

# Time-saving fixed lingual retainer using DuraLay resin transfer

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**T**here is general agreement on the necessity of fixed lingual retainers to prevent relapse in many patients after active orthodontic treatment.<sup>1-3</sup> Several methods for delivering fixed lingual retainers have been introduced.<sup>2,4-9</sup> However, bonding a lingual retainer is still challenging because it requires long working time and has a risk of contamination from saliva and moisture, which can cause bonding failure. In addition, it is difficult to adapt the retainer wire to perfectly fit the lingual surfaces of an anterior tooth. We developed a method of fabricating a fixed lingual retainer using DuraLay resin (Reliance Dental Manufacturing, Worth, Ill) and have used this method with satisfactory results for nearly 10 years on thousands of patients. This technique has proven to be a reliable, convenient, and time-saving procedure.

## PROCEDURE

A few weeks before debonding, take an impression and pour an accurate cast in hard stone. Placing the fixed lingual retainer before debonding provides several advantages, including avoiding the relapse that might occur immediately after debonding, giving a patient time to adapt to the lingual retainer before debonding, and reducing complications at the debonding appointment.

Gently bend a length of multi-stranded wire to accurately fit the cast. Check the adaptation of the wire to ensure passive location against all tooth surfaces to be retained. Our preferred material is 0.0175-in multi-stranded wire (Unitek Coaxial, 3M/Unitek, Monrovia, Calif). This 6-stranded wire has a relatively smooth

surface conformation and offers increased mechanical retention and enough flexibility to allow physiologic movement of the teeth.<sup>10,11</sup>

Apply DuraLay separating medium to the cast and fix the shaped wire to the cast. Then mix the DuraLay resin and apply it gently between the distal surface of the second premolar and the mesial surface of the first molar (in case of 3-3 lingual retainer, between the contact points of the canine and premolar) (Fig 1). DuraLay resin is easy to manipulate and requires less time than other resin materials because it is fast setting and easy to detach from the cast. In addition, DuraLay resin is known to have good dimensional stability.<sup>12,13</sup>

Set Nola dry field system (Nola Specialties, Hilton Head Island, SC) in position and meticulously clean, etch, and prime the teeth to be bonded. Instead of a common air syringe, using warm, dry air at this stage is helpful. The warm, dry air is especially advantageous when we treat a patient with gingival recession and hypersensitive teeth.

Remove the wire from the cast and accurately transfer it to the teeth, using the DuraLay resin guide. Fix the transfer resin portion firmly with utility wax (Fig 2). Each tooth is then bonded individually with the Transbond XT system (3M/Unitek).<sup>14,15</sup> First, bond all teeth other than the 2 terminal teeth. Cut the terminal portions of the wire and remove the DuraLay resin, and then bond the 2 terminal ends. The wire ends should not be exposed. Bond each resin portion carefully so that it tapers to a smooth, feathered edge and ensures accessibility by a toothbrush. At this stage, we manipulate the light-curing bonding resin with 2 blades of resin-contouring instruments (GC 11, GC Co., Tokyo, Japan); this has proven useful in resin filling (Fig 3, A). Some minor polishing might be required to smooth the resin surface so that food impaction and tongue irritation are minimized. We use a Soflex (3M/Unitek) bur for this purpose (Fig 3, B). The finished retainer is shown in Figure 4.

## CONCLUSIONS

DuraLay is a methylmethacrylate material widely used in fixed prosthodontics; it provides dimensional

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**Fig 1.** After length of multi-stranded wire is bent to fit cast, DuraLay resin is applied to hold wire between second premolar and mesial surface of first molar.



**Fig 2.** Transfer resin portion is firmly fixed with utility wax in mouth for 5-5 lingual retainer.



**Fig 3. A,** Each tooth is bonded individually with Transbond XT system; **B,** minor polishing is required to smooth resin surface.



**Fig 4.** Finished lingual retainers. **A,** 5-5 fixed lingual retainer; **B,** 3-3 lingual retainer.

stability and convenience. As a transfer material, it seems to be appropriate in orthodontics, also. The technique described above is simple and accurate. Additionally, because the terminal portions of the retainer wire are firmly held in the mouth, the clinician can place the retainer alone, without fear of contamination or displacement of the wire. This procedure can offer comfortable manipulation, acceptable stabilization, and shorten both chair and laboratory times.

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