

The Voice of the General & Pediatric Orthodontic Practitioner

JOURNAL OF THE AMERICAN ORTHODONTIC SOCIETY

Volume 11, Issue 3

May/June 2011



**Value Of Continuing Education
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DISTALIZING UPPER MOLARS:

Five Case Studies Using Distalization Appliances

By Jeffrey Gerhardt, DDS and Bert Vasut, DDS

In practice, we often run into a problem in which the upper molars have drifted mesially and block out either the upper canine or second bicuspid teeth. The molars can move forward due to the early loss of a primary molar, delayed eruption of an adult bicuspid or a dentalalveolar issue.

In the case of blocked out teeth, the dentist has to make the decision of trying to distalize the effected molar or extracting a tooth to create space. Over the years, we have tried several techniques for distalizing molars. They include:

1. Open coil springs which push off the anterior teeth to distalize the molars. The problem with this technique is that it often requires the patient to wear strong Class II elastics to counter the anterior force of the open coiled spring. If the patient does not wear their elastics, the anterior tooth procline instead of the molars distalizing.
2. Various open-coiled spring appliances which push off the palate like a Nance appliance to distalize the molars instead of using the anterior teeth as an anchor.

3. Within the last two years, I have started using a Pendex appliance to distalize molars with more predictability. Dr. Bert Vasut first introduced me to this appliance. He is a pedodontist and a large part of his practice is dedicated to orthodontics.

Pendex Appliance

The Pendex appliance uses the palate as the anchor to distalize molars. A large Nance button is used for anchorage. A .032 wire is bent into a helical spring designed to provide a light continuous force on the first molar.

It is attached to the bicuspid teeth by either a band or a wire cemented to the occlusal of the bicuspid tooth. Molar bands with a lingual sheath are placed on the upper first molars (Fig. 1).

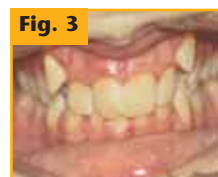
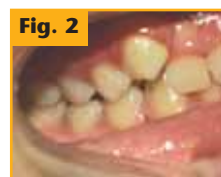
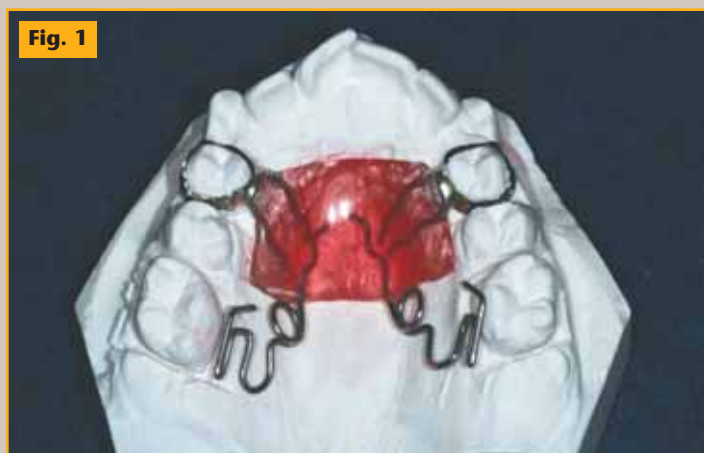
I have used this type of appliance made by Allesee Orthodontic Appliances at (800) 262-5221 or Tp Orthodontics at (800) 343-5997 (they call it a Pendulum appliance.)

Case Examples

Case 1

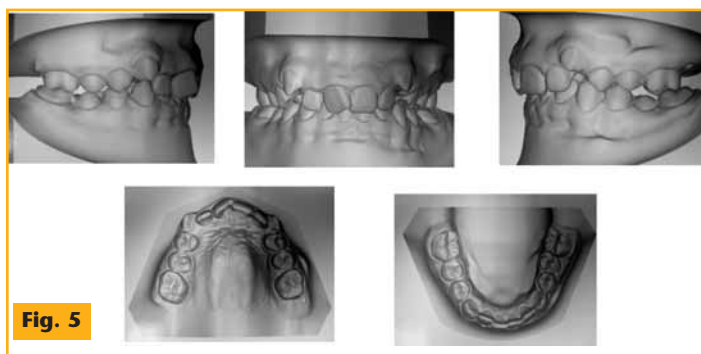
The patient is an 11-year-old female with crowded out canines. In this case, the molars are in a full step Class II position. The patient is skeletally Class I. Her workup revealed that she is ideally a non-extraction case (Figs. 2-5).

With treatment, the question is do we attempt to distalize the upper molars to a Class I relationship to make room for the upper canines or do we extract the first bicuspids to make room for the canines and end the case





- 2 Once molars distalized, appliance is removed and normal tip-edge mechanics are used to finish the case (Fig. 15).
- 3 Finished case (Fig.16).



in a full step molar Class II relationship? After discussing the case with the parents, we decided to attempt to distalize the molars with a Pendulum appliance.

Treatment of Case 1

- 1 Placed appliance (Fig. 6).
- 2 Five months later, molars distalized to a Class I relationship (Fig. 7).
- 3 Removed appliance. There is plenty of space for the upper canines to be moved into place (Fig. 8).
- 4 Now, we continue treatment with normal Stage I tip-edge mechanics. An upper .016 niti wire was placed to move canines into place (Figs. 9, 10, 11).

Case 2

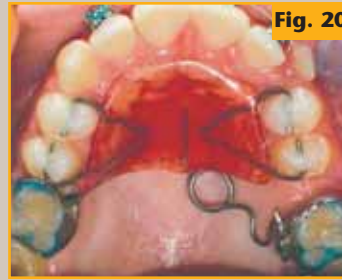
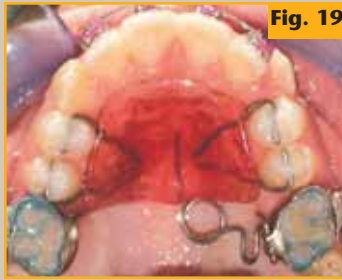
Dr. Bert Vasut diagnosed the following:

- 1 Trapped out upper second bicuspids.
- 2 Retained upper deciduous canines.
- 3 Mild posterior crossbite.

Treatment of Case 2

- 1 Start with Pendex appliance to distalize molars.
Note: Appliance can also be fabricated with a jack screw to correct posterior cross-bites.



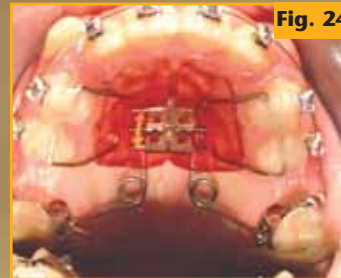


Case 3

This case was diagnosed from Dr. Bert Vasut who evaluated the patient to have a Class II molar on the right and Class I on the left. Right side canine blocked out (Figs. 17 & 18).

Treatment of Case 3

- ① Placed Pendex appliance. Note: Has a unilateral spring to distalize tooth #3 only. Occlusal photos are taken with a mirror so appear backwards (Figs. 19).
- ② Molar distalized, so Pendex removed (Figs 20).
- ③ Can make Nance appliance or put stop in orthodontic wire on mesial of molar tube to hold molar in place as pull bicuspid distally.
- ④ Once bicuspid pulled distally, use niti wire to pull canine down into place.
- ⑤ Finished case (Figs. 21).



Case 4

Dr. Bert Vasut diagnosed that the upper canines were blocked out (Figs. 22 & 23). The patient had Class II molar and Class I skeletal.

Treatment of Case 4

- ① Placed Pendex appliance to distalize molars (Fig. 24).
- ② Once molars distalized, canines started to drop down into place and pendex appliance was removed. Continued case with normal tip-edge mechanics.
- ③ Completed case (Figs. 25, 26, 27).

Case 5

This technique uses an open-coiled spring. I have added this technique to the article to show there are alternative methods to distalize molars. This technique is dependent upon patient cooperation.

The diagnosis was an excessive overbite, skeletal Class I. Dental class molar full step Class II on right, Class I on left. No room for upper right canine to come in.

Treatment of Case 5

- ① Used normal tip-edge mechanics to correct overbite.
- ② Placed open-coil spring on right side to try and distalize molar. Note: Placed bead (from Walmart) on wire. The bead keeps the spring from going up the stop on the wire. Also, if you want more tension on the molar, instead of having to replace the open -oil spring on wire, you can just add more beads. Each bead is about 1 mm

wide, so if want to increase tension by 2 mm, just add two beads. (This is a technique that Dr. Ron Austin taught me, Fig. 31).

- ③ Patient is instructed to wear 2 once, Class II elastics on the left. On the right, the patient wears 6 once elastics for two weeks, then 4 once for two weeks, then 2 once for two weeks. This technique keeps the upper anterior teeth from proclining. Every six weeks, we add 1-2 beads to the wire until the molar is distalized.
- ④ After created space, the canine started to come in. We bracketed the tooth and pulled into place with a .016 NiTi wire (Fig. 32).
- ⑤ Continued with normal stage III tip-edge mechanics (Fig. 33).

The use of Pendex type appliances can be very beneficial for the dentist practicing comprehensive orthodontics. One of the great benefits of this technique is it is not dependent on patient cooperation. Less dependence on patient cooperation should lead to more predictable results. The appliance uses the palate as the anchor instead of the teeth so the patient does not have to wear heavy elastics. So far, we have had great success in using these appliances.



If you want more information on distalization appliances, refer to "Contemporary Orthodontics" 4th edition textbook by William Profit. Molar distalization is covered on pages 488-489.

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