



ESTHETICALLY PLEASING , HIGHLY EFFECTIVE – A PALATAL HOOK RETRACTOR (A CASE REPORT)

Dental Science

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ABSTRACT

The transpalatal arch can be used as an adjunct during orthodontic treatment to help control the movement of maxillary first molars in three dimensions including molar rotations, uprighting and maintaining transverse dimensions posteriorly. Here, a modified transpalatal arch is used along with MBT prescription with an extension soldered to the TPA, which is in line and near to the centre of resistance of the incisor for the correction of its proclination. This modification prevent the round tripping in the treatment that would have occurred in complete maxillary strapup with continuous archwire. Moreover, it corrected the axial inclination of the tooth within a very short span of time without any reciprocal reaction on adjacent teeth.

KEYWORDS

Modified TPA, Centre Of Resistance, Axial Inclination

Introduction

In recent years, the demand for orthodontic treatment in adults has greatly increased. Excessive protrusions that invite injury or avulsions, need treatment at an early instance to avoid permanent damage, for eg: class II division I malocclusions with incisor proclination.<sup>1</sup> In addition, patients with proclined anteriors requires instant esthetic facial results and that their soft tissue profile should be more regarded than hard tissue.

They are often reasons why persons get teased. Thus, they affect the self-esteem.<sup>2</sup> Such a malocclusion can be corrected by using a Hawley appliance. But it causes tipping while retracting the proclined incisors thereby increasing an already existing deep bite and the visibility of incisors.

Also, patients often have a tendency to flick the appliances in and out, which leads to stress fracture of the retaining cribs or clasps, and the resulting loss of retention will encourage the patients to leave them out. Intrusion along with retraction has to be achieved in these kind of cases with fixed or partially fixed appliances.<sup>3</sup> We present a case of simultaneous intrusion and retraction of a single anterior tooth with a modified palatal hook retractor.

Case report

A 19 year old adolescent female patient was reported to the Department of Othodontics, for the correction of proclined upper incisor which affected her social life. Extraorally she had a balanced face with pleasant profile with the maxillary dental midline coincident with the facial midline. Intraorally she presented a class I molar and canine relation with proclination of 11 which increased the overjet to 7mm. The lower midline had a deviation to the left side by 3mm. Moreover, the maxillary arch had a crowding of about 2mm , and mandibular arch of about 3mm. (Fig:1)

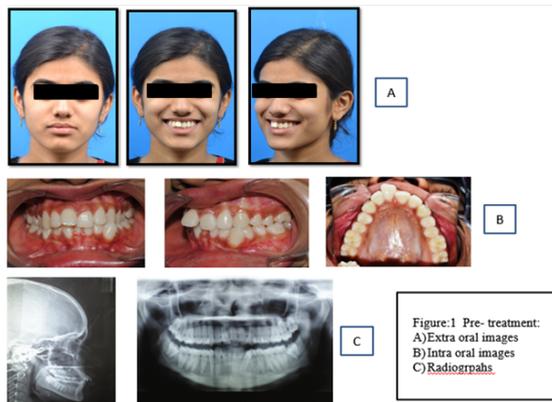


Figure:1 Pre-treatment:  
A)Extra oral images  
B)Intra oral images  
C)Radiographs

Treatment objective:

Improve the axial inclination of the central incisor without altering the molar and canine relation , coincide the dental midlines and relieve crowding in upper and lower arch.

Treatment alternative :

Treatment plan included fixed mechanotherapy with the use of modified transpalatal arch for the correction of proclined central incisor.

Treatment progress:

Banding was done for the upper molars followed by fabrication of transpalatal arch and a hook soldered to it. The direction of hook was in line and near to the centre of resistance of the central incisor. A lingual button was bonded on the palatal aspect of the central incisor. An elastic force of 25 grams which was measured by a Dontrix gauge was placed. (fig:2) The patient was instructed to change the elastics every 48 hours. Within 2 ½ months of treatment the incisor had come to the position in which the further treatment could be followed with fixed mechanotherapy.(figure 3)

Figure: 2



Immediately after placing the appliance

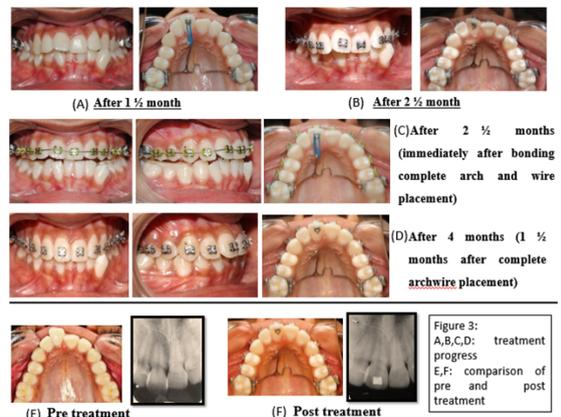


Figure 3:  
A,B,C,D: treatment progress  
E,F: comparison of pre and post treatment

**Treatment result**

Most of the treatment objectives were achieved with a short course of treatment with controlled dental movements. (figure 3)

**Discussion :**

Frequently we come across many cases where there is proclination of a single tooth giving the patient many psychological and esthetic problem.

These cases require the correction of the involved tooth first followed by the complete comprehensive treatment. If not, the complete strap up followed by continuous archwire will lead to adverse proclination effect on adjacent teeth.

To avoid this round tripping we have come up in our department with a modified mechanics which will prevent this round tripping and unwanted tipping that leads to the root resorption.

In the initial stages of treatment, this mechanics offers many advantages over alternative techniques as it is extremely well tolerated, requires no/less adjustment by the patient and allows accurate and rapid positioning of the teeth. Most of the treatment objectives are achieved with a shortcourse of treatment with controlled dental movements.

**Indications:**

- When there is sufficient space in the arch for the proclined incisor to be retracted.
- When only one or two incisors / anteriors are proclined very severely, complete bonding not possible .

**Limitation**

- When there is not enough space in the arch for the proclined incisor.
- When there are more than two proclined anteriors.

**Advantages:**

- Patients' esthetic and psychological problems can be reduced early in the treatment.
- Round tripping can be prevented since adverse effects on adjacent teeth can be avoided.
- Light forces can be used.
- No root resorption.
- There will be both intrusion and retraction.

**Conclusion:**

This modified mechanics is effective in reducing the proclination of incisor and preventing the round tripping of adjacent teeth (As an adverse effect of placing continuous archwire in such kind of clinical problems). It also reduces the patients' esthetic and psychological problems to a larger extent within a short period of 2 ½ months as in the presented case.

**References:**

1. Refined begg for modern times :Dr Vijay P.Jayade :pg no 48
2. Orthodontic concept and strategies : Van der linden
3. Salzmann JA. Psychological factors in patient attitudes. American journal of orthodontics. 1970 Sep 1;58(3):295-6.