



Active lingual retainer - A Case series

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Introduction

Removable retainers are appliances used extensively to preserve stability and prevent relapse following orthodontic treatment. The magnitude of their importance as a part of routine retention procedure has gained ascent especially since the tendency for relapse occurs in 70 % of cases. Patients invariably need to wear retainers as it takes 8 months for periodontal fibres to reorganize, thus requiring minimum 12 months of retention period. But unfortunately due to various reasons relapse has been seen to occur, which lead us to the only alternative i.e. fixed lingual retainers especially in lower anteriors.

In this day and age many orthodontist are advocating the use of fixed lingual retainers in the maxillary arch as well. The ease of fabrication and aesthetics is one of the reasons that lingual retainers have gained such popularity. The patient compliance is also well accepted in case of lingual retainers.

However, even with the use of fixed lingual retainers, relapse may occur due to breakage. In such cases active lingual retainers can be used to bring about minor corrections & the need to undergo fixed orthodontic treatment could be counteracted. A clinical procedure first demonstrated by Dr. Marino Musilli¹ illustrates how lingual retainers can be used to bring about active tooth movement. Anna mariniello² and liouej³ have also published case reports, where they have described the use of varied active lingual retainers. In this case series we put forth 3 cases, treated in similar manner

Materials and Methods

The armamentarium consisted of 0.0175" multi-stranded stainless steel wire, a composite kit and cheek retractors when and if needed. The wire was chosen not only because it was a standard part of armamentarium, but for its ideal flexibility allows for individual tooth movement thus preventing unnecessary bond failure and irregular surface of wire provides greater surface area for bonding which helps in treatment protocol. Due to good formability and the proper load/deflection ratio, this wire is optimal to achieve alignment and/or levelling. The possibility of shaping loops allows the clinician to easily manage the

opening and closing of spaces, derotations, as well as minor intrusions/extrusion.

A simple U loop design was used, as it helps in correction of minor crowding and spacing with activation of the loops. Further step bends (in and out bends) were incorporated in the wire to correct the rotation and torquing of teeth which were in accordance to biomechanical principles explained by burstone^{4,5}. Activation of the loops were done accordingly during each appointments.

Cases

Case 1

A 21 year old female patient had a chief complaint of irregularly placed upper front teeth even after orthodontic treatment. The patient had undergone orthodontic treatment 5 years back for correction of crowding. On examination, patient had a class I molar and canine relation with crowding of 3-4 mm in the upper anteriors (Fig 1 A). Since the patient was concerned only with correction of her smile and was not willing for a conventional orthodontic treatment, the lingual active retainer therapy was advised.

Case 2

A 47 year old female patient reported with a chief complaint of irregularly placed upper right lateral incisors and expressed displeasure in getting braces of any kind due to her age and social concerns. On examination patient had a class I molar and canine relation with generalised spacing in anteriors. Periodontal health was just not satisfactory and needed improvement for mild recession in anteriors (Fig 2 A). Since patient was only concerned with 12 overlapping 11 the lingual active retainer therapy was advised (Fig 2 B). She was instructed to maintain good oral hygiene using modified bass technique.

A, Case 3, a 25 year old male patient with upper anterior crowding was treated with active lingual retainer

Treatment was completed in a period of 2 months period with well aligned upper anteriors.

Conclusion

The use of lingual active retainer was able to correct

minor correction of crowding and spacing in Patients. Treatment was successfully completed in a period of 3-4 months without much discomfort to the patients. Hence active lingual therapy can be used as an adjunctive treatment option for relapse cases.

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Illustrations

Illustration 1

CASE 1: Fig.1B, Placement of active lingual retainer with loops 5 mm in length.
Fig.1 C: 3 months after treatment, a passive lingual retainer is placed.
Post treatment photos from left to right frontal and occlusal in case 1



Illustration 2

Fig.1B, Placement of active lingual retainer with loops 5 mm in length.
Fig.1 C: 3 months after treatment, a passive lingual retainer is placed.
Post treatment photos from left to right frontal and occlusal in case 1



Mid treatment occlusal photo with appliance bonded lingually to teeth surface in case 1
C



Illustration 3

CASE 2: Fig.2 A, a 47 year old female patient with spacing in the upper anteriors.



Illustration 4

Case 2 Pretreatment photos from left to right in a clockwise direction frontal, right lateral, occlusal. \nFig 2B. A 0.0175â€• multi-stranded stainless steel wire was used to make loops of 5mm placed interdentially. Mid treatment photos from left to right occlusal and right lateral in case 2

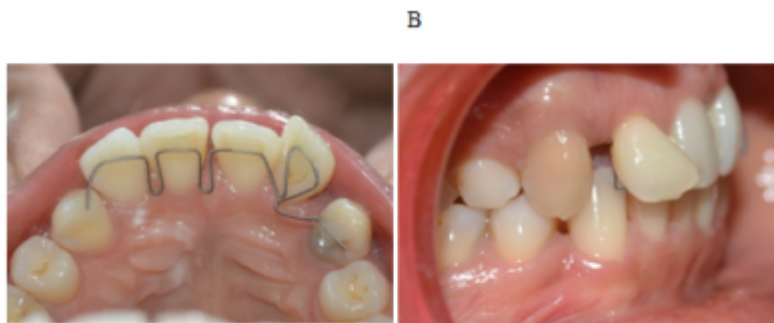


Illustration 5

Fig 2 C, Post treatment photos from left to right in clockwise direction frontal, right lateral, occlusal in case 3



Illustration 6

Case 3

Fig 3 A



Fig 3 A - pretreatment photos of case 3 from to right frontal, occlusal.

Fig 3 B



Fig 3 B - posttreatment photos of case 3 from left to right frontal, occlusal