

An Innovative Device for Stabilization of Fixed Lingual Retainer

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ABSTRACT

Maintaining the incisor alignment after active orthodontic therapy is the crucial step for the orthodontist. Bonded lingual retainers are the retention of choice with minimal adverse effects. However, there is a need for a device that holds the retainer wire in its stable position without any interference to the isolation procedure. This device may achieve the above requirements. This article aims to introduce a simplified clinical innovation that stabilizes the lingual retainer to enhance better bonding procedures. This innovative clinical technique is simple, easy to fabricate, with commonly available materials in daily day to day practice that helps the clinician to perform better bonding procedure with reduced chair-side time and increased clinical efficiency.

Clinical Relevance: This simplified innovative method described for fabrication and placement of the bonded cuspid-to-cuspid/bicuspid-to-bicuspid offers a practical and effective way of stabilizing anterior teeth.

KEYWORDS: Bonded retainer, Clinical innovation, Retention, Stainless steel wire

INTRODUCTION

In 1934 Professor Albin Oppenheim stated that "retention is the most challenging problem in orthodontia; in fact, it is the problem".¹ Maintaining the incisor alignment after the active orthodontic therapy is the crucial step for the orthodontist.² This can be achieved by planing proper retention phase prior to the start of the treatment but not at the end of the treatment.³ stabilization of the results accomplished by active orthodontic therapy is done with the help of retainers. The most commonly used retainers are 1) Removable retainers, 2) Fixed lingual retainers to prevent orthodontic relapse.⁴

Bonded lingual retainers are the retention of choice over removable appliances with minimal effects on speech, mastication, oral hygiene, and comfortable to the patient.⁴ however bonding a lingual retainer is technique sensitive, require long chairside time without proper adaptation of retainer wire to the lingual surface of the teeth and improper isolation leads to bond failure.⁵

Various methods have been employed to simplify the direct bonding of a lingual retainer using elastics, separators, boxing wax, silicone impression materials, transfer trays, memosil trays, etc.,⁵⁻⁸

However, there is a need for a device that holds the retainer wire in its stable position without any interference to the

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isolation procedure. This device may achieve the above requirements.

Aim:

The aim of this article is to introduce a simplified clinical innovation that stabilizes the lingual retainer wire during direct bonding and reduces the chairside time.

Materials and Methods:

The materials used in the study are commonly used in clinical practice and cost-effective
0.0175 twisted stainless steel(SS) wire
19 gauge stainless steel wire
Young's universal plier
Working models.
Syringe cap
Acrylic material

Technique:

1. Working casts were prepared using dental stone and position the casts in maximum intercuspation.
2. Use pre-fabricated retainer wires (0.0175 SS wire) for maintaining the desired incisor alignment in its place.
3. Adjust the retainer wire along the contours of the lingual surfaces of the teeth.
4. Fabricate blunt retentive tag in the form of a question mark at its end using young's universal plier to avoid

damage to soft tissues while adjusting the device to hold the retainer wire in position.

5. It should follow the contours of the palatal surface and extends labially by passing through the incisal surface (central arm).
6. It acts as a central arm that runs between two central incisors.
7. Similarly, fabricate two lateral arms with a 45-degree bend towards the canine and then 90-degree bend facing palatal surface between lateral incisor and canine. From there, it follows the shape of the central arm at its end.
8. On the other end, three arms were joined using acrylic resin and syringe cap, which acts as a handle.

The device consists of a handle and three arms. It resembles a claw of an eagle. (Fig 1)

Central arm: it should follow the inter-proximal surface of two centrals

Lateral arms: it follows the inter-proximal area between lateral and canine.

9. Now the device is entirely fabricated, and check it on the working models. (Fig: 2)
10. Transfer the retainer wire into the patient mouth and stabilize the retainer wire in its position with the help of this device. (Fig: 3)



Fig1: Claw shaped stabilizer: one central arm, two lateral arms.

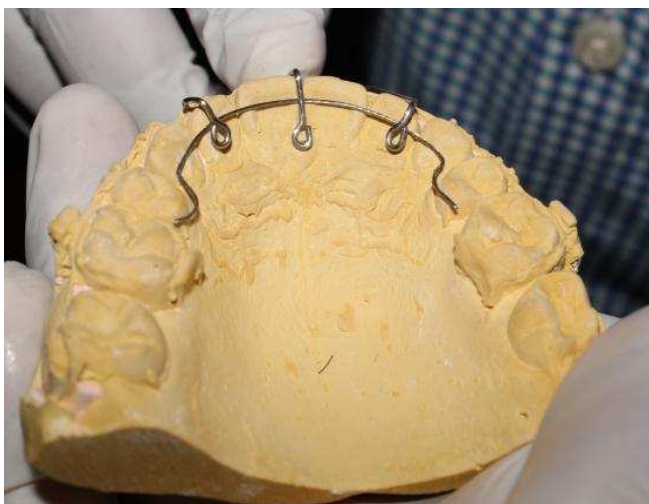


Fig2: Checking the stabilization of retainer wire with the device.



Fig3: Transfer the device into the patient mouth.



Fig4: After bonding the retainer wire.

Results:

The purpose of this paper is to introduce a simplified device that helps in bonding a lingual retainer wire in its desired position to enhance better stability, retention and reduced chair-side time.

Discussion:

After the fabrication of the device, adapt the 0.017 SS twisted retainer wire along the contours of the palatal surface of anterior teeth in its stable position, and check for any occlusal interferences. This device will help the operator to hold the retainer wire in its place and improves visualization enables him to perform better bonding to achieve long term stability. As the ends of the device are blunt, so there is less chance of causing iatrogenic damage to soft tissues. (Fig: 4)

Advantages:

1. Simple and easy to fabricate
2. Economical
3. Reduced chairside time
4. Stabilization of the retainer wire
5. Minimal patient discomfort
6. Better visualization
7. Less iatrogenic damage to soft tissues.
8. Good patient co-operation can be achieved.

Conclusion:

This simplified innovative method described for fabrication and placement of the bonded cuspid-to-cuspid/bicuspid-to-bicuspid offers a practical and effective method of stabilizing anterior teeth.

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