



# FABRICATION OF A MODIFIED REPOSITIONING KEY FOR RELINING PROVISIONAL RESTORATIONS

Phillip Roe, DDS, MS,<sup>a</sup> Rishi D. Patel, BDS, MS<sup>b</sup>

Loma Linda University School of Dentistry, Loma Linda, Calif

The fabrication of a provisional restoration is an important step in achieving an optimal definitive prosthetic result.<sup>1,2</sup> It requires care and attention, as the contours of the provisional restoration are fundamental in the development and maintenance of the gingival architecture, while also providing important information for the fabrication and placement of the definitive restoration.<sup>1,2</sup> To create a provisional restoration which is ideal in contour, durable, and has long-term color stability, an indirect laboratory-fabricated provisional restoration is typically required.<sup>1,3</sup> An indirect provisional restoration also serves to minimize the time involved with the chairside reline procedure.<sup>3</sup> Unfortunately, in certain situations, the intaglio surface of provisional restorations may be poorly adapted to the clinically prepared tooth or implant abutment, rendering the relining procedure unreliable, as the orientation of the

provisional restoration can vary in 3 dimensions. In such situations, a repositioning key can be advantageous.

Simeone and Piloni<sup>2</sup> first described the use of a repositioning key in 2004. The purpose of this device was to aid in the clinical relining phase. This rigid plaster key allowed the clinician to accurately position the provisional restoration, eliminating any variability in its 3-dimensional orientation.<sup>2</sup> However, when a repositioning key is used for a reline procedure, it is important to ensure that the provisional restoration is in the proper position.

This article describes a technique for fabricating a repositioning key with a transparent incisal/occlusal display. This acrylic resin repositioning key enables the clinician to correctly orient the provisional restoration while allowing direct visual access to the incisal/occlusal surface to ensure complete seating. This procedure is intended to simplify the clinical fit of the pro-

visional restoration by confirming its complete seating, thereby minimizing adjustments following relining.

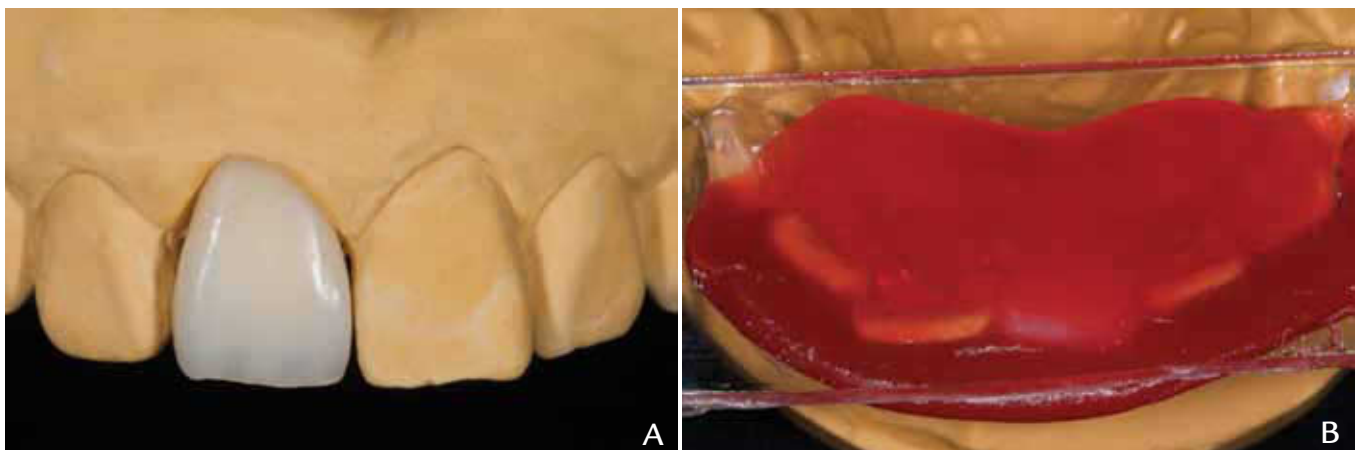
## PROCEDURE

1. Prepare the tooth on the diagnostic cast with a diamond rotary cutting instrument (no. 6856.016; Brasseler USA, Savannah, Ga). Fabricate a laboratory provisional restoration using conventional techniques<sup>1</sup> (Fig. 1, A).

2. Apply a generous amount of petroleum jelly (Vaseline; Unilever, Englewood Cliffs, NJ) onto the provisional restorations and the adjacent teeth as a separating medium.

3. Mix autopolymerizing acrylic resin (Pattern Resin; GC America, Inc, Alsip, Ill) in a mixing cup until it reaches a dough stage.

4. Apply petroleum jelly to prevent the acrylic resin from sticking to the gloves. Manipulate the autopolymer-



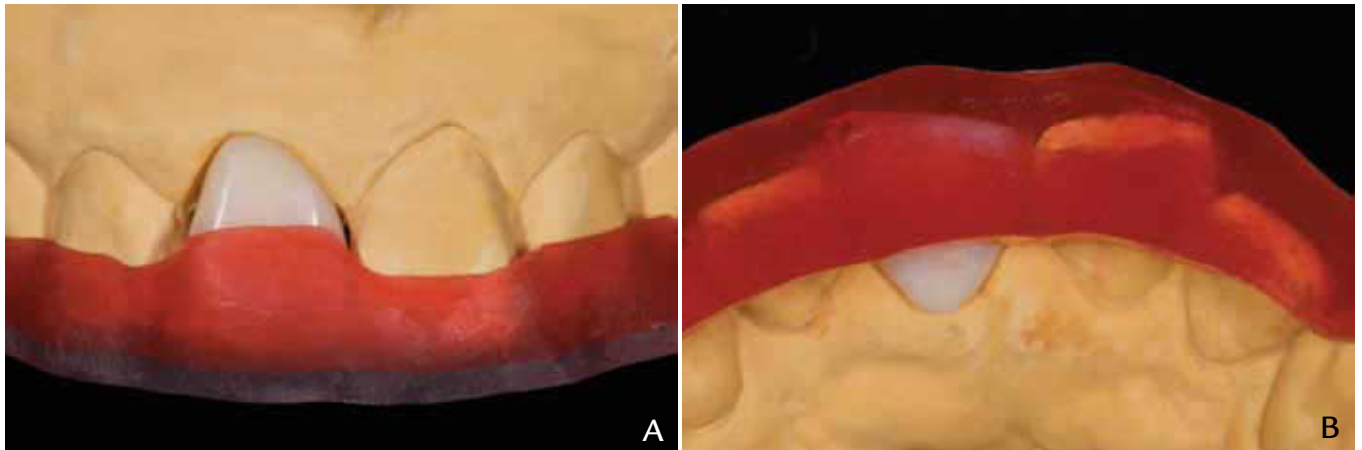
**1** A, Facial view of definitive cast with completed provisional restoration. B, Clear splint sheet is placed over autopolymerizing acrylic resin so that incisal edges are visible.

<sup>a</sup>Assistant Professor, Department of Restorative Dentistry.

<sup>b</sup>Assistant Professor, Department of Restorative Dentistry.

(J Prosthet Dent 2010;104:401-402)





**2** A, Facial view of completely seated finished repositioning key and provisional restoration on cast. B, Verification of complete seating is possible due to incisal transparency of repositioning key.

izing acrylic resin to the appropriate shape and size, and adapt it onto the provisional restoration(s) and adjacent teeth on the stone cast.

5. Add monomer onto the incisal/occlusal surface of the acrylic resin, before the material has completely set, using a brush (Benda Brush; Pearson Dental Supply Co, Sylmar, Calif), and adapt a 0.060-inch-thick polyethylene terephthalate glycol-modified (PETG) splint sheet (Treatment Sheet Clear .060; Ultradent Products, Inc, South Jordan, Utah) until the incisal/occlusal edges are visible as they contact the clear sheet (Fig. 1, B).

6. As the acrylic resin polymerizes, gently remove and seat the repositioning key to prevent locking of the

acrylic resin to the cast. After the material has polymerized, gently remove it from the stone cast, and then trim the excess resin and splint material using a carbide rotary cutting instrument (no. H251ACR.104.060; Braseler USA).

7. Clean the provisional restoration and the repositioning key to remove any residual debris and/or petroleum jelly. Place the provisional restoration in the repositioning key and verify its seating on the stone cast (Fig. 2).

8. Reline the provisional restoration intraorally with acrylic resin using the repositioning key.

## REFERENCES

1. Roe P, Kan JY, Rungcharassaeng K. Fabrication of a provisional restoration using a translucent matrix and composite resin for immediate tooth replacement. *Pract Proced Aesthet Dent* 2009;21:245-7.
2. Simeone P, Pilloni A. Temporary crowns: repositioning key as a new technical approach in the clinical relining phase. *J Esthet Restor Dent* 2004;16:284-8.
3. Small BW. Indirect provisional restorations. *Gen Dent* 1999;47:140-2.

### Corresponding author:

Dr Phillip Roe  
Center for Prosthodontics and Implant Dentistry  
Loma Linda University School of Dentistry  
11092 Anderson St  
Loma Linda, CA 92350  
Fax: 909-558-0324  
E-mail: proe03d@llu.edu

### Acknowledgments

The authors thank Dr Joseph Kan and Dr Kitichai Rungcharassaeng for their constructive feedback on the manuscript.

Copyright © 2010 by the Editorial Council for *The Journal of Prosthetic Dentistry*.

## Journal Back Issues Available to Subscribers

As a service to our subscribers, copies of back issues of *The Journal of Prosthetic Dentistry* for the preceding 5 years are maintained and are available for purchase from Elsevier, Inc until inventory is depleted. Please write to Elsevier, Inc, Subscription Customer Service, 6277 Sea Harbor Dr, Orlando, FL 32887, or call 800-654-2452 or 407-345-4000 for information on availability of particular issues and prices.