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The Bionator to Open the Bite

Voice of Experience

The Bionator To Open The Bite

In the last issue we discussed the selection, placement, and adjustment of the bionator to open the vertical dimension.

In this article we will deal with the more common problems associated with bionator therapy and examine their causes and solutions. We will also evaluate a number of auxiliary attachments that can be utilized to enhance bionator therapy.

Let's begin by addressing the most common of all problems, patient compliance. Many good clinicians make the initial mistake of simply placing the bionator on the patient and expecting complete compliance. This type of attitude on the part of the doctor quite frequently results in very poor cooperation on the part of the patient. The clinician must realize that it is just as important to properly motivate the patient as it is to be able to correctly adjust the appliance.

As any good dentist knows there are many ways to motivate a patient. These vary according to the attitude and personality of the doctor, as well as on the age and values of the patient. However, there is always one constant, and that is that you must get the patient and the parent "actively involved" in the treatment. There are a number of ways to accomplish this goal. A few suggestions would include a frank discussion with the parent emphasizing the importance of full time wearing of the appliance. The doctor should impress upon the parent the need to prevent the child from becoming a "dental cripple", and the desire to "avoid surgery" or the removal of "healthy permanent teeth" if at all possible.

The child can be motivated by the desire to succeed and do what is correct in the eyes of both the parent and the doctor. This attitude can be encouraged by asking the child to keep a diary of appliance wearing time. We have found that the best motivational tool is a bulletin board divided into two sections, winners and losers. The child's photograph is taken with our standard dental polaroid camera, (Fig. 1) at the beginning of therapy. The child places their own photograph on the bulletin-board along with all the other "winners". If the child's compliance drops, they must take their own picture and replace it under the "losers" category where it stays for the next four weeks. The impact upon the patient's desire to cooperate as well as the parent's desire to prevent their child from being a "loser" is beyond belief.

We have also found that giving the patient a choice of color and design of the acrylic appliances also increases enthusiasm and thus compliance. Whatever your individual technique might be, get people involved in their own well being. Failure to do so is an open invitation to poor cooperation on both the part of the patient and the parent.

A good test for compliance is the patient's ability to talk with the appliance in the mouth. It should stay lightly in place on the lower arch as the child speaks.



If the child talks with the teeth held tightly together in the bionator, then the appliance is not being worn well.

As a last resort to compliance problems, the doctor can make the appliance partially or completely fixed. There are a number of different techniques to duplicate the action of a fixed bionator to open the bite. Those include the Hurbest appliance, the Keller appliance and the Galliger appliance. One of the more commonly used appliances is the banded Crozat (Fig. 2) Two Class II 3/16", 3 1/2 oz. elastics are used to bring the mandible forward, and a third 5/16", 3 1/2 oz. elastic is employed for anchorage on the maxillary arch. Brackets or composite can be placed on the incisors to prevent this third elastic from sliding gingivally. All of the fixed bionators work best when used in the permanent dentition due to the need for anchorage on the lower arch.

The second most common bionator problem is the lack of eruption of the posterior permanent teeth. This can be caused by improper grinding of the posterior flanges. All acrylic occlusal to the height of contour must be removed before a tooth can erupt to the new vertical dimension. The shiny wear fossetts can be used as a guide for grinding this acrylic.

Teeth cannot possibly erupt if their interproximal contact points are tight. The contacts should be checked with dental floss after the first three months of therapy. If they are still tight, separating elastics should be placed in the appropriate arch. These elastics should be replaced every four weeks until the contacts are opened.

For difficult cases 1/8 2 oz. vertical elastics can be worn on the molars and (or) bicuspids. Buttons can be used on the maxillary teeth and cleats on the mandibular teeth as attachments for the elastics. (Fig. 3) If the patient is to be finished in fixed appliances it is best to use the standard brackets and molar bands in place of buttons and cleats. Just remember to remove any lingual attachments from the molar bands to allow the Bionator to seat correctly.

An auxiliary spring frequently used on the bionator is a crossover wire. These allow the clinician to change a dental midline or to condense anterior spacing.

(Fig. 4) These springs can be used on either the upper or lower arch.

The clinician may see excess spacing form between the lower incisors as the expansion screw is turned. This occurs as a result of the incisors being caught within the acrylic cap. The operator should use a spiral burr to remove all inter incisal acrylic within the cap.

There are a number of additional attachments and adjustments that can be utilized during bionator therapy by the experienced practitioner. Those are explained in detail in two well illustrated textbooks available from N.A.O.L. (Fig. 6) Please feel free to contact Frank Foxin Texas or Jim Addiego in California for additional assistance in design and adjustment of your next bionator appliance.



Fig #3



Fig #4



Fig #5



Fig #6

Q. What is the best type of cement to use for banding?

In general the oxyphosphate cements that contain fluoride are used for routine banding. However, the glassionomer cements are best when a great deal of force is going to be used such as with a Class III labial bow. If a band is lost we routinely recement it with glassionomer. The glassionomer cements also work well for banding restored teeth, or malformed teeth where good band adaptation is impossible.

If a band has been cemented with glassionomer cement it is always wise to cut the band before removing it to avoid any possible damage to the tooth. Moisture control is important for both oxyphosphate cement and glassionomer cements. However it is critical for the glassionomer cements, so be careful.