



2018

Novel Method for Provisionalization

Rami Albahri DDS, Jason D. Lee DDS, MMSc.
Harvard School of Dental Medicine



Objectives

During the course of a prosthodontic rehabilitation, a diagnostic wax up serves as the blue print for planning and provisionalization. There are multiple ways to actualize the designed wax up, including but not limited to, putty matrix, vaccu-form shell or a custom polymethyl methacrylate (PMMA) shell. The following case report will demonstrate a technique for the fabrication of clear injectable matrix for provisionalization.

Discussion

The demonstrated technique is a novel and predictable technique that could be utilized for provisionalizing partial or full coverage restorations using different materials including but not limited to, resin composite, Bis-Acrylic or PMMA. The technique could potentially be used for conservative resin composite build ups as opposed to free-hand sculpting.

Technique

- The following steps were followed for the fabrication of the clear injectable matrix:
1. Wax- up designed to achieve anterior coupling and guidance (Figure 2).
 2. Wax-up duplicated using type III stone (Figure 3, Figure 4).
 3. PVS Putty mixed and placed over the teeth to be utilized as a spacer for the clear PVS material (Figure 5).
 4. Vaccu-form shell fabricated over the duplicated cast with the spacer (Figure 6, Figure 7).
 5. Holes drilled into the vaccu-form shell to create access for the resin composite tips (Figure 8).
 6. Place cotton tips through the holes to create the negative space for the resin to pass through and lute them together with rope wax (Figure 9).
 7. Deposition of the clear PVS onto the shell and placed over the duplicated cast (Figure 10).
 8. Try in the matrix intraorally and verify seating (Figure 11).
 9. Excavate any previous restoration and bevel the enamel. Tooth was etched and bonding agent applied before seating of the clear matrix. Teflon tape was placed against the adjacent teeth to maintain an area contact (Figure12).
 - 10.Seat the matrix and dispense the resin. Light cure the resin through the matrix (Figure 13).
 - 11.Finish and polish the provisionals (Figure 15).

Clear injectable Matrix		Free-hand sculpting	
Advantages / Indications	Disadvantages	Advantages / Indications	Disadvantages
Decreases chair-time	Increases Lab-work	Single units	Time consuming
Predictable result	Difficulty seating after each bonding		Unpredictable result
Ability to actualize the Wax up			Inability to actualize proposed wax-up.
Multiple units			

Conclusions

The clear injectable matrix was successfully utilized to provisionalize #6-11 in a timely and predictable manner .

References

- McLaren EA. 2013.
- Magne P, Magne M, Belser UC 2007.



Figure 1: Pre-Operative



Figure 2: Wax-up design

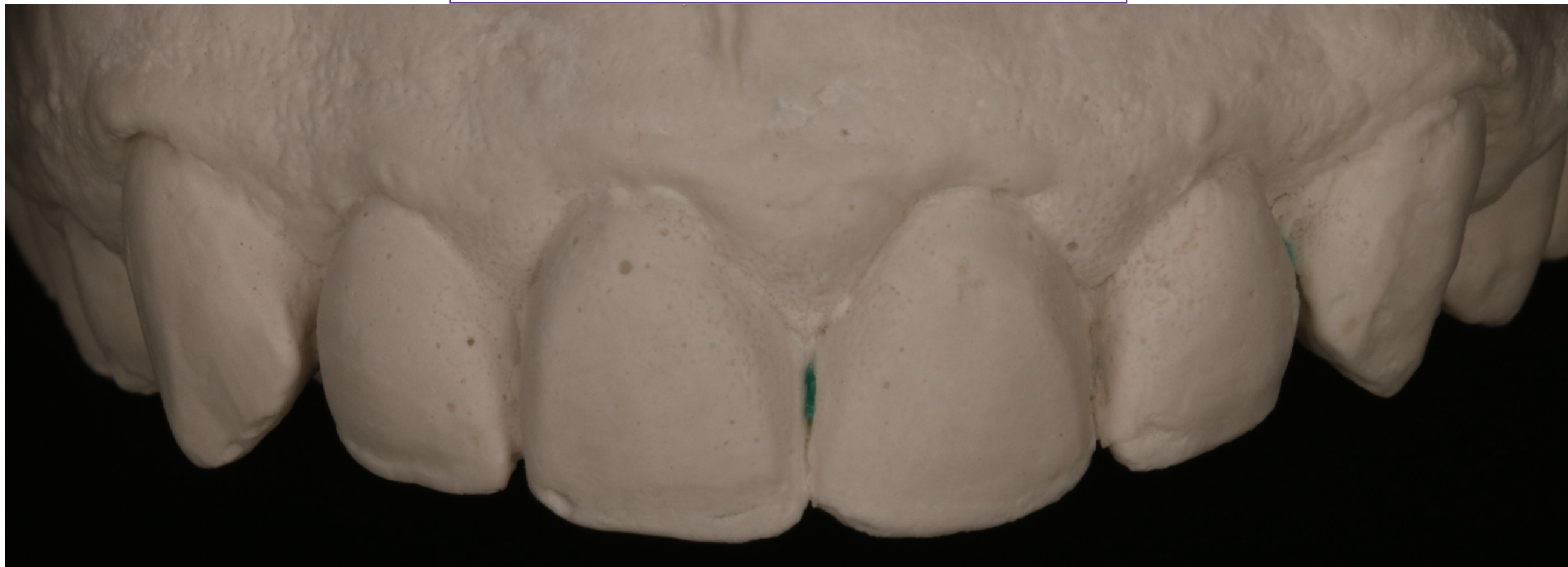


Figure 3: Wax-up duplication



Figure 4: Wax-up duplication – Occlusal view

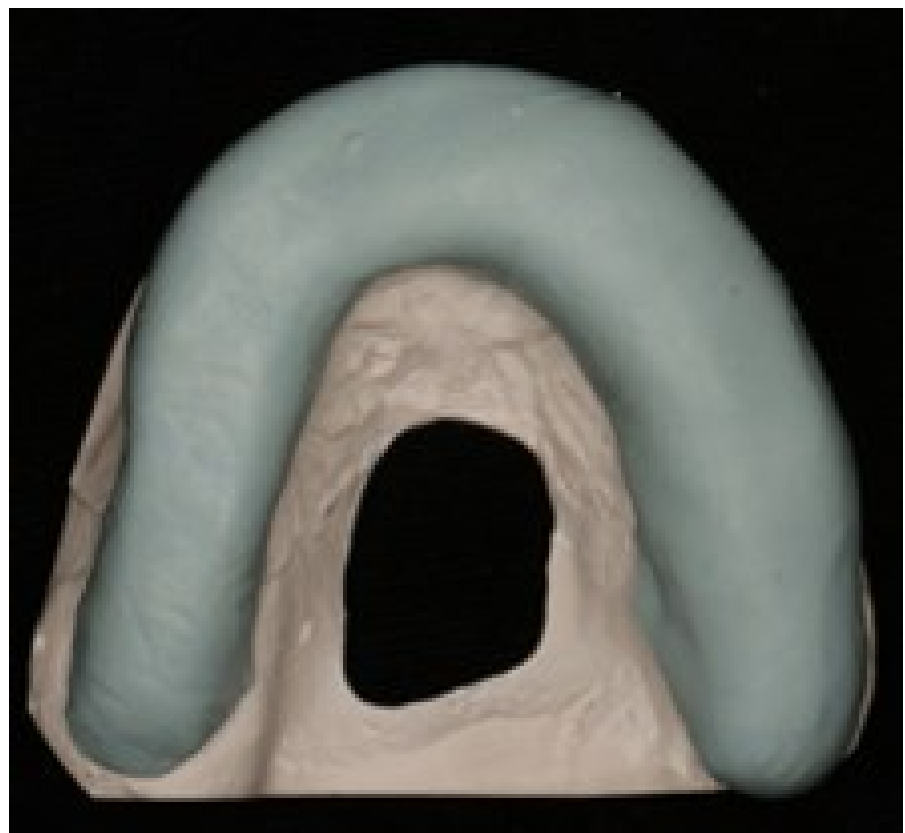


Figure 5: Putty placed over the teeth as a spacer

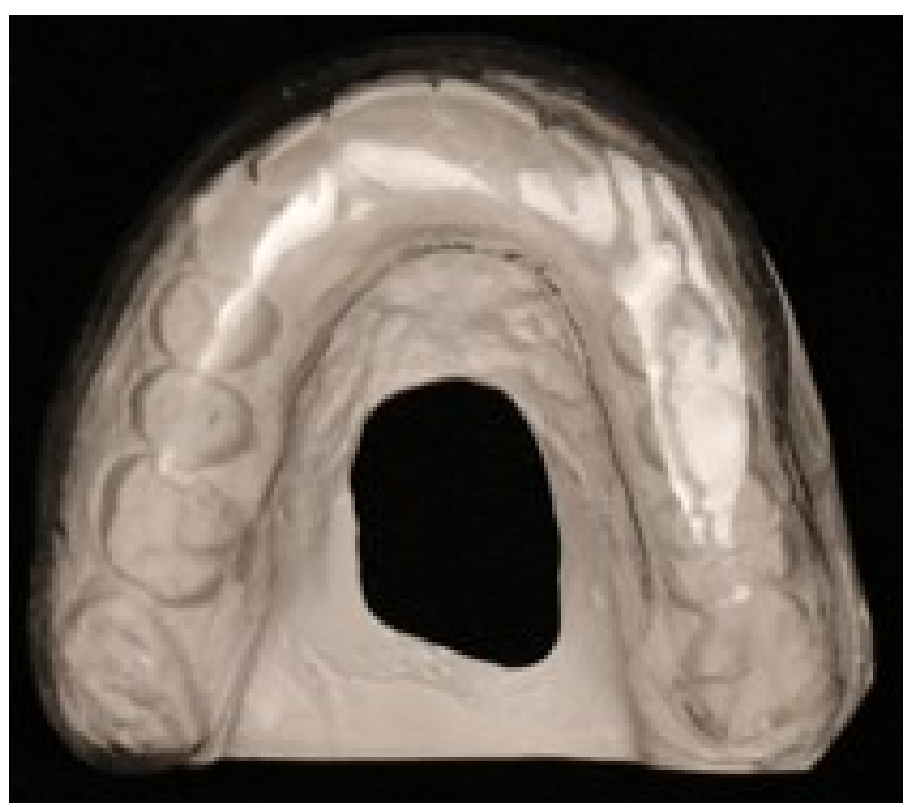


Figure 6: Vaccu-form shell fabricated over the putty spacer

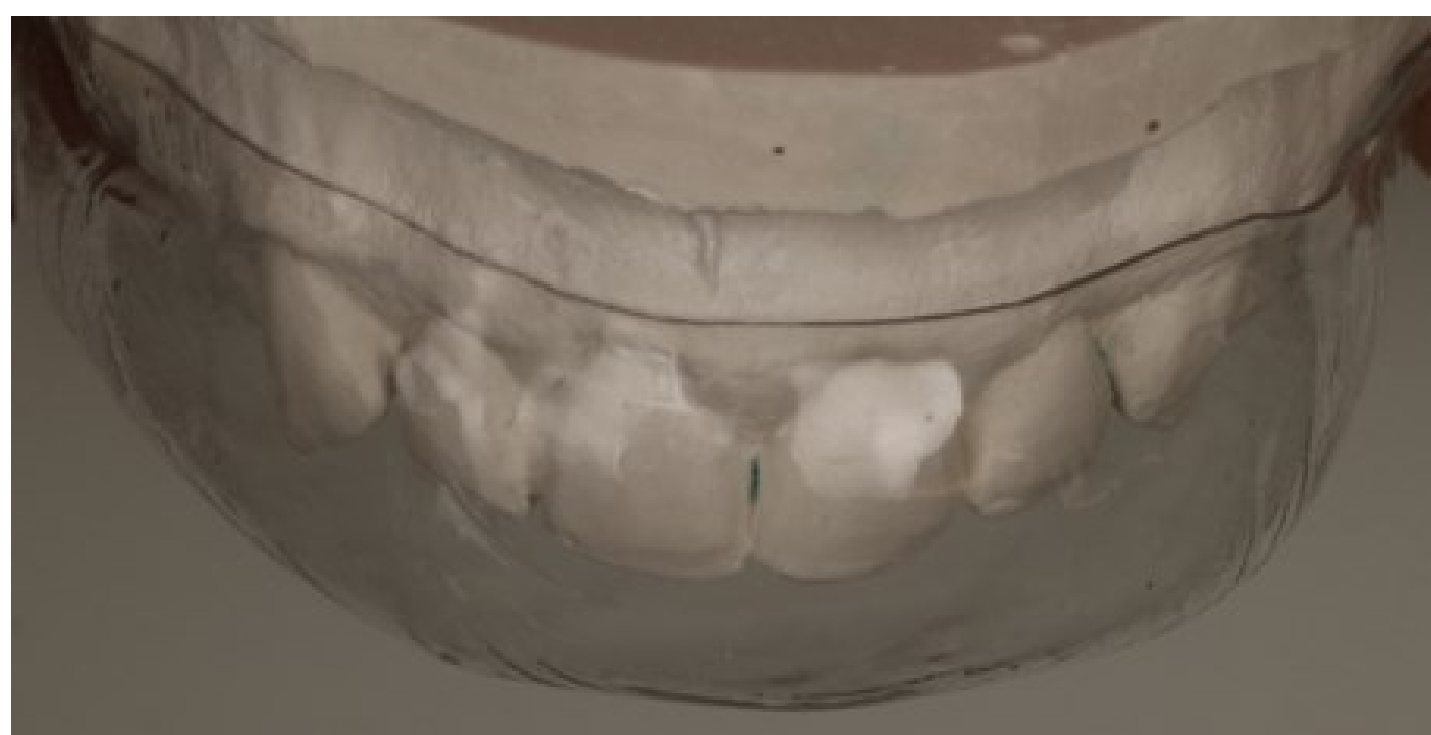


Figure 7: Vaccu-form shell showing the space for the clear PVS.



Figure 8: Holes drilled to the size of the composite.

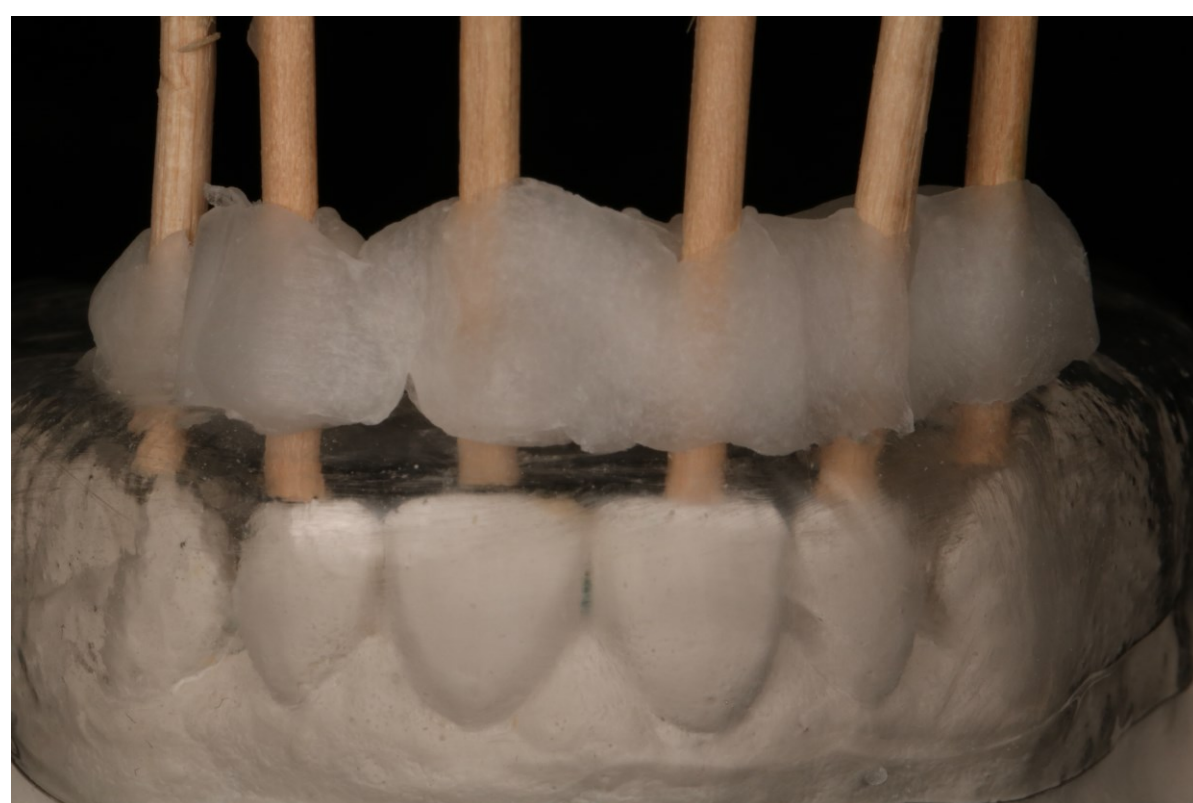


Figure 9: Cotton tips used to maintain the negative space.

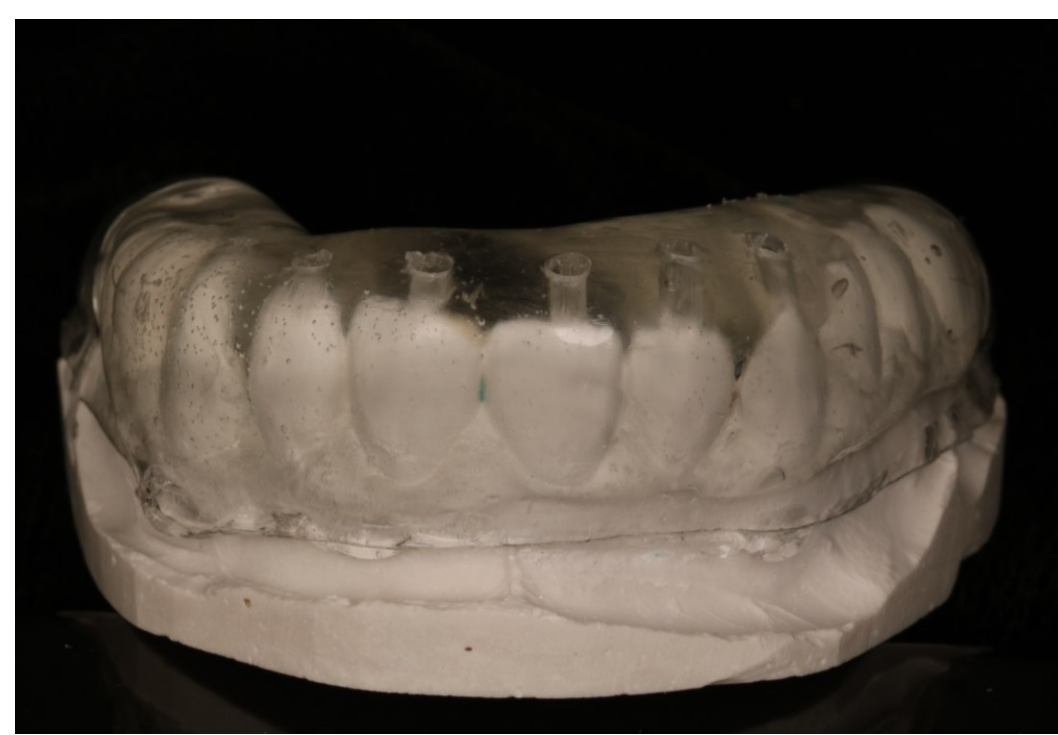


Figure 10: Dispense clear PVS onto the vaccu-form shell and seat the shell on to the duplicated cast.

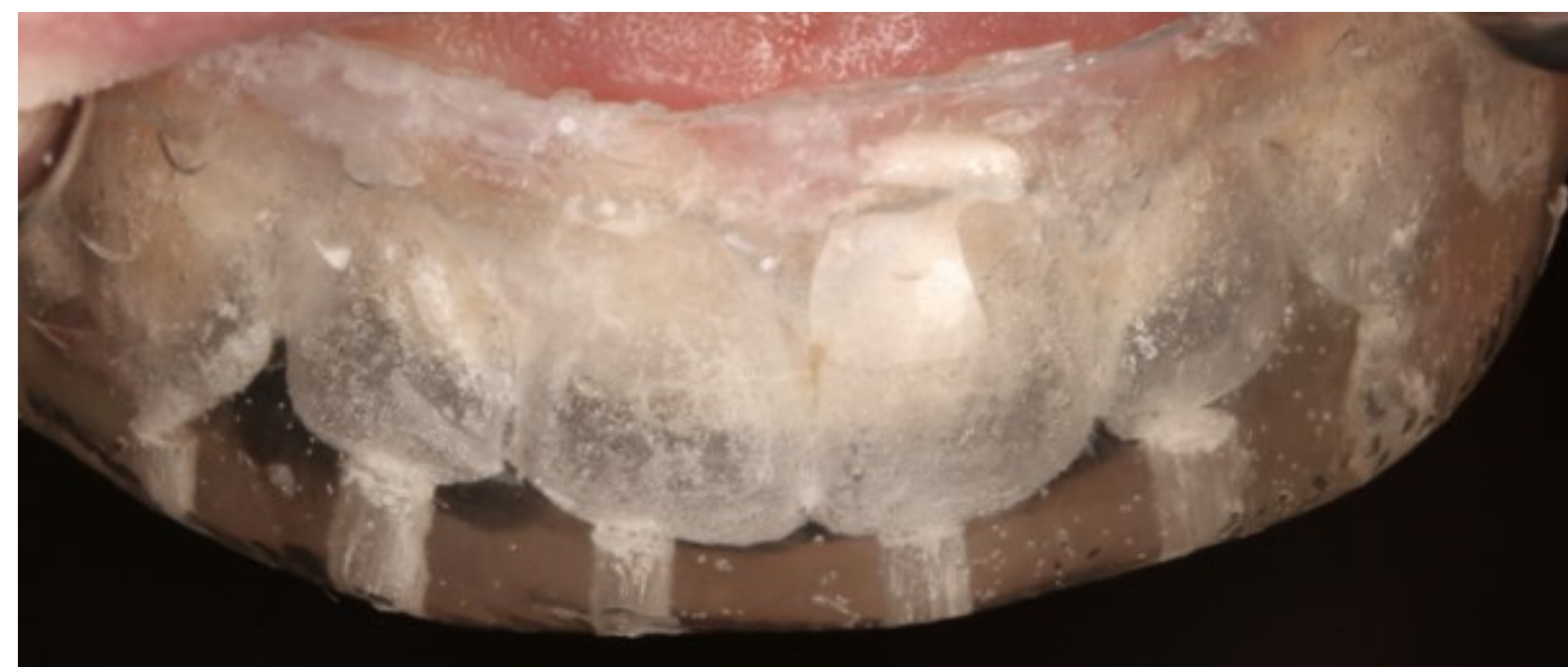


Figure 11: Try in the matrix and verify seating.



Figure 12: Excavate any previous restoration and bevel the enamel. Teeth were etched and bonded. Place Teflon tape against the adjacent teeth to maintain a contact.

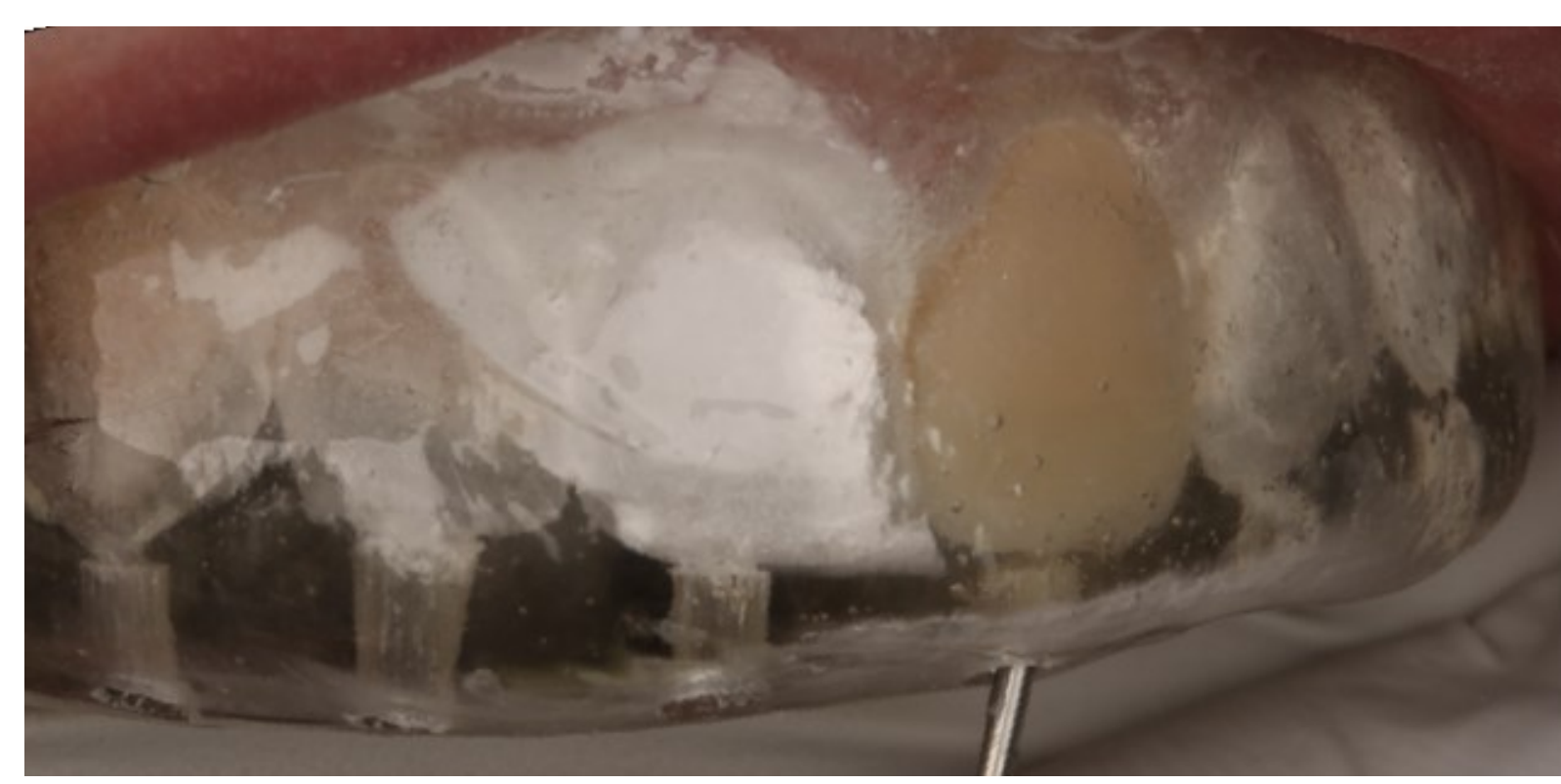


Figure 13: Seat the matrix and dispense the resin material. Light cure through the matrix.



Figure 14: Immediately after removal of the matrix.



Figure 15: Finish and polish the restorations.