A Quick Esthetic Remount Cast for All-Ceramic Restorations

Paul A. Hansen, DDS[1] & Julie Gist[2]

[1] Assistant Professor, Department of Restorative Dentistry, University of Nebraska Medical Center, College of Dentistry, Lincoln, NE
[2] 4th year Dental Student, Department of Restorative Dentistry, University of Nebraska Medical Center, College of Dentistry, Lincoln, NE

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Correspondence
Paul A. Hansen, University of Nebraska Medical Center, College of Dentistry, 40th and Holdrege, Lincoln, NE 68583-0750.
E-mail: phansen@unmc.edu

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Abstract

A technique is presented for the expedited fabrication of a remount cast for the alteration of all-ceramic crowns and fixed partial dentures. The remount cast allows the laboratory technician to know the precise location of the gingival tissues and allows modification of all-ceramic restorations.

When a ceramic crown or all-ceramic fixed partial denture (FPD) is fabricated, a discrepancy may exist where the prosthesis comes in contact with the gingival tissues. This is most often found in the interproximal areas on the master cast where the gingival tissues were removed for die fabrication. During die trimming, the interproximal soft tissues are removed to expose the preparation margin on the tooth.[1] The result is that often the laboratory technician must guess on the tissue contact in this area.

A common method of making impressions after tooth preparation is the retraction and corresponding movement of the gingival tissues around the individual tooth.[2,3] This can result in a discrepancy in the height and contour of the free gingival margin around the tooth. By trying in either the framework or the completed restoration and picking it up in a remount impression, exact soft tissue contours are recreated for the laboratory technician to complete an exacting shape of the all-ceramic crown or FPD. Gingival embrasures must allow room for the patient's interdental papillae, yet prevent the dark triangles that will occur when the ceramic material does not fill the space between the restoration and the gingival tissues.

The literature reflects a variety of methods to pick up restorations in the patient's mouth for the purpose of reproducing soft-tissue contours and contacts. Kornfeld recommends the use of dental stone or low-fusing metal to fabricate the remount cast.[4] Lucia described a method of blocking out the gingival tissues with hydrocolloid before making the remount cast with low-fusing metal to prevent locking the casting onto the new remount cast.[5] Touati et al recommended picking up the ceramic restorations, placing the original dies into the impression, and then pouring the impression in die stone to achieve the anatomy of the soft tissues and the interdental papillae.[6] Touati et al felt that it was essential to remount esthetic cases to achieve a natural and harmonious soft-tissue integration.

This article presents a procedure for making a remount cast quickly and easily to reproduce gingival tissues at rest to accurately modify all-ceramic restorations.

Procedure

1. Try in all restorations to ensure marginal fit and interproximal contacts are satisfactory (Fig 1). If a tissue discrepancy is observed, the clinician may decide to return the restorations to the laboratory for modification.
2. To prevent movement of the all-ceramic units in the mouth, silicone disclosing material (Fit Checker GC America, Inc., Alsip, IL), may be used as a temporary luting agent. Silicone is used because it is easily removed from all-ceramic restorations and will not damage their margins. The silicone is removed before making the remount cast.
3. An alginate impression is made, picking up the FPD (Fig 2).
4. A vinylpolysiloxane material (Exabite II, GC America, Inc.) is injected into the ceramic restorations, covering all margins. Before the vinylpolysiloxane material sets, modified paper clips are partially placed into the material to hold the material to the cast after the dental stone is poured into the remainder of the impression (Fig 3).
5. The cast is separated from the impression, and checked for accuracy (Fig 4). The resulting cast will provide the ceramist the opportunity to add porcelain to the interproximal areas and around the pontic to ensure uncompromised esthetics. The cast will allow the ceramist to add the

Figure 1 Try-in of completed fixed partial denture #8–10 with a pontic in place for tooth #9. Black spaces are present in the interproximal areas.

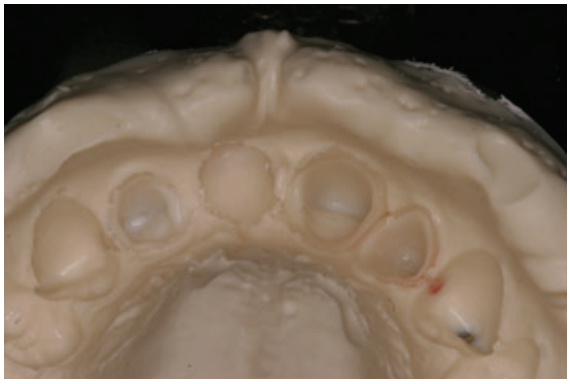

Figure 2 The fixed partial denture picked up in an alginate impression.

porcelain without having to lubricate or modify the cast, as the vinylpolysiloxane material will not absorb water.

6. After modification, the ceramic units can be retried in the mouth to check for any discrepancies (Fig 5).

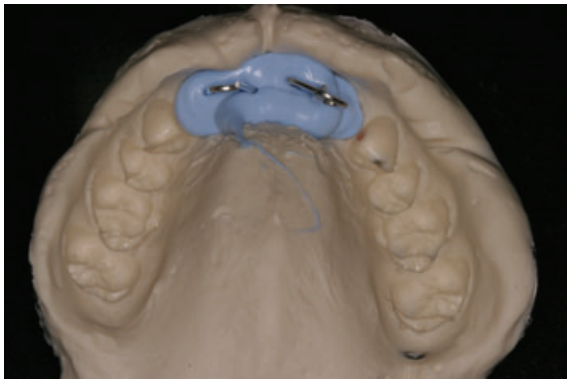

Figure 3 Vinylpolysiloxane bite registration material injected into the all-ceramic units to cover all margins. Paper clips have been modified to provide retention between the vinylpolysiloxane material and the dental stone.

Figure 4 The resulting remount cast reflects the tissue contours of the patient. The vinylpolysiloxane bite material is retained in the cast using the paper clips.

Discussion

The technique described presents various advantages for the patient as well as for the dentist and laboratory technician.

1. The technique is quick, inexpensive, and atraumatic to the patient.
2. The technique will produce a cast with a resilient component around the ceramic restorations that will not lock the restorations onto the cast or cause any possible chipping or fracturing of fragile margins. The resilient component is rigid enough to hold the ceramic units in a stable position.
3. The technique provides a workable remount cast that reproduces the gingival contours in a relaxed and unaltered position.
4. The cast with the resilient component will provide a working platform for the ceramist to make corrections to existing contours.

Summary

This technique allows a remount cast to be fabricated for the purpose of making corrections to all-ceramic restorations. The technician can readily make accurate corrections and return the modified restorations to the dentist.

Figure 5 The adjusted and recontoured fixed partial denture in place. Note the excellent tissue contact interproximally.

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