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Lingual Retainer Stabilizer (LIAR)

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Abstract

Retention at the end of orthodontic treatment is as important as the treatment itself. Bonded lingual retainers are very commonly and necessarily used both in the maxillary and mandibular arches as they provide better patient compliance and convenience.

The placement of lingual retainer is a technique sensitive process which requires proper isolation, etching and bonding procedures. Moreover, stabilizing the lingual retainer on the tooth surface during bonding is a challenging task for the Orthodontist.

The purpose of this paper is to introduce a new simple technique of stabilizing the lingual retainer in orthodontic finished cases. The aim of the technique is to simplify the clinical steps that orthodontist will go through and to reduce the chair side time..

Keywords: Lingual retainer stabilizer, Orthodontic treatment, Clinical innovation

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1. INTRODUCTION

Moyer defined retention as "maintaining the newly moved teeth in position long enough to aid in stabilizing their correction". It is considered as a major step in stabilizing the results accomplished through active orthodontic treatment (1).

There are two types of retainers: a removable and a fixed retainer. The retainer should be well tolerated by the patient with minimal negative effects on speech, mastication, oral hygiene, comfort and the general health of the oral tissue. The retention phase is initiated after orthodontic treatment completion to prevent orthodontic relapse (1).

Several methods for delivering fixed lingual retainers have been introduced. 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 (2).

Some of the methods for stabilizing the lingual retainers include Modified Kesling's separators for stabilizing lingual retainer wire (3), Stabilizing retainer using separators (1), Fixed lingual retainer using DuraLay resin transfer (2).

Here we are presenting a noble method of stabilizing a lingual retainer which can be easily fabricated chair side without the need of laboratory procedures.

CLINICAL INNOVATION REPORT

Armamentarium required are:

1. Young's Universal Plier
2. 24 Gauge round stainless steel wire.
3. Used modules strip
4. Lingual retainer (twisted ligature wire)
5. Patient's Plaster model

The steps of fabrication are as follows:

1. A 3-inch length of 24 gauze round stainless steel wire is cut and straightened to full length.
2. A small U loop is made at one end of wire.

3. Then two concentric helices are made of 2-3 mm internal diameter followed by the other end being bent into another helix perpendicular to the first loop.
4. The second arm or palatal arm is gradually curved so as to adapt well on to the lingual/palatal surface of the anterior teeth. 2-3 such stabilizers are fabricated (Fig. 1&2).

Fig.1. Fabricated spring (Top view)

Fig. 2. Fabricated spring (Lateral view)

5. A used module strip is taken and 5-6 holes are made equidistant from each other. The 'U' loop end of the fabricated stabilizer is engaged in one of the holes of the module holder and second stabilizer through another hole at the other end (Fig.3).
6. The stabilizers can be engaged through the sequence of holes on the module strip as per requirement during bonding (Fig.4,5 & 6).

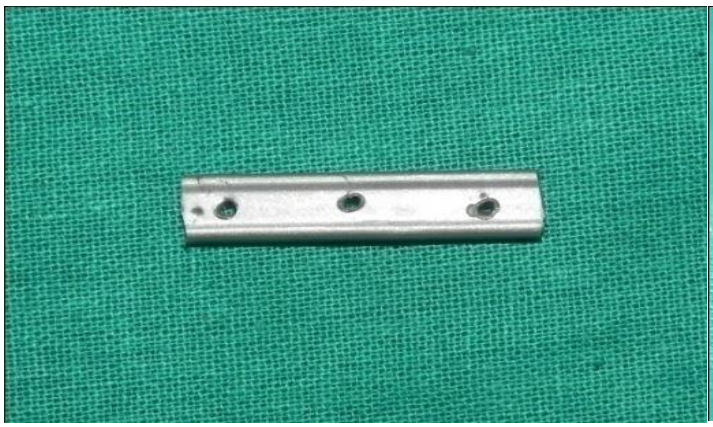

Fig 3. Used module strip

Fig. 4 The complete Lingual retainer stabilizer

Fig. 5. Lingual retainer stabilizer on model (Top view)

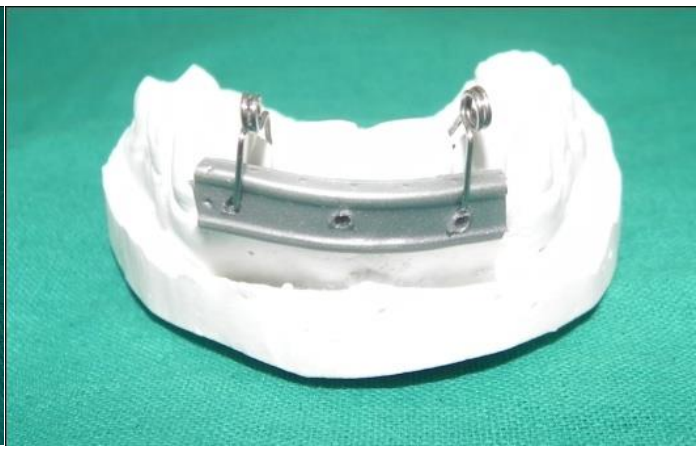

Fig. 6. Lingual retainer stabilizer on model (Front view)

3. DISCUSSION

A successful retainer is one which maintains the position of the teeth and assists in achieving a balance between the muscular forces of the lips, cheeks or tongue and the forces of occlusion. Bonding of an upper or lower fixed lingual retainer using stainless

steel wires of different sizes and shapes is a common orthodontic procedure. They are popular over removable retainers as they are considered reliable, independent of patient cooperation, highly efficient, easy to fabricate, and almost invisible, and that bonded retainers are applicable for both mandibular and maxillary anterior teeth. Reliability is of prime importance among all those advantages. There is greater clarity in relation to the compatibility of fixed retention in terms of periodontal health and on variations that may facilitate maintenance of optimal hygiene (1).

The retainer can be constructed in a dental laboratory, made at chair side, or it can be purchased in prefabricated form. Possible predisposing factors for bonded retainer failure are mainly the thickness and quality of the retainer wire, the type of composite used for bonding, the manner in which deficiencies are handled in terms of wetness or dryness of the bonding field, and occlusal trauma to the wire. Factors, including the influence of operator technique and improper isolation of bonding field might override the effects of retainer design or materials.

Hence there would always be a need for a technique that provides the greatest possible isolation and stabilization of the retainer wire to be bonded. The assembly discussed in this article fulfills the above criteria suitably and is economical and time saving as well.

CONCLUSION

Proper stabilization of the retainer wire prior to bonding provides good adaptation, proper positioning of the retainer wire and good bond strength while eliminating contamination of etched surfaces which might occur during wire positioning before bonding.

The advantages of the presented assembly are

1. It is easy to fabricate & can be prefabricated so reduces chairside time.
2. It efficiently holds the retainer wire leaving optimum space to bond the retainer.
3. It provides good isolation of lips as well,due to thickness and position of the module strip.
4. It can be removed quickly and easily.
5. No additional armamentarium is required, hence economical also.

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