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Have you ever looked at one of your patients' charts and noticed that the treatment record was as thick as an unabridged version of War and Peace? Then you saw a thin chart – one of your favorite patients, where the treatment went smoothly with few office visits. Why was there such a big difference? Usually, we are quick to blame the patient for the extra visits and hassles. In some cases this attitude is justified; however, many times the responsibility for problems during treatment is due to the orthodontist's decisions on timing of treatment and selection of orthodontic appliances. There has been a general trend in orthodontics to begin treatment at an earlier age. The objectives of early treatment have been expanded to include management of arch-length deficiencies and skeletal malalignments. While it is essential to correct these discrepancies, the timing of initial treatment and the choice of appliance are critical for optimal efficiency and profitability. The decision to start treatment too early or use an appliance that demands high patient compliance can extend treatment and frustrate patients, parents and the orthodontic team. The first step toward reducing these difficult situations is to develop a philosophy of treatment that is based on addressing the most common problems facing the orthodontist:

1. Noncompliance with orthodontic appliances (i.e., headgear, functional appliances, elastics).
2. Emergencies – broken or loose appliances. Emergencies related to improper management of archwire ends, protruding ligature ties and improperly contoured or activated wires or appliances are preventable.
3. Poor oral hygiene and associated decalcification, decay and periodontal complications.
4. Root resorption.

To minimize these problems, we must create positive changes by focusing on efficiency, quality control and profitability. The most significant changes I made to improve the quality of life, efficiency and profitability in my practice were the use of noncompliance appliances and properly timed phases of treatment.

Noncompliance Appliances
Headgears, Bionators, Frankels, sagittals, Jones Jigs, Class II elastics and other removable appliances, while effective with the compliant patient, are ineffective with the less-than-motivated patient. The amount of time, energy and additional visits needed to treat these patients will certainly stress a busy practice. Constant discussions on compliance issues can compromise the office's relationships with patients and parents.

The two most effective noncompliance devices are the Herbst* and Pendex appliances. Both possess the ability to simultaneously correct both transverse and anteroposterior discrepancies. The Herbst, combined with a rapid palatal expander or quad helix, is used to correct the typical Class II skeletal and dental malocclusion, while the Pendex is used for the skeletal Class I with a Class II

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Dr. John R. (Bob) Smith received his D.D.S. from Emory University in 1975 and his M.S.D. from the University of Washington in 1977. He received the Milo Hellman Research Award for his graduate thesis. An original member of the "Lingual Task Force," Dr. Smith has lectured and published extensively on lingual orthodontics as well as practice management, diagnosis and treatment planning, and early intervention. He maintains a full-time practice in Winter Springs, Florida.

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* Herbst is registered trademark of Dentaurum, Inc.
dental malocclusion (see the article by Drs. Bennett & Hilgers on the “noncompliance appliance” in Clinical Impressions, Vol. 3, No. 3, 1994).

The major advantages to both of these are:
1. Fixed with continuous force application and direction.
2. Easily adjusted.
3. Reduce the need for other bonded appliances while in use. (With the Herbst, it is occasionally necessary to place brackets on the incisors to establish torque and/or increase arch length.)
4. Patients are seen at 10-to 12-week intervals.
5. Because of the noncompliance nature of the appliances, visits are short and positive.

 Emergencies, Poor Oral Hygiene and Root Resorption
One thing these problems all have in common is their tendency to occur with fixed orthodontic bands and brackets. Therefore, to reduce their deleterious effects in the noncompliant patient, every effort should be made to keep the active orthodontic phase with full braces to a minimum. How can this be done with the difficult Class II skeletal and dental malocclusions? Before I describe my current protocol for treatment, let’s look at what happened in my practice before I routinely used the Herbst and Pendex for Class II corrections.

When I started my practice 18 years ago, the typical nonextraction Class II case was treated in the late mixed dentition with bonded brackets on the upper and lower incisors, bands on all first molars and utility archwires. The driving force for A-P correction was headgear of various types and Class II elastics. Once incisor torque, arch length and dental midlines were corrected, the patient was maintained with partial braces and headgear until cuspids and bicuspids erupted into position. I usually did not wait for the eruption of second molars before bonding the remaining teeth and continuing treatment. I call this process progressive bonding, where Phase I treatment blends into Phase II treatment with no rest period between the phases. Treatment would range from 20 to 40 months, depending on the eruption of cuspids and bicuspids. When patients cooperated and wore their headgear and elastics, it did not take long to develop a nice occlusion from the first molars mesially. However, with many cases, I struggled with the Class II correction due to poor patient compliance and was unable to accomplish my treatment goals, frequently producing a compromised result.

Have you ever produced a beautiful case only to have the second molars erupt into poor position? What did you do next? You had to band or bond the second molars and go back through your archwire sequence to reestablish the occlusion. This adds four to twelve months to the overall treatment time, consumes more supplies, increases labor costs and contributes to reduced profitability. Also, it is very disheartening to the patient to suffer additional delays in treatment. Doesn’t it make sense to wait until second molars have erupted before placing full orthodontic appliances? Many doctors argue that some patients who are nearing high school age will not tolerate braces. I agree that this can be a challenge. In those few cases, it is best to inform the patients of their options. First, waiting will be more efficient and will ensure proper molar position. Second, braces can be placed early, but if second molars erupt into poor position, additional time in braces will be necessary. Third, they can choose to accept some malalignment of the molars if they are left untreated. I prefer the first option whenever possible. The wise orthodontist would realize that the second option would require additional fees to compensate for the extra work.

When bonded brackets and bands are worn for extended periods of time, there is greater potential for decalcification, periodontal disorders and root resorption. If a treatment protocol that minimizes the duration of fixed therapy can be used, it will greatly reduce these serious problems. It is always difficult and time consuming to explain these various problems to the patient. The most significant changes I made to improve the quality of life, efficiency and profitability in my practice were the use of noncompliance appliances and properly timed phases of treatment.

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patients, parents and referring doctors. To develop a community image of high service and quality care, it is essential to minimize these unpleasant explanations. Implementing a new treatment philosophy, especially the use of noncompliance appliances and properly timed treatment phases, enables you to do just that.

**Current Treatment Philosophy (Ages 5 – 8)**

I typically avoid early treatment except in patients with crossbites, digital habits or midface deficiencies that need maxillary protraction. If I am supervising a seven-year-old with a Class II crowded condition, I will generally recommend removal of primary canines to allow the incisors to erupt into better alignment rather than performing early expansion. Why? There are many mild-to-moderately crowded Class II cases that I will treat on a nonextraction (permanent teeth) basis with expanders, Herbst or Pendex. Extraction of primary cuspids does not adversely affect my ability to expand later and achieve a nice nonextraction result. Also, if active treatment can be stalled until just prior to the eruption of the cuspids and bicuspids, there is a reduction of the overall supervisory time. Treatment can still be accomplished with a two-phase approach, but the retention period (resting period) between phases is greatly reduced. In cases with severe crowding, I can continue with

**CASE I: N.H. – Class II, Div. I Skeletal and Dental Malocclusion.**

*Pretreatment.*
Simultaneous treatment of transverse, A-P and arch length.

Full-banded and bonded therapy.

Final result after 22 months of treatment and 19 office visits.
One of the things that affects our willingness to change mechanics is the fact that "the barrier of habit filters all our perceptions." A couple of considerations that should affect our willingness to change in a more positive manner are:

1. We are into a generation of freedom, not responsibility.
2. Actual bottom line numbers.

The fact that our society is more freedom-oriented means that this is the time for compliance-free appliances. Influence of bottom line numbers goes something along the following lines. Let's say the orthodontist starts 25 patients a month. In twelve months, there are 300 new active patients. Average treatment time of two years equates to 600 active-treatment patients in the practice. Most practices I have surveyed are approximately one-third early-treatment (200 active cases) and if the early-treatment fee is $2,000, this is $400,000 over two years. If the average full-treatment fee is $4,000 for the 400 full-treatment cases, the amount is $1.6 million over two years. The sum of the full- and early-treatment cases is $2 million over a two-year period, or a $1 million-a-year practice.

If Simplified Treatment Mechanics are used, the 600 active patients will be seen every eight weeks, and this means 300 active patients a month. Therefore, the orthodontist can work 10 days a month, see 30 active-treatment patients a day, and have a $1 million-a-year practice (in reality, the practice would actually see 40-45 patients a day because of recalls, retainer checks and new patients). This is gourmet food for thought about changing our mechanics.

STM Appliances
There are several appliances I use in STM, all of which lead to achieving an uncrowded Class I case before placing braces. Once again, I first correct the width, then make AP corrections (there are exceptions that will be covered later).

"W" Appliance. I use the upper "W" appliance infrequently, usually for adults with excessive lingual crown torque who need only dental expansion of the upper arch (Figure 1).

RPE. My most common method of expanding the upper arch is with a jackscrew appliance to achieve true palatal disjunction. I normally bond a button or a stop of bonding material to prevent the appliance from moving occlusally during the mixed dentition expansion. This appliance is very hygienic and is fabricated in our office in a single visit (Figures 2 & 3).
The expander that utilizes a facemask is slightly different; stainless steel crowns are used to pop open the bite immediately. Also, .045 stainless steel hooks are soldered to the buccal surface and bonded to the D/4 bilaterally. Tubes can be soldered to the .045 wire to allow the placement of anterior brackets, if needed (Figures 4 & 5).

**TPB.** The palatal disjunction appliances are replaced in approximately 2-3 weeks with a transpalatal bar. This maintains the achieved expansion and allows molar rotation if desired. The transpalatal bar also stabilizes the molars if retraction mechanics are to be used. The appliance can be soldered or it can be a removable design using .032 square wire and Precision™ Lingual Hinge Caps. Use of .032 round TMA® wire allows upper molar rotation (Figures 6 & 7).

"The fact that our society is more freedom-oriented means that this is the time for compliance-free appliances."

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Monday as You Do to Friday
**Frozat.** For lower expansion, I use a "Frozat" (Figures 8 & 9). As I prefer not to use removable appliances, this is a fixed Crozat framework. When Dr. Robert Ricketts developed the "Cricket" appliance several years ago, I started using it soldered to molar bands. I liked the appliance but not the name "Fricket," hence the name "Frozat." The moment of force to expand one side will distalize the opposite molar like a lip bumper and is the reason I don't need to use lip bumpers. On mixed dentition cases, it might be advisable to bond a button or a stop of bonding material to the lingual of the D/4 to prevent the appliance from moving occlusally.

**Lower Lingual Bar.** After expanding the lower arch or after early treatment, I use a fixed lower lingual bar to achieve long-term lower-arch stability (Figure 10).

**Cantilever Bite-Jumping Appliance.** Most often I use a Cantilever Bite-Jumping Appliance to correct Class II malocclusions because most Class II cases are deficient in the lower jaw, not hypertrophic in the

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**Figure 8.** "Frozat"–my typical lower expander; as sweep arms expand, the opposite molar distalizes.

**Figure 9.** Note soldered, fixed sweep arm contacting laterals (can be made removable with Precision Lingual Hinge Caps and .032 x .032 Snug-Fit wire).

**Figure 10.** LLB (Lower Lingual Bar)–holds expansion or serves as lower retainer after Phase I therapy.

**Figure 11.** Cantilever Bite-Jumping Appliance – note hex-head screws.

**Figure 12.** Note Precision Lingual Hinge Caps and removable lower lingual bar allowing four individual units, making recementing loose crowns much easier.

**Figure 13.** Bayonet bends prevent mesial or distal movement of the lingual bar.

**Figure 14.** Pendulum – note “swallowing trough” of smooth acrylic to facilitate rapid patient adaptation.

**Figure 15.** Vertical loops allow distal tipping of the molars without in-and-out movement—molars can still be rotated, if desired.

**Figure 16.** Nance – holds distalized molars during retraction.
upper (Figures 11, 12 & 13). In other words, if it is a skeletal Class II and the patient looks better with the lower jaw forward, I use this appliance to correct the Class II relationship.

**Pendulum**. If the case is a skeletal Class I and a dental Class II, I use the Pendulum™ Appliance. My design is slightly different from Dr. James Hilgers’, as the loops are more vertical (Figures 14 & 15). This allows molar rotation without out-in movement of the molars. Another advantage is the “swallowing trough” of smooth acrylic that facilitates faster patient adaptation.

**Nance**. When a Pendulum or Cantilever Bite-Jumping Appliance has been used, a Nance is fabricated to maintain molar distalization (Figure 16). If molar distalization has occurred in an adult with a Cantilever Bite-Jumping Appliance, it is normally left in place to use as anchorage for retraction of the anterior teeth.

**Facemask**. A facemask is utilized to advance the upper jaw in conjunction with upper jaw expansion (Figure 17). Most of the advancement is achieved during palatal disjunction, as the sutures are separated and allow rapid protraction of the maxilla.

**Bite Turbos**. In deep bite cases, it is sometimes necessary to utilize “bite turbos” (Figure 18). The name is appropriate as they immediately open the bite and allow anterior bracket placement. They can be placed on the lingual of the upper incisors. Bonding material or lingual brackets work well. Bonding material bite turbos can be placed on the occlusal of the lower dentition, preferably on primary teeth.

**Orthos**. Once width and AP corrections are accomplished, it is time to place the braces. The Orthos™ system (Figure 19) works very well with our three-archwire system. There are numerous advantages to the Orthos system, including lower-profile lower anterior brackets, significant reduction in the need for 1st order bends mesial to lower cusps and 1st molars, and reduced mandibular posterior segment torque to prevent dumping. Orthos provides a more precise, preadjusted appliance that speeds treatment, reduces chairtime and enables me to detail and finish the occlusion rapidly.

**Interarch Springs/Elastics**. Normally, interarch springs are used for mild Class II or Class III cases and are presented as a “high-tech” alternative to elastics (Figures 20, 21 & 22). They are especially effective for correcting midline deviations. I use Class I springs for space closure on a finishing archwire for extraction cases.

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Elastics are normally used in a zigzag fashion to finalize the occlusion (Figures 23 & 24).

**Polypropylene Retainer.** When the occlusion has been refined, it is time for retention. I use .030 or .040 polypropylene material formed to the models taken at the time of band removal. The retainers stop distal to the 4's on the lower and distal to the 7's on the upper (Figures 25 & 26). These are worn full time for three weeks and then night wear is started.

**STM Case Classification and Treatment Mechanics**

The types of cases that I treat and their treatments are outlined below:

I. **CLASS I**

A. Nonextraction

1. Slight Crowding or Spaces – Most of my orthodontically-treated cases fall into this group. As is true in most practices, about 90 to 95 percent of our patients are Class II or Class I crowded. Counting those Class II cases that are corrected to Class I uncrowded cases before placing braces, most of my patients will fit in this group.

   a. Spacing – Facemask with light elastics to close forward, elastics/springs as needed.

   b. Slight Crowding – Expand and/or strip anterior.

   c. Open Bite – Surgery if over 3-4 mm/tongue reminders.

   d. Deep Bite – Intrude upper arch or lower anterior depending on relationship of upper central tips to upper lip.

2. Moderately critical anchorage – This is a more critical anchorage problem than the preceding Class I. Not critical dentally or facially enough to require extractions but will need more than expansion/striping to create enough space for the permanent dentition. Use a Pendulum to distalize upper 1st molars, strip anterior teeth, and/or lower expander, and/or Class III elastics/springs to lower from large Nance.

B. Extraction

This is a severe anchorage/crowding case with good molar relationships. Due to the severity of the crowding/bimax problems, it is necessary to remove tooth structure from the dental arch. Once again, a three (total) archwire system may be used. Close extraction spaces with Ni-Ti® springs and crimp-on hooks on the finishing archwire. First or 2nd bicuspid are extracted and a Nance/Pendulum may be used.

II. **CLASS II**

A. Nonextraction

1. Dental Class II and Skeletal Class I – A very rare case in my office. Correct with Class II elastics/springs only if upper anterior are too procumbent and lower anterior are too far back. I normally use springs and tell the patient their advantages, such as not having to change them and that they work all the time so we finish sooner than with elastics. If we can eliminate things that are removable (elastics), we can control finishing time.
If elastics are used, have the patient put them on their finger while eating. This reminds the patient to replace the elastics when finished eating.

2. Dental Class II and Skeletal Class I – Upper teeth are too far forward and lowers are where you want them. Another fairly rare case in my office but the second-most often treated Class II. Use a Pendulum until super Class I, with or without Class III elastics/springs. Always hold the distalization of the upper molars with a large Nance.

3. Skeletal Class II, Deficient Lower Jaw – This is the most common Class II correction I do in my office. Use a bite-jumping appliance (always check bite-jumping appliance therapy with before- and aftertranscranials or tomograms). Most Class IIs will need expansion. Upper and/or lower expanders can be incorporated into the bite-jumping appliance, if needed.
   a. Expand if needed.
   b. Advance 3 mm every two months until edge to edge and hold for nine months if more dental correction is wanted.
   c. Advance all at one time (use appliances on the upper arch if even more orthopedic change is wanted) and hold for 12 months.

B. Extraction
We rarely extract in cases in which we have the opportunity to do Phase I work. Most of our extraction cases are nongrowing patients.

1. Dental Class II and Skeletal Class I – Treat with or without Class II elastics/springs. Extractions may be upper 1st bicuspid only, upper and lower 1st bicuspid, upper and lower 2nd bicuspid, or upper 1st and lower 2nd bicuspid.

2. Dental Class II and Skeletal Class I – Upper teeth are too far forward and lowers are where you want them. Use a Pendulum, band upper when Class I and extract as above. I prefer to leave the teeth in while correcting the Class II. As soon as I have a super Class I and the Nance is placed, I am ready to bracket the case and start my retraction and space closure.

3. Skeletal Class II, Deficient Lower Jaw – Use bite-jumping appliance therapy before or after extractions and treat as above. I prefer to have my extractions done before bite-jumping appliance therapy. This allows physiologic drift to occur while the Class II is being corrected.

III. CLASS III

A. Nonextraction, Dental to Mild Skeletal Class III
Treat with or without facemask, with or without Class III elastics/springs and expand, if needed. Most Class III cases need some expansion, especially of the upper. I use a different expander if I am going to use protraction mechanics on the upper arch. I do not start my expansion until the patient is accustomed to wearing the facemask. This usually takes two to three weeks. Protraction helps achieve the Class III correction more rapidly if done when the sutures are separated. Also, expansion of the upper jaw opens the bite and moves the mandible down and back.

B. Extraction, Dental to Mild Skeletal Class III with Crowding
Treat with or without facemask, with or without Class III elastics/springs. Extractions may be upper and lower 1st bicuspid, upper and lower 2nd bicuspid, upper 2nd and lower 1st bicuspid, or lower 1st bicuspid only. Treat as above but eliminate the crowding by extractions. The extractions can help with the dental Class III correction.

IV. ASYMMETRIC AND/OR COMPROMISED CASES

Treat as needed. Be creative! Use any or as much as needed of the above treatments. Remember, appliances can be used unilaterally to correct problems. Don’t be afraid to use a bite-jumping appliance to correct an asymmetric lower jaw. Some of the cases will involve later dental work, such as partials, bridges or implants (plan ahead).

V. SURGERY

Extraction or nonextraction. Do orthopedic correction with surgery (upper only, lower only, or upper and lower combination surgeries). Treat as a Class I case and do extractions and space closure (if needed) before surgery. Once the space is closed and the teeth fit well on the models, the patient is ready for surgery to correct the bony relationship.

VI. NEUROMUSCULAR

Orthotics and/or orthodontics. I treat a lot of headaches and neckaches with Myo-tronics equipment. The reason is simple – I have totally predictable results. After the first series of tests, I can tell which patients I can help and which I cannot. If you don’t utilize this type of equipment and you treat TMD, I encourage you to keep an open mind and evaluate the technique. It works very well for us.

Conclusion
This completes the overview of my mechanics. Remember, this is just an outline. A lot has been left out, and I hope you will make a list of the types of treatment mechanics you utilize. It will allow you to look at what you are doing and start streamlining your mechanics. My overall treatment goal is to put braces on only “Class I emergency cases.” In other words, we have corrected the width, corrected the AP and we have an uncrowded Class I case.

Once again, I am not telling you how to do your mechanics; I am only showing a brief outline of how and why I do mine. An excellent alternative example of Class II correction is Dr. James Hilgers’ “Tandem Pendex-Herbst” therapy. My one hope is that this article will get you to think of ways to improve your mechanics so you will be more efficient and profitable and so that your patients are seen less and finished on time.
Terminal molar tubes are the mainstay of fixed appliance therapy. Their placement, ease of use, and functionality are either the bane or boon of most biomechanics. The blue words used to describe the frustration caused by blocked, loose or deformed terminal tubes are abundant in most orthodontic offices. Technology has changed virtually every other arena in orthodontics. By and large, however, terminal tubes still have a tendency to be complex, oversized and cumbersome. That has changed dramatically with the development of Accent™ first and second molar terminal tubes. A blending of flexible wire technology with sophisticated casting techniques now allows us to take a giant step backward – to tubes that are so simple, clean and unobtrusive that they defy the normal context.

Historically, first molar tubes were designed to be convertible, so that when the second molar was banded, the first molar could be integrated without changing its band. This resulted in a hybrid tube-bracket combination that could be converted on demand. This allows for engagement of rigid ideal archwires but necessarily involves side effects, including:

1. Interference with upper molar.
3. Need to tie first molar tube securely after conversion.
4. Difficulty in archwire placement.

Accent tubes were designed with one simple concept in mind: to use new flexible-wire technology to our advantage, allowing for a drastic reduction in tube size and complexity, while retaining the functionality for which terminal tubes were originally conceived.

**Twelve Advantages of Accent Tubes**

1. Easy, easy wire entry. Without question, the biggest breakthrough with Accent tubes is the one that makes the most common sense. The entry to the Accent tubes is trumpeted to create a wire-entry funnel that is six times larger than flush-entry tubes. This makes wire placement a piece of cake. New casting technology allows for downsizing of the funnel (and the tube in general) so that this advantage is gained without adding to the size or vertical height of the tube. Considering the difficulty of visualizing the tube entry in the first – let alone the second – molar region, the improved entry is especially helpful:
   a. With mesially rotated molars.
   b. When using prerotated wires.
   c. When using braided wires.
   d. When using rigid wires.

2. Nonconvertibility – the contrarian viewpoint. Many of us have lived with the concept that we must have a convertible first molar tube. That is true when our wire selection only includes rigid wires. Wires with a higher modulus of elasticity allow for feeding the wires on through to engage the second molars, almost regardless of their malalignment. This, of course, is...
enhanced greatly by funneling the wire into the tube. Nonconvertibility means no more premature conversion of the cap and no more need to tie the lower first molar in with steel ligatures or for the vertical tie-wings that a convertible tube automatically implies. The funneling of the tube entry and the use of Ni-Ti® Copper Ni-Ti®, TMA® and braided wires all make this feed-through possible.

3. Comfort and cleanliness. The diminutive size of the tube improves comfort and cleanliness. A small, integrated buccal hook for elastics helps keep both single and double buccal tubes to a size that is compatible with buccal tissues and oral hygiene.

4. Noninterference with upper molars. Perhaps the biggest problem with large, convertible tubes is the interference created with the upper first molar, particularly when it is moving past the lower first molars in the process of Class II correction. The vertical wings on the convertible bracket are particular offenders. Once the upper molar buccal cusps engage these wings, essentially all Class II correction stops, as the upper molar teeth “lock in” to the lower molar tubes. Another common problem is chipping or abrasion of the buccal cusps of the upper molar as it engages the vertical wings of the convertible molar tubes. Many clinicians have resorted to reducing these vertical wings in order to avoid the problem, but, of course, this destroys the convertibility feature of the hybrid tube-bracket.

5. Ideal vertical height placement. The vertical bonding location of the lower buccal segments is based almost entirely on the ability to position the lower molar tubes in ideal positions. If the tubes need to be placed more gingivally because of size and interference considerations, the torque in the lower arch can be affected. The more gingivally the tubes and brackets are placed, the more lingual crown torque is accentuated. This can result in narrowing of the lower arch, dropping of the lingual cusps and arch coordination problems. Keeping the molar tubes as small as possible so that they can be placed more occlusally improves their integration with the more anterior brackets.

6. Smaller band footprint. The relatively small space occupied by the Accent tube improves band fit and adaptation, as well as creating less surface area on which to dislodge the tube or band.

7. Excellent bondability. The Accent tube also makes an excellent bondable tube. Its smaller size and wedge-shaped bevel
improve retention considerably. In addition, the easily-placed archwires further reduce the tendency to dislodge the bonded tube. The ideal combination of a large, well-adapted bonding pad and a small, beveled tube improves bond retention as well as comfort and cleanliness.

8. Superb tissue protection. The downward, wedge-shaped bevel is superb at protecting buccal tissues. There is no horizontal ledge to catch food and as the bolus of food contacts the Accent tubes, it is deflected in a downward, outward manner. This also improves hygiene, as there is no large undercut (as in the gingival tie-wings of the convertible tube) to collect remnants of food. The wedge shape also allows for a downward bevel of the trumpeted entrance, further enhancing the small vertical height of the tube.

9. Maximizes intertube and interbracket distances. The use of flexible archwires and the ability to nurse them into nonconvertible tubes is directly related to wire flexibility and available space. Increasing the intertube and interbracket distances greatly improves the ability to engage wayward second molars. Even large, torque-control wires can be fitted into the Accent tube entries that are six times larger than normal.

10. Excellent integration of first and second molar tubes. Since the torque, rotation and tip of my Rx are identical for both first and second molars, the bands can be used interchangeably. For instance, we carry a stock of first molar double buccal tubes. Every case does not necessarily require a double tube. If you will not be using auxiliary or secondary arches, a single tube will do. We can use the second molar (single) tube on the first molar and add further to the simplicity and cleanliness of the entire strap-up.

11. Makes double buccal tubes more feasible. For the clinician who desires the use of a double buccal tube, Accent’s auxiliary (gingival) tube has also been greatly reduced in size. It has no torque or rotation (which can be set by the clinician in the archwire) and is shorter than the main arch slot. The overslung mesial portion of the tube thereby protects the auxiliary archwire from being deformed by the forces of occlusion. Again, the diminished size of the Accent tube’s main slot makes the double buccal tube more comfortable and useable.

12. Definitely makes sense as second molar tube. Even if the clinician still prefers to use a convertible tube on the first molar, the Accent tube is an excellent choice as a second molar tube. In the most posterior aspect of the mouth, its funneled entry is quite helpful in archwire engagement, even if the first molar is going to be tied in with a steel ligature.

Conclusion
A new era in buccal tube design has begun. It allows for integration of continuous archwires without the hassle of convertibility. Accent single and double buccal tubes are as small as casting technology allows, are funneled for easy wire entry and help coordinate both buccal segment bracket placement and second molar integration. If simplicity is one of your watchwords, it’s time to take a giant step backward to these smaller, more comfortable alternatives and away from large, cumbersome convertible buccal tubes.
The Business of Orthodontics:
A Buck a Minute

by James J. Hilgers, D.D.S., M.S.
Mission Viejo, California

Timeline: I’m ready. Gloves, mask, shield, goggles on, pliers in hand. Patients bibbed and primed. It’s 8:00 a.m. – time to start. Only one small crack in the dam. No staff. Nada, zero, zip members of my stupendous staff have yet arrived.

8:01: Kris sprints in, perspiration on her forehead, and exclaims, “Have you seen the I-5? It’s a zoo.”

8:02: Linda walks in, “Big crackup on Oso Parkway. Sorry, it’s a zoo out there,” she laments.

8:03: Ann races in, hair askew, no makeup, “Amy threw up before I left. My house is a zoo this morning. Sorry.”

8:04: Kim saunters in, “I think the battery is dead on my alarm,” she complains, “I hate it when that happens.” “Me, too,” I think to myself.

8:05: Susie flies through the door, “I couldn’t catch Stonk (the dog, not the husband) this morning. He was chasing coyotes. Made my life a real zoo, I’ll tell you.” “I’ll just bet,” I think to myself.

8:06: Cherie bursts in. Finally, I confront: “Why are you six minutes late?” I query. “Because I’m a lofty intuitive and you’re a realistic sensate,” she replies. Cherie tries to confuse me with the book she read the night before. It works.

8:07: The rest of the staff strolls in professing various and sundry other excuses which say simply, “Sorry we’re late, but it’s a real zoo out there. No possible way we could actually arrive on time.” The kids, the dog, the traffic, the car pools, the alarm, the husband – there seems to be no end of causes for the zoo.

The problem: Woody Allen said 70 percent of life is just showing up. He didn’t mention whether or not you need to be on time. Being late seems to be an infection. There is not a business in this modern world that doesn’t complain about employee tardiness or fret about what to do about it. It creates dissension among staff members (“She’s always late.”), upset in patients (“Isn’t my time as valuable as yours?”) and frustration in the employer (“How can I impress upon them how important it is to be punctual and fair to other employees?”). Casual observers might think the problem results from the quality of the person who is late. “Hire people with higher responsibility levels and you won’t have the problem,” they might say. Not so. Some of my very best employees over the years have had this one small foible. Being exactly five minutes early was an impossibility; being exactly five minutes late you could set your nuclear clock by. At least the doctor is always on time. Oh, right! Actually, I hear more complaints about the doctor being late to arrive, late back from lunch, late to leave. But that’s understandable for the doctor. It’s a zoo out there, you know. So, it seems like everybody is a little guilty. The problem is, once it becomes common office knowledge that it’s okay to be a little tardy, there is no end to it. With a little motivation, it’s just as easy to be five minutes early as it is to be five minutes late.

The solution: Put in a time clock (or activate the time clock on your computer). Everybody, including the doctor, clocks in. For every minute an employee is late, they are charged a dollar. That’s it, a buck a minute. Go ahead, come in late. The later, the better, because it’s going to cost you. For many years we had a large glass jar sitting on top of the time clock and when an employee was late, they had to plant the dollar bills in the jar at the time of arrival. Within one week, everybody was coming in on time. Still do. It motivates to lose five dollars out of your first hour’s work. Now, we simply deduct a buck a minute from the uniform allowance (you cannot legally deduct from salary). Since the uniform allowance is optional, add up the minutes you’re late and deduct the charge from your optional check.

Read it and weep. Now, here’s the kicker. The doctor has to pay five dollars a minute. My staff literally leaves the ground in glee when they see me walk in ten minutes late. Har-de-har, fifty bucks for the kitty. I don’t come in late much anymore, either. What do we do with the money? We use it for one of those staff retreats where we sit around with other office staffs and talk about the problem of employee tardiness. Just desserts, I guess.
Molar Distalization: More Ammunition for Your

By Michael W. Scott, D.D.S., M.S.D.
Longview, Texas

In the 11 years that I have had the privilege of practicing orthodontics (certainly not long by some standards), many appliances and techniques have been developed that offer the practitioner solutions to various problems. It has been said that the half-life of orthodontic knowledge is five years. That may be an exaggeration, but I do recognize the fact that much has changed in my operatory over these 11 years.

Over the past four years, I have had the honor of speaking about orthodontic treatment at study clubs, graduate programs and professional meetings both in the United States and abroad. Through the course of these engagements, one of the most consistent discussions is on the topic of practice management and, in particular, practice goals. My personal list of practice goals is short:
1. Produce consistent, predictable, high-quality orthodontic results.
2. Practice with great efficiency.
3. Start all the cases I care to start.
4. Make a reasonable profit.
5. Have fun.

With the explosion of high technology in the orthodontic marketplace, a tremendous number of "gizmos and gadgets" have been introduced. In evaluating the available new products, I focus on how I feel the particular product will impact my practice goals. Is the particular product truly an evolutionary or revolutionary device or is it snake oil?

The list of treatment options at my disposal to treat the various orthodontic problems that I encounter could be likened to a Chinese restaurant menu. Once a diagnosis is made, I choose the various "entrées" that I will "serve" each patient from my "menu." I might choose one "thing" from column A, two from column B, none from column C, and one from column D. The sum total of the things I choose and how I use them add up to my treatment plan for that person. Over the past 11 years, my menu has changed as I have made careful and considered additions. One of the additions is a new molar distalizing appliance. From an ever-growing selection of devices, I found the Lokar™ Molar Distalizing Appliance to be superior to any other appliance avail-

Dr. Scott earned his D.D.S. from the University of Tennessee School of Dentistry in 1982 and his M.S.D. in Orthodontics from Baylor College of Dentistry in 1984. He has lectured in both the United States and abroad on the Orthos Appliance System, early treatment and facemask therapy. He maintains a private orthodontic practice in Longview, Texas.
able on the market. In evaluating its effect on my practice goals, I can say that its impact has been nothing but positive. Molar distalization is a technique that has added a new “column” to my menu, because it has increased my ability to produce consistent, predictable, high-quality orthodontic results. The Lokar Appliance has proven to be more efficient mechanically than other systems I have evaluated. In addition, the time involved chairside is minimal; therefore, the goals of practicing with efficiency and profitability are positively affected.

This article will cover four main areas of molar distalization:
1. Indications.
2. Contraindications.
3. Implementing molar distalization therapy.
   a. Clinical procedures
   b. Lab procedures
4. The typical course of therapy seen in molar distalization.

Indications
Although the Lokar Molar Distalizing Appliance was originally developed as a noncompliance treatment modality, I have found it to be a vital part of both my early-treatment and full-treatment regimens. Therefore, aside from its potential as a noncompliance aide, I suggest the following applications:
1. An end-on or full Class II molar relationship due to maxillary protrusion. This indication would apply in both early-treatment and full-treatment situations. Cephalometric measurements and facial profile analysis would be used to confirm the diagnosis and, therefore, the use of molar distalization.
2. An end-on or full Class II molar relationship due to maxillary cuspids being either impacted, unerupted or erupted labially and high in the vestibule. The maxillary posterior segments are found to have drifted mesially resulting in a Class II malocclusion. The space available for positioning the cuspids is greatly reduced. The situation may be that the maxillary first bicuspid is in contact mesially with the lateral incisor, either unilaterally or bilaterally. The facial profile analysis reveals balanced proportions. For various reasons, the option of extracting upper first bicuspsis is not acceptable. In my opinion, extraction of the upper first bicuspsis in situations such as this is rarely acceptable.
3. An end-on or full Class II molar relationship due to the ectopic eruption of either the first or second bicuspid. This situation may arise due to the early loss of a primary molar. The maxillary first molar has drifted mesially, resulting in a Class II relationship and blocking out the space for the bicuspid. A common occurrence is to find the maxillary second bicuspid lingually positioned, with the maxillary first molar and first bicuspid in contact. This situation is usually unilateral but may also be found bilaterally. For various reasons, the option of removing the maxillary second bicuspid is not acceptable.
4. Any other situations that arise where distal movement of the maxillary molar is indicated.

Contraindication
The only contraindication to the use of the Lokar Molar Distalizing Appliance as employed in my office is an end-on or full Class II molar relationship due to mandibular retrognathia. Cephalometrically, the maxilla and maxillary dentition are found to be positioned within normal limits and the mandible is found to be retrognathic. Facial profile analysis is used to further confirm the diagnosis.

Implementing Molar Distalization Therapy
Two clinical appointments and one lab procedure are involved in implementing molar distalization therapy.

Figure 1. Bands fitted on the maxillary molars and second bicuspsis.

The First Clinical Appointment. At this appointment, bands are fitted on the maxillary first molars and second bicuspsis (second primary molars, if present) (Fig. 1). In fitting the first molars and bicuspsis, use your usual prescription bands. For second primary molars, use either a large bicuspid band or a small maxillary second molar band, depending on the size of the tooth. In either case, there is no need to have special bands. Neither is there

continued on following page
need for special attachments that must be welded to your existing bands, as is the case with some systems.

One very important point needs to be mentioned here. If molar distalization is to be used as an early treatment procedure, one must verify from the patient's panoramic radiograph that the roots of the maxillary second primary molars are not resorbed to the point that they will not be stable and secure anchor teeth. As in most things, timing of the initiation of treatment is important.

Once the bands are verified as fitting correctly, the molar bands are removed and will not be needed again until the second clinical appointment. An alginate impression is made of the maxillary arch with the bicuspid bands in place for the construction of a Nance holding arch. The Nance will be attached to the bicuspid and used as anchorage to enable the molars to be distalized while minimizing the amount of mesial movement of the bicuspid and anterior teeth. Once the impression is complete, the bicuspid bands are removed, spacers replaced and the patient can be dismissed. The molar and bicuspid bands, along with the impressions, are then sent to the lab for construction of the Nance.

Laboratory Procedures. An accurate working model must be obtained in order to construct the Nance holding arch. The bicuspid bands are seated in the impression and held in place by using sticky wax dripped into the band. Because soldering will be done on the lingual surface of the bands, the wax must be confined to the inside of the buccal aspect of the band (Fig. 2). Also, take care to place the bands in the impression properly – don't get the right and left bands confused. Also, make certain the bands are correctly oriented in the impression – don't place them upside down. Once the bicuspid bands are in place in the impression, the working model is poured in plaster. The molar bands are not needed for any of the lab procedures.

Once the plaster is set and the model trimmed, the construction of the Nance can begin. The first step is the forming of two sections of .040 stainless steel wire to serve as the framework (Fig. 3). The two .040 wires are held in place by small amounts of sticky wax (Fig. 4). In order to stabilize the wires during the soldering procedure, the sticky wax is covered by a small amount of plaster (Fig. 5). The plaster serves as an insulator during the soldering process and prevents movement of the wires. The wires soldered in place can be seen in Figure 6.

Plaster and residual sticky wax are cleaned from the model and the model is painted with a separating medium such as Alcote® in preparation for the placement of the acrylic. The “salt-and-pepper” method is used to apply the acrylic to the model. In building the acrylic, start in what will be the center of the Nance button. Add the acrylic in a circular fashion until the Nance button is the desired size (the bigger the better). Build the acrylic to a thickness of 3 to 4 mm. Place the model in a pressure pot filled with warm water for 10 minutes. A detail view of the rough acrylic is seen in Figure 7.

The rough acrylic is now ready to be finished and polished. First, cut the outline of the Nance button with an acrylic cutting bur. I use a Great Lakes bur #SDB265. In cutting the outline of the button, care should be taken to trim the acrylic around the incisive papillae (Fig. 8). This will avoid pressure being placed on that area as the distalizer is activated, thereby reducing the chance of patient discomfort. Second, use an acrylic bur to reduce the thickness of the button to approximately 2 to 3 mm. I use a Brasseler bur #H351E. Smooth and polish the solder joints using a round stone and a rubber wheel. Polish the acrylic and solder joints using coarse lab pumice and an acrylic polishing compound. Once this is done, thoroughly clean the Nance, making sure there is no residue from the acrylic or polishing process on the inside of the bands. Before the Nance leaves the lab, the inside of the molar and bicuspid bands is etched using 50 micron aluminum oxide. This has proven to greatly decrease the number of loose bands as treatment progresses. The final product is seen in Figure 9.

The Second Clinical Appointment

When the patient arrives, spacers are removed and the teeth to be banded are prophied. The Nance is trial seated and the first molar bands are seated along with the Nance to assure that everything will seat together. The patient is asked to make sure there is nothing irritating in the palate under the acrylic. The molar bands, along with the Nance, are then removed, rinsed to remove salivary contamination, dried and cemented back in place. The distalizer itself is seen in Figure 10. Arrow number one indicates the mesial sliding component. Arrow number two indicates the component of the distalizer which will be inserted into the archwire tube of the molar.

The next step is to insert the distalizer into the archwire tube of the first molar and adapt the distalizer so that it is parallel to the plane of occlusion (Fig. 11) and adapted closely to the teeth for maximum patient comfort (Fig. 12). It is important to have the mesial and distal ends of the distalizer adapted close to the teeth so they will not irritate the cheek or the lip. However, it is especially important to not place bends in the sliding components of the distalizer that would inhibit the efficient movement of the teeth.

Once the distalizer is adapted, it is removed for the moment. If the second bicuspid bands are banded or if there are bicuspid bands on the second primary molars, hand twist a .012 stainless steel ligature around the bracket. Make the ligature very snug and twist it twice (Fig. 13). It is important to twist the ligature as opposed to simply looping the ligature around the bracket. As the molar is distalized and the spring becomes less compressed, the tension on
Figure 2. Maxillary impression with second bicuspid bands waxed in place.

Figure 3. Working model with .040 stainless steel wire framework for Nance.

Figure 4. .040 stainless steel wires held in place with sticky wax.

Figure 5. Sticky wax covered with plaster for insulation during soldering.

Figure 6. .040 stainless steel wires soldered in place.

Figure 7. Detail view of rough acrylic.

Figure 8. Nearly complete Nance on working model. Note how the outline is cut around the incisive papillae.

Figure 9. Final product.

Figure 10. Arrow 1 indicates a mesial sliding component. Arrow 2 indicates a component which inserts into archwire tube of molar.

Figure 11. Lokar Distalizer adapted so it is parallel to the plane of occlusion.

Figure 12. Lokar Distalizer adapted closely to the teeth for patient comfort.

Figure 13. The .012 stainless steel ligature hand-twisted distally around bicuspid bracket.
the ligature is reduced. The ligature could come off of the bracket if not twisted. It is also helpful to make the twist to the distal of the bracket. Near the end of the distalizing process, this will enable you to get about 2 mm more of distalization. If second molar bands are on the second primary molars, the .012 ligature is attached to the archwire tube by threading it through the tube. There is no need to twist the ligature in this case.

The distalizer is now reinserted into the archwire tube of the first molar. The distalizer is then activated by tying back the mesial sliding component with the .012 ligature and compressing the spring of the distalizer (Figs. 14 & 15). The best activation is achieved by compressing the spring 1 to 2 mm short of complete compression. The spring is nickel-titanium and works best if not completely compressed. Once the activation is complete, cut off any of the wire that protrudes through the distal of the archwire tube. Figure 16 shows the finished insertion and activation of the Lokar Distalizer. The patient is given the usual instructions on caring for orthodontic appliances and then scheduled for the next visit.

**Typical Course of Treatment**

In my office, distalizer patients are seen every five to six weeks for monitoring and reactivation of the distalizers. My experience has been that if longer appointment intervals are used, the force diminishes below that needed for distalization.

To reactivate the distalizer, it is not necessary to remove and replace the .012 ligature. Using a scaler, “untuck” the twisted end of the ligature that was tucked in when the distalizer was last activated. Use the scaler to compress the spring mechanism and use a plier such as a How plier or a hemostat to twist the end of the ligature to tighten it and hold the spring in the reactivated position. The twisted end of the ligature may need to be cut before being tucked back out of the way. Patient instructions are reinforced, the progress is shown to the patient and the next visit is scheduled.

Treatment times will vary from patient to patient depending on how much molar distalization is needed and how fast the teeth move. My experience has been to expect an average of 1 to 3 mm of space created with each reactivation.

In making the determination of “how much is enough,” I would suggest that the maxillary molars be distalized to at least an end-on Class III relationship with the mandibular molars. This overcorrection is needed for two reasons. No matter how one tries, the maxillary bicuspids will almost always move mesially as the molar is distalized, thus necessitating some overcorrection. Also, as the maxillary anterior teeth are being retracted following distalization, some anchorage will naturally be lost and can be compensated for by the overcorrection.

A critical consideration is the transition from the distalizers to the next step in treatment. Following molar distalization, one of several items may be introduced into treatment. The next step may be:

1. Banding and bonding the maxillary arch as part of full treatment.
2. Banding and bonding a maxillary 2 x 4 as part of early treatment.
3. Placement of a rapid palatal expander.

Whatever the next step may be, it is critical to know that once the distalizers are removed, the molars will rapidly begin to return to their former positions. To prevent this occurrence, I suggest the use of what I call an “A.M.–P.M.” appointment – see-

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“**It is a very efficient system that requires very little chair time to initiate treatment and check progress.**”
ing the patient twice in one day. The A.M. appointment involves making an impression of the maxillary arch to construct a new Nance that will go to the maxillary molars to hold them in their distalized positions and help serve as anchorage. This is accomplished in the following manner: The distalizers and the Nance are removed. The molar bands are removed after the impression is made for the new Nance. The same molar bands are used for the new appliance. The patient is dismissed and the new Nance is constructed over the course of the morning. The P.M. appointment involves seating the new Nance and placing the maxillary brackets. If an expander is to follow the distalization process, the A.M.–P.M. appointment would simply require taking the impression for the expander in the A.M. and seating it in the P.M.

**Clinical Examples**

**Case One – Patient B.R.**
Case one is an example of clinical indication number one, a patient who presents with an end-on or full Class II molar relationship due to a maxillary protrusion. The patient was a 13-year, 6-month-old female with a Class II molar relationship on the right and an end-on Class II molar relationship on the left. The horizontal overjet was 6 mm. The pretreatment maxillary arch is shown in Figure 17. Lokar Distalizers were seated on 8-29-95 and can be seen in Figure 18. Progress photographs taken on 10-23-95 (Figs. 19 & 20) show the amount of molar distalization achieved after seven weeks of treatment. Progress photographs taken on 11-14-95 (Fig. 21), after ten weeks of treatment, show the maxillary arch after the completion of molar distalization and placement of Orthos™ brackets and bands. The A.M.-P.M. appointment was used, of course. Note how well the new Nance fits the molars and palatal tissue.

**Case Two – Patient S.H.**
Case two is an example of clinical indication number two, a patient who presents with an end-on or full Class II molar relationship due to the maxillary cuspids either being impacted, unerupted, or erupted labially and high in the vestibule. The patient was a 12-year, 1-month-old female who presented with a Class II molar relationship on both right and

Pretreatment.

Herbst treatment (10 months). Notice the nice Class I cuspid and molar relationships. The cuspsids and bicuspids move to the distal with Herbst treatment. It is essential not to place braces on the cuspsids or bicuspids during Herbst treatment.

Maxillary bonds 2-2 for torque control.

Final result.
classic serial extraction with the ultimate removal of bicuspids. These cases begin the orthopedic phase after the eruption of the canines and bicuspids. After the second molars erupt, full orthodontic appliances are used to refine the occlusion.

The key to effective treatment is to reduce the number of visits needed to treat each case by doing as many procedures as possible during the shortest period of time. Keeping the rest period between phases to a minimum and accurately timing treatment are two of the most important attributes of the highly productive and profitable office (Cases I and II).

When I have treated transverse, A-P and crowding problems at early ages (5-8), I often see more relapse. This relapse is probably due to difficulties with retainer wear and the loss of occlusal stability during the transition from primary to permanent teeth. Also, with an extended period of growth after these corrections, there is more opportunity for the expression of the patient's genetic facial growth pattern. In my opinion, it is best to wait until the very late mixed dentition to begin treatment. These patients will have the canines and bicuspids erupting into a more favorable position during the first phase of treatment and better cuspal interdigitation that aids occlusal stabilization during the shorter rest period.

Start in the Late Mixed Dentition: Active-Rest-Active Treatment

If a patient only requires expansion, I typically use a rapid palatal expander and a lower 0.045 stainless steel quad-helix (Wilson type) expander. Following expansion, the upper and lower incisors are bracketed to establish torque, tip and midline correction. The expansion devices are removed when an archwire of sufficient stiffness (0.019 x 0.025 TMA) can be placed to maintain the expansion. This process usually takes eight to twelve months. All braces are removed and fixed upper and lower lingual holding arches are placed to maintain the transverse and arch length increases (Figures 1 and 2). The patient is placed on six-month recall intervals during the rest period until all teeth, including second molars, have erupted. Full-banded and bonded treatment usually begins 12 to 18 months later and is eight to twelve months in duration. I call this approach “Active-Rest-Active Treatment.”

The Herbst is particularly useful in those cases with a horizontal mandibular asymmetry. It can be incrementally adjusted with shims to properly position the mandible to the facial midline. The Herbst

continued on following page
can be used either unilaterally or bilaterally. Brackets are usually placed 12 weeks after expansion to establish torque so that the mandible can be postured forward to the desired position. After the incisors are aligned, the brackets are removed to reduce the potential for decalcification, gingival problems and root resorption. Another important reason to remove the brackets is to allow the patient to enjoy a beautiful smile during the remaining months of Herbst therapy and the rest period.

After Herbst therapy has produced a super Class I molar relationship, the appliance is removed, the patient begins the rest period and is placed on six-month recall. With the holding arch in place, the cuspsids and bicuspids drift to the distal, creating a nice Class I buccal occlusion (Case III). When the second molars are in, I begin the final active phase of occlusal refinement using the Orthos Appliance. This phase of treatment is usually eight to twelve months in duration with the patient seen every 10 to 12 weeks. I typically use a two-wire sequence: .016 Ni-Ti® followed by .019 x .025 TMA®. If additional torque or leveling is required, a .021 x .025 TMA or stainless steel wire is used.

**Fees**

Have you ever had a parent decide not to start the second phase of treatment? Have you ever heard:

"You mean Junior has to wear braces again?"

"We didn't expect perfection after the first phase. We are happy with the result."

"We didn't know the second phase was going to cost so much!"

We have, even though we spent a tremendous amount of time explaining the need and benefits of the second phase before, during and after phase I. When we start a case we want to finish it to the best of our ability. Therefore, we present one fee that is inclusive of everything. But to be profitable, it is essential to be very efficient.

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Because we start treatment in the very late mixed dentition and use the Active-Rest-Active approach to keep the rest period to a minimum, we treat the typical Class I case in 20 to 24 office visits. By using the "one-fee-covers-all" approach, the patients follow through with comprehensive treatment and we no longer have discussions on why the second phase is necessary.

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**"The greatest advantage of a mature recall system is that patients begin treatment at the best time to maximize overall treatment efficiency."**

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**Retention**

The final element of a philosophy of treatment efficiency has to do with proper retention and supervision of finished cases. Many practices see an unnecessary number of retention patients each day. In our practice, 4 to 6 percent of the patients we see each year are in the final retention phase.

I believe in fixed lifetime retention in the lower arch. After using several types of retainers over the years, I've found that the fixed .032 stainless steel wire bonded to the cuspsids with light-cure composite offers the most consistent and trouble-free retention. Polyvinyl (.5 mm) retainers that extend to the second molars are used over both arches. The lower polyvinyl provides extra protection to ensure proper alignment of the lower incisors. It is also useful if the lower fixed retainer is lost or broken.

After retainers are placed, patients are seen in four to six months. They are instructed to wear their retainers only at night unless there is a concern for spacing in extraction areas. In these cases, the patients wear their retainers full time until the next appointment. If the case looks good at the first visit, the patient is seen again in a year. This annual visit is usually the last visit, and our patients graduate from our orthodontic program. With graduation comes the responsibility for them to continue to wear their retainers.
and to seek help if the retainers are lost, no longer fit or need repairs. By keeping the retention phase to three to four visits, the daily schedule is not burdened by unnecessary appointments.

Conclusion
There are other major topics yet to be discussed that are essential to the development of the highly efficient and profitable practice. Fortunately, that will give me something to write about in the future. Remember, with the right philosophy of treatment based on sound problem-solving tactics, any office can achieve the desired result. Be prepared for many challenges as you change and don't expect immediate results. This process is gradual and methodical. The good news is that many orthodontists throughout the country are now realizing the benefits of less stress, extra time, increased profits and high-quality orthodontic results. I hope you enjoy your journey.

CASE III: A.A. – Class II, Div. I Skeletal and Dental Malocclusion.


After Herbst treatment (11 months in Herbst, 7 total visits).

An upper holding arch will maintain the arch length while the cuspids and bicuspids continue to drift distally.
left. The maxillary cuspids were unerupted. The maxillary right first bicuspid was in contact mesially with the right lateral incisor. There was approximately 1 mm of space between the maxillary left bicuspid and the left lateral incisor. The pretreatment maxillary arch is shown in Figure 22. Lokar Distalizers were seated on 9-27-94 and can be seen in Figure 23. Progress photographs taken on 1-11-95 (Fig. 24) show the amount of molar distalization achieved after 14 weeks of treatment. Progress photographs taken on 2-20-95 (Fig. 25), after 19 weeks of treatment, show the maxillary arch after the completion of molar distalization and the placement of brackets and bands. Again, the A.M.-P.M. appointment was used to minimize the mesial movement of the molars and ensure an accurate fit of the Nance placed on the molars.

Case Three – Patient J.C.

Case three is another example of clinical indication number two. The patient was a 30-year, 3-month-old adult male who presented with a Class I molar relationship on the right and a Class II molar relationship on the left. The maxillary left cuspids was positioned labially and slightly high in the vestibule. A moderate amount of crowding was also present in the maxillary anterior segment. The pretreatment maxillary arch is shown in Figure 26. The treatment plan for the patient involved nonextraction therapy and unilateral distalization of the maxillary left molars. Treatment was initiated on 2-22-95. The patient was seen on 3-29-95 with no progress seen. The distalizer was removed and checked for proper function and reseated. The patient was seen on 4-26-95; again, no progress was seen. Investigation revealed the presence of a clenching habit that caused the teeth to interdigitate so strongly as to prevent the distal movement of the molars. A new Nance in the form of a bite plane was constructed and seated on 5-31-95 (Fig. 27). Progress photographs taken on 8-1-95 (Fig. 28) show the amount of molar distalization achieved after 8 weeks with the bite plane. Progress photographs taken on 9-13-95 (Fig. 29), after 14 weeks of treatment, show the maxillary arch after the...
Conclusion
As can be seen in the previous clinical examples, molar distaliza-
tion utilizing the Lokar Molar Distalizing System has proven
to be an indispensable new item in my "menu" of orthodontic
hardware. In reviewing how the Lokar Distalizer has affected my
practice goals, I have reached the following conclusions: The
system does produce consistent and predictable results that
contribute significantly to my ability to produce high-quality
results. It is a very efficient system that requires very little chair
time to initiate treatment and check progress. The system has had
a positive effect on profitability due to its efficiency. It also is a fun
thing to do. I feel the Lokar Molar Distalization System will truly
contribute more ammunition to your operatory.

* The Lokar Distalizing Appliance is protected under U.S. Patent Number 5,299,935

The First Vienna Orthodontic Conference
June 14-15, 1996
Honoring Dr. Charles J. Burstone
“Force Driven Solutions to Orthodontic Mechanotherapy”

The University of Vienna is sponsoring the first Vienna
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A select faculty will present a comprehensive symposium
encompassing current thinking on orthodontic force
systems and biomechanics:

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Open and panel discussions are also scheduled. For preapplication contact:
Universitätsklinik für Zahn-, Mund- und Kieferheilkunde
Abteilung für Kieferorthopadie (Fr. Ruth)
Währinger Strasse 25 a, A-1090 Wien
Tel. (0222) 401 81 Dw 2300       Fax (0222) 406 35 204
## Lecture/Course Schedule at a Glance – Through June 1996

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<th>Lecturer</th>
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<th>Sponsor, Contact and Subject</th>
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<tr>
<td>3/2-3</td>
<td>Wick Alexander</td>
<td>Ann Arbor, MI</td>
<td>U. of Mich.; Dr. McNamara (313) 763-5070; Moyers Symposium, “Patient Motivation”</td>
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<td>3/2-3</td>
<td>J. Hilgers/R. Bennett</td>
<td>El Paso, TX</td>
<td>Tweed Group; Dr. Sullivan (915) 593-1181; “The Essence of Practical Orthodontics”</td>
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<td>3/11</td>
<td>David Sarver</td>
<td>Beaver Creek, CO</td>
<td>Faces; Dr. Thomas (919) 493-8944; Condylar Resorption &amp; Sleep Apnea</td>
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<tr>
<td>3/20-22</td>
<td>L. Batres/J. Calderon</td>
<td>Panama City, Panama</td>
<td>Dr. Batres; Dr. Batres (507) 264-3619; Alexander Discipline Comprehensive*</td>
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<tr>
<td>3/21-22</td>
<td>Wick Alexander</td>
<td>Kansas City, MO</td>
<td>UMKC Alumnae; Dr. Blackwell (816) 524-6525; Open Bite &amp; Class III Tx</td>
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<td>3/21-23</td>
<td>ESLO</td>
<td>Monaco</td>
<td>European Soc. of Ling. Ortho.; Dr. Altounian (Fax) 33-1 39 64 9554; 2nd Symposium</td>
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<td>4/11-13</td>
<td>Wick Alexander</td>
<td>Frankfurt, Germany</td>
<td>Ormco GmbH; G. Walburger 498381 921892; Alexander Discipline Comprehensive*</td>
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<td>4/12</td>
<td>James Hilgers</td>
<td>Nashville, TN</td>
<td>Tenn. Ortho Assoc.; Dr. Johnson (615) 893-9151; “Moving Toward Noncompliance”</td>
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<td>4/15-17</td>
<td>Wick Alexander</td>
<td>Istanbul, Turkey</td>
<td>Medikodental; T. Ates 90-216-3508118; Alexander Discipline Comprehensive*</td>
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<td>4/19-20</td>
<td>David Sarver</td>
<td>Braselton, GA</td>
<td>Ga. Ortho &amp; Oral Surg. Mtg.; Dr. Field (404) 536-0882; Surgical Orthodontics</td>
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<td>4/19-21</td>
<td>Wick Alexander</td>
<td>Madrid, Spain</td>
<td>Kalma; Manuel de Felipe 341 380 2383; Alexander Discipline Advanced</td>
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<td>4/21-22</td>
<td>J. Hilgers/R. Bennett</td>
<td>Laguna Beach, CA</td>
<td>Drs. Hilgers &amp; Bennett; Linda (714) 830-4101; “The Essence of Practical Orthodontics**</td>
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<td>4/21-26</td>
<td>J. Hilgers/R. Bennett</td>
<td>Laguna Beach, CA</td>
<td>Drs. Hilgers &amp; Bennett; Linda (714) 830-4101; Key Personnel Seminar</td>
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<td>5/6-8</td>
<td>Mario Paz</td>
<td>Beverly Hills, CA</td>
<td>Ormco &amp; Spec. Appl.; Shelly (310) 278-1681; Lingual Orthodontics*</td>
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<td>5/13</td>
<td>Randall Bennett</td>
<td>Denver, CO</td>
<td>AAO Annual Mtg.; Lecture – Practice Management</td>
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<td>5/16-18</td>
<td>Wick Alexander</td>
<td>Arlington, TX</td>
<td>AD Club, America; Brenda (817) 275-3233; Second ADI Worldwide Symposium</td>
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<td>5/24-27</td>
<td>Stanley Braun</td>
<td>Poprad, Slovakia</td>
<td>Nomia; Dr. Halaharin 0042-7-846006; Modern Edgewise Mechanotherapy*</td>
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<td>5/30-62</td>
<td>Stanley Braun</td>
<td>Danaska Dysh., Slov.</td>
<td>Nomia; Dr. Halaharin 0042-7-846006; Modern Edgewise Mechanotherapy*</td>
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<td>6/4-5</td>
<td>Wick Alexander</td>
<td>Tel Aviv, Israel</td>
<td>Israel Ortho. Soc.; Dr. Blitz 09441253; Alexander Discipline Comprehensive*</td>
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<td>6/6-9</td>
<td>Stanley Braun</td>
<td>Bratislava, Slovakia</td>
<td>Nomia; Dr. Halaharin 0042-7-846006; Modern Edgewise Mechanotherapy*</td>
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<td>6/8-9</td>
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<td>Liestal, Switzerland</td>
<td>Swiss Alex. Disc. Club; Dr. Jenne 0049 27122099; Alexander Discipline Advanced</td>
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<td>6/9-10</td>
<td>Randall Bennett</td>
<td>Paris, France</td>
<td>AOSM; Josiane (1) 48591617; Lecture – Contemporary Orthodontics</td>
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<td>6/13</td>
<td>Wick Alexander</td>
<td>Forte dei Marmi, Italy</td>
<td>Alexander Discipline Study Group, Italy; Roberta 0187-966377; Study Group Meeting</td>
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<td>6/14-15</td>
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<td>Forte dei Marmi, Italy</td>
<td>Biaggini Ormco Italia; Roberta 0187-966377; Open Bite, High Angle &amp; Class III Tx</td>
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<td>6/14-15</td>
<td>Vienna Conf. Faculty</td>
<td>Vienna, Austria</td>
<td>U. of Vienna; Fr. Ruth 0222 401 812300; Orthodontic Mechanotherapy</td>
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<tr>
<td>6/23-25</td>
<td>Didier Fillion</td>
<td>Paris, France</td>
<td>Dr. Fillion; 33 1 4405907; In-Office Lingual Ortho., Typodont Lab &amp; Clinic*</td>
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<tr>
<td>6/30-7/1</td>
<td>David Sarver</td>
<td>Virginia Beach, VA</td>
<td>Vir. Assoc. of Ortho.; Dr. McCorkle (703) 563-1640; Contemporary Planning &amp; Tx</td>
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*Typodonts and/or Participation

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Mark your calendar and include Arlington in your post-Denver travel arrangements. Symposium will be sponsored by the Alexander Discipline Study Club of America. Agenda includes special focus on Class III Tx. Keep up with the latest developments and enjoy Texas-style hospitality. For details, contact Brenda at: Phone (817) 275-3233; Fax (817) 277-3826.