Short Communication

In-office fabrication of a modified molar distalizing jig

ABSTRACT

The rise of the soft tissue paradigm has led to the rise of nonextraction therapy in orthodontics. Molar distalization is a key aspect in nonextraction therapy as well as Class II correction in certain cases. This article deals with the fabrication of a modified molar distalization jig. The salient features of this jig are that it is easy to fabricate with materials routinely available in an orthodontic office as well as very economical.

Keywords: Class II, Class II correction, molar distalization, nonextraction treatment

INTRODUCTION

Nonextraction treatment has gained an even greater importance over the last quarter century. This is due to the rise of the soft tissue paradigm, wider use of interproximal reduction, and to some extent, patient aspirations.

Class II malocclusions still remain the most widespread of malocclusions. The nonextraction approach has slowly but surely gained a foothold in the correction of Class II malocclusions as well.

Distal movement of the maxillary first molars is a common goal in the treatment of the Class II molar relationship and in the resolution of tooth size/arch length discrepancy in the maxillary arch.[1]

A number of approaches are available for the correction of the Class II molar relation. Cervical headgear popularized by Kloehn[2] was conventionally used for this purpose. However, due to certain limitations of this modality, mainly questionable patient compliance, it's use has diminished. A number of newer approaches came forward. These include the pendulum appliance,[3] vertical holding appliance,[4] Wilson's Bimetric arch,[5] Distal Jet,[6] K-loop,[7] and Jones jig[8] to name a few. Each of these appliances has their advantages as well as their shortcomings.

The Jones jig is a popular option due to its effectiveness and ease of use. However, ordering the jig is an additional expense to the office. Once ordered, receipt of the appliance also takes additional shipping time.

This article describes a modified design of the Jones jig that can be fabricated in office, with materials available in the orthodontic office.

Steps in the fabrication of the jig [Figure 1]:

1. The molar tube is placed such that the headgear tube lies gingivally
2. A straight piece of 0.9 mm stainless steel wire is bent gingivally such that its distal end goes into the 0.045" molar tube
3. To the distal end of this bend, a 17 × 25 or 19 × 25 stainless steel wire is soldered depending on whether a 0.018" or 0.022" slot is used
4. Another hook fabricated from a 0.6 mm stainless steel wire

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is also soldered to the previously stated 0.9 mm wire

5. A nickel-titanium molar distalizing spring that exerts a force of about 75–100 g is inserted mesially onto the 0.9 mm wire
6. A traction hook was welded onto a crimp and was inserted mesial to the spring
7. The second premolar is banded, and a Begg bracket is welded to the buccal as well as the lingual side
8. The shape of the palatal button is modified as our experience has shown that this configuration is better tolerated by the patient while providing better anchorage. This was inserted into the molar sheath of the first molars with the aid of a 0.9 mm wire [Figure 2]
9. A second spring exerting about 75 g of force is placed between the Begg bracket and the molar sheath on the lingual side. The additional spring prevents any unnecessary rotations. This is especially useful in Class II situations where the first molar does not have a mesiolingual rotation.

CASE REPORT

A 22-year-old female patient reported to the department with an Angle's Class II Division 2 subdivision malocclusion.

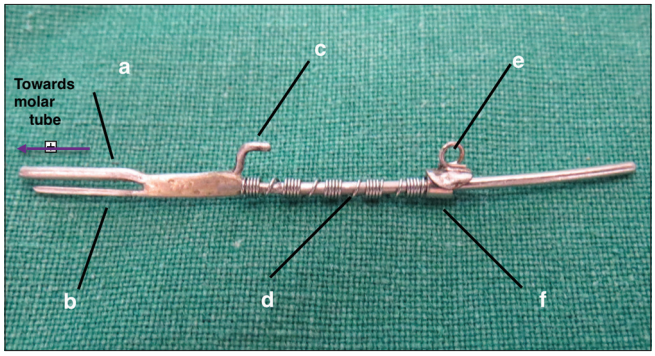

Figure 1: Parts of the jig. (a) 0.9 mm stainless steel wire, (b) 17X25 or 19X25 stainless steel wire (depending upon bracket slot size), (c) Hook made with 0.6 mm stainless steel wire, (d) Nickel- titanium distalizing spring, (e) Traction hook, (f) Crimp

Figure 3: Predistalization intraoral view

Figure 5: Postdistalization intraoral view

The patient had an average growth pattern with an end on molar relation on the right side [Figure 3]. The jig was fabricated as described above and was activated on the buccal side by ligating the traction hook to the Begg bracket on the second premolar [Figure 4]. On the lingual side, the second spring was placed between the Begg bracket and molar sheath of the first molar. The required distalization was achieved in 4 months [Figure 5]. The movement was retained with a temporary anchorage device and was subsequently used to aid in space closure [Figure 6].

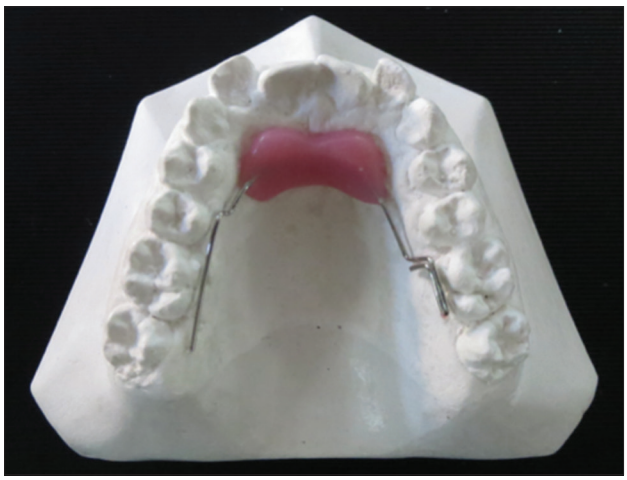

Figure 2: Modified palatal button

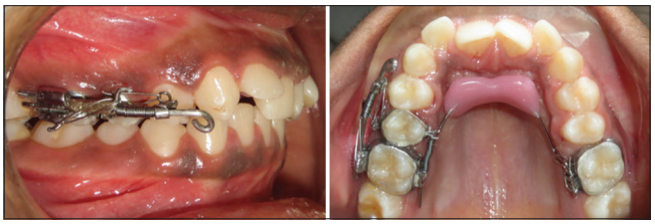

Figure 4: Placement of the jig

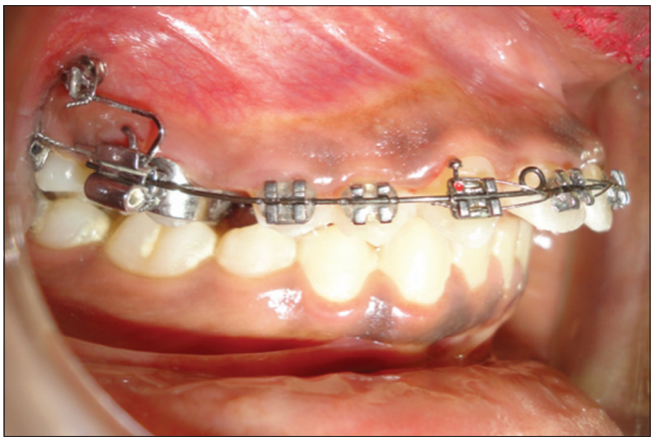

Figure 6: Retention of distalization achieved with a temporary anchorage device

CONCLUSION

The above-mentioned appliance is an inexpensive but efficient alternative to other commercially available appliances.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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