

LABIAL STABILIZATION DEVICE OF MAXILLARY EXPANSION

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ABSTRACT:

Tooth size arch length discrepancy (TSALD) is one of the main reasons for crowding and malocclusion. Expansion of the dental arch is one of the ways to achieve space. The main challenge is to hold the teeth in the corrected position after cross bite correction. This case report describes one simple and easy way to retain the molars in the corrected position. It is simple and easy and does not require fabrication of any special appliance and can be worn and used during the period of fixed orthodontic therapy without much discomfort to the patient.

Key words: Expansion, Labial stabilization, maxillary arch expansion, retention.

INTRODUCTION

Dental crowding is relatively common in primary and early permanent dentition. Various methods and techniques are followed to relieve crowding and correct arch^{1,2,3}. Holding the corrected malocclusion in that position becomes the tough job. Due to abnormal muscle function and mastication, relapse becomes inevitable.^{4,5}

The causes of relapse of can be:

- Relapse due to growth related changes.
- Relapse due to imbalance in the muscular forces.
- Relapse due to not eliminating the cause of malocclusion
- Relapse occurs as the occlusion is not settled or finished properly.

This article briefs about the method of maintaining the expanded dentition in permanent as well as deciduous dentition.

Case report

A 12 year old male patient reported to the OPD with the complaint of mal aligned teeth. On examination the patient had a constricted maxillary arch with a v shaped arch form. He had mouth breathing habit. Upper left canine was out of the arch and the laterals were palatally placed (Fig .1a,b,c). A banded maxillary expander was fixed in place and the patient was instructed to activate the screw twice daily to achieve the expansion rate of 0.5 mm /day (Fig 2 a,b). Expansion was carried out for 2 weeks. After 2 weeks the maxillary expansion appliance was removed and custom made retainer (Fig.3) was given and treatment is continued with (Fig.4a, 4b and 4c) fixed orthodontic appliance.

Retainer: A 19 gauge (1.1mm) stainless steel wire is taken and vertical loops are given in the center of the wire

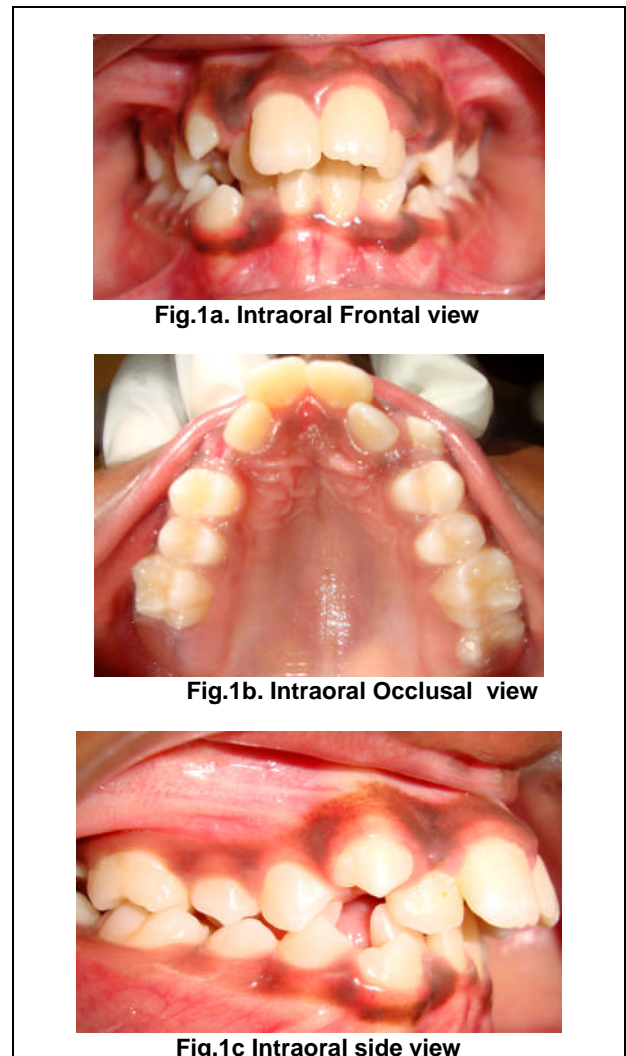


Fig.1a. Intraoral Frontal view

Fig.1b. Intraoral Occlusal view

Fig.1c Intraoral side view

coinciding the midline of the upper arch in the expanded arch form (Fig.3). Then the wire is inserted in the headgear tube from left to right upper 1st molars and anteriorly vertical loop is ligated to the arch wire for stabilization as well as on the buccal sides (Fig 4 c) at the premolar areas. Stiff wire with the loops in the anterior segment gives resiliency and at the same time rigid wire holds the molar from collapsing during alignment stage

Discussion

Relapse is one of the primary drawbacks of orthodontic treatment. Because of the buccinators mechanism and other forces on the arch, there is a high probability of relapse . More over when simultaneous fixed therapy is done the arch wire too exerts forces on the buccal segment.

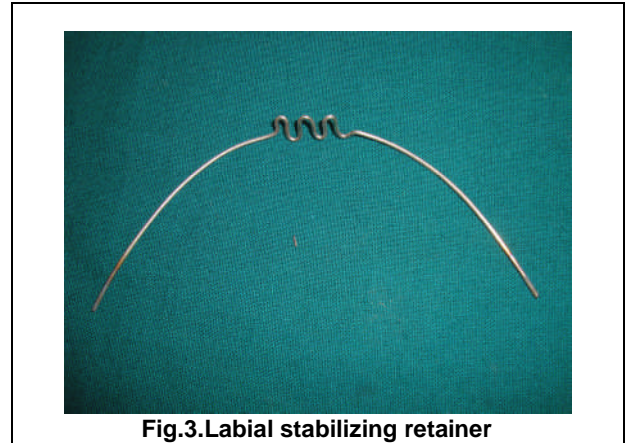


Fig.3.Labial stabilizing retainer

The advantage of this retainer is

1. Easy to fabricate
2. Easy to adjust
3. Acts as an substitute to transpalatal arch and can be activated to expand the arch further
4. It can be done at the chair side and saves time.
5. Cost effective.
6. Can be used along with fixed orthodontic therapy.
7. Minimal patient discomfort.
8. It eliminates the discomfort of transpalatal arch.
- 9.

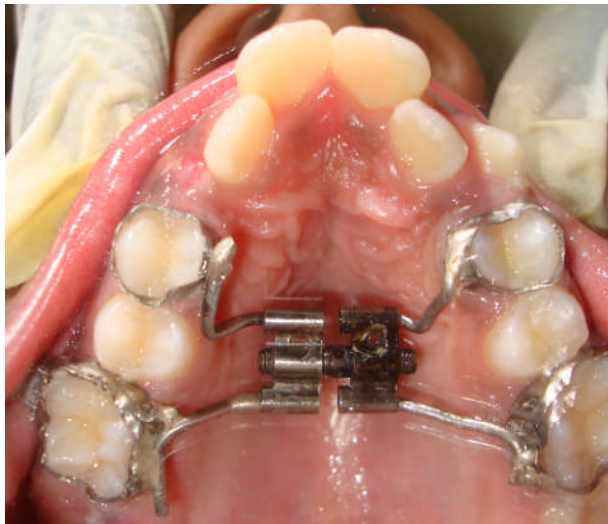


Fig.2a. Banded Maxillary Expansion-pretreatment



Fig.2b. Banded Maxillary Expansion-post-treatment



Fig.4a. Retainer in place with Fixed appliance -Frontal view



Fig.4b.Retainer in place with Fixed appliance -Occlusal view



Fig.4c. Retainer in place with Fixed appliance-
sagittal view

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CONCLUSION

This is one of the simplest method to retain the arch expansion. This method is not cumbersome to the patient and it can be done at the chair side and saves the chair side time.

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