

Lingual Fix Retainer: Made Easy

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ABSTRACT

Background: The stability of orthodontic treatment is a major concern to both orthodontists and patients. The problem involved in retention is so great as to test the utmost skill of the most competent orthodontist, often being greater than the difficulties being encountered in the treatment of the ease up to this point. Many orthodontists believe that permanent retention with a fixed retainer is the only way to maintain ideal dental alignment after treatment. With the advent of direct bonding, the use of fixed retention on the palatal or lingual surfaces of the anterior teeth has increased in popularity. Such retainers have significant advantages for the patient in terms of comfort and aesthetic acceptability. The multistrand retainer is more commonly used and positioned with a direct bonding technique. This leads to several practical difficulties, not least of which is the problem of holding the wire in position whilst the adhesive sets without risk of disrupting the bond. Many methods have been developed to hold the wire on the lingual surface of the teeth. It may be held using finger, dental floss, orthodontic elastics ligatures, and ligature tacks welded to the retainer wire. These methods have certain shortcomings inherent in them. To overcome these problems new technique has been developed.

Keywords: Lingual fixed retainers, orthodontics, dentistry.

INTRODUCTION

The stability of orthodontic treatment is a major concern to both orthodontists and patients. Several long-term studies have demonstrated a strong tendency for relapse of anterior alignment after orthodontic treatment and retention. For this reason, many orthodontists believe that permanent retention with a fixed retainer is the only way to maintain ideal dental alignment after treatment. Retention following active tooth movement can be affected by the use of either removable or fixed retainers. With the advent of direct bonding, the use of fixed retention on the palatal or lingual surfaces of the anterior teeth has increased in popularity. Such retainers have significant advantages for the patient in terms of comfort and aesthetic acceptability. Most of the orthodontic cases require bonding of fix lingual retainer after the orthodontic treatment.^{1,2} The multistrand retainer is more

commonly used and positioned with a direct bonding technique. This leads to several practical difficulties, not least of which is the problem of holding the wire in position whilst the adhesive sets without risk of disrupting the bond.³⁻⁴ Lingual retainer fabrication requires meticulous work; Till now, many methods have been developed to hold the wire on the lingual surface of the teeth. It may be held using finger, dental floss, orthodontic elastics ligatures, and ligature tacks welded to the retainer wire. These methods have certain shortcomings inherent in them. To overcome these problems new technique has been developed.^{5,9}

Indications for bonded retainers:¹

The indications differ between the canine-to-canine bonded retainer and the flexible wire bonded retainer. Lee considered the following to be indications for placement of a bonded canine-to-canine retainer:

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1. Severe pretreatment lower incisor crowding or rotation;
2. Planned alteration in the lower intercanine width;
3. After advancement of the lower incisors during active treatment;
4. After nonextraction treatment in mildly crowded cases;
5. After correction of deep overbite.

The flexible wire retainer appears to have different indications for clinical use.

Zachrisson listed the following:

1. Closed median diastemas;
2. Spaced anterior teeth;
3. Adult cases with potential postorthodontic tooth migration;
4. Accidental loss of maxillary incisors, requiring closure, and retention of large anterior spaces;
5. Spacing reopening, after mandibular incisor extractions;
6. Severely rotated maxillary incisors
7. Palatally impacted canines.

TECHNIQUE

- Take an impression of the arch and prepare a working model.
- The twisted 0.010" ligature wire or multistrand wire is adapted on the working model along the lingual surface of the teeth to be stabilized. (Figure 1)
- Pumice and polish the lingual surface of teeth on which retainer is to be bonded. Check the position of retainer wire in mouth and adjust if necessary.
- Etch the enamel surfaces of incisors with 37% phosphoric acid for 30 seconds. Wash and blow dry. Apply a coat of primer.
- Lingual retainer is held in place by means of orthowax on the both ends of retainer wire. (Figure 2 A & B)
- Retainer wire is then tacked with adequate amount of adhesive on incisors.
- Check with a mouth mirror that enough adhesive is used. Light curing is done. (Figure 3 A & B)
- After the retainer wire is bonded on incisors, orthowax is removed from both ends on canine.

- Pumice and polish lingual surface of canines. Then wire is bonded on canine as described earlier. (Figure 4 A & B)
- Instruct the patient to maintain the oral hygiene.



Fig 1: Study model with lingual wire adaptation.



Fig 2a: Maxillary Lingual retainer hold with orthowax.



Fig 2b: Mandibular lingual retainer hold with orthowax.



Fig 3a: Maxillary lingual retainer light cured.



Fig 3b: Mandibular lingual retainer light cured.



Fig 4a: Maxillary polished lingual surface & canine wire is light cured.



Fig 4b: Mandibular polished lingual surface & canine wire is light cured.

CONCLUSIONS

The Orthowax helps the clinician to overcome the difficulties in the fixed lingual retainer stabilisation with good patient compatibility and is operator friendly to adjust the position of the lingual retainer, at the same time holding the lingual retainer firmly without slippage. It saves clinicians time and is easy to fabricate. It is cost-effective. Since, it does not irritate the gingiva. A method has been presented for indirect placement of multistrand retainers in the upper arch. It has been designed to overcome the difficulties of adapting and holding the wire in position whilst the adhesive sets.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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