

DRS. PETER KESLING, FRANCOIS COURATIER AND GERARD DE COSTER RELAX DURING TIP-EDGE COURSE IN MONTPELLIER, FRANCE (SEE PAGE 4.)



TIP EDGE TODAY™

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PROF. MILTON SIMS (CENTER) WITH DRs. CHRIS KESLING (LEFT) AND DR. ALAN ISAAC (RIGHT) DURING RECENT TIP-EDGE COURSE IN AUSTRALIA (SEE PAGE 4).

WINTER 1994-95

EDGELINES

POWER TIPPING—

Helps cut corners during retraction. An exclusive option with Tip-Edge brackets only. See Cover Story.



EASY LIFT-OFF—

Tip-Edge brackets are easily removed with vertical pressure. See Page 2.



MANAGING POSTERIORS—

Modifying the ends of the archwire for improved molar control at the end of Stage II. See Page 3.



TIP-EDGE GRAPHIC



Tippy's on a roll—into his 9th year and getting larger all the time.

Continuous Power Tipping — An Exclusive Edgewise Option With Tip-Edge Brackets

Distal tipping of crowns by second order bends in the archwires was first suggested by E.H. Angle¹ (Figure 1). This was his attempt to overcome the limitations to tooth movement created by the horizontal archwire

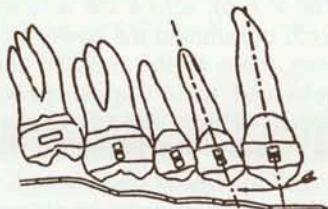


Figure 1. Second order bends by Angle to tip teeth distally — circa 1925.

slot in his "latest and best..." tie (edgewise) brackets. The force generated by flexing the main archwire is initially high and quickly drops to zero.

C.H. Tweed perfected distal crown tipping with such second order bends in what came to be known as the Tweed Tech-

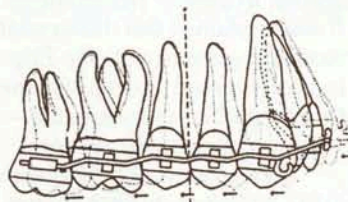


Figure 2. C.H. Tweed used second order bends extensively to aid in retraction.

nique.² He considered each bracket a potential power plant and pointed out the difficulty of synchronizing each—like timing the cylinders of an automobile engine (Figure 2).

The Tip-Edge archwire slot makes possible a new, easier and more selective means of "power tipping." The difference, of course, is that the power does not come from a deflected archwire. The power comes from an auxiliary. Suggestion of this exciting possibility was first made by P.C. Kesling in

1988³. At that time he illustrated the use of an elastomeric Tip-Edge ring placed in reverse to generate power to encourage distal crown tipping of a maxillary canine.

Today the power is generated by Side-Winder springs placed "backwards." That is, springs are chosen that apply force to tip the crowns (rather than the roots) distally (Figure 3).

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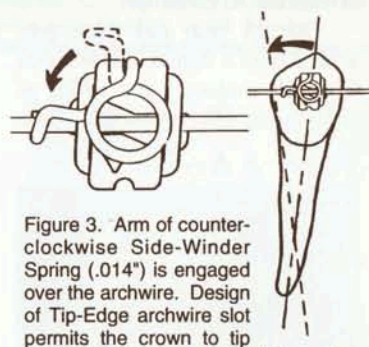


Figure 3. Arm of counter-clockwise Side-Winder Spring (.014") is engaged over the archwire. Design of Tip-Edge archwire slot permits the crown to tip distally under force created by spring.

UK Update *By Dr. Richard Parkhouse, Consultant Orthodontist, Glan Clwyd Hospital, WALES*

A highly successful three day Tip-Edge course was held for orthodontic consultants and trainees in Harrogate, September 30th to October 2nd. I was ably assisted by Professor Andrew Richardson of Belfast, Ireland.

My paper, "Out Torquing Edgewise," opened the following morning and was well received. It was a great privilege to receive tributes from Dr. Norman Cetlin during his own address,

in which he referred to the Tip-Edge presentation as "outstanding."

Another eminent speaker on the program was Dr. Jim Boley—a lifelong Tweed instructor from Dallas. He spent some time discussing Side-Winders, which he now intends to use on canines.

Half the available places on the Chester Tip-Edge course for next May sold out the same morning. Tip-Edge courses over here tend to be fully booked

more than 6 months in advance!

There is no doubt that Tip-Edge is a highly respected technique in the UK. It is taught on many University postgraduate programs, shortly to include the Eastman Dental Hospital, and is generally acknowledged among orthodontists to be the appliance of the future.

Even though it has taken longer to establish than I expected—I am finally convinced that Tip-Edge is set to become a world force in orthodontics. 🐾

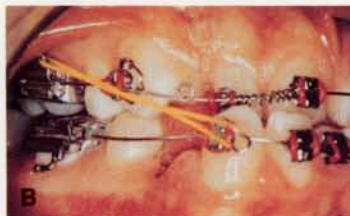
Continuous Power Tipping

Continued from page 1

Figure 4 A—D



A. Before treatment cast, male 18 years. Maxillary canines extracted several years before. Mandibular premolars extracted prior to treatment.



B. Initial .016" Australian wires with strong anchor bends. Light (2 ounce) Class III elastics worn 24 hours a day.



C. Three months into treatment. Side-Winder springs placed on mandibular canines to power tip crowns distally.



D. Six weeks later mandibular canines have tipped distally and the incisors tipped lingually. Springs are removed and .022" archwires placed for Stage II.

Of course, the great advantage of this over crown tipping from second order bends is that it is a continuous, non-relaxing force. Also, there is no need to deflect the archwire to generate the forces. It can remain as a stabilizer to maintain vertical control.

Use of such spring-powered distal crown tipping on two patients will help explain and clarify the manner in which power tipping can be beneficial in achieving desired corrections—without removing or adjusting archwires.

Correction Of Anterior Crossbite

An 18 year old male presented with a dental and skeletal Class III malocclusion (Wits of -4.0 mm), (Figure 4A). The

maxillary permanent canines had been extracted several years before—reasons unknown. Another orthodontist had said that orthognathic surgery would be needed to correct his problems. It was explained that differential tooth movement and Tip-Edge brackets greatly simplify the treatment of cases such as this—without orthognathic surgery.

Treatment was begun with .016" archwires in both arches, bite opening bends and light Class III intermaxillary elastics contributed to anterior bite opening (Figure 4B). A coil spring was placed to move the maxillary lateral incisor distally to permit placement of a temporary crown.

The bite opened well but the anterior teeth were still edge-to-edge after three months of treat-

ment (Figure 4C). Side-Winder springs were placed to power tip the mandibular canines distally. An E-Link connected the canines to prevent the creation of anterior spaces. Power tipping was preferred over the placement of horizontal elastics which might have moved the mandibular molars too far mesially.

Six weeks later the canines had tipped distally and the Side-Winder springs were removed. The E-Link across the anterior teeth transmitted the power tipping force to the incisors and enhanced their lingual crown tipping (Figure 4D). A temporary crown was placed on the maxillary lateral incisor and a .022" maxillary archwire placed. Space closing elastics were added to begin Stage II.

Control Of Lower Incisor Flaring

A 20 year old female presented with a bimaxillary protrusion (Figure 5A). The mandibular incisors were severely proclined (IMPA 110°) and their incisal edges were +2.5mm ahead of the A-Po line. The diagnosis and treatment plan included the extraction of the maxillary and mandibular second premolars.

Treatment was begun with the usual Stage I mechanics. Plain .016" archwires with bite-opening bends were placed and 2 ounce Class II elastics worn to correct the overbite and overjet (Figure 5B). Elastomeric strings (threaded through the vertical slots) were used to correct the blocked out mandibular left central incisor and canine.

Continued on page 3

Figure 5 A—D



A. Malocclusion of 20 year old female. Mandibular incisors are labially inclined (IMPA 110°). Diagnosis calls for removal of the four second premolars.



B. Initial .016" Australian archwires and Class II (2 ounce) elastics. Elastomeric threads used to move mandibular central incisor and canine to archwire.



C. Side-Winder springs placed on mandibular canines to tip crowns distally. Cuspid ties keep six anterior teeth together.



D. Six weeks later mandibular incisors are more upright. Springs are removed, archwires of .022" placed, and Stage II mechanics begun.

Q's and A's

Q. What is the best way to debond Tip-Edge Brackets?

SYDNEY, AUSTRALIA

A. The easiest and most comfortable for the patient is to gently squeeze the tie wings together incisogingivally. This can be accomplished using a debonding plier with the rubber cap removed. The beaks of the plier fit behind and over the ends of the tie wings. A gentle squeeze and the bracket comes away from the tooth surface easily with no patient discomfort. Debonding is much easier and safer if the brackets remain engaged to the archwire. Normally the brackets are debonded first followed by the loosening of the molar bands. The entire assembly can then be removed from the mouth as a unit.

Q. An associate told me he is using Tip-Edge brackets on cuspids and is amazed at the speed of retraction and the small amount of force required. He also said that if I tried this I would not be able to upright the canines with a nickel titanium archwire. Why is this?

PRINCE EDWARD ISLAND, CANADA

A. The force for uprighting distally tipped teeth having Tip-Edge brackets is generated by Side-Winder uprighting springs — not by flexing the archwire. If a nickel titanium archwire were used, the Side-Winder uprighting springs could overpower (flex) the archwire and cause the bite to deepen. Full size, steel archwires (.022" or .0215" x .028") are normally used during all uprighting and torquing procedures for maximum stability.

Continuous Power Tipping

Continued from page 2

Once bracket engagement of all the mandibular incisors was achieved, it was noted that continued bite opening procedures might increase the proclination of the mandibular incisors. Therefore, Side-Winder springs were placed "backwards" on the mandibular canines to power tip their crowns distally (Figure 5C).

Elastomeric cuspid ties were used to keep the six anterior teeth together, so that the incisors would be uprighted lingually as the canine crowns moved distally.

At the next appointment (6 weeks later) improvement was apparent (Figure 5D). The mandibular incisors were more upright (IMPA 105°) and the overbite had been significantly reduced. New archwires of .022" were then placed, along with elastomeric E-Links® to close remaining posterior spaces.

References:

- ¹Angle EH. The latest and best in orthodontic mechanism. Dent Cosmos 1928;70:1143-1158.
- ²Tweed CH. The application of the principles of the edgewise arch in the treatment of malocclusions: II. Angle Orthod 1941;11:12-67.
- ³Kesling PC. Expanding the horizons of the edgewise arch wire slot. Am J Orthod Dentofac Orthop 1988;94:26-37.

Additional Benefits And Applications

Power tipping of canines distally in the presence of .016" archwires may actually enhance bite opening. Engagement of the power arms of the Side-Winder springs over the relatively flexible .016" archwires distal to the canines could cause the distal sections to deflect occlusally and the anterior portion gingivally.

When similar springs are used to achieve final root positioning in Stage III, the archwires are 4 to 8 times stiffer than .016" archwires and such deflection is either non-existent or clinically insignificant.

Short bursts (4-6 weeks) of selective power tipping can also be used to aid in the retraction of maxillary canines in Class II cases and the correction of mid-line discrepancies at the end of treatment.

Managing Posterior Teeth

Premolars are normally first engaged on the archwires at some point during Stage II. Due to vertical and horizontal discrepancies between the premolars and molars it is usually necessary to return to the original, more flexible .016" archwires for this initial (4-6 week) engagement.

During space closure the molar and tube will tend to rotate distobuccally because a round wire cannot fill the .0215" x .028" tube horizontally (Figure 1A).

The first molar is then rotated slightly at the end of Stage

II making it difficult to insert a rectangular archwire. Modifications are necessary to compensate for this lateral play between the round wire and the tube. A molar offset and toe-in are placed in the wire (Figure 1B).

If no buccolingual offset was used the premolar would be moved buccally and could interfere with the insertion of the rectangular wire into the molar tube (Figure 1C).

To further aid the insertion of the end of the rectangular archwire, its lingual corner can be ground off to form a point (Figure 1D).

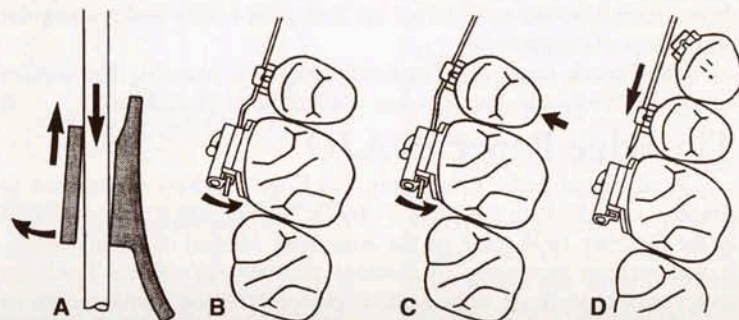


Figure 1 A-D; A. Round wire lets tube rotate during space closure; B. Toe-in plus molar offset provide proper relationships; C. Toe-in only moves premolar buccally; D. Lingual corner of rectangular wire beveled to aid insertion.

CASE REPORT

A 13-year old male of Indian descent presented with a Class II, Division I dental and skeletal malocclusion (Wits 6.5 mm). Alignment of the mandibular anteriors was good but the profile was quite protrusive ($\bar{1}$ -APo +3.5 mm). For profile considerations, maxillary first and mandibular second premolars were extracted. Tip-Edge brackets and tubes were placed.



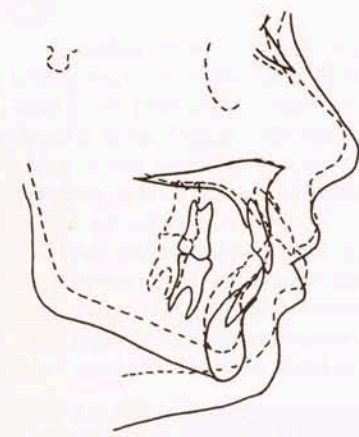
Initial .016" Wilcock archwires with strong bite opening bends and light Class II elastics. Mandibular first premolars were bracketed for control and treated like anterior teeth. No extraoral force was used throughout treatment.



When the overbite and overjet were corrected, .022" archwires were placed for increased stability. E-Links applied to close extraction spaces. Class II elastics were worn just enough to maintain anterior relationships.



In the final stage of treatment, a nickel titanium Torque Bar and Side-Winder springs were placed for torquing and uprighting. After uprighting was completed, a Tip-Edge Ring was placed on the maxillary premolar to maintain its tip correction.



V.S. Male, 13 Years
Class II, Division I
 Extractions U44, L55
 Archwires Used 5 (3U, 2L)
 Adjustments 17, Time: 28 Months
 Retention Tooth Positioner

Cephalometric Changes:

	Start - Dotted	Finish-Solid
$\bar{1}$ -APo	+3.5 mm	+2.5 mm
Wits	+6.5 mm	+5 mm
SN-MP	32.5°	31.0°
ANB	6.5°	5.0°
SNA	81.0°	81.0°
SNB	74.5°	76.0°
$\bar{1}$ -SN	107.5°	95.5°

Tip-Edge Course In France



Reception given by the Dean of the University of Montpellier for Tip-Edge students and faculty.

A Tip-Edge course was given by Dr. Peter Kesling in Montpellier, France the end of September. It was sponsored by both the University of Montpellier and the French Begg and Tip-Edge Society. Other instructors at the course were Dr. Gerard De Coster of Belgium and Drs. Francois Couratier, Andre Pujol and George Mauran all of France.

The course was oversubscribed with over fifty participants. Several faculty members from universities throughout France also attended. The students did well working with wax typodonts and moved the teeth properly through all stages. The course lasted three days which allowed most to set up both round wire and rectangular wire Stage III typodonts.

The French Begg and Tip-Edge Society is planning for another course in 1995—the location has not yet been determined. ❏

Tip-Edge Paper in AJO

A paper entitled, "Employing Tip-Edge brackets on canines to simplify straight-wire mechanics", by Dr. R. Thomas Rocke appeared in the October 1994 issue of the American Journal of Orthodontics. It was written especially to disclose the benefits of the Tip-Edge archwire slot to those orthodontists presently using conventional or preadjusted edgewise brackets. ❏

Report On Tip-Edge In Australia

By Arthur Hall, TP Vice President Asian-Pacific Sales

Both a Basic and Advanced Tip-Edge course were given in Sydney this October by Dr. Chris Kesling. There were 48 participants in the Basic course (capacity group) while the Advanced course attracted 20.

Dr. Milton Sims, Professor of Orthodontics in

Sydney, is one of the driving forces behind Tip-Edge in Australia. Thanks to his efforts and others, Tip-Edge is well on its way to becoming established in Australia. In November Dr. Colin Twelftree, of Adelaide, is presenting Tip-Edge lectures to the Queensland Orthodontic Association in Brisbane, a traditional edgewise stronghold. It is also important to note the influence of Sydney University in Asia. The university just announced a "joint venture" orthodontic program at Khon Kaen University in Thailand in 1995. There were three staff members from Khon Kaen University attending the Tip-Edge course.

Dr. Keith Godfrey will soon become the Professor of Orthodontics at Khon Kaen. Dr. Godfrey hopes to arrange a Tip-Edge course in Thailand in October 1995. ❏



Over 60 orthodontists attended basic and advanced Tip-Edge courses recently presented by Dr. Chris Kesling and sponsored by the University of Sydney (Australia). From left to right: Dr. Chris Kesling, Mr. Arthur Hall, Professor Milton Sims and Dr. Tasanee Wangsrimgkol from Khon Kaen University in Thailand.

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