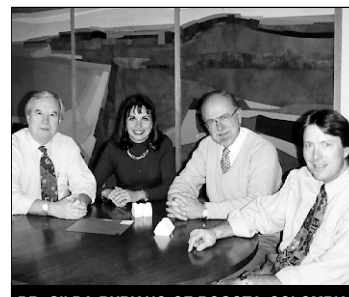


DRS. LOADER, KIFT, STRAIG, RAPAPORT (STANDING) PLUS HAWKINS AND PARKHOUSE (SEATED) PONDER SIDE-WINDER TORQUE IN AUSTRALIA—PAGE 3.



Published Quarterly In The USA

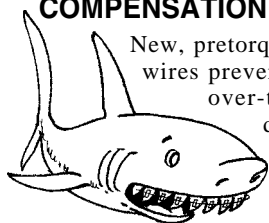


DR. GILDA RUBIANO OF BOGOTA, COLOMBIA VISITS WITH MEMBERS OF THE KESLING AND ROCKE ORTHODONTIC GROUP DURING TIP-EDGE REFRESHER COURSE—PAGE 4.

SPRING 1996

EDGE LINES

DEEP BITES MAY REQUIRE TORQUE COMPENSATION:



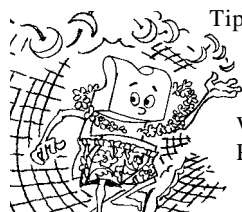
New, pretorqued archwires prevent incisor over-torque in deep bite cases. Cover Story.

MOLARS OUT OF WORK:

Tip-Edge efficiency lessens need for molar anchorage. Q's & A's Page 2.

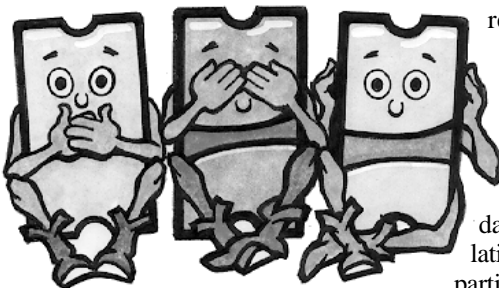


TIPPY SURFS THE NET:



Tip-Edge Today available on the World Wide Web. Page 3.

TIP-EDGE GRAPHIC



No Monkey Business —the Tippy triplets let the world know what they think of friction in orthodontics.

“Pretorqued” Rectangular Archwires

By: Dr. Richard Parkhouse, Consultant Orthodontist, Glan Clwyd Hospital, WALES

With the recent introduction of pretorqued .0215" x .028" archwires (TP 381-195 maxillary, 381-196 mandibular), setting up for rectangular Stage III has suddenly become easier, quicker and more accurate. No longer should it be necessary to manipulate



Dr. R.C. Parkhouse

torque settings into the anterior segments of archwires in the majority of cases.

The passive set of the rectangular cross section is of course relevant, serving as a “reference plane” for the final torque angulations that will be achieved by the Side-Winder springs. Completion of both torque and tip are self-limiting and stop simultaneously. If the rectangular cross sectional angle is flat, parallel with the occlusal plane (referred to as a “zero torque” setting), each bracket will express the torque value built into its respective base.

Generally, a zero torque setting is appropriate. However, there are occasions with adverse skeletal discrepancies, when standard incisor torque angulations will be inappropriate, particularly in Class III cases.

Indications for Anterior Torque Compensation

The most common indica-

tion for pretorqued archwires is the deep bite problem. Here the new archwires are particularly useful in preventing unwanted incisor proclination, which can result from using vertical bite sweeps in ordinary, untorqued rectangular archwires (Figure 1-A).

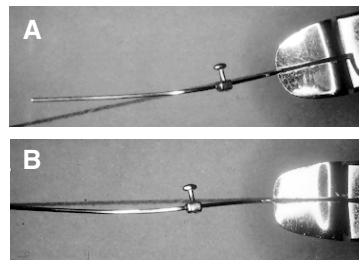


Figure 1-A & B. A) Placing a bite opening sweep into a flat untorqued rectangular archwire will automatically induce labial crown torque to the incisors. B) Using a pretorqued archwire, the 5 degrees lingual crown torque in the maxillary anterior segment compensates the effect of the bite sweep to produce zero torque through the maxillary incisors.

The pretorque in the archwire, in this context, is compensating the bite sweep rather than the skeletal pattern. It is, in fact, lingual crown (labial root) torque which, in the anterior segments, cancels the labial crown (lingual root) torque that would otherwise result from the bite sweep (Figure 1-B). Zero torque at the front is, therefore, preserved, which will neither add nor subtract from the Tip-Edge Rx-I bracket prescription.

Advantage of Mid-Crown Bonding Positions

The amount of vertical curvature necessary in the rectangular archwire to maintain overbite reduction will, however,

vary slightly with the bonding position chosen by the operator. As with pretorqued appliances in general, a mid-crown bonding position as described by Dr. L.F. Andrews¹ is recommended, rather than a more incisal bonding height.

Bonding jigs can readily be modified by cutting off the occlusal rests. The vertical arm of the jig can be aligned with the long axis of the crown, at its midpoint, while the vertical placement, at mid-clinical crown height, can be gauged by eye (Figure 2).

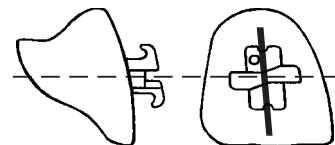


Figure 2. The mid-crown bonding position, as originally described by Dr. L.F. Andrews.

The advantage of a mid-crown bonding position is that it coincides with the point of greatest crown convexity. It will, therefore, automatically produce a more consistent final torque prescription, irrespective of the size of the clinical crown. It also increases efficiency of torquing, compared with an incisal bonding position, which is less distant from the root itself.

Pretorqued Archwires

The maxillary archwire contains 5 degrees of pretorque, the mandibular 8 degrees. Both wires are .0215" x .028" with square (not rounded) edges. The pretorque extends to the

Continued on page 2

“Pretorqued” Rectangular Archwires... Continued from page 1

distal of the archwires. By means of a few simple adjustment steps by the operator, it is therefore possible to accommodate to variations of tooth width and arch form without stocking a range of different sized archwires.

Centerline markings (single for maxillary, double for mandibular) appear on what will normally be the gingival surface of the maxillary archwire and the incisal surface of the mandibular (Figure 3).

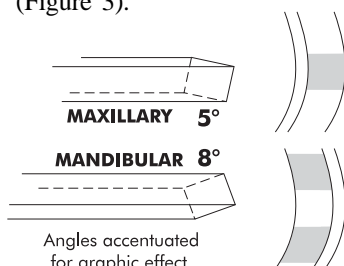


Figure 3. Pretorqued archwires — 5 degrees of lingual crown torque (maxillary) and 8 degrees (mandibular). The centerline markings, on the upper surfaces, should both be visible to the operator on insertion.

In increased overbite cases, where bite sweeps are required to maintain overbite reduction, both centerline markings should, therefore, be visible to the operator when fitted. This is to ensure that neither arch will inadvertently be placed upside down. The lingual crown pretorque across the incisors thus compensates the labial crown torque that occurs in the incisor region when placing a vertical bite sweep, so preserving “zero torque.”

Of course, pretorqued archwires are not required for every case. Where anterior openbite or minimal overbite existed initially, bite sweeps will obviously not

be necessary. In such instances, plain rectangular arches (TP 381-197/8) can be fitted without bite sweeps and, except in cases of severe skeletal discrepancy, no adjustment to anterior torque values will be necessary, with “zero torque” throughout.

Detorquing the Buccal Segments

Due to the continuity of the wire, the pretorque in the anterior segment extends to the distal ends. Therefore, it is necessary to return the posterior segments of the archwire to “zero torque.” This is a simple adjustment, made by grasping the archwire with two pairs of torquing pliers (TP 100-142P) immediately adjacent (one on each side) to each traction hook in turn (Figure 4). A small twist

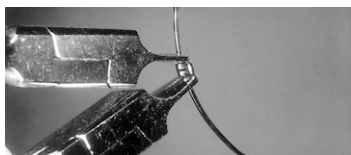


Figure 4. Eliminating undesired posterior crown torque.

at this point can return the unwanted lingual crown torque along the posterior segments to “zero torque,” similarly on the opposite side, without altering the pretorque in the anterior segment. Verify the zero torque by holding one posterior segment of the archwire in a torque plier and sighting across to the opposite leg, as described in the Tip-Edge Guide² (Figure 5).

Bite Sweeps Achieve Zero Anterior Torque

Having detorqued the buc-



Figure 5. Verifying zero torque in the buccal segment.

cal segments, all that remains is to wipe in the bite sweep with thumb and finger, steadying the archwire in a torque plier immediately mesial to each hook in turn. To check that the sweep has compensated the pretorque to zero, hold the archwire at its midpoint and eye along the interspace between the plier beaks, as illustrated in the Tip-Edge Guide.²

Small alterations in anterior torque can easily be made by holding the archwire firmly at its centerline in a plier. Gentle upward pressure with fingers beneath the distal ends will slightly increase palatal root torque in the maxillary anterior segment, while depressing the ends will reduce it, and vice versa in the mandibular. Recheck for zero torque in the posterior segments.

Skeletal Variations

The most common need for a modified anterior torque prescription arises in severe Class III cases. Since the majority of Class III cases have a raised mandibular angle with reduced overbite, bite sweeps will not normally be necessary. In these circumstances, pretorqued rectangular archwires can be fitted flat and the pretorque across the anterior segment can be used to compensate the skeletal pattern.

It is frequently necessary, in

addition, to accommodate some proclination of the maxillary incisors. For this purpose, a maxillary pretorqued archwire can also be placed *upside down*. In this instance, the centerline marking will not be visible to the operator on insertion. With no bite sweep, 5 degrees of proclination will automatically be provided to the maxillary incisors (Figure 6-A). Again, the

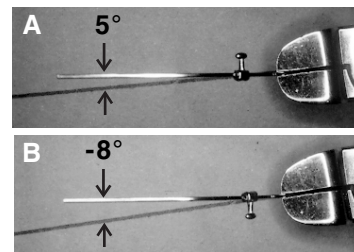


Figure 6-A & B. Compensating a Class III skeletal pattern, without increased overbite. A) The maxillary archwire must be fitted upside down to allow 5 degrees of maxillary incisor proclination. B) Pretorqued archwire can be fitted flat to produce 8 degrees of retroclination of the mandibular incisors.

posterior segments will normally be adjusted to zero torque.

It is usually necessary to finish the mandibular incisors to a retroclined position, in order to maintain a positive overjet. A mandibular pretorqued archwire used without a bite sweep will give 8 degrees of retroclination to the mandibular incisors (Figure 6-B). All that is required is to adjust the segments distal to the hooks to zero torque, as described above. 🦷

References

1. Andrews LF. The straight wire appliance explained and compared. *J Clin Orthod* 1976; 10:174-195.
2. Kesling PC. *Tip-Edge Guide*, 2nd ed. 1992, Two Swan Advertising pp. TE-39.

Q's and A's

Q. When using Tip-Edge brackets and the Differential Straight-Arch Technique, are the second molars routinely banded?

WYNCOTE, PENNSYLVANIA

A. Because of the unique Tip-Edge archwire slot, there is no need for more than one molar in each quadrant for anchorage. Usually second molars are only banded if they need leveling, rotation or are in crossbite.

Q. Is it possible to substitute an accentuated bite sweep for an anchor bend during bite opening?

MANILA, PHILIPPINES

A. Yes. The important thing is the distance the anterior portion of the wire is displaced gingivally from the archwire slots in the

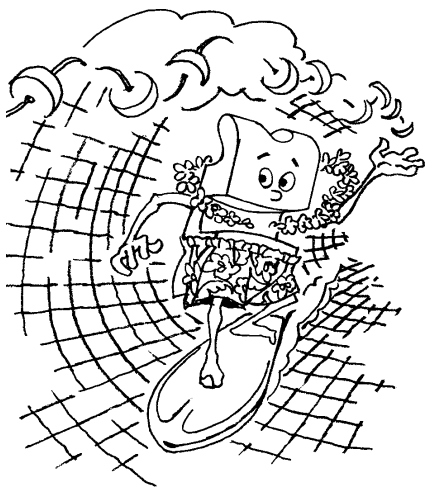
brackets. However, if the wire slides distally through the molar tubes (posterior space closure), the amount of anterior gingival displacement (bite opening forces) may become reduced. This might not be recognized as readily as when using localized, bite opening bends.

Q. In Stage III, when using a .022" x .018" nickel titanium Torque Bar, how many degrees of change in angulation can one reasonably expect and in how much time? Do you use 20° or 30° bars routinely? Is it possible to achieve 10° of torque?

PIKETON, OHIO

A. The average rate of torque is approximately 2° per month and the 30° Torque Bar is preferred. With proper insertion it should deliver 10° of torque within six months. 🦷

TP Orthodontics Goes Online and Features Tip-Edge Today— <http://www.tportho.com>.



Tip-Edge Today is the first orthodontic publication available on the World Wide Web. The WWW Tip-Edge pages will allow for instantaneous worldwide computer access to the latest developments in the Tip-Edge appliance and technique.

When fully constructed, the Tip-Edge Web site will include most articles as well as graphics and photos from current and past issues of Tip-Edge Today.

The online version of Tip-

Edge Today will also allow for faster answers to technique questions through an electronic bulletin board feature. Information will also be provided on upcoming Tip-Edge courses and lectures as well as the latest information on new product developments and technique tips. In response to popular demand the latest "Tippy" cartoon adventures will also be posted on this Web site.

Through the use of an attached printer, hard copies of any items posted on the Tip-Edge pages can easily be printed (in full color with appropriate printers) for use in research or teaching. Although the first Tip-Edge pages may be a little "rough" in appearance please be patient as they will be continuously updated and improved in quality. Tip-Edge Today Online can be accessed at: <http://www.tportho.com>.

Indonesian Tip-Edge Course



A two-day basic course was held in October 1995 at Ladokgi R.E. Martadinata, Jakarta. The course leader (sixth from left) was Commander Dr. A. Betny Sumantri of the Indonesian Navy.

All the participants in the course were enthusiastic and diligently went through all the stages on their typodonts. Tip-Edge Guides, translated into Indonesian by Dr. Sumantri, helped make the course a success.

Tip-Edge in Japan



In October of 1995 Dr. R.C. Parkhouse (front row center) spoke to the members of the Japanese Tip-Edge Society in Nagoya. His topic was "The Vertical Dimension." The Society is only three years old but already has held nine meetings and has over 120 members. He also gave a 3-day typodont course in Tokyo.

CASE REPORT

This 15 year old female exhibited a Class II, Division 1 malocclusion with a Wits value of +1.5 millimeters. While the extraction of teeth was clearly required to correct her malocclusion (total discrepancy of -7.0 mm) second, rather than first, premolars were extracted to prevent flattening the profile.



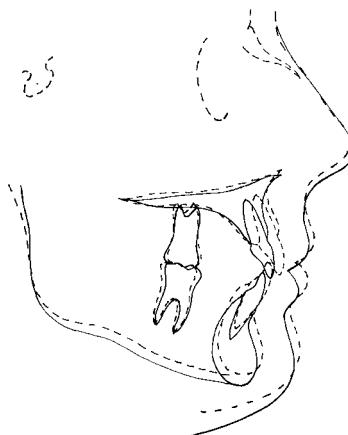
Tip-Edge appliances with .016" Wilcock stainless steel archwires were placed in both arches. Zing® String was used to tip the maxillary right first premolar distally just enough to allow for alignment of the canine.



Stage II began using the original .016" Wilcock archwires with bite opening curves. At the next appointment, maxillary and mandibular .022" archwires were placed to maximize molar rotational control during final space closure.



After all extraction sites were closed, Stage III was initiated with square edged .0215" x .028" stainless steel archwires in both arches. Side-Winder springs were placed on all teeth to upright and torque them to their final inclinations.



H.K. Female, 15 Years
Extractions U55, L55
Archwires Used 6 (3U, 3L)
Adjustments 17, Time: 25 Months
Retention Perfector

Cephalometric Changes:

	Start-Dotted	Finish-Solid
I-APo	+1.5 mm	+1.0 mm
Wits	+1.5 mm	0.0 mm
SN-MP	32.5°	33.0°
ANB	4.5°	4.0°
SNA	79.5°	78.5°
SNB	75.0°	74.5°
I-SN	91.0°	92.0°

Graduate Students' Tip-Edge Course

On November 17th-18th, first year graduate students of some of the orthodontic programs that teach Tip-Edge took a course at the Orthodontic Center. Begun in 1994, these courses have proved to be an effective springboard for students to dive into Tip-Edge. Participating schools included Columbia University, Montefiore Medical Center, Saint Louis University, State University of New York at Stony Brook and University of North Carolina. 📖



Students from Saint Louis University examine patient at the Orthodontic Center.

Tip-Edge in Australia



In October of 1995 Dr. R.C. Parkhouse (seated, third from left) gave an advanced course in Sydney, New South Wales. Over 40 orthodontists, including some post graduate students, attended the lectures at the Swiss Grand Hotel. 📖

Graduate Orthodontics and Tip-Edge in Colombia, S.A.

As a way to expand new horizons, the CIEO* Military University in Bogota, Colombia has been teaching the Differential Straight-Arch® Technique for over 5 years.

The course begins with a semester which covers theory and practice. The students bond brackets on typodonts which have been set in different malocclusions and go through the three stages of the technique. The next semester the students start many Tip-Edge cases which are easily finished before they graduate because it is a three year orthodontic program.

The Tip-Edge technique is taught by Dr. Gilda Rubiano who attended a course at the Orthodontic Center in 1989 and returned for a Refresher in 1995. Chairman of the Department, Dr. Eduardo Galvis, and Dr. Guiomar Cely also assist with Tip-Edge patients in the clinic. Both attended a Tip-Edge course a few years ago. The University has many records of patients treated with the technique that prove its speed, ease and effectiveness. 📖

*Center of Investigation and Education of Orthodontics



Starting second from left: Dr. Eduardo Galvis, Dr. Gilda Rubiano, Dr. Elsa Arango, Dr. Guiomar Cely and third semester students of the CIEO Military University.

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