MX Fixed Anterior Growth Guidance Appliance, Facial Version Generation 8
MX Fixed Osseo-Restoration™ Appliance, Facial Version Generation 8

Description:
The MX Fixed Anterior Growth Guidance Appliance, Facial Version or MX Fixed Osseo-Restoration™ Appliance, Facial Version is a fixed appliance used on patients over age 10 through adulthood to develop the Naso-Maxillary Complex and upright the MN ramus through remodeling. This appliance takes advantage of the remodeling occurring in the facial region by influencing residual growth sites. Its design is based on the concepts found in the removable MX sagittal appliance which has served orthodontic practitioners for decades. The current modifications include:

1. A fixed design using orthodontic bands on the MX 1st bicuspids and the MX 1st molars.
2. The anchorage is achieved with a lingual connecting wire welded between the bicuspid and molar bands on each side.
3. A bilateral welded eyelet facially placed on the bicuspid bands which holds the active pressure wire attached to an acrylic pad.
4. Proprietary activation springs with a screw retained lockstop mechanism
5. The proprietary force delivered to the acrylic component by the screw retained lockstop mechanism
6. The anterior palatal acrylic is specifically sized and placed to initiate a 3D remodeling response of the Naso-Maxillary Complex.
7. The anterior lingual stabilization wire with custom lingual pads rests on the cingulums and lingual surface of the four incisors and the cuspids.
8. The transpalatal seating wire to aid in the seating of the appliance.

Made of stainless steel orthodontic wire, orthodontic bands, and a specialized acrylic pad, the appliance fits comfortably in the roof of the mouth while allowing the tongue adequate space to comfortably position. To activate the appliance, the screw retained lockstop mechanism is loosened and the springs are fully compressed bilaterally.

It is important to note here, that when the MX Fixed Anterior Growth Guidance Appliance, Facial Version or MX Fixed Osseo-Restoration™ Appliance, Facial Version treatment has begun, the following factors contribute greatly to the successful outcome for each patient. Based on the current understanding of Craniofacial Biology, it is imperative that clinical treatment should progress in the direction of:

- Normal facial balance
  - Nasomaxillary complex
  - Mandibular position
  - Symmetry
- Stable Class I cuspid occlusion
- Stable Temporomandibular Joints
And that the following be ideally achieved:

- Lip Seal (Competent lips and strong orbicularis oris)
- Nasal Breathing (Healthy airway)
- Absence of Tongue Habits

These three attributes shall be referred to as the “BIG 3”. It should be noted that the “BIG 3” represent more than just the three points indicated above. When achieving the “BIG 3” each patient is equalizing the complex forces of Craniofacial Biology including such factors as harmonious balance of extrinsic soft tissue influence, balanced growth, congruent function, and biological stability.

Advantages:

There are several important Dentofacial Orthopedic advantages in the use of the special MX Fixed Anterior Growth Guidance Appliance, Facial Version or MX Fixed Osseo-Restoration™ Appliance, Facial Version:

1. This is an excellent appliance to develop the Naso-Maxillary Complex. This appliance takes advantage of the remodeling occurring in the facial region by influencing residual growth sites.
2. This appliance develops the MX three dimensionally through remodeling
3. This appliance in association with the “BIG 3”, eliminates cants, excessive gingival show, and remolds the Naso-Maxillary Complex to a more functional structure.
4. This appliance creates a positive effect on the nasopharyngeal airway
5. It is composed of heavy duty materials, yet is comfortable for the patient to wear, and easy for the parent to see.
6. Activating the appliance is easy for the doctor
7. Construction is quite straightforward, and chairside adjustments are easy, requiring only a few moments of the dentist’s time.
8. Patient and parent acceptance is excellent.

**Fitting the Appliance:**

1. Construction of the appliance requires MX/MN impressions and a fully intercuspated bite. Separators are placed mesial and distal to the MX 1st molars 1 week prior to seating the appliance. On the seating appointment remove the separators.
2. The appliance is trial fitted to check the seating of the bicuspid and molar bands and determine that it is comfortable.
3. Each appliance is delivered with 13 mm of the active wire extending into the facial molar tube.
4. Remove the MX Fixed Osseo-Restoration™ Appliance, Facial Version and etch the lingual of the MX six anterior teeth for 60 seconds. Rinse thoroughly and dry. The etched teeth will be bonded later after the bands are seated and cemented.
5. Dry the bands and apply the band cement.
6. Cement the bands of the Anterior Growth Guidance Appliance with glass ionomer dual cure cement. **Make sure the bands are placed in the mouth in the exact position that they were on the models.**
7. Before bonding the custom lingual pads, make sure that the lockstops are loose and the springs are passive.
8. The anterior lingual custom pads should lay on the cingulums and lingual aspects of the four incisors and the cuspids.
9. Rinse and dry the lingual of the MX six anterior teeth while gently lifting the custom pads from the lingual of anterior teeth.
10. While holding the lingual custom pads slightly away from the teeth, paint a composite primer on the lingual of the anterior teeth. Next apply bracket adhesive to the lingual of the teeth and release the custom lingual pads so they touch the lingual of the six anterior teeth. This bonds the lingual anterior wire to the lingual of anterior teeth.
11. Using the index finger push the acrylic pad making sure it slightly blanches the tissue it covers and making certain that the custom lingual pads are in intimate contact with the teeth. Add additional bracket adhesive to cover the custom pads.
12. Light cure each pad thoroughly.
13. The purpose of the lingual wire with the custom pads is to keep the acrylic pad from sliding down the palate and **NOT** to flare the teeth.
14. Use copious amounts of adhesive as the normal chewing function may dislodge the bond. (Note: Dr. Galella places the adhesive in front of the lingual wire on the distal of the cuspids as it crosses from the facial to the lingual. This helps to
15. Check the occlusion and make sure the lower anterior teeth are not hitting the bond. If the MN incisors hit the MX bond and/or lingual wire place a pre-adjusted FRLA with FLAT occlusal pads on the MN molars to open the bite slightly (Approximate. This prevents unwanted debonding. Ly 3 mm of clearance between the incisal of the MN anterior teeth and the lingual bonding of the MX anterior teeth.

16. Remove the transpalatal seating wire attached to the molars by cutting it off with a bur. Do Not forget to polish the sharp spots left by the bur. Have the patient check with their tongue.

**Adjustments:**

1. Activate the springs using the ControlledArch® StopLock Wrench to loosen the screws in the screw retained lock mechanism locks. Once the screws are loosened, rest an index finger on the shaft of the wrench where it meets the lock and push the lock posteriorly compressing the springs completely. Once compressed tighten the screws in the stoplock to hold the compression.

2. Visually check for FULL compression of the bilateral springs.

3. Check the occlusion, making sure that the MN teeth do not hit the adhesive or lingual wire when the patient bites or chews. If this occurs add to the FLAT occlusal pads on the MN 1st and 2nd molars to open the bite adequately. (3 mm clearance)

4. Have to patient check for sharp spots with their tongue and polish any sharp spots.

5. Supply the patient with some orthodontic wax until they become used to the appliance.

**Treatment Progression**

1. Activate (fully compress) the springs monthly & check anterior custom pads to make sure they are not debonded. Check with a sharp explorer to determine if the custom pads are not debonded. Visual examination is not acceptable.

2. If a portion is debonded, re-etch and repeat steps 7 through 12 under **Fitting the Appliance**.

3. Activate (fully compress) the springs each month until the developmental goal is met. This is usually 3 months for adolescents and 4 months for adults.

4. You may need a FRLA (fixed removable lingual arch) to expand the MN molars during this treatment. To assist the advancement/remodeling of the MN.

5. After the MX Fixed Osseo-Restoration™ Appliance, Facial Version treatment is complete, remove the appliance completely and place pre-adjusted MX and MN FRLAs (fixed removable lingual arches).

6. **Reminder:** Watch to see if the anterior teeth flare. They will not flair if the custom pads are securely bonded and in intimate contact with the lingual of the MX anterior teeth.

7. The proprietary springs and construction of the MX Fixed Osseo-Restoration™ Appliance, Facial Version will not apply too much force to flare the teeth or
overpower the remodeling process. The custom lingual pads if securely bonded will prevent flaring of the MX anterior teeth.

7. Use the sleep angel and breathe right strips to enhance treatment results by initiating nasal breathing!!
8. Initiate the “BIG 3” as soon as possible.

Should you have any problems or questions please contact Dr. Galella: 

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