

## Post Distalization - Anchoring Molars

### Abstract

The term distalization means the displacement of a structure to a position farther posterior than that which it accepted at the onset of treatment. Maxillary molar distalization is needed for non-extraction treatment of dental Class II malocclusions. The traditional approach to distalize maxillary molars is with extraoral appliances. Although this method offers the advantage of stability with fewer side effects, the need for compliance and the esthetic drawbacks led clinicians to search for noncompliance alternatives. Numerous alternative intraoral noncompliant appliances such as repelling magnets, the distal jet, and the pendulum have been developed, and many well-documented studies have substantiated their effects. Stabilization of molars once they occupy a new position is necessary. In this article we have summarized the different methods. All the methods are effective and it depends on clinician to use methods depending on case to case.

### Key Words

Distalization, Nance-button, Stabilization

### Introduction

Whenever there is space deficiency, the methods of gaining space that strikes to our mind first are, extraction, expansion and stripping. In recent years, the percentage of patients having extraction as a part of orthodontic treatment has decreased considerably as experiments has shown that premolar extraction does not necessarily guarantee stability of teeth alignment. Proximal stripping also has its own limitation. Molar distalization, in recent years is evolved as an alternative method of gaining space to conventional methods where ever is indicated. Distalization is a procedure, aimed at moving the teeth in a distal direction so as to gain space. Once the molars have been moved distally, they must be stabilized in their new positions or they will rapidly drift back mesially.<sup>[1]</sup>

### Principles of appliance design:

- Minimal loss of anchorage
- Ease of use
- Cost
- Minimal chair time for placement and reactivation.

The molars can be stabilized in different ways:<sup>[1],[2],[3],[4],[5]</sup>

#### 1. Nance button and its modifications

- Nance is the most stable and dependable way to maintain molar positions and it can be fabricated at chair side at the same appointment as the distalization appliance removed. It has been used most commonly because of better anchorage support.

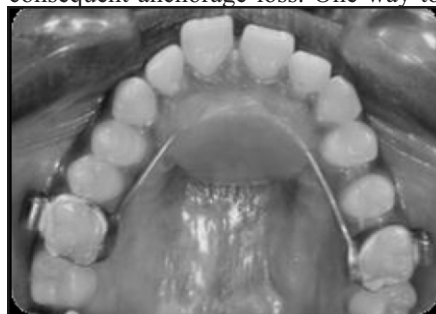
#### 2. Soldered TPA (Transpalatal arch)

and its modifications. It should be made up of 0.9mm or 0.8 mm stainless steel wire.

#### 3. Removable TPA (Transpalatal arch)

4. **Headgears** - A headgear is worn for a few months while the buccal segments drift distally. Although this method requires some patient compliance, it is typically for a shorter period.

5. **Distalization appliance itself. For example-** Distal-jet. Upon completion of molar distalization, the Distal Jet is converted to a Nance holding arch to prevent further distal movement and consequent anchorage loss. One way to



<sup>1</sup> Amit Prakash

<sup>2</sup> Raju Patil

<sup>3</sup> O.P.Mehta

<sup>4</sup> Gautam Singh

<sup>5</sup> Poonam Kumari Jayaprakash

<sup>1</sup> Senior Lecturer

Dept of Orthodontics & Dentofacial Orthopedics

<sup>2</sup> Reader

Dept Of Pedodontics & Preventive Dentistry

<sup>3</sup> Professor & H.O.D.

Dept of Orthodontics & Dentofacial Orthopedics

Rishi Raj Dental College & Hospital, Bhopal

<sup>4</sup> Senior Lecturer, Dept Of Conservative Dentistry

Darshan Dental College & Hospital, Udaipur

<sup>5</sup> Reader, Dept of Orthodontics & Dentofacial Orthopedics

Teerthanker Mahaveer Dental College & Research

Centre, Moradabad

### Address For Correspondence:

Dr. Amit Prakash, Senior Lecturer

Dept. of Orthodontics & Dentofacial Orthopedics

Rishi Raj Dental College and Hospital, Bhopal

E-mail : drprakash24@yahoo.co.in,

amitprakash30@gmail.com

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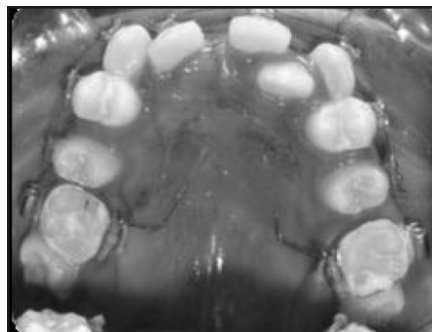


Fig 1: Nance button



Fig 2: Soldered TPA



Fig 4: Headgear

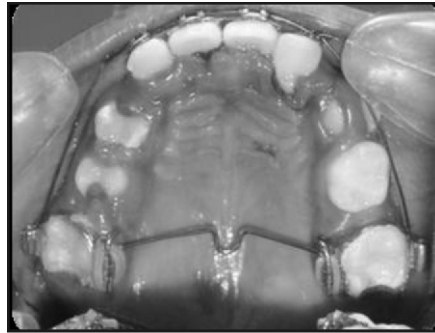


Fig 3: Removable TPA

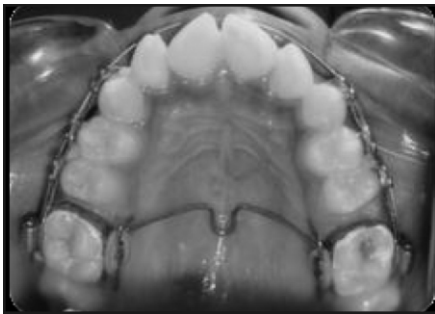
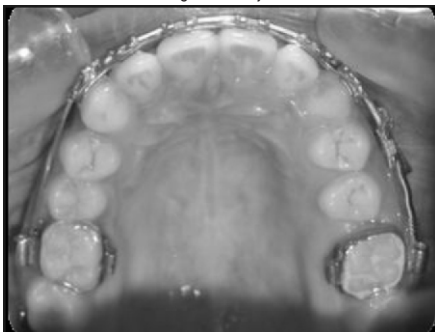


Fig 5: Distal-jet



Fig 6: Passive coil spring



stop movement of the bayonet wire through the tube is to flow a light-cured acrylic around the coil spring, over the distal bayonet bend, and over the activation collar to produce a solid extension from the molar bands to the acrylic button. An alternative method is to wrap an .014" stainless steel ligature wire around the end of the doubled-back wire (extending distally from the lingual sheath on the first molar band) and tie it around the tube just mesial to the activation collar. The coil spring should be compressed completely and the set screw tightened to prevent mesial movement of the molars. The tube can also be crimped around the mesial portion of the bayonet wire.

**6. Passive coil spring** - It helps in maintaining the correction achieved.

**7. Class II and Class III elastics** - Best to use after distalization with implants. Also effective with appliance such as double loop NITI. Class II and Class III elastics are used after distalization of maxillary and mandibular molars. Can also be used when en-masse distalization of whole upper or lower arch is done.

**8. Upper utility arch** - An upper utility arch holds the molars back with the incisors as anchorage.

**9. Continuous archwire with omega loops** - The entire upper arch is bonded or banded, and a continuous archwire with omega loops mesial to the upper first molar tubes is placed. Thus, the entire arch is used for anchorage while the buccal segments are moved distally, and the first molars are prevented from moving mesially along the wire. This approach can be combined with the Nance buttons.

**10. Lingual arch or lip bumper in lower arch** - Mostly used with lower distalization appliance such as franzulum or C space regainer.

#### Discussion

Space gained by distalization is required to correct the dental malocclusions. If molars are not stabilized properly then

post distalization correction is difficult to achieve. The most frequently used Treatment sequence in space utilization phase is as follows:

#### Upper arch:

1. Removal of the removable plate.
2. Creation of a posterior anchorage unit.
3. Intrusion and retraction of the upper front teeth with the appropriate mechanics.
4. Closure of residual spaces.
5. Detailing of the arch and occlusion.

#### Lower arch:

1. Correction of rotations and dental malposition.
2. Complete leveling of the curve of spee.
3. Closure of residual space.
4. Detailing of the arch and occlusion.

#### Conclusion

There are many advantages and disadvantages of both the intra-oral and extra-oral methods. It should be remembered that patient selection for a particular method of stabilization is of utmost importance and should not be overlooked. Right appliance should be selected for the right patient and one should not select the patient for the appliance rather the appliance should be for the patient. It is imperative on our part to know indication, contraindication and modifications that are possible with stabilization molar. Patient selection is of utmost importance and should not be overlooked. To fight a borderline case distalization is important weapon in orthodontist's armamentarium.

#### References:

1. Hilgers JJ. The pendulum appliance for Class II non-compliance therapy. *J Clin Orthod* 1992;26:706-14.
2. Carano A, Testa M. The distal jet appliance for upper molar distalization. *J Clin Orthod* 1996;30:374-80.
3. Kalra V: The K-loop molar distalizing appliance. *J Clin Orthod* 1995; 29: 298-301.
4. Aldo Giancotti, Paola Cozza: Nickel Titanium double-loop system for simultaneous distalization of first and second molars: *J Clin Orthod* 1998; 32: 255-260.
5. Kyu-Rhim Chung: C-Space Regainer for Molar Distalization: *J Clin Orthod* 2000; 34:32-39.

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