

The Need for Accurate Pickup Impressions

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Quality dentistry is performed with the thought of minimizing breakage by specific design considerations, therefore extending the durability of the appliance, and/or the need for emergency repairs. Unfortunately this is often not the case.

Dental school records between 1970 and early 1980 show a decreasing number of edentulous patients that may decrease the availability of sufficient experiences for the clinical training of dental students.¹ Studies demonstrate that 60% of patients with full dentures have at least one significant issue with their prosthesis. Of this 60%; 50% lack stability, 10% to 18% lack integrity (lack of quality control), and 12% to 42% have retention issues.² Patients with removable partial dentures are more likely to have untreated root caries than are patients without removable partial dentures (RPD).³ Due to these and other problems, “emergency” repairs for removable prostheses must be provided often by the dental professional and the dental laboratory. Patients with these needs cannot be rejected and as a result the dentist must know how to deal with these situations properly.

COMMON TYPES of REMOVABLE PARTIAL DENTURE REPAIRS

The most common examples of emergency RPD repairs include: adding a tooth to be extracted; fixing a denture tooth that has broken; repairing a tooth that has debonded from the acrylic base due to contamination in the processing phase or excessive wear of the supporting base. Severe wear of the supporting base may also cause broken flanges in tissue bearing areas. Another common type of repair is the relines of ill-fitting dentures because of bone resorption process or immediate denture construction.

In the case of relines, it is not possible to accurately repair these if the appropriate pick up or wash impression, is absent for the dental laboratory technician. The pickup impression will give the dental technician an exact reproduction of how the appliance fits in the oral cavity.

PICKUP IMPRESSIONS: A VARIETY OF TYPES



Figure 1. Pickup impression with alginate of a removable partial denture (RPD) metal framework. Teeth Nos. 19 and 20 will be added.



Figure 2. The poured impression.



Figure 3a. A double impression for the reline and repair of a Kennedy Class II RPD. Note the light-body wash impression in the tissue bearing surface of the distal extensions. A heavy-body impression material has been used to pick up the wash impression.

The most common impression is done with the appliance in the patient's mouth and a pickup is performed with alginate material in an appropriate tray. Immediate pouring of impression will diminish distortion and help to ensure a better fit (Figures 1 and 2).

Note the close adaptation of the framework to stone model and the lack of stone covering the framework. The most common mistake is pouring the impression without observing if the prosthesis was displaced in the impression material when removed from the patient's mouth. It is imperative that the appliance be repositioned before pouring the impression.

Crown and bridge materials like polyvinylsiloxane and polyethers are more expensive alternatives that can be also used to do pickup impressions. They are materials of choice when doing reline repairs. Light-body consistencies are especially recommended since they tend to prevent tissue displacement when taking the impression.

Frameworks with acrylic areas requiring a reline will need a wash impression of the tissue-bearing surface picked up by a second impression. Such cases may be described as a double impression technique (Figures 3a to 3c).

In cases where the abutment is compromised, and a lack of stability is an issue for a good impression, the literature reports that the use of a quadrant tray is acceptable for this procedure. With this method, the pickup impression can be stabilized with the patient's bite.⁴



Figures 3b and 3c. Views of the poured impression. Care has been taken to prevent displacement of the RPD in the impression material. Please observe the precise seating of framework in model and the absence of No. 21 replaced by the impression material.



Figure 4. A distal extension RPD retrofitted with an attachment to solve a retention issue due to the lack of a posterior abutment. Note the black laboratory impression copings that will hold analogs before pouring the working model.



Figure 5. A poured model from an alginate pickup impression to be used to repair a broken flange in the tuberosity area.

Pickup impressions of attachments for dentures over implants (with relining of intaglio surface) can also be done as an indirect technique instead of a direct pickup of the attachment with resin material (Figure 4).

Some other uses for the pickup impression can go from the simple repair (Figure 5) to more complicated cases including: in cases involving precision attachment placement when combining fixed and removable appliances (Hybrid); implant supported overdentures when using Hader bar attachments with appropriate clips; indexing before soldering multi-unit fixed bridges that have suffered distortion during casting; and with the altered-cast technique.

CONCLUSION

Being able to perform accurate pickup impression techniques is a must for the dental practitioner who wishes to perform quality reline and repair services for his or her dental patient. The quality of work that can be done by the dental laboratory technician is directly related to the quality of the pickup impression supplied by the dentist. Asking your dental laboratory to provide impression feedback and technical advice with the purpose of improving materials and/or techniques is an appropriate request that can be made by the practitioner.

References

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