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J O U R N A L

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Special 16-Page AAO Edition

INSIDE...

Planning the "PR" Eventp. 2

By Ms. Sandi Gayle

AAO Centers of Interestp. 3

New Product Highlightsp. 12

Bracket Design and Patient Comfort

By LARRY W. WHITE, D.D.S., M.S.D.

Diplomate of the American Board of Orthodontics
Hobbs, New Mexico

Patient cooperation during orthodontic treatment has been and probably will continue to be the most important variable with which orthodontists must deal.

In the past most of our effort to elicit patient compliance was directed to understanding the underlying reasons for uncooperative behavior.¹ This Freudian *medical model* presumes outer behavior to be nothing more than an outer symptom of a deeper and inner, unresolved conflict. The medical model encourages the clinician to treat this inner problem in order to eliminate the outer symptom.

Unfortunately, there is no agreement about the effectiveness of treatment based on the medical model. It also requires expert professional help and it makes no provision for patient self-help.

Rather than trying to understand and control a patient's neurotic tendencies, response to authority and the lack of self-esteem,² orthodontists might be better advised to seek control of the orthodontic environment through the judicious choice of appliances and force systems, since there is recent evidence that uncooperative orthodontic

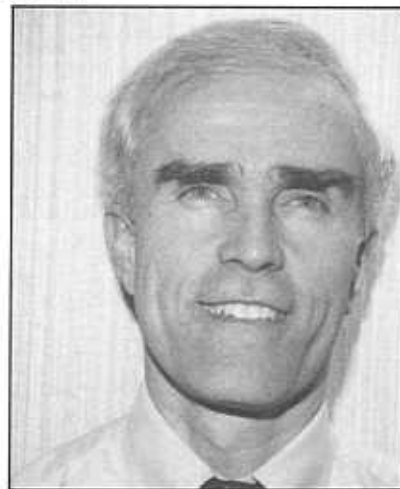
Continued on page 6

Why I Came Back to Titanal™/Counter Force®* After Trying Substitutes

By CYRUS W. BAZEMORE, JR.,

D.D.S., M.Sc.O.

Winston-Salem, North Carolina



On a recent visit to my office, the Lancer Regional Manager, Ken Brown, learned of my happiness with

Titanal/Counter Force archwire. He requested that I share some of my feelings on the use of this archwire clinically. I asked Lancer to provide magnified photographs comparing Titanal/Counter Force and competitive "M" arch surface areas, photographs illustrating the differences in arch form and anterior torque between Titanal/Counter Force and competitive arches, and a photograph of a Titanal/Counter Force arch that I bent and recontoured. The differences revealed in the comparative photographs along with the greater strength of Titanal wire apparently underlie the marked clinical superiority that I have experienced with Titanal/Counter Force in my practice.

Continued on page 10

Dr. C. W. Bazemore has been in private practice for approximately 18 years in Winston-Salem, N.C. Dr. Bazemore did undergraduate work at University of North Carolina, and then went on to U.N.C. School of Dentistry for his D.D.S. Thereafter, he received his Master of Science in Orthodontics from the U.N.C. Department of Orthodontics in Chapel Hill, N.C. Dr. Bazemore practiced orthodontics in the Air Force, then opened his private practice in Winston-Salem, N.C. in 1972.

*Titanal/Counter Force
Patent No. 4,818,226

Design and Comfort

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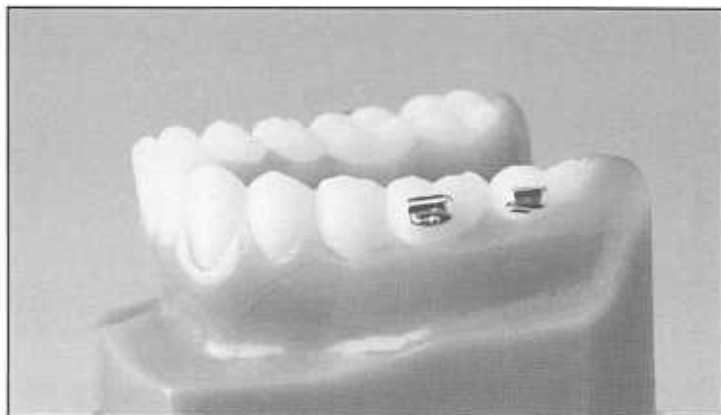


Figure 1: Shorty tube bonded to mesio-buccal cusp of partially erupted 2nd molar.

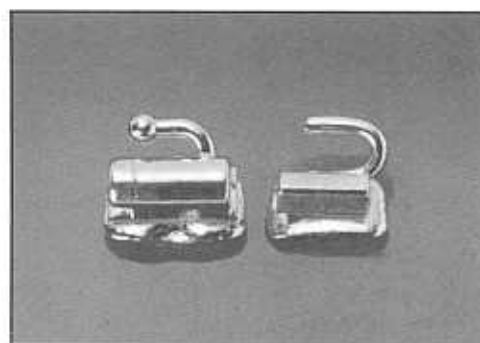


Figure 2: Current standard 4.2mm tube and 3mm Shorty tube.

patients have a low sensitivity threshold.^{3,4,5}

Patients born with low sensitivity thresholds are supersensitive to all kinds of stimuli such as bright lights, loud noises, unusual odors, tastes and tactile provocations. Their exaggerated responses to the discomfort brought about by orthodontic treatment result in a number of dental behaviors that complicate treatment: they pick at and break appliances, complain about pain, miss appointments, develop auto-immune intraoral ulcerations, have easily fatigued jaw muscles, refuse to use permissive appliances and salivate copiously.

Most of the non-compliance we encounter is not accidental or developmental, but the direct result of a genetic endowment. These patients don't have a character defect that prevents them from cooperating; rather, their heightened sensitivity makes it difficult to endure the biological changes we cause with treatment. And they aren't likely to change their non-compliant behaviors because of our threats, exhortations or punishments. In fact, these are likely to be counter-productive by causing resentment, counter-aggression, emotional arousal and avoidance.

The best chance orthodontists have of gaining cooperation from problem patients is somehow to lower their discomfort. There are many techniques orthodontists might use to *tame the pain*, and the following is a list of some that have been useful to me:

Most of the non-compliance we encounter is not accidental or developmental, but the direct result of a genetic endowment.

1. Decrease gingival inflammation with improved brushing, antibiotics and/or chemotherapeutics.
2. Improve the brushing technique by providing a softer-bristled toothbrush.
3. Prevent periodontal strangulation after adjustments with chewing gum or a Lancer bite wafer.
4. Use continuous forces rather than intermittent ones.
5. Limit the use of permissible appliances.
6. Use nonsteroidal anti-inflammatory agents (NSAIA) such as aspirin or ibuprofen after adjustments.
7. Use the most resilient wires possible

- such as .014 and .016 or .016 x .016 and .0175 x .0175 Titanal archwires.
8. Use bonded attachments as often as possible.
9. Use comfortable brackets with the largest intra and interbracket distances.

There is no doubt the bonding of brackets and tubes is more comfortable than the fitting and cementing of bands. The general public's knowledge of this phenomenon is probably the reason we are having such an influx of adult patients. They know orthodontic treatment doesn't hurt like it used to.

But many orthodontists resist bonding molars and bicuspid because of frequent breakage. This is less of an objection for me since Lancer began coating my brackets and tubes with a silane enhancer. The pre-treatment of metal appliances with specific organo-specific silanes significantly enhances the chemical adhesion of the composite paste to the bracket!

In company tests with extracted human teeth, Lancer has discovered that silane treated SinterLine brackets have as much as 25% more strength than untreated brackets. Clinical experience validates this *in vitro* study. Since having all of my brackets and tubes coated with a silane enhancer, the breakage of bonded appliances — particularly bicuspid and molars — has greatly diminished.

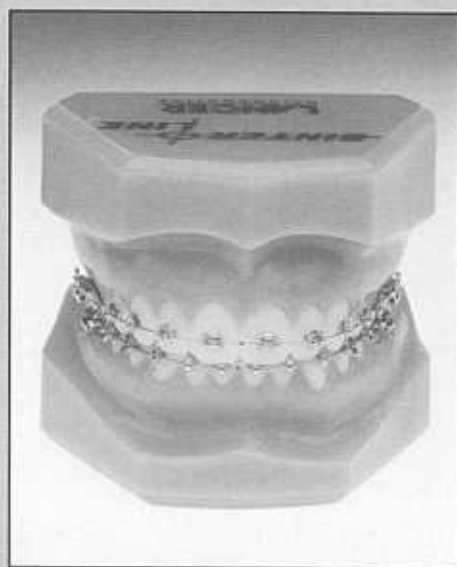
My clinical impression is that silane

Adjustable Wing SinterLine™— Alexander Rx

Maximizing Comfort, Simplifying Mechanics



Figure 3: Lower Adjustable Wing SinterLine Appliance.

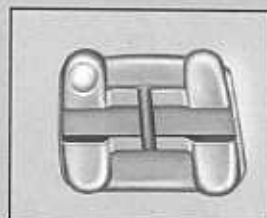


Adjustable Wing SinterLine

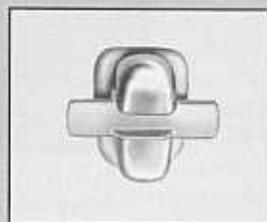
The Adjustable Wing SinterLine appliance provides the necessary interbracket distance to facilitate ideal tooth movement with light, *comfortable* forces. Added comfort results from the small, smooth, rounded contours of the Adjustable Wing SinterLine cuspid and lower anterior bonds and small twin SinterLine central and lateral bonds. The tooth-shaped brackets are markedly superior in cosmetic appeal to any other Lewis or twin type system. Because of their small, comfortable design, in some cases the upper 3-3 bonds can be positioned gingivally to become practically "invisible"; this is especially useful when bite closure is required.

The adjustable wings are ideal in dimension and temper; wings are long enough for rotational control yet short enough to avoid archwire hang-ups with tipped teeth.

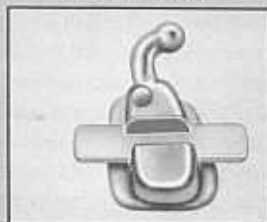
Lancer's small-based, short wing (4.5mm width) Lewis bonds or SinterLine twin bicuspids are preferred bicuspids selections to complete the Adjustable Wing SinterLine system.



Central



Lower Anterior



Upper Cuspid

treated bonds are about as resistant to breakage as cemented bands. So I typically bond from 2nd molar through 2nd molar. Bonding molars permits the inclusion of partially erupted 2nd molars that would be difficult or impossible to band and thus greatly speeds up treatment. I ordinarily use the extra-short 3mm tube (Shorty) for bonding 2nd molars. (See Figures 1 and 2)

The use of a comfortable bracket with maximum inter and intrabacket distances is important for patient comfort. Schudy, Schudy and Creekmore have conclusively shown that forces delivered to teeth are significantly less when the interbracket distance is large.^{7,8}

This is why I prefer the SinterLine Adjustable Wing bracket for the small lower incisors and cuspids. This bracket maximizes the interbracket distance and delivers less force to the teeth during the removal of rotations, leveling or torquing of teeth. (See Figure 3)

The bonding surfaces of these brackets are also reduced, but the silane coating more than compensates for the loss in bonding strength from smaller pads. Clinically, there seems to be no difference in the breakage rate of SinterLine Adjustable Wing brackets and those with larger bases.

Continued on next page

SPECIAL OFFER:

The Adjustable Wing SinterLine system (.018) is available through June 30, 1990 at a 40% discount for 1-49 cases and a 50% discount for 50 cases or more.

5-5, Regular: \$91.40/case

1-49 cases — \$54.84/case

50 cases or more — \$45.70/case

(Prices are for 5-5 with small, short wing, straight wire Lewis bonds on bicuspids. Twin SinterLine bonds or prewelded bands available for bicuspids at same discounts off retail prices.) To order, call Lancer toll-free or use the Response Form on page 15. ■

Design and Comfort

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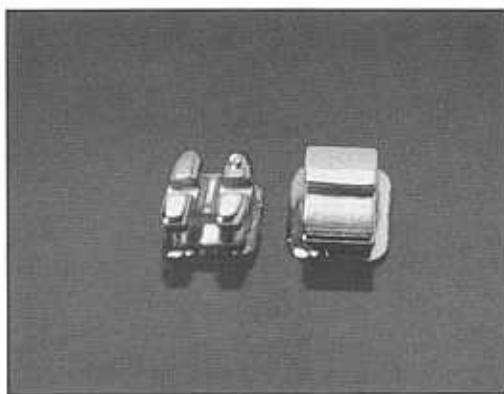


Figure 4: SinterLine lateral twin compared with single bracket.

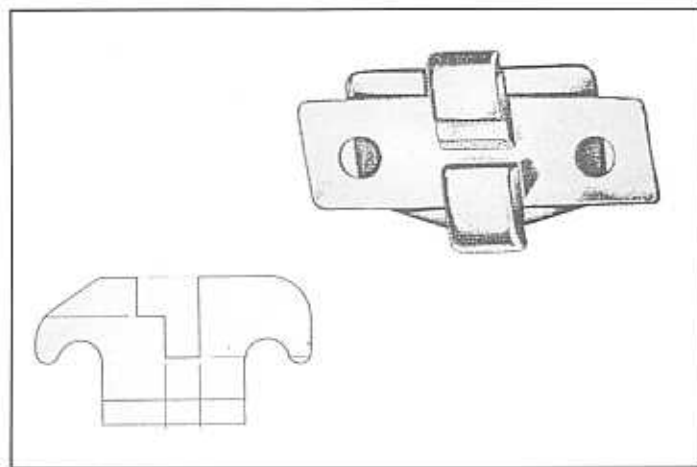


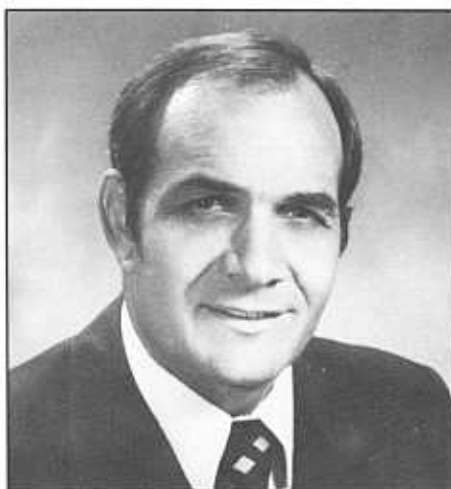
Figure 5: Schudy appliance—side view of design and labial view of bracket.

The miniature SinterLine Siamese brackets for the maxillary centrals and laterals are correspondingly small and their design and smoothly rounded edges make them easily tolerable. With the relatively wide central and lateral teeth, interbracket distance is sufficient and mechanical advantage is not compromised with these ultra-small twin brackets. (See Figure 4)

I prefer .018 bracket slots because of their ability to accept smaller, more resilient wires that torque teeth more efficiently, yet the .022 bracket will give clinicians more intrabacket distance that permits greater wire displacement and a subsequent lowering of forces in the initial phases of treatment.

In an effort to solve this dilemma of maximizing inter and intrabacket distance without sacrificing the efficiency of small wires, Schudy has suggested an appliance design that uses a large outer dimension slot during the initial phases of treatment (rotations, alignment and leveling) and then permits movement of the archwire into an inner, smaller slot that effectively controls the teeth in three planes of space? It is too early to see if this seminal design offers a significant advantage, but it has a theoretically sound basis for diminishing patient discomfort. (See Figure 5)

After 30 years in dentistry, I am more convinced than ever that diminishing patient



Dr. White

pain and the fear of pain is the key to enlisting patient compliance. There are many ways this can be done, but one should realize that bracket selection is an important feature of this strategy.

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Dr. White received his B.S. from the University of New Mexico and his D.D.S. and M.S.D. from Baylor Dental College. He practices in Hobbs and has satellite offices in New Mexico and Texas. He has published extensively and is currently Editor of the Journal of Clinical Orthodontics and the Rocky Mountain Society of Orthodontists Newsletter. He is past president of the Rocky Mountain Society of Orthodontists, the New Mexico Orthodontists Society and the Texas Tweed Orthodontic Study Group.