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TIPS FROM OUR READERS

A technique for assessing the fit of a removable partial denture framework on the patient and on the definitive cast

Yung-tsung Hsu, DDS, MS

The lack of fit of a removable partial denture has been reported as the most common problem in the treatment of patients with partial edentulism.[1] The misfit could be a result of poor laboratory procedures, a distorted impression, or ridge remodeling after delivery. Evaluating the fit of a removable partial denture starts at the framework evaluation appointment. The evaluation consists of the fit on the definitive cast and the fit intraorally.[2,3] Damage to the definitive cast by inserting and removing the framework must be avoided, and the components of the framework should fit well on the cast before it is placed intraorally.[4] Clinicians usually use components, such as rests and lingual plates which have contacts with the teeth as references for the fit evaluation. Disclosing media, including disclosing paste (PIP; Keystone Inc) and aerosol-disclosing indicator (Occlude; Pascal Inc), could be used to evaluate the fit of the framework; however, the minor connector in the edentulous area is seldom evaluated clinically because it may not affect the seating of the framework and is difficult to visualize directly. Maximum support from the edentulous area can be obtained only when the denture base fits well over the tissue. The definitive partial denture is processed on the cast; therefore, the seating of the framework on the cast should be the same as it is intraorally. Any irregular or sharp projection on the tissue side of the framework may abrade the cast and interfere with complete seating intraorally. If the interference is not removed completely, the seating of the framework will be different between the cast and the mouth. Because of the finishing procedure after the casting of the framework, a space under the minor connector in the edentulous area of the cast may not indicate the misfit of the framework; however, the framework may rock on the cast or intraorally and this rocking may mislead the clinician.

This report presents a technique using a low viscosity impression material to evaluate the framework fit on the

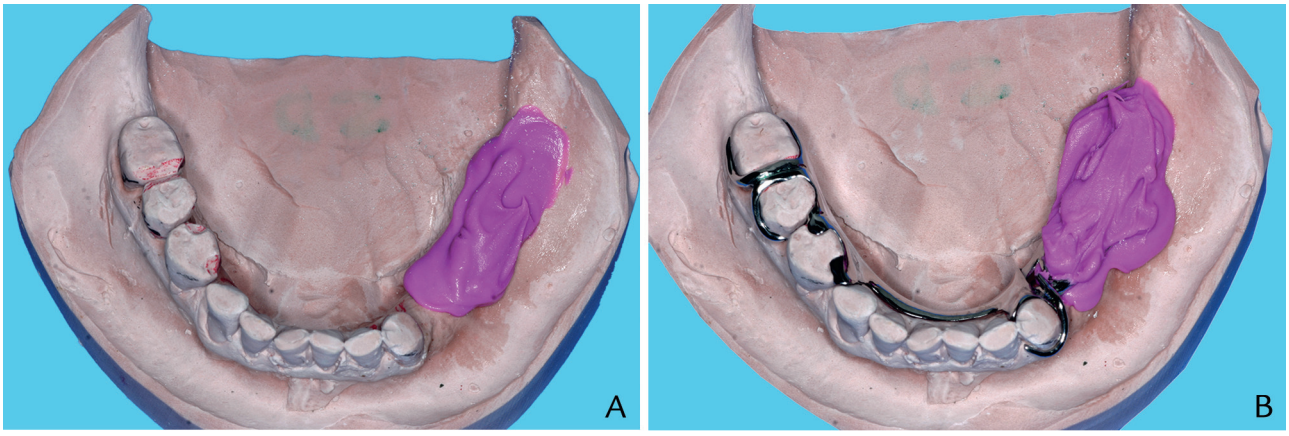

Figure 1. A, Inject polyvinyl siloxane registration material onto cast. B, Place framework over registration material.

Associate Professor, Department of Restorative Sciences, University of Alabama at Birmingham, Birmingham, Ala.

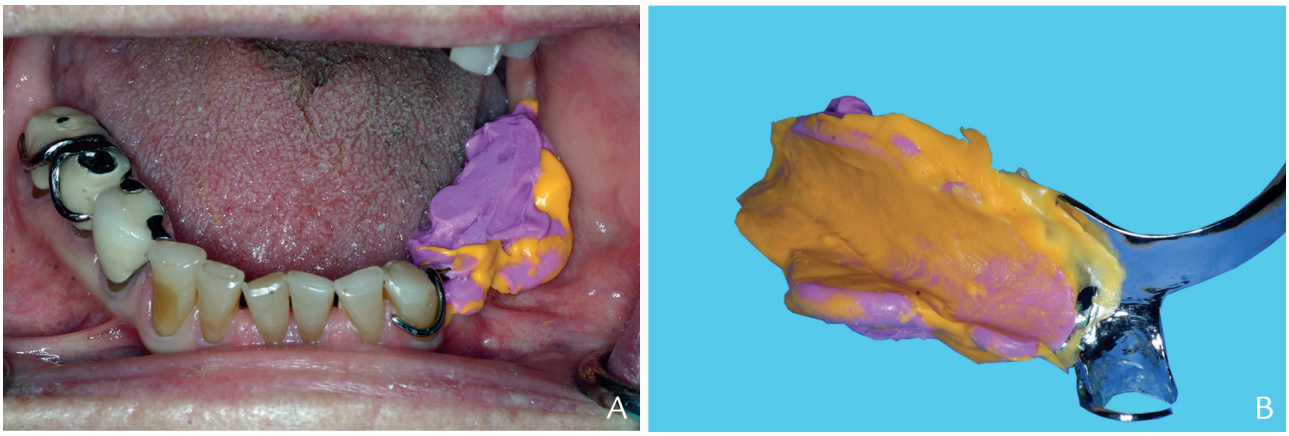

Figure 2. A, Inject low viscosity polyvinyl siloxane material on tissue surface and place intraorally. B, Evaluate thickness of impression material.

edentulous area. The thickness of the impression material represents the discrepancy of the fit of the denture base between the cast and intraoral tissue. If there is a significant thickness of the impression material, the clinician should reevaluate whether there is any interference between the framework and the teeth and whether the framework should be remade. If this discrepancy occurs on the distal extension area, a corrected cast impression procedure [5-7] could be made at the framework evaluation appointment or the denture should be relined after delivery.

PROCEDURE

1. Paint a layer of lubricant (Vaseline; Chesebrough-Pond's USA) on the distal extension area of the definitive cast.
2. Inject a polyvinyl siloxane (PVS) occlusal registration material (Regisil PB; Dentsply Caulk) onto the lubricated area (Fig. 1A).
3. Place the framework onto the cast (Fig. 1B) immediately after step 2. Use the minor connectors, such as rests or indirect retainers, to evaluate the complete seating of the framework.
4. After the registration material polymerizes, remove the framework with the registration material. Trim excess material if necessary.
5. Inject a low viscosity PVS impression material (Aquasil Ultra XLV; Dentsply Caulk) on the tissue surface of the registration material and place the framework intraorally immediately. Ensure the rests fit on the rest seats of the teeth (Fig. 2A).
6. After the impression material polymerizes, remove the framework from the mouth.
7. Carefully examine the thickness of the impression material at different locations; this represents the space between the denture base and the tissue (Fig. 2B). If necessary, reexamine the interferences between the teeth and framework and repeat steps 2 to 6.
8. If the thickness of impression material is satisfactory, remove all the PVS materials from the framework and proceed with the fabrication of the record base and tooth arrangement.

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Corresponding author:
Dr Yung-tsung Hsu
School of Dentistry
University of Alabama at Birmingham
1919 7th Avenue South, Rm 534
Birmingham, AL 35294
Email: ythsu@uab.edu