

FEATURES SECTION

How to ... place a lower bonded retainer

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Post-orthodontic relapse of lower incisors is a common phenomenon. Sometimes a bonded retainer is fitted to prevent this relapse. In this article, we suggest a handy clinical technique of fitting a lower bonded retainer, which is convenient and easy to carry out.

Key words: Bonded retainer, relapse

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Introduction

After completion of orthodontic treatment, a strong tendency towards relapse is reported.^{1–3} This relapse tendency is especially evident if:

- the lower incisors have been excessively proclined during treatment;
- where a number of significant rotations have been corrected;
- in initially spaced dentitions;
- where some expansion of the arch has been provided;
- where the inter-canine width has been significantly altered.

In these clinical situations, a bonded retainer is very useful, especially when the patient is keen to minimize risk of any relapse whatsoever. A good review of bonded retainers is written by Bearn.⁴ There are several techniques, direct and indirect, available for placing bonded retainers.^{5–15} The technique used in this article is one of the several techniques using elastics for holding the wire during bonding.

In this article, the technique of placing a lower bonded retainer will be described in a number of steps. From a psychological point of view it is far better to place the lower bonded retainer before removing the lower fixed appliance. Thirty minutes spent placing the lower bonded retainer will be accepted by the patient in anticipation of the fixed appliance removal in the near future. This is preferable to spending 30 or 40 minutes

on removal of the upper and lower appliances, immediately followed by half-an-hour placing another appliance; the bonded retainer.

Technique

We recommend that a lower bonded retainer is fabricated at the chair side in 0.0175 twist flex wire as it only takes a few seconds to make a curve into a straight piece of wire. There is no need to put loops on either end of the wire where it is bonded onto the lingual surface of the canines (Figure 1). It is useful to take all the activity out of the wire by very quickly annealing the wire with a gas torch (Figure 2). The wire should be annealed very briefly as excessive heat will damage the wire increasing the risk of fracture. The wire should then be quenched under cold water.

Placement of the retainer

The old arch wire is then taken out of the patient's mouth and small elastics can be placed over three of



Figure 1 A curved wire

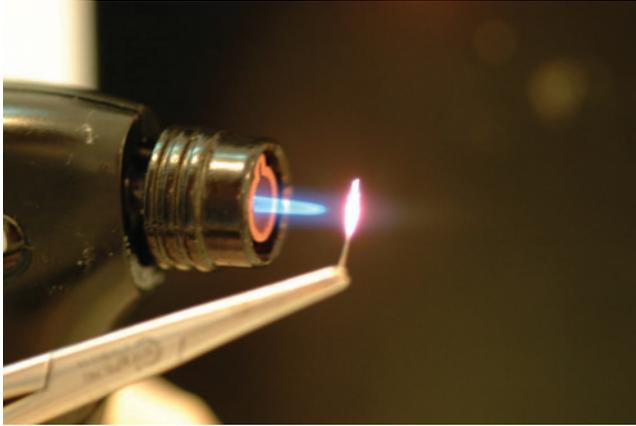


Figure 2 The wire is being annealed

the four lower incisors. With the brackets still in place, it is very easy to locate the elastics in position (Figure 3a,b).

The preformed wire is first placed passively on the lingual surfaces of lower canine to canine and the red elastics are then picked up with a small probe from the lingual surface over the wire retainer, and stretched back over the labial surface of the incisors and placed



Figure 3 (a,b) Placing elastics around incisors



Figure 4 (a,b) A wire accurately located on the lingual surface of lower incisors with elastics

gingival to the brackets (Figures 4a,b). It is important to stress that the wire must be held passively. The danger of this otherwise practical approach is that the elastics may slightly distort the wire. This can either promote tooth movement or increase the risk of bond failure.

Following 10–15 seconds pumicing, the lingual surfaces of lower canine to canine are etched for 30 seconds (Figures 5a,b).

Bonding the retainer

We find Transbond® L.C. is a good composite to use because of the high filler content, reducing the risk of failure due to wear of the composite. After carefully drying the teeth with moisture and oil-free air, an etched appearance can be seen on all six lower anterior teeth. A foam sponge is used to place the unfilled resin liquid onto the recently etched surface and this is briefly cured (Figures 6a–c).

The Transbond® L.C. composite can either be applied with Teflon-coated instruments (Figure 7a) or with the

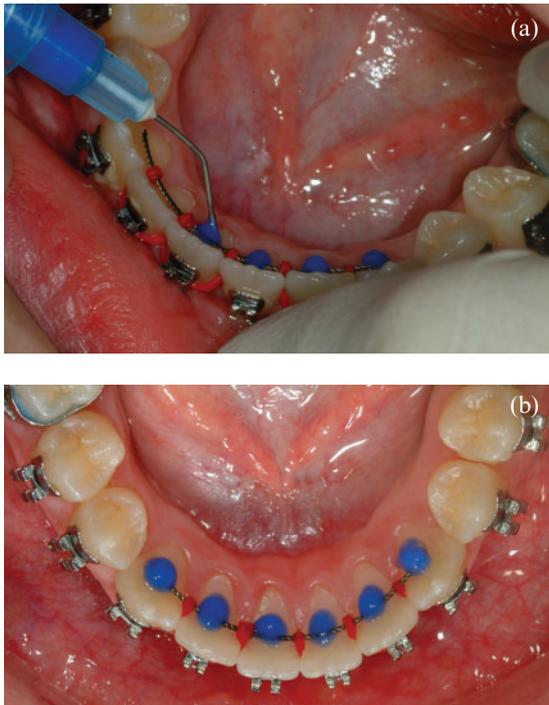


Figure 5 (a,b) Etching the lingual surfaces of lower incisors

foam sponge (Figure 7b) depending upon operator preference. The foam sponge is used to flatten the composite over the archwire on to the lingual surface of the tooth.

A small amount of composite needs to be placed on the lingual surface of lower 3-3 and subsequently cured. The amount of composite should be big enough to cover the wire only in the middle of the crown and not all the way along the crown surface. The red elastic bands are very easily removed by simply stretching them with a short probe and cutting through the elastic with ligature cutters (Figure 8). It must be stressed that a good moisture control is an absolute requirement for successful use of a bonded retainer. The use of cotton rolls in conjunction with a saliva ejector is very useful to achieve a dry field.

The tooth-composite interface is checked with a probe to make sure there is no ledge present at the adhesive and tooth junction (Figure 9).

This then leaves the lower fixed bonded retainer in place, which requires regular annual checks. This responsibility can often be passed on to the General Dental Practitioner and they are frequently happy to look after the bonded retainers, if requested to do so.

Once the bonded retainer is in place the fixed appliance can be removed (Figure 10). The patient is

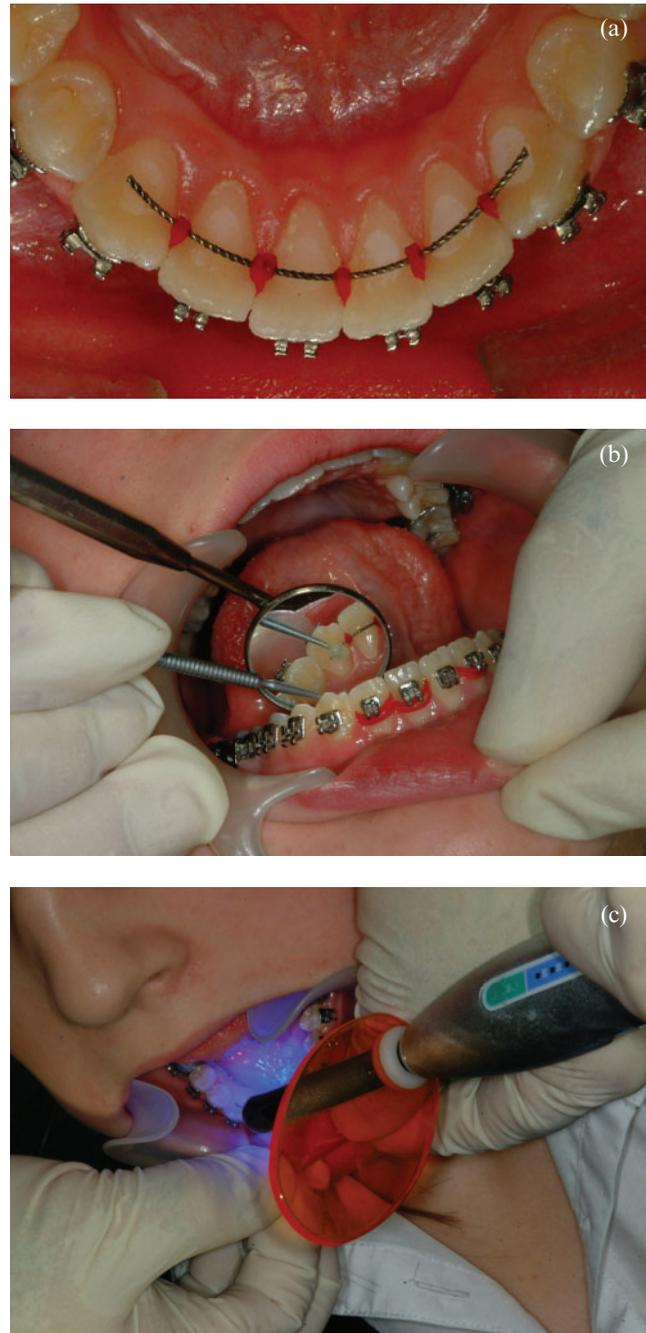


Figure 6 (a) Etched lingual surfaces. (b,c) Bonding liquid being applied and light cured

then given specific oral hygiene instruction on how to use super floss under the retainer. However, they should be told to return urgently should one of the bonds become loose. The long-term care of these retainers is controversial. However, if the Orthodontist has made arrangements with the General Dental Practitioner, it may alternatively be possible for the patient to attend



Figure 7 (a) Composite being applied with a Teflon-coated instrument and (b) with a foam sponge

there, rather than with the Orthodontist. In addition, if the General Dental Practitioner is going to be checking the retainer then they should be informed and advised how to check it, and if required, repair it.



Figure 8 Cutting the elastic with a ligature cutter

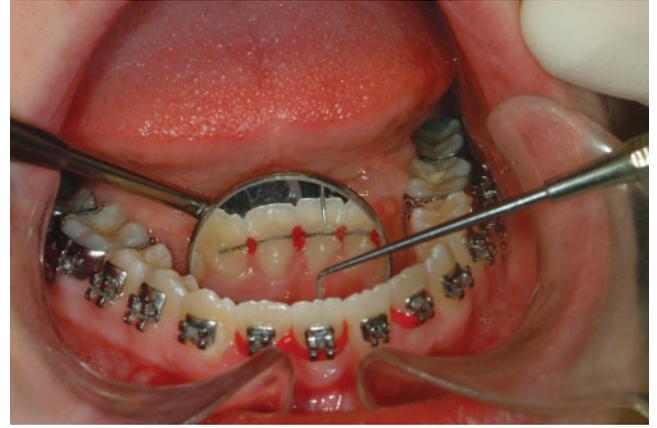


Figure 9 A probe is used to check that the junction between the tooth and composite is smooth



Figure 10 The lower bonded retainer in place after debonding

Conclusion

We have shown in this article that fitting a lower bonded retainer is an easy procedure if the step-by-step technique, we have suggested, is followed. It can be carried out at the chair side without any laboratory work involved.

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