

Tips from the lab

COMMON LABORATORY ROADBLOCKS

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The cases that doctors have the most difficulty with from start to finish are not fixed or removable cases, but combination cases. Combination cases are defined as those that involve both fixed and removable prosthetics. These cases require more advance planning than others in dentistry due to their complexity. With the numbers and variations of connectors and attachments, it's no wonder that dentists have a hard time keeping all of this in mind.

At Glidewell Laboratories, we offer a planning service to make

sure that all combination cases get off to a good start. A dentist simply needs to send us study models and a bite registration, and one of our experienced technical advisors will diagram some potential solutions to these complex problems. The nominal fee for this planning service is credited to the doctor's account when he or she sends the case to the laboratory. The goal is to ensure that dentist, laboratory, and patient have a clear view of how this treatment is going to proceed long before the bur touches the tooth.

In order to help you with your

combination cases, I am going to outline the most common problems with the many combination cases that come through our laboratory.

The biggest problem we see has to do with bites. Baseplate wax is not an acceptable bite registration medium when used in a thin sheet. While it works well when part of a bite rim, it simply undergoes too much distortion to be truly useful. Fast-setting, rigid bite registration silicones are the preferred way to take a bite. In addition to not distorting due to temperature or shipping, these bites

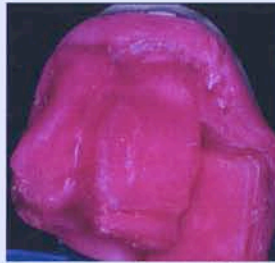
allow us to seat the models into a firm position before constructing the appliance.

Many times a patient will have a collapsed bite and the dentist would like to increase vertical dimension with the use of a removable appliance. In a case like this, however, the bite needs to be taken at the new vertical dimension of occlusion. More times than not, the bite is taken at the old vertical dimension of occlusion which leads to various bite problems at the try-in and finish stages.

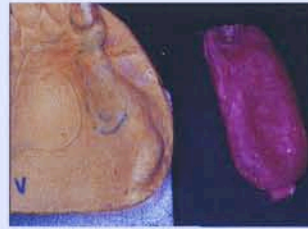
Another common problem we



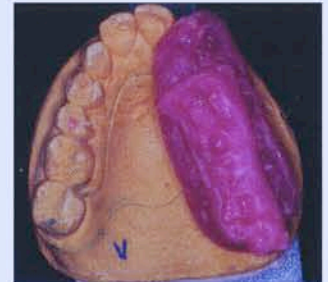
This full arch bite was taken with a large ball of baseplate wax. In addition to the distortion that can take place in the patient's mouth, major distortion can also occur in a delivery person's car or a shipping box.



In addition to being a full arch baseplate wax bite, this is also a mush bite due to the lack of lower teeth on one side. Fast-setting, hard-silicone bite registrations are the preferred method for establishing bite registrations that will stay accurate during shipping and construction of the partial denture.



When all the teeth in one quadrant are missing, it is necessary to use a bite rim for occlusal registrations. This doctor has taken a mush bite by pressing baseplate wax between the soft tissues and the opposing teeth. We are rarely able to construct accurate appliances from mush bites.



To complicate matters, this doctor also placed bite registration material on the wax mush bite. A wax bite rim would have provided a much better occlusal registration to mount these models, and would have given this doctor a much better chance at receiving an ideal partial denture.



This doctor has prescribed a new removable partial denture to open this patient's vertical dimension, yet the bite registration was taken at the patient's collapsed vertical dimension. These types of bite registrations need to be taken at the new vertical dimension the patient requires.



This doctor has prepared two maxillary teeth for a fixed bridge with attachments for a new removable partial denture. By not impressing the contralateral side, it will be impossible to properly survey this model for attachments and the upcoming partial.



This doctor has prepared a tooth for a crown on a patient who will be receiving a new removable partial. Without any anatomical information from the contralateral side of the mouth, the success of the partial is compromised.



The most common problem seen with pick-up impressions is a partial not completely seated. In this case, excess space is evident between the palatal framework and the model underneath.



With only three teeth remaining in the lower arch, this doctor has prepared all three of the teeth for crowns and has taken a double-arch impression even though there are no occlusal stops. A new bite registration at the correct vertical dimension is mandatory.



Although not always readily apparent in the impression, when it is poured it is easy to see that the lingual bar of this removable partial denture was not completely seated against the tissue. When examining the impression, there should be no impression material between the partial framework and the tissue.

see in the laboratory is when a couple of teeth are being prepared for crowns on a patient who will be having a new partial as well. The dentist usually will send us the impressions of the preparations for fabrication of the crowns, but will neglect to send the full arch model that shows the other teeth in the arch. We need to see the other teeth in the arch so that we can properly survey the new crowns we are fabricating to ensure a well-fitting partial that will make both dentist and patient happy. It is a mistake to prep and cement the crowns, and then start to think about the partial.

Pick-up impressions are another area in which we encounter roadblocks. Pick-up impressions are utilized on a combination case when there will be an attachment between the partial and the fixed prosthetics. Typically, the fixed prosthetics will be tried into the mouth and evaluated for fit and esthetics. At that point, a pick-up impression should be taken with the units in place in the patient's mouth. The subsequent model with the fixed units in place will be used to construct the partial.

In addition to not taking pick-up impressions, the other mistake we see is impressions where the fixed units moved out of place when the impression was being seated. The best way to prevent this — especially for multiple fixed units — is to place a small amount of temporary cement inside the crowns or bridges to hold them in place during the pick-up impression process. This way, you can be assured that the lab will receive an accurate model. When taking pick-up impressions with partials in the mouth, it is crucial to make sure that they remain seated as well. I like to use denture adhesive under the saddles to keep it in place. Flowable composites also can be used to temporarily "lock" a partial in place.

Many dentists try to skip the custom tray step, only to be disappointed with the prosthesis when it is delivered. Custom trays are mandatory to achieve optimum results with all complex fixed and removable prosthetics. We saw a case come through the lab recently where the doctor had prepared all the remaining teeth in the upper arch for a combo case, then took the final impression in a double-arch tray rather than a custom tray. We see putty being used in double-arch trays — a practice that none of the impression material companies endorse either.

Most dentists are unaware of all the attachment possibilities that are available for combination cases. Use your laboratory as a resource to see what design they feel will work the best. It's a good feeling to go into a case knowing exactly what needs to be prepared, and what rest preps you need to place to ensure a successful outcome for your patients.