

AOA Appliances, etc.

**AOA ALLESEE ORTHODONTIC APPLIANCES
IN PARTNERSHIP WITH YOUR PRACTICE
VOLUME 3, NUMBER 1, 1999**

Thinking Appliances...

I appreciate the response we have received to our previous *AOA Appliances, etc.* newsletters. Your positive comments and personal interest in sharing design modifications, laboratory pearls and overall feedback are essential to our ongoing success.

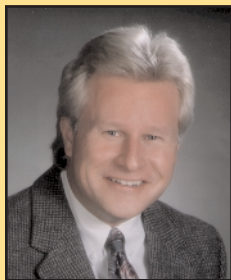
With our third issue, we are pleased to welcome Dr. Joe Mayes of Lubbock, Texas; his article on Penguin distalizing appliances offers a unique approach to traditional Pendulum concepts. We are also extremely pleased to introduce Dr. Armin Bajramovic, who joined our laboratory on January 13, 1997. Armin has become an extremely valuable asset to our laboratory in manufacturing Lingual Indirect cases. We trust you will find his interview insightful and we welcome your interest in our Lingual Department.

Dr. Albert Chinappi, Marlton, NJ, has been kind enough to share his thoughts on Functional Positioners. Dr. Chinappi has successfully utilized post-treatment finishing appliances, such as the Positioner, for over 20 years.

We are also offering our new Mara booklet, which updates your office on the step-by-step procedures as advocated by Dr. James Eckhart. Finally, we are offering a 25% discount coupon on your next Lingual Indirect case – please contact John Fuller to review your lingual requirements in more detail.

Please continue to share your concerns with me regarding your laboratory requirements or appliance designs – I would welcome the opportunity to share your ideas in future issues of *AOA Appliances*.

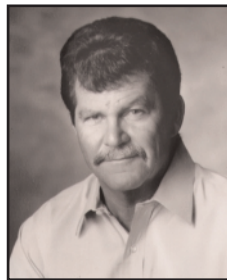
David Allesee
General Manager,
AOA Laboratory



The Texas Penguin...

A NEW APPROACH TO PENDULUM THERAPY

by Dr. Joe H. Mayes, D.D.S., M.S.D.



For years, I have used the Pendulum appliance in my office for constant and predictable results when correcting dental Class II's, and for molar distalization of skeletal Class II's. My feeling is that this is the age of "fixed functional" appliances. My philosophy is to utilize compliance-free appliances as much as possible, when available.

My overall treatment goals are to first correct the width problems (always expand first if needed), next to correct the anterior-posterior problem and then to place braces on Class I uncrowded cases. Therefore, I routinely complete banded treatment in eight-to-nine months.

I like to do as much as possible at each visit and not see the patient as often, welcome services to the parents and patients. By using compliance-free appliances whenever possible, I am decreasing the monitoring needs of the parents and reducing the demands placed on growing children.

All the appliances I use are pre-made as often as possible and then delivered in a single visit. If an upper expander is to be used and followed with a Pendulum, an immediate interim retainer would be necessary to hold the width while the Pendulum is fabricated in an external lab. This adds a visit to my treatment regime but is not a problem. Also, at the end of Pendulum therapy, a large Nance is fabricated to maintain the gained arch length and molar distalization. Once again, if this is not done in an in house lab, an immediate retainer would be necessary to maintain the molar position while an external lab fabricates the appliance. One other thought: don't be in a hurry to band and bond the upper arch. Allow physiologic drift of the buccal segments to occur. I like to allow about four months before bonding the upper arch. This way I am not burning anchorage on something that is going to occur by itself.

My design of the Pendulum is different from Dr. Jim Hilgers' in three major areas. First, I expand with a Hyrax appliance (Figure 1); there is never an expansion screw in the Penguin Pendulum appliance (Figure 2). The main reasons for this are that I would be wasting the best anchorage of the appliance with a gap between each side and the fact that the only place I have a vertical component of cortical bone to push against is at the mid-palatal suture. The second difference in design is that the spring coil is fabricated so that the arm to distalize the molar is as close to parallel to the root of the molar as possible (Figure 3). This design change allows the tooth to be moved distally without a buccal or lingual movement while allowing rotation of the tooth if desired. The third major difference is in the thickness of the appliance, 8-10mm with

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the T-Rex (Figure 4) versus a smooth “swallowing trough” of 2-3mm with the Penguin (Figure 5). My feeling is that thicker appliances tend to create an iatrogenic tongue thrust.

I performed a comparative study which involved 75 consecutively treated cases split into three groups of 25 each: (1) 25 consecutive cases of Pendex, (2) 25 consecutively treated T-Rex, and (3) 25 consecutive cases of expansion followed by treatment with my Pendulum design. When ranked for comfort on a scale of one to ten, with one being the least comfortable and ten the most comfortable, my design was the most comfortable (an average of three points higher than the other two designs). Another finding of this study indicated that approximately 50 percent of the time with the original design, both A point and the upper incisors were advanced. This did not occur with the design I use.

Another design change that is becoming popular is the tooth-borne expansion and molar distalizing appliance. The appliance I have used of the tooth-borne nature has exchanged dental movement for dental movement. Therefore, I don't use these appliances in my practice.

The Pendulum design I now use (Figure 6) utilizes removable springs and is a valued improvement over the old design as far as simplicity and not advancing the upper incisors or A point. It's thinness allows rapid patient adaptation and it can be used to maintain the expansion achieved with the previous expansion appliance. The design also pushes the molars distally as close to the curve of Spee as possible. The design fits in well with my philosophy of Simplified Treatment Mechanics (STM). In other words, correct the width, correct the anterior-posterior relationship, and place braces on Class I uncrowded cases.

CLINICAL MANAGEMENT OF THE PENGUIN PENDULUM

Clinical Insertion:

Step 1: A) Fit bands on upper first molars. B) Attach .036 x .072 horizontal lingual sheaths to the molar bands (or the laboratory can provide for you). C) Cement bands.

Step 2: Activate the removable TMA spring. When activating the spring do not violate the TMA loop. The distal end of the spring should be at a 90° angle when properly fabricated prior to activation. Activate the TMA wire by placing the round part of a bird beak plier inside the coil loop, using finger pressure, push the portion of the wire

that will be used to distalize the molar at about a 45° angle to the distal. This will sufficiently activate the TMA spring for maximum molar distalization. The spring is removable and can be readjusted later if needed.

Step 3: Place a small amount of utility wax on the folded TMA wire and place the activated TMA wires into the sheaths imbedded in the acrylic of the palatal trough of the appliance. This will keep the TMA wires from slipping out during the bonding process.

Step 4: Acid etch the occlusal surface of the teeth to receive the occlusal rests (usually the first bicusps). Using a Kerr Applicator, enhance and seal with OptiBond Solo from Kerr. Light cure for 10 seconds.

Step 5: Place LCR (light cure retainer material from Reliance) on the bicuspid rests before placing the appliance in the mouth. *Do not cure.*

Step 6: Hold Pendulum appliance with inserted TMA springs in place and occlusal rests resting on the appropriate teeth. Place LCR over the seated occlusal rests and cure with the light.

Step 7: Once the composite material is cured, use a Weingart plier and slide the activated TMA wires into the lingual sheaths attached to the molar bands. During this procedure stabilize the appliance with finger pressure until both TMA springs have been engaged.

SUBSEQUENT ACTIVATION & LENGTH OF DISTALIZATION

The TMA wires are activated at 7-8 week intervals. Sometimes it is necessary to re-activate the springs after delivery of the pre-activated appliance to obtain the desired distalization (a Class III molar relationship). Remove the removable springs and re-activate the TMA wire using the same procedure as outlined in Clinical Insertion, Step 2. Activate the distal arm from its position 45 degrees to the distal. Distalization usually takes 4-5 months, slightly longer if upper second molars are fully erupted.

Once a Class III molar relationship has been achieved, remove the appliance and immediately replace with a holding Nance, or hold the distalization with an invisible retainer until a Nance can be fabricated in a commercial lab.

With the Nance in place, leave the upper buccal segments to distal drift on their own at least 4 months. The newly acquired anchorage will not be wasted on something that will occur anyway because of the transeptal fibers. Approximately one-third to one-half of the space closure will happen during this time.

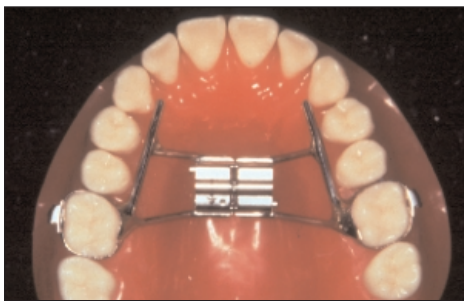


Figure 1

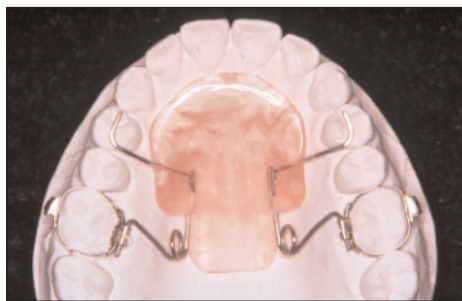


Figure 2

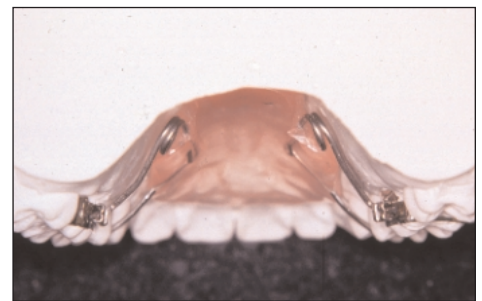


Figure 3

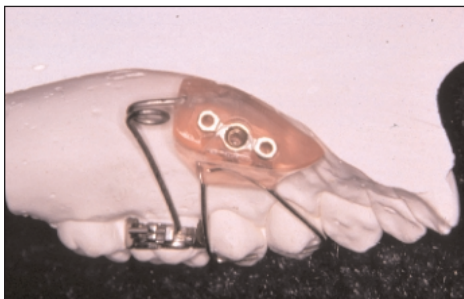


Figure 4



Figure 5



Figure 6

THE LINGUAL SCENE

Since our affiliation with Ormco in 1994, we have become increasingly involved with members of the Ormco Lingual Task Force and other leading lingual orthodontists. We are now fully dedicated to expanding our commitment to quality and service to our Lingual Indirect Set-Up Service. We've got a great technical staff together to serve you. We welcome your input and dialogue. Please contact John Fuller or Armin Bajramovic, who head up our Lingual Service, at 800-262-5221.

ARMIN BAJRAMOVIC, TECHNICIAN/LINGUAL SPECIALIST, INTERVIEWED BY CAL COLEMAN, CONSULTANT TO AOA, AND JOHN FULLER, PRODUCTION MANAGER, AOA

John Fuller: Armin, tell us a little about your experiences coming to this country from your homeland of Bosnia.

Armin: The civil war in Bosnia displaced thousands of people. My wife, children and I were fortunate to make our way to Germany where I found employment as an orthodontic technician in Munich. I came to the United States after 4 years of working in Germany and settled in Chicago. Dr. Lee Graber was kind enough to tell me about AOA and David Allesee. When I contacted David, a meeting was arranged and I decided to accept his offer of employment and move my family to Racine, Wisconsin. That was in January, 1997.

Cal Coleman: What is your background and formal training?

Armin: I received my dental degree at the University of Sarajevo, faculty of dentistry, in January, 1982. My orthodontic training was completed at the University of Zagreb orthodontic clinic in 1992, with emphasis on the use of removable appliances, particularly for first stage mixed dentition treatment. My introduction to orthodontic biomechanics and fixed appliance therapy was via the standard edgewise technique.

Cal: What were your first duties at AOA?

Armin: General lab work...functional appliances fabrication, soldering and retainers.

Cal: How did the lingual indirect bonding service develop at AOA?

Armin: AOA and Ormco were very interested in expanding the laboratory services available to offices interested in using lingual brackets. We already had personnel with experience in building CLASS set-ups and the leadership and training capability you

provided as a member of the original Lingual Task Force. Also, my knowledge as a trained orthodontist can assist in determining the ideal set-up.

Cal: If you could practice orthodontics in America, would you use the CLASS system developed by Ormco with input from lingual pioneers Jack Gorman, Bob Smith and Craven Kurz?

Armin: If I could practice, I would definitely include lingual orthodontics as a treatment option using CLASS as a refined and sophisticated technique for indirect lingual bracket placement. We do offer the basic TARG method which seems suitable for less complicated cases and non-extraction treatment.

John: What, in your opinion, is the most demanding task in the CLASS system?

Armin: The CLASS system of working from an idealized set-up has the potential of eliminating or greatly reducing compensating archwire bends. The knowledge of how to create the set-up is demanding and critical to the slot placement. Remember, we are positioning slots, not necessarily brackets. Our technique for bracket placement with CLASS allows us to seat all six anterior brackets simultaneously with a special archwire fixture which accomplishes both the in-and-out distance and also the common torque applied to each bracket slot. This can then be transferred to the posterior brackets.

Cal: Do you think the TARG method without the CLASS gives an accurate bracket placement?

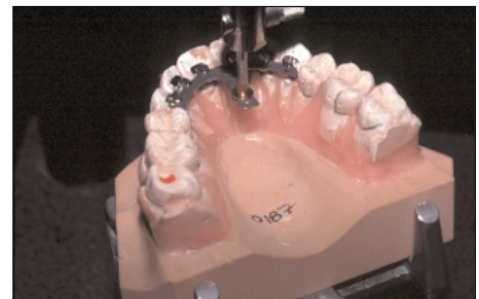
Armin: Yes, the TARG machine (Torque Angulation Reference Guide) can be used effectively on many cases, for instance lingual treatment only of the maxillary arch that does not require extractions.



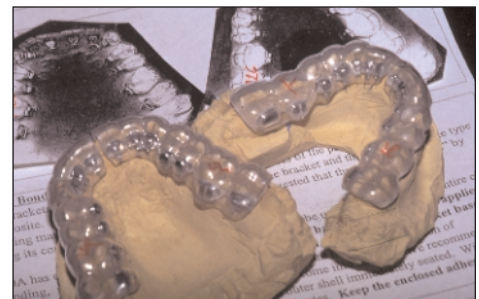
Armin Bajramovic



Indirect CLASS method – teeth in ideal set-up



Indirect bracket with CLASS method



Indirect trays with brackets on models



Completed kit for return to doctor

AOA Bookshelf

Cal: Do you feel the CLASS system can be a benefit in finishing lingual cases?

Armin: Absolutely. One of the benefits in using the CLASS method is an accurate finishing archwire. I feel it is possible for our lab service to provide accurate finishing templates.

Cal: As an orthodontist, what could be improved in the Doctor/Laboratory relationship as it applies to indirect bracket placement?

Armin: More feedback information from the office on the chairside procedure and the overall quality of fit with our indirect trays. In other words, how did it go. A follow up set of models, 6-12 months into treatment, would be very interesting to compare with the original records. We keep a copy of all CLASS models taken prior to the set-up. And, as always, the quality of the models forwarded to the Indirect Lab must be as accurate as possible. I recommend that an office never dismiss a patient until the impressions are poured and the models checked.

Cal: Speaking of models, how do you feel about the quality received for indirect set-ups at AOA?

Armin: The majority of offices provide outstanding models. Unfortunately, we occasionally receive models that would suffice for standard lab services such as retainers, but are not detailed enough to fabricate accurate lingual set-ups. Keep in mind that any inaccuracies in the model will contribute to bracket failure or improper bracket placement when seating the transfer trays. Remember, one tooth that may be inaccurate can affect the entire transfer tray. It won't be just that bracket that will be poorly positioned; it will effect all the brackets within that tray segment. The impressions should be taken using a quality alginate or silicone type material and be poured immediately in stone.

John: Armin, how are you enjoying working with the lingual program?

Armin: Of course, my personal experiences are all labial concerning bracket placement, but the CLASS system, with the over correction possibilities as well as archwire design, is very interesting. I think my background and education in the mechanics of tooth movement is very useful when combined with the technicians working in the department.

Cal: Can you be contacted by interested doctors?

Armin: Of course. If you are patient with my language ability, I would be happy to discuss our services with interested offices. My English is improving greatly.

John: Thanks, Armin. I look forward to our future collaboration as we continue to advance the Lingual Indirect Bonding Service at AOA.

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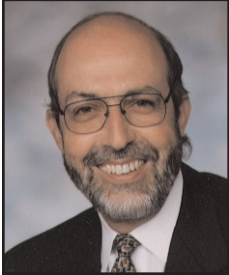
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800-262-5221

Positioning For Future Growth

by Dr. Albert S. Chinappi Jr., D.D.S., M.S., P.A.



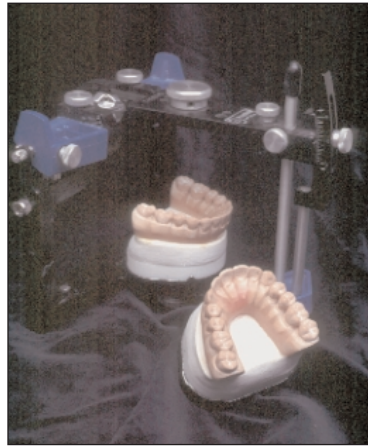
When one considers the nature of most post orthodontic problems, we are often dealing with an adolescent population that began treatment to correct a Class II malocclusion. This population often has a significant amount of facial growth remaining at the conclusion of treatment. If we consider what possibilities exist in the remaining future facial growth, our retention appliance design may change.

In our office, we attempt to harness this growth differential by using a tooth positioner. As the mandible continues to grow against the more stable maxillary dentition, we are attempting to continually adjust this functional interface. The matrix created by the positioner becomes the form for the future growth. Since the appliance encourages muscle activity during use, the benefits are enhanced.

The appliance offers a great deal of flexibility due to the nature of its construction. You can shape individual arches in the set-up according to your treatment goals, i.e., more width or spacing control. You can also control

the amount of functional correction desired in the bite relationship. In Class II cases we always ask for an edge-to-edge set-up so that the incisor positions are edge-to-edge when the appliance is worn, much like a bite used for a functional appliance.

The wear instructions we prescribe are for 2 hours of exercise time per day and to sleep with it every night. The patients are told that the exercise facilitates the final positioning of the teeth as well as allows the muscles to adapt to the appliance. Usually, after a couple of nights, the appliance stays in all night. We continue this until the first post-treatment check 6 weeks later. At that visit both the parents and child are asked about progress with sleep time; if successful, we stop day wear. After the first year we cut back to 4 or 5 nights per week.



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