

DR. MIRGHANI AND DR. ALGEHANI (ORTHODONTIC REGISTRAR) RELAX DURING TIP-EDGE COURSE IN HOLY MAKKAH (PAGE 4).



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DRS. H. KELLER, T. GLOOR, R. MEYER AND B. SPYCHER OF SWITZERLAND EXAMINE DR. PETER KESLING'S "CAT IN THE HAT" PATIENT (PAGE 4).

FALL 1996

EDGE LINES

AUTOMATIC OVERTORQUE:

The dynamics of the Tip-Edge archwire slot permit easy, overtorquing of selected teeth. Cover Story.

PREVENTING OVER-RETRACTION IN CLASS II EXTRACTION CASES:

Extraction of maxillary second premolars instead of the firsts can reduce the need for anterior torque. Q's & A's, Page 2.

A DISAPPEARING ACT:

Side-Winders become less visible and more versatile, Page 3.



TIP-EDGE GRAPHIC



"YOU CAN REACH ME AT 1-800-TIP-EDGE." Tippy Tip-Edge becomes the first and only orthodontic bracket with its own phone number.

COVER STORY

Automatic Overtorquing Of Palatally Displaced Maxillary Lateral Incisor Roots

By: Peter C. Kesling, D.D.S., Sc.D.

The Problem

One of the most frustrating relapses is that of a maxillary lateral incisor that was originally in crossbite. To see the incisal edge slowly but surely retreat lingually is disheartening—not only to the orthodontist, but the patient as well. In severe cases even the conscientious wearing of a retainer is often not enough to stem the tide.

It is quite simple to tip the crowns of palatally displaced teeth labially into the line of the arch. Relatively light, round archwires of titanium or stainless steel and/or elastomeric ties provide the force for this first order movement which is the accepted practice for all orthodontic techniques.* This corrects the incisal edges from positions of crossbite to normal incisal relationships but it does not move the root tips labially. Actually heavy forces could even tend to fulcrum the root apices further palatally. If no subsequent steps are taken to move the roots labially (actually over move them), the crowns will tend to relapse back into positions of crossbite.

The Solution

The dynamic Tip-Edge archwire slot provides a means of automatically overtorquing the roots of such teeth labially (Fig-

ure 1 A-C and Figure 2).

The brackets are bonded upside down (this does not change the direction of the Tip-Edge archwire slot). The only change is in the torque in the bases, from -8 to +8 degrees. It is also recommended that the brackets be bonded further gingivally to ensure incisal overlap and further help prevent relapse.

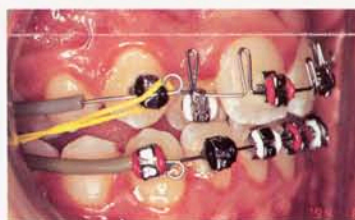
Conventional edgewise and

round wire techniques also have established methods of moving roots of incisors labially. However, in contrast to Tip-Edge each must be consciously instigated at the opportune time in treatment.

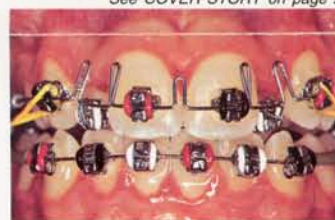
Conventional Edgewise To "Reverse Torque" Maxillary Lateral Incisors

Edgewise archwires (usually undersized to lighten the

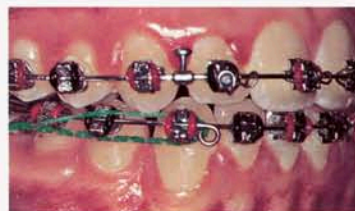
See COVER STORY on page 2



A



B



C

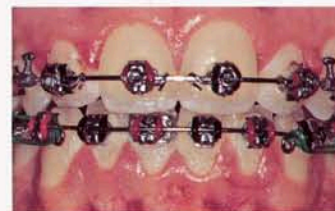


Figure 1A-C. A) Place appliance appointment. Maxillary lateral incisor brackets are bonded upside down and tied with steel ligatures to archwire. B) Beginning of stage three ten months later, both archwires .0215" x .028" and Side-Winder springs in place on all teeth requiring tip or torque correction including the labially flared maxillary lateral incisors. C) Twelve months later maxillary lateral incisors have been uprighted mesiodistally and reverse torqued labiolingually—compare their labial surfaces in front view with front view in B. All tip and torque achieved by single Side-Winder springs—no reactivation and no archwire modification. Mandibular .022" archwire replaced for one visit to close posterior spaces.

* Note: It is interesting to consider that orthodontists who claim teeth must be translated bodily to close spaces or reduce overjets, use this simple means of crown tipping followed by root uprighting to move them labially. If nothing else, this should give them "food for thought."

COVER STORY — Automatic Torquing

forces created) are modified with third order adjustments and deflected into static archwire slots to achieve root torque. However, palatally displaced lateral incisors often require 10 – 15 degrees of reverse torque to reach any degree of overcorrection. This is demanding on the operator and can be uncomfortable for the patient because of the “round trip” torque force applied to adjacent teeth. Furthermore, the “slop” between the size of the archwire and slots must continually be compensated by overadjusting the archwire.

The task of overtorquing roots *labially* can be further aggravated by preadjusted slots that are programmed to torque the roots *palatally*. Preadjusted lateral brackets could be inverted. However, this would require severe third order bends to initially achieve archwire engagement and many subsequent archwire modifications to return to a “straight wire.”

Round Archwires And Torquing Auxiliaries

Orthodontists using archwires that are round in cross section have a relatively easier task in that they do not have to fight (or even consider) the third order angulations of the archwire slots. Also there are a variety of torquing auxiliaries that can be employed to torque roots labially or palatally.

These include the Muir type that is prewound around the archwire or the Begg, Kitchton and reciprocal types that can be applied without removing the archwire. If the brackets have vertical slots, the highly versatile and effective Individual Root Torquing (IRT) auxiliary can also be used.

However, the problems associated with torquing in the presence of round archwires by such auxiliaries are varied. First, the fact that the archwires are round as compared to rectangular, reduces their stiffness by a factor of up to 50 percent. This

results in relatively less vertical and horizontal control as the auxiliaries can deflect the archwires in one or both dimensions. Second, and of no small significance, the orthodontist must reconsider the original position of each tooth in selecting, placing and activating such auxiliaries. In a busy practice this can easily be overlooked—until the end of treatment. Then what? Inform the patient he or she must have the appliances on for another 9 to 12 months?

The third problem with all torquing auxiliaries working against round archwires is that they are not self limiting. That is, in order to ensure force delivery at the desired inclination, such auxiliaries must be placed in configurations of overactivation. They have the activation and unbridled ability to torque the teeth an additional 10 to 20 degrees. With missed judgment or appointments this could be a significant problem.

Dynamic Slot Provides Automatic Overcorrection

The dynamic Tip-Edge archwire slot gives orthodontists a simple, yet automatic means of overtorquing labially the palatally displaced roots of lingually blocked maxillary lateral incisors. This is achieved through preadjusted *reverse* slot torque (created by bonding the Tip-Edge brackets upside down) and applying Side-Winder springs in conjunction with full size (.0215" x .028") rectangular archwires at the beginning of

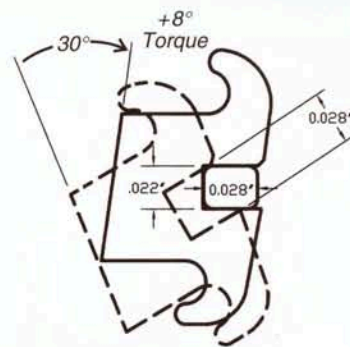


Figure 3. Inverted maxillary right lateral bracket. Force from Side-Winder spring acting against a passive, full size rectangular archwire can move the root labially 30 degrees to a +8 degree torque position without reactivation.

stage three.

It is not necessary for the archwire to be fully seated in a Tip-Edge slot in order for torque to commence. Clinical experience suggests (and computer aided drafting confirms) that as much as 30 degrees of torque (palatal or labial) can be achieved from a single Side-Winder working against a full size archwire, (Figure 3).

The reverse torquing is automatic in that it begins when a Side-Winder spring is applied for a different purpose—to move the root distally. There is no need for the orthodontist to even consider which direction torque should take for individual teeth.

This potential for overtorquing could transfer with a patient from office to office and be achieved even though the subsequent orthodontist was not aware of the original condition.

Continued on page 3

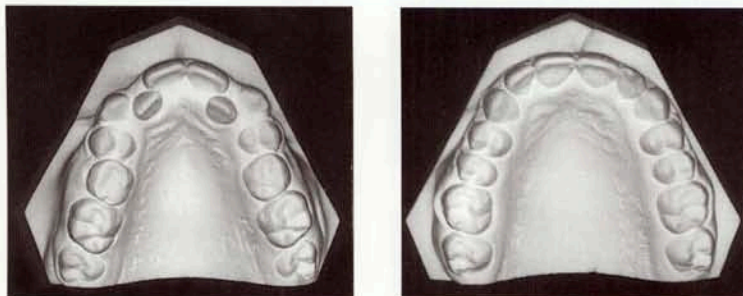


Figure 2. Occlusal views of before and after treatment models of patient shown in Figure 1. Note the lateral incisors have been moved into the line of the arch—but have no labial flare. This is evidence of labial “reverse” root torque.

Q's and A's

Q. *In Class II extraction cases I always extract the maxillary first premolars to help prevent the first molars from moving mesially. However, I am finding that the maxillary anterior teeth are tipped (overly) lingually at the beginning of Stage III. How can I avoid what seems to be an unnecessary degree of torquing?*

ORLANDO, FLORIDA

A. With Tip-Edge treatment mechanics there is no significant anchorage strain exerted upon the maxillary molars until after the overjet and overbite have been corrected in stage one. During stage two the anchorage loss in the maxillary arch is also negligible since the anterior teeth are free to tip distally during retraction. Consequently there is no reason to let anchorage considerations dictate which teeth are to be extracted in the maxillary arch when the extraction of teeth is indicated to correct a Class II malocclusion.

By eliminating anchorage concerns from diagnostic decision making, it is possible to take other important features such as tooth

size and condition into account when deciding which teeth to extract. Oftentimes the maxillary second premolars are significantly smaller than the first premolars. In these situations the second premolars are extracted even if a full step Class II molar relationship exists. By removing the smaller premolars, a better Class I molar relationship is achieved with less chance of posttreatment spacing in the maxillary arch as is often seen when larger, first premolars are extracted.

Generally, the only situations where maxillary first premolars are extracted (in conjunction with mandibular first premolars) are those which require either the correction of severe bimaxillary protrusions or severe anterior crowding. In such cases, initial retraction or unraveling will not produce excessive lingual inclinations of the maxillary incisors. Severe skeletal Class II malocclusions are also indications for the extraction of all four first premolars.

If the extraction of premolars is indicated, usually all four second premolars or maxillary second and mandibular first premolars are recommended. These treatment plans result in shorter treatment times and require less torquing in stage three. ☛

Automatic Torquing... Continued from page 2

Of course, even without inversion, Tip-Edge brackets will automatically create labial torque when required. However, it would then require third order adjustments to achieve any desired reverse torquing.

The torque force delivered by the Side-Winder spring is constant (though varying), needs no reactivation and is existent right to the end. It is significant that actual torque does not stop because of deactivation (which is the case with *all* other methods of torque by auxiliaries or archwire deflection) but because of mechanical stops between the archwire and the inner faces of the archwire slot. This is another first for Tip-Edge that sets it far ahead of any other orthodontic bracket. 📌

WITS Analysis Of Tip-Edge Gives It A "Thumbs Up"

Forty-one participants attended a Tip-Edge typodont course held in Johannesburg, South Africa the 21st and 22nd of March, conducted by Dr. Richard Parkhouse. The fact that every registrant also attended the second day is evidently regarded as something of a local record! The response was overwhelmingly positive.

Professor Bill Evans, organizer of the course on behalf of the South African Society of Orthodontists, commented afterward that every registrant had the opportunity to "live Tip-Edge," sharing fully in the excellent results, with frank discussion of problems and pitfalls. He has since received many laudatory comments and reactions. Interestingly, it is reported that the straight wire segment of the audience was particularly impressed.

Tip-Edge is now being energetically taught in the postgraduate program at Witswatersrand University. In return, Dr. Parkhouse was privileged to be made an Honorary Member of the South African Society of Orthodontists. (No group photo available.) 📌

New Invisible Side-Winder Springs Simplify Ligature Tie Changes

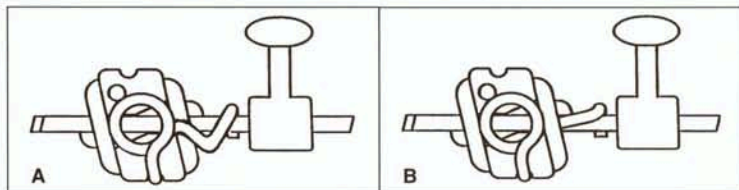


Figure 1A&B. A) Conventional Side-Winder springs must be removed and replaced to change ligature ties. B) New "invisible" Side-Winders eliminate the need to remove springs for ligature tie changes. These new springs also improve the appearance of the appliances during stage three.

With conventional Side-Winder springs, changing elastomeric ligature ties during stage three requires considerable chair time. This is due to the need to remove and replace all Side-Winder springs in order to change the underlying elastomeric ties (Figure 1A).

This problem can be overcome by placing Side-Winder springs first and ligating over both the springs and archwires with the elastomeric ties. If this is attempted with conventional Side-Winder springs, rotational control is compromised since the arm of the spring prevents the elastomeric tie from contacting the archwire.

Recently developed "invisible" Side-Winder springs* have eliminated this rotational control problem when the elastomeric ring is placed over both the spring and the archwire (Figure 1B). This has been accomplished by modifying the spring arm so it lays directly over the archwire when engaged.

As the name states, "invisible" Side-Winders not only make ligature changes much easier, but also improve the appearance of the appliances when the springs are in place. Invisible Side-Winders are also useful for those patients who tend to lose Side-Winder springs between appointments, since the ligature ties ligate the springs as well as archwires, directly to the brackets. 📌

*Available December 1, 1996

CASE REPORT

A 13-year-old female patient exhibited a Class II, Division 1 malocclusion with 10 mm overjet and 100 percent overbite with the mandibular incisors occluding on the palate. The extraction of teeth was not indicated due to the mild crowding present in the mandibular arch and the position of the mandibular incisors 3.5 mm behind the A-Po line.

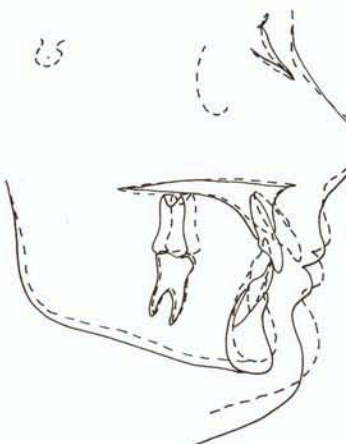


Maxillary and mandibular looped archwires were both fabricated from .016" stainless steel (A.J. Wilcock). Light Class II elastics (1½ ounces each side) were initiated along with strong bite opening bends to correct the overjet and anterior overbite.

After correction of anterior crowding, new .016" stainless steel archwires without loops were placed. Correction of overjet proceeded slowly due to poor elastic wear.



After 17 months of treatment, stage three mechanics were initiated with maxillary and mandibular .022" stainless steel archwires (A.J. Wilcock) and a 30 degree Torque Bar in the maxillary arch. Poor elastic wear during the first half of treatment resulted in an unusually long treatment time for this degree of malocclusion.



T.J. Female, 13 Years
 Class II, Division 1
 Nonextraction
 Archwires Used 8 (4U, 4L)
 Adjustments 16, Time: 24 Months
 Retention Upper & Lower Retainers

Cephalometric Changes:

	Start-Dotted	Finish-Solid
1-A-Po	-3.5 mm	+1.0 mm
Wits	+4.5 mm	-0.5 mm
SN-MP	20.0°	23.0°
ANB	4.0°	2.0°
SNA	86.0°	85.0°
SNB	82.0°	83.0°
1-SN	113.5°	100.0°

Tip-Edge Course At Orthodontic Center

Participants in the recent Tip-Edge course had an international flavor. Of the 41 in attendance, ten different countries were represented. There were large contingents from both Switzerland (4) and France (10). Dr. Gerard DeCoster of Brussels provided simultaneous French translation via radios with headsets.

This was the first course that used the new Third Edition of the TIP-EDGE GUIDE. It proved extremely helpful in guiding the students through their typodont exercises and served as a reference library as well.

One of the highlights of the course was the appearance of a life-size version of Tippy Tip-Edge during one of Dr. Parkhouse's lectures. Needless to say, he was surprised but continued with his lecture as if he had just greeted an old friend! 📌



May 6th — 8th Tip-Edge Course at Orthodontic Center, Westville, Indiana. Instructors in front (left to right) are: Dr. Chris Kesling, Dr. Thomas Rocke, Dr. Richard Parkhouse and Dr. Peter Kesling.



Drs. Bukhari and Mirghani (left of front row) and some of the orthodontists who participated in course held in Holy Makkah, Saudi Arabia.

Tip-Edge Course In Saudi Arabia

A two-day Tip-Edge Enlightening Introductory Course was recently given in Holy Makkah by Dr. Mirghani Awad Yousif, a consultant orthodontist for the Ministry of Health in London. It was opened by His Excellence Dr. Dahlan, the Deputy of His Royal Highness Prince Majid Al-Saud, The Governor of Makkah Region. The course was attended by fifteen orthodontists and included lectures, demonstrations and group discussions.

Dr. Bukhari, a Saudi orthodontist, qualified from England helped with lectures and group discussions.

Dr. Mirghani feels that Tip-Edge will have a very promising future in Saudi Arabia as the appliance is more socially acceptable than conventional straight wire which needs to be augmented with headgear. 📌

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