Haas Expander Appliance

Description:

The Haas appliance is a banded appliance with a palatal expansion screw housed in palatal acrylic. It is designed for lateral expansion and because of the palatal acrylic it is especially effective for opening and separating the mid-palatal suture. It can be used in both mixed and permanent dentition cases.

Indications for use of Haas Appliance:

Constricted Maxillary Arch.
Crossbite.
Class III growth pattern.
Crowded Maxillary incisors and/or crowded cuspids.
Patients with TMD.
Patients with obstructed nasal airway.

Contraindications for use of Haas:

Patients with cleft palate or lip.
The majority of adult patients.
Vertical growth patients.

Alternate Appliances:

Maxillary Sim Transverse Appliance (when bicuspids are not erupted).
Schwarz Appliance.
Galella Type Modified Haas Appliance.

Clinical Procedures:

1. One-week prior to taking impression, separate the Max 6-year molars. (Separators need not always be placed before impressions, but makes it easier for the laboratory to fabricate appliance.)
2. Complete maxillary and mandibular alginate impressions. Obtain a Wax Bite at normal biting relationship.
3. Pour models with lab stone.
4. Complete **ORTHODONTIC TECHNOLOGIES** laboratory prescription form.
5. Ask for molar bands as your band and bracket prescription dictates.
6. One week prior to delivery, patient must be seen for placement of separators mesial and distal of Max 6-year molars.
7. The appliance is delivered and adjusted for best fit.
8. Adjusting the central transverse screw activates the appliance.
9. Instructions are given to patient on wear and care and adjustment procedures.

Adjustment suggestions:

The palatal expansion screw has a central barrel with holes drilled through at 90 degree angles to each other, permitting a "key" to be inserted into one of the holes and rotated 90 degrees, which will open or "expand" the appliance ¼ mm. Four turns of the key is equivalent to 1 mm of expansion.

This appliance is ideal for expanding the transverse width of the palate. The adjustment begins by the practitioner demonstrating the technique for turning the screw to the parent. Then, the parent or a third party who accompanied the patient turns the screw one turn (1/4 mm). If the patient is 12 to 13 years or younger the appliance can be activated one turn of the key (1/4 mm) per day. If the patient is older, age 13 to 18 years, it is suggested that the expansion proceed more slowly with one turn of the key 2 to 3 times per week. If the patient is an adult the rate of turning should begin at 1 time per week, then, with careful monitoring to insure the molars do not start tipping, could be increased to 2 turns per week if deemed necessary.

When the expansion forces begin, there may be some discomfort reflecting the increased force in the palatal area, so the patient should be advised to take mild pain-relievers, if needed (ibuprofen is recommended).

Length of treatment time, and results expected:

Depending on the age of the patient, the palate begins to separate within a few days along the union of the paired maxillary bones. The younger the patient, the more rapid is the beginning of the palate separation. At that time, a slight soreness may develop beneath the nose, and a space will appear between the two maxillary central incisors (diastema). Activation of the screw should be continued until the desired width of the palate has been reached, which has been decided during the Orthodontic Analysis (Refer to Dr. Sim's Article, "A new approach to evaluation of orthodontic record casts.").

Hard tissue and soft tissue responses to the expansion forces:

If maxillary occlusal X-rays, showing all upper incisors, are taken before, during and following treatment of maxillary expansion, it will be seen that the dark space that appears where the maxillary bones are separated during treatment will slowly fill in with newly remodeled bone, and the maxillary central incisors slowly move to close the diastema that has been created by the treatment.

There is almost no discernible change in the soft tissues during the Haas procedure. Some slight inflammation may appear around the maxillary central incisors, but this disappears immediately following the end of the adjustments and removal of the appliance.

Holding Phase:

At the end of expansion treatment when no more adjustments are to be done the appliance is to be left in place for 3 to 4 months for initial stabilization. The screw should be "locked" by threading a length of .010 ligature wire through the hole, and twisting the wire, cutting the twisted wire to a short end, and tucking the end out of the tongue's reach. Another method is to place some acrylic into the screw mechanism to "lock the screw". Both of these methods prevent the screw from "backing up", which is the undesirable process of having the acquired palatal width diminished by a possible slow backward rotation of the screw barrel.

Stabilization of teeth and bone following removal of the Haas appliance:

After reaching the required development width and completing the holding phase of approximately 3 to 4 months, a maxillary Fixed-Removable Lingual Arch (FRLA) should be fitted to stabilize the teeth and bone. This should be left in place for up to a year following Haas treatment.

Precautions:

Orthodontic Technologies will provide a swivel key for turning the screw, but, if a regular metal key is used a piece of dental floss should be tied to the key to avoid inadvertent aspiration while adjusting the expansion screw. Demonstrate the proper way to insert, turn, stop and remove the key. In some cases the parent misunderstands and tries to adjust it by turning the key forward, then back, before withdrawing the key! This method of adjustment, of course, accomplishes nothing. Be sure the responsible adult understands the method for turning the key by having them practice one turn chairside.