

DR. RALEIGH WILLIAMS OFFERS SOUND ADVICE ON MAXILLARY FIRST MOLAR EXTRACTION CASE, COVER STORY.



FALL 1998

## EDGELINES

### ORAL SURGEON HAS SECOND THOUGHTS—

After extracting maxillary first molars, Cover Story.



### WAITING FOR CANINES TO UPRIGHT—

Use of stronger canine springs discussed. Q's & A's, Page 3.



### CORKSCREW—

Only helpful when opening wine. Dear Editor, Page 4.



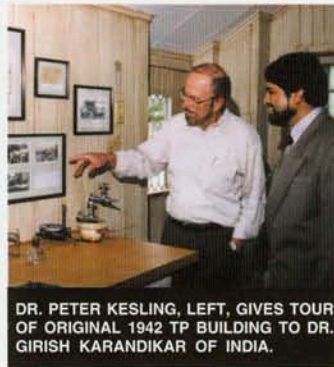
### SELF-LIGATING TIP-EDGE?

Less than one-half of those orthodontists using Tip-Edge brackets are interested in a self-ligating bracket and 10% are undecided.

Data based on survey of orthodontists using Tip-Edge brackets and the DSAT.

# TIP-EDGE® TODAY

Published Quarterly In The USA



DR. PETER KESLING, LEFT, GIVES TOUR OF ORIGINAL 1942 TP BUILDING TO DR. GIRISH KARANDIKAR OF INDIA.

## COVER STORY

# Apparent Sinus Involvement Presents No Problem in Space Closure

By Christopher K. Kesling, D.D.S., M.S.

A patient presented to the clinic of Drs. John and Maori Kaku of Tokyo, Japan. He was 32 years old and Asian with a Class II, Division 1 malocclusion. A severe overjet of 8.9 mm and overbite of 80 percent were present with limited crowding in both arches, Figure 1.

Cephalometric records revealed an underlying Class II skeletal pattern (Wits = +5.0 mm) due to a retrognathic mandible with the mandibular incisors located 3 mm ahead of the A-Po line (Japanese normal for this value is +5.0 mm). The patient's facial profile was convex with a protrusive maxillary lip.

The correction of such adult Class II malocclusions often requires the extraction of teeth in both arches. If, however, the mandibular arch is well aligned with the mandibular incisors on or near the A-Po line, the preferred treatment plan is often the extraction of teeth in the maxillary arch only.

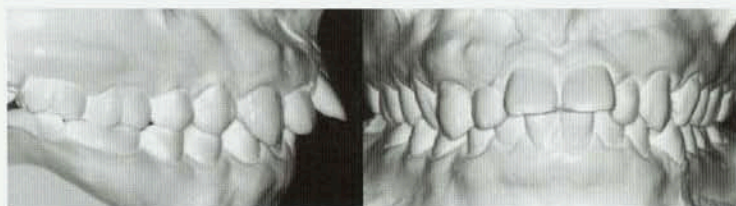


Figure 1. Patient exhibited a full step Class II, Division 1 malocclusion with 8.9 mm of overjet. Mandibular arch exhibited only minor crowding.

In this situation many orthodontists automatically consider the extraction of maxillary first premolars, which allows for correction of any existing anterior overbite and overjet but leaves the first molars in a Class II relationship. The final occlusion achieved with this treatment plan sometimes suffers from poor interdigitation of the buccal segments and a tendency for reopening of the extraction sites.

When the maxillary third molars are present and well oriented for successful eruption, the preferred treatment plan is the extraction of the maxillary first molars.<sup>1</sup> This produces a far superior occlusion as compared to

maxillary premolar extractions with the entire buccal segments, including the molars, in solid Class I occlusion.

The extraction of maxillary first molars was recommended by Drs. Kaku and the patient was referred to the oral surgeon for the extraction procedure.

After the extractions the surgeon felt that the palatal roots of the first molars had been connected to the maxillary sinuses. He referred to the panoramic x-ray to illustrate his point, Figure 2.

The oral surgeon claimed that the apparent connection between the sockets and the maxillary sinuses would result in poor bone formation in the extraction sites. He recommended that orthodontic treatment be delayed for at least 6 months to facilitate new bone formation and then warned that bridges might be required to close the extraction sites instead of orthodontic treatment if adequate bone regeneration did not occur.

This surgeon's concerns were a shock to the orthodontists and they initially regretted they had not chosen to treat this patient using a first premolar extraction

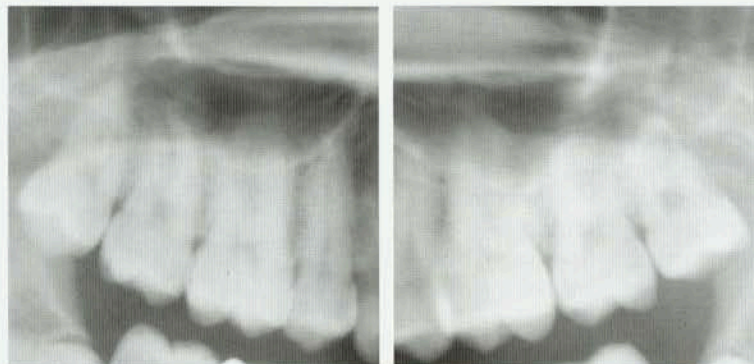


Figure 2. Sections of panoramic radiograph taken before treatment. Note apparent proximity of maxillary sinuses to root apices.

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## COVER STORY

Sinus Involvement . . . *Continued from page 1*

plan. Seeking another opinion, the patient's records were sent to Dr. Raleigh Williams, the author of several articles on the subject of first molar extraction treatment, for his thoughts on this patient's situation. Dr. Williams comments were as follows:

*Your Japanese colleagues have no problem whatsoever with their 32-year-old patient, MK. What exists in the maxillary first molar region is very common in most adults. As people mature and grow older, the maxillary sinus gradually enlarges. It usually extends itself down in between the buccal and palatal roots of the first molar, especially with someone 32 years old.*

*In an x-ray, this extension of the sinus down between the roots can be misinterpreted by the mistaken idea that the lingual root of the maxillary first molar projects up into the sinus. All is well for their patient, and they should proceed immediately with his treatment, using normal physiological light forces as used in the Differential Straight-Arch Technique® utilizing Tip-Edge brackets.*

*Delaying treatment would be a big mistake. A delay would provide time for disuse resorption of the alveolar process, something they do not want to let happen. For this reason, as a general rule, orthodontic treatment should always begin as soon as possible after extrac-*

*tions. This is especially important in first molar extraction cases.*

*From the information given me plus the cephalometric tracing, they have diagnosed this case very well and chosen the correct extraction site. The case should treat out beautifully.*

*Dr. Raleigh Williams  
Tucson, Arizona*

After receiving Dr. Williams comments, treatment was initiated immediately with Straight-Edge brackets on the central and lateral incisors and Tip-Edge brackets on the premolars and canines. Maxillary and mandibular starting archwires were .016" nickel-titanium, Figure 3.

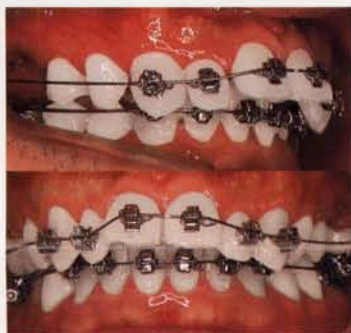


Figure 3. Place appliance appointment. Initial archwires were .016" nickel titanium in both arches.

Treatment was completed with full size rectangular archwires. Side-Winder springs were used as needed on those teeth requiring mesiodistal uprighting and labio/palatal-lingual torquing, Figure 4.



Figure 4. Nearing the end of treatment with full size (.0215" x .028") rectangular archwires engaged in both arches.

After 2 years and 4 months of treatment the appliances were removed and retainers were delivered. The Class II molar relationship along with the patient's overbite and overjet were successfully corrected and the maxillary third molars had moved into occlusion with the mandibular arch. The treatment result achieved for this patient is virtually indistinguishable from that achieved using a nonextraction treatment plan, Figure 5.



Figure 5. Appliance removal.

The patient's profile improved significantly with less protrusion of the upper lip, Figure 6. Superimposition of tracings of start and finish lateral cephalograms reveal the only major cephalometric change to have been the retraction of the maxillary incisors, Figure 7.

The posttreatment panorex shows that the apparent proximity of the maxillary sinuses to the root apices had no effect on the ability to move teeth into the extraction sites, Figure 8.



Figure 6. Facial profile at A) Start and B) End of treatment.

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## Q's and A's

**Q.** During stage three I have found the canines slow in uprighting. I have instead placed (old fashioned) .016" uprighting springs and find they are faster. Is this a recommended procedure?

Wyncote, PENNSYLVANIA

**A.** Your use of .016" uprighting springs on canines may very well be valid. Years ago uprighting springs were made from .012" to .018" wire. The .012" springs were for mandibular lateral incisors and the .018" springs for maxillary canines. While this may have made physiologic sense, it proved to complicate inventory control and, of course, the use of the springs themselves. We don't seem to find ourselves waiting for canines to upright in extraction cases—usually it is the torque of the maxillary incisors that determines the end of fixed appliance therapy. Perhaps you are tipping the canines excessively due to the inherent anchorage potential within the Tip-Edge appliance. Less or more distally located extractions might be in order.

**Q.** I've always used .016", preformed archwires and recently heard that they are now made of TP's new Original wire rather than from straightened lengths of Australian wire. What exactly is the difference between these archwires? What benefits will I see with the new preformed wires?

Sedona, ARIZONA

**A.** The new preformed archwires made from the "TP Original" premium stainless steel wire are stiffer than those formerly made from Wilcock wire. This is due to the sequence of forming and heat treating the wires. With the Wilcock wire, the wire was heat treated first, straightened to remove the "cork-screw" effect and then bent into the desired archform. The straightening of the wire deadened it slightly (up to 20 percent), making it less stiff. However, such intermediate straightening is not required with TP's new "Original" wire. Consequently, maximum stiffness of the wire is ensured with the new preformed archwires. This increased stiffness facilitates the correction of deep anterior overbites by maximizing the intrusive forces produced by the bite opening bends.



## COVER STORY

## Sinus Involvement . . . . . Continued from page 2

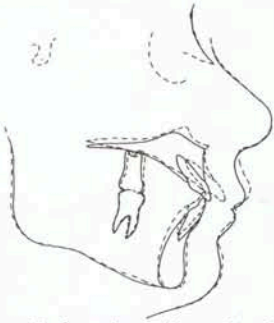


Figure 7. Superimposition of tracings.

The problems the oral surgeon warned of only existed due to the difficulty of attempting to interpret 3-dimensional relation-

ships using a 2-dimensional medium. Waiting 6 or more months after the extractions as the surgeon had requested would have made it far more difficult, if not impossible, to completely close this patient's extraction sites. Adult orthodontic treatment should always be initiated as soon as possible once extractions have been performed.

## References

Williams RT. Single arch extraction—upper first molars or what to do when nonextraction fails. *Am J Orthod* 1979;76:376-93.

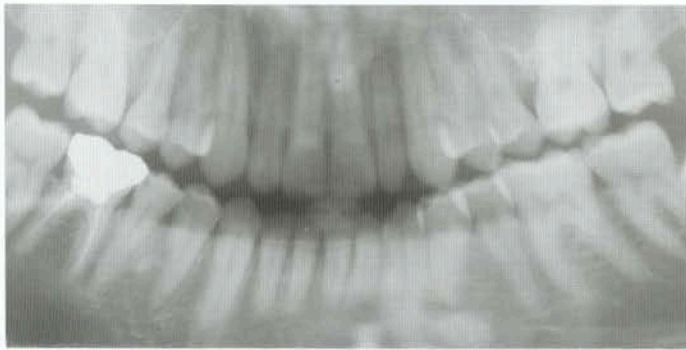


Figure 8. Posttreatment panoramic radiograph.

## Invisible Side-Winders Make Debut

After over two years of clinical testing, the new invisible Side-Winder springs are finally making their way into orthodontic offices around the world.

The hook on the end of the arm of the original spring has been replaced by two 90-degree bends, Figure 1.



Figure 1. Hook for engagement over the archwire is replaced by two 90-degree bends. Spring formed of .014" wire.

The result is that the arm lies nearly parallel to the archwire when engaged. Also, because it is not necessary to deflect the arm as far to engage the offsets as with the hook, the spring is formed with 100 percent activation, Figure 2.

Available only with short tails, invisible Side-Winders are placed *before* the elastomeric ligatures. This simplifies placement and permits the ligature to help retain both the spring and the archwire, Figure 3, and also

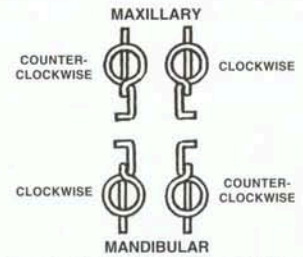


Figure 2. Arms of springs and legs that fit into the vertical slots of brackets are parallel for more activation, resulting in higher uprighting force values.

makes it possible to change elastomeric rings without removing and replacing the uprighting springs.

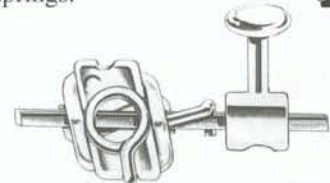


Figure 3. Elastomeric ring is placed *after* the spring. Make sure ring does not catch over the end of the arm—assembly should look as shown above.

## Invisible Side-Winder Order Information

	Pkgs. 10	Oriented 50
Counterclockwise	214-011	214-009
Clockwise	214-012	214-010

## CASE REPORT

By: Dr. Messias Rodrigues  
Piracicaba, Brazil

The patient, first seen at age 9, presented a Class II, Division I malocclusion. It was complicated by a unilateral right posterior crossbite and an anterior openbite, caused in part by a steep mandibular plane angle and persistent thumb sucking. Crowding in the mandibular arch was minimal and the mandibular incisors were on the A-Po line. Nonextraction treatment was planned. Preliminary rapid maxillary expansion was planned to correct the crossbite.



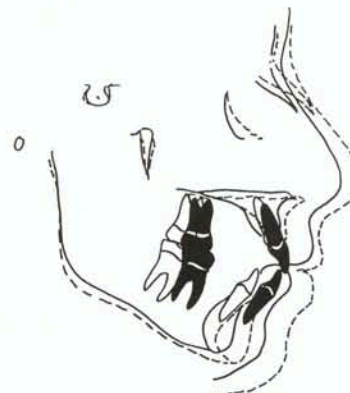
Rapid maxillary expansion was accomplished with a fixed-jack screw appliance with lingual acrylic extensions on to the palate. Following two weeks of activation, the appliance was maintained for six months to allow new bone to fill in the palatal suture.



The Class II was corrected using .016" stainless steel archwires and light, Class II elastics. Then a maxillary coaxial wire leveled the newly erupted premolars while a .0215" x .028" archwire stabilized the mandibular teeth.



Following torquing and uprighting with Side-Winder springs on .0215" x .028" archwires, braided rectangular archwires with power pins and box elastics "socked in" the occlusion.



C.G. .... Female, 9 Years, 11 Months  
Nonextraction  
Rapid maxillary expansion ... 6 months  
Archwires Used ..... 7 (4U, 3L)  
Adjustments ..... 18, time: 26 Months  
Retention ..... Maxillary Retainer  
Mandibular 3-to-3

## Cephalometric Changes:

	Start-Solid	Finish-Dotted
1 A-Po	+0 mm	+2 mm
Wits	+4 mm	+2 mm
SN-MP	40.0°	36.0°
SNA	80.0°	83.0°
SNB	70.0°	75.0°
ANB	10.0°	8.0°
1-SN	98.0°	98.0°



## Tip-Edge Workshop in New Delhi, India

In December of 1997 a two-day Tip-Edge workshop was conducted in New Delhi. Sponsored by the Indian Orthodontic Society, the program was held at the International Trade Center and was conducted by Drs. Vinod and Asha Verma.



Participants in two-day Tip-Edge Workshop. Woman in center is Dr. Asha Verma (Chairman of the Indian Orthodontic Society). To her right are Professor Pradip Jayna and Dr. Vinod Verma.

## Advanced Tip-Edge in Madrid, Spain

On March 6th and 7th an advanced Tip-Edge course was held in Madrid. There were nineteen participants and the course was given by Dr. Arturo Vela.

Dr. Vela is currently teaching the Differential Straight-Arch Technique to the postgraduate students at Barcelona University. In October he will be giving a beginning Tip-Edge course at the University of Southern Mississippi in Madrid. Over forty participants are enrolled to date.



Dr. Vela points out the features of an invisible Side-Winder spring during advanced course in Madrid.

## Dear Editor:

Just a Fax to thank you for the "sneak preview" of the new TP Original Premium Plus .016" wire. Assessed subjectively, its tensile qualities seem at least comparable with the equivalent Wilcock Special Plus grade, and it stands up well in the mouth, too.

As for its handling characteristics, the new wire feels different, but I like the changes, particularly the smoother surface and also the fact that it comes off the spool straight.

I know that a number of orthodontists bend archwires directly off the spool, utilizing the twist as precurvature, but I find the



new TP wire easier to handle without this curvature, since it is always quite difficult to straighten out and level the posterior "leg sections" with curvature off the spool. Furthermore, occasionally a Special Plus spool will unravel like a corkscrew, adding an unwelcome third dimension to be levelled out.

Incidentally, I hope that the new wire will improve the performance of the preformed archwires also, since these used to lose a significant amount of resilience when the Special Plus was polished, which presumably will no longer be necessary with the new wire.

*Dr. Richard C. Parkhouse*

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