

TECHNIQUE CLINIC

Use of Rare-Earth Magnets for Bonding Lingual Retainers

Although several methods have been described for bonding fixed lingual retainers, precise positioning has always been problematic.¹⁻⁸ The use of transfer trays^{9,10} is time-consuming and carries the risk of leakage of adhesive into the gingival embrasures and subsequent oral-hygiene problems. Elastics,² dental floss,¹¹ and ligature wires can facilitate retainer placement, but can still cause inaccurate placement by shifting during polymerization.¹² Likewise, applying finger or plier pressure to hold the retainer wire for curing is risky, because any movement can weaken the bond.

This article describes the use of neodymium-iron-boron rare-earth magnets for placement of a bonded lingual retainer.

Procedure

1. After debonding, take impressions and create working casts.
2. Mark the area for retainer placement on the cast, and fabricate a retainer from an .0175" twisted, flexible wire (A).
3. Clean and dry the labial surfaces of the teeth to be bonded.

4. Using cyanoacrylate adhesive,* attach magnets of appropriate size to the labial surfaces of several of the teeth to be incorporated in the lingual retainer, including the two terminal teeth (B). We use magnets** that are 3-4mm in diameter and 1-1.5mm thick.

5. Position the retainer against

the teeth with a pair of tweezers, then remove the tweezers, allowing the magnets to hold the retainer in place (C).

6. Check the retainer for proper placement. Minor changes can be made by adjusting the positions of the magnets with light pressure from a finger or plier. If a magnet needs to be moved, the glue should be reapplied.

7. Dry and etch the lingual surfaces of the teeth to be bonded, and affix the retainer with a light-cured adhesive.

8. After removing the magnets with a debonding plier, clean and polish the tooth surfaces and retainer wire (D).



*Super Glue, Super Glue Corp., 9420 Santa Anita Ave., Rancho Cucamonga, CA 91730; www.supergluecorp.com.

** Indigo Instruments, 169 Lexington Court, Unit I, Waterloo, ON N2J 4R9, Canada; www.indigo.com.

Discussion

Magnets can stabilize a retainer wire securely enough to allow precise positioning, even in the maxillary arch of a deep-bite patient. Proper placement helps prevent occlusal wear of the composite over the retainer wire, thus reducing the risk of breakage.¹³

We have used rare-earth magnets to bond about 15 maxillary and 35 mandibular lingual retainers. When a proper bonding protocol was followed, no cases of bond failure were recorded during six months of follow-up. The method of lingual retainer placement shown here is not only reliable, convenient, and efficient, but also inexpensive, since the same magnets can be used for numerous patients.

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