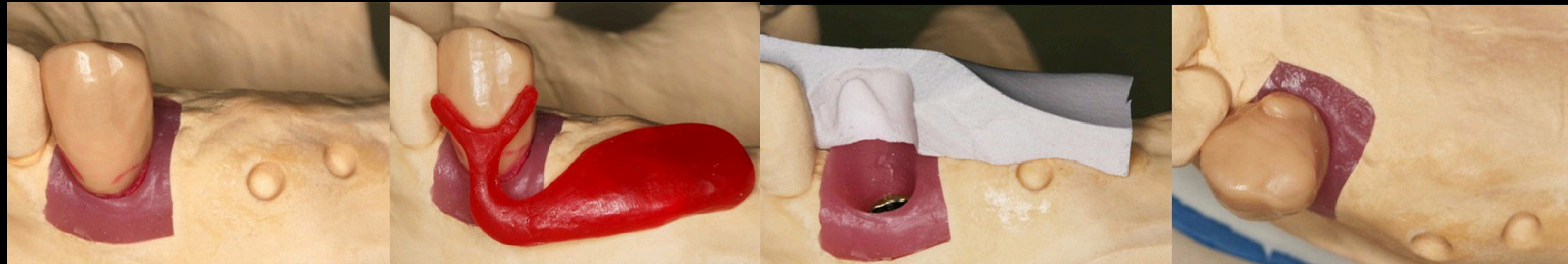
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Technique Using Impression Coping

5. Create wax pattern fitting resin clasp; use lingual putty index (ZETALABOR; Zhermack) for lingual/proximal surfaces and rest seat. Reduce wax for porcelain space; cast metal coping; apply porcelain contoured to contact clasp, proximal plate, and lingual plate.



6. Remove denture tooth from clasp; attach custom abutment; cement crown.



Technique Using Interim Abutment

1. After extraction/implant placement, add denture tooth to RPD.
2. Attach interim abutment (Certain; Zimvie) to implant; place cotton pellet in screw access channel. Inject resin (Protemp Plus; 3M) around abutment with RPD seated to shape clasp, distal guiding plane, and cingulum rest. Remove excess resin.
3. Resin pattern forms retentive clasp, proximal plate, and lingual contact. After polymerization, remove RPD; make implant-level impression. Send to lab



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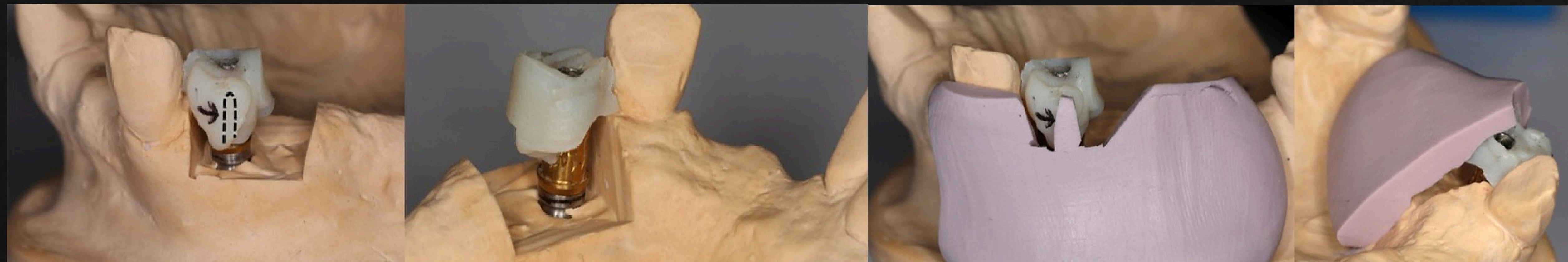
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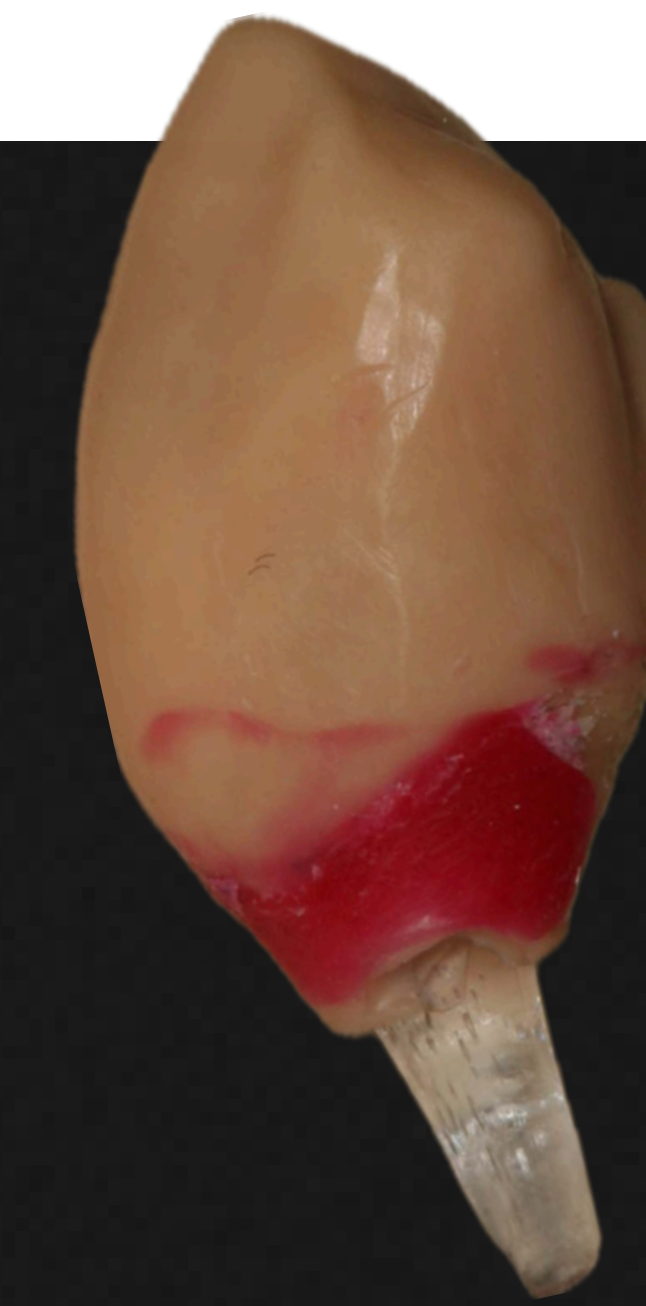
Technique Using Interim Abutment

4. Create facial/lingual putty indices from resin pattern; trim facial index for I-bar clasp projection. Fabricate crown using indices for morphology



5. Seat screw-retained crown; tighten abutment screw to recommended torque.

Fill access channel with PTFE tape and composite resin.



Conclusion

A technique was described where a crown was made that fits both the implant and existing RPD using an impression coping. Caution should be exercised when attempting to fit your RPD components while using this technique. An impression made with improperly fitted RPD will result in a crown with an ill fitted RPD.

