



News and Information

Orthodontic Perspectives

Innova

Clinical Case Studies





Mary Jo Abler

Message from the President 3M Unitek

It's hard to believe that a year has passed since I had the opportunity to attend the AAO Annual Session in Philadelphia and meet a number of you. At that time, I took particular note of how the people closest to the profession were viewing the future. Although there had been a number of challenging years in the industry, I was pleased to find that, for the most part, there was a positive outlook.

I have continued to look for this viewpoint over the past year while meeting orthodontic professionals across many countries. Today, I sense that this outlook has changed. Not only is the current view of the future positive, it is also accompanied by renewed excitement. Professional plans are no longer on hold. Practice goals for growth and development are at the forefront. Solutions that will make treatment more efficient and effective are actively being sought.

I hope that you find yourself among those just mentioned who are excited about what is ahead. And, as you move forward, remember that 3M Unitek continues to expand its product and solution options, so that we can offer you both incredibly efficient and beautifully aesthetic treatment choices.

Our recently introduced APC™ Flash-Free Adhesive takes the industry's most efficient pre-coated appliance system even further by eliminating the time-consuming flash-removal step from bonding. Clarity™ ADVANCED Ceramic Brackets are now available in two popular prescriptions. And the premier aesthetic Incognito™ Appliance System features new lower profile brackets for improved biomechanics and greater patient comfort.

If self-ligation is your preference, new Victory Series™ Active Self-Ligating Brackets are an excellent and unique choice. Developed specifically with input from current active self-ligating bracket users, these brackets have design features that can add efficiency to your treatment, and you can add even more efficiency with optional APC™ II Adhesive pre-coating.

The opportunity to share your insights and gain an understanding of your expectations is of great importance to me and to everyone at 3M Unitek. The knowledge we gain is the driving force behind our efforts to provide the highest quality products, solutions and services, and offer innovations that will help you achieve your professional goals.

If you are planning to be in New Orleans for this year's AAO Annual Session, please stop by the booth and visit with us. If not, remember that we always want to hear from you. And please enjoy this issue of *Orthodontic Perspectives Innova*.



Orthodontic Perspectives Innova is published periodically by 3M Unitek to provide information to orthodontic practitioners about 3M Unitek products. 3M Unitek welcomes article submissions or article ideas. Contact address: Editor, Orthodontic Perspectives Innova, 3M Unitek, 2724 South Peck Road, Monrovia, CA 91016-5097. To call for more information: In the United States and Puerto Rico, call (800) 852-1990 ext. 4399. In Canada call (800) 443-1661 and ask for extension 4399. Or, call (626) 574-4399 (direct).

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Announcements

First Anniversary of APC™ Flash-Free Adhesive

May 2014 marks the **first anniversary** of APC™ Flash-Free Adhesive, and the excitement in the industry is still growing. This revolutionary bonding product is now available on **two bracket lines**: Clarity™ ADVANCED Ceramic Brackets and Clarity™ SL Self-Ligating Brackets, which are available in more than 30 countries worldwide.

Contact your 3M Unitek Sales Representative for details!

CLARITY™ | SL
SELF-LIGATING APPLIANCE SYSTEM

APC™ Flash-Free
Adhesive Coated Appliance System

CLARITY™ | ADVANCED
advanced ceramic brackets



10-Year Milestone for SmartClip™ Self-Ligating Brackets

Our unique self-ligating bracket design has reached its **10-year anniversary** and continues to grow!



RelyX™ Unicem 2 Automix Self-Adhesive Resin Cement Recommended

RelyX™ Unicem 2 Automix Self-Adhesive Resin Cement is now recommended as a dual-cure option for the Incognito™ Appliance System, for both initial bonding and rebonding applications.

RelyX Unicem 2 self-adhesive resin cement is an industry-proven dual-cure adhesive with handling and performance characteristics well suited for indirect bonding. It is available in an Automix delivery system that conveniently and accurately mixes and dispenses the paste for application on the lingual indirect bonding trays, as well as direct dispensing onto lingual bracket bases for rebonding.

RelyX Unicem 2 kits in A2 shade, as well as Dispensing Tips, are available from 3M Unitek. This addition expands the adhesive options available for the Incognito Appliance System, which already includes Transbond™ IDB Pre-Mix Chemical Cure Adhesive.



Victory Series™ Active Self-Ligating Brackets: An Outstanding and Efficient Treatment Alternative



Silviya Karapetian, Global Brand Manager, 3M Unitek

Silviya Karapetian joined 3M Unitek in 2007 and is the Global Brand Manager for 3M Self-Ligating Systems including SmartClip™, Clarity™ SL and Victory Series™ Active Self-Ligating Brackets. Silviya received her BS and MBA degrees from the Marshall School of Business at the University of Southern California.

**“Dependability, control, and quality are what I get with...
Victory Series™ Active SL Brackets.
Doctors using active self-ligation
should consider this system.”**

– Victory Series™ Active SL Bracket System Evaluator

New Dynamic Duo in Self-Ligation

Self-ligating brackets have been available since the 1930s, but their evolution and acceptance by the orthodontic community seems to have progressed most in the last two decades. This evolution has now reached a new level, as 3M Unitek introduces new Victory Series™ Active Self-Ligating Brackets.

Intricately designed and extensively tested, these new brackets are also the first active self-ligating brackets available with pre-coated adhesive. This “Dynamic Duo” in self-ligation – combining the advantages of an active self-ligating bracket with the time savings of pre-coated adhesive technology – offers a new level of efficiency as well as treatment performance clinicians can trust.

Victory Series™
Active Self-Ligating Brackets

APC™ II
Adhesive Coated Appliance System

Quality and Reliability from a Trusted Brand

The Victory Series™ brand family of orthodontic brackets from 3M Unitek is known worldwide for its quality. Now, this renowned family has expanded into the self-ligating bracket category, with new Victory Series™ Active Self-Ligating Brackets. Designed using extensive practitioner input, Victory Series Active Self-Ligating Brackets combine industry benchmark performance with APC™ Adhesive, the most efficient bonding system in orthodontics.

Victory Series Active SL Brackets feature a robust ligating mechanism that provides durability and ease of operation. The door is full slot-width, to enhance rotational control, with the added advantage that no special instrument is necessary to open or close the door. The new brackets may be used with familiar active SL bracket archwire sequences, so there are no technique changes required to incorporate the brackets into a practice.



From the beginning to the end of treatment, Victory Series Active SL Brackets are designed to give practitioners the quality and reliability they need to treat the most complex cases. Extensively tested by competitive bracket users before release, these new brackets directly address the issues many practitioners reported with other active self-ligating bracket choices, such as improved door functionality and reliability, better tooth fit, and reduction in required 1st order bends. Patient comfort is also enhanced with thoughtful design aspects like round, low profile hooks and rounded edges on the bracket body.

“What I found most exciting about the Victory Series™ Active SL Bracket System was the quality finishing I was seeing with a straight wire. Quality engineering led to improved lower anterior alignment.”

– Victory Series™ Active SL Bracket System Evaluator

Three Treatment Phases with Advantages in Each

The design of Victory Series Active SL Brackets allows dynamic interaction between the ligating mechanism and the archwire as treatment phases change, with performance advantages in each stage – passive, interactive and active. With this design, orthodontists can efficiently progress from the initial leveling and alignment through final finishing and detailing.

Passive Phase



Round archwires
in .022 slot

With round archwires, the bracket is passive, resulting in minimal archwire contact and low friction for efficient leveling and alignment.

Interactive Phase



Sizes below
.016 x .025 in .022 slot

Small square or rectangular archwires fill the slot but do not reach the ligating mechanism. This adds control during the working phase for space closure, rotation control and arch form expression.

Active Phase



Sizes starting
at .016 x .025 in .022 slot

Larger rectangular archwires engage the ligating mechanism, offering full control for finishing and detailing.

Efficiencies with APC™ II Adhesive System

Victory Series Active SL Brackets are available pre-coated with proven APC™ II Adhesive, which reduces bonding steps and variables for added efficiency and convenience. Inspired by 3M innovative adhesive technology and expertise, the proven APC Adhesive System pre-coats each bracket with just the right amount of adhesive, so there are fewer bonding steps than traditional light-curing methods. Fewer steps during bonding can make the bonding appointment more pleasant for everyone involved.



APC™ II
Adhesive Coated Appliance System

The Only Pre-Coated Active SL Bracket

Maintaining the exceptional quality for which the Victory Series brand is known, these brackets are manufactured to strict tolerances and extensively tested to assure reliability. With a combination of bracket and adhesive, orthodontists and their patients can enjoy the unique benefits of the world's only pre-coated, active self-ligating bracket.

Please take a few minutes to review the following article by Darrell James and Todd Oda about the process used to develop these new brackets and the features they offer. If you are already an active self-ligating bracket user, or have wondered about the advantages active SL brackets may offer in treatment, I think you will find that Victory Series Active SL brackets are an excellent new choice to consider. You can also get more information by clicking [here](#).

Victory Series™ Active Self-Ligating Brackets



Darrell James, Sr. Technical Service Engineer, 3M Unitek

Darrell S. James is Senior Technical Service Engineer at 3M Unitek. He has worked at 3M Unitek since 1985, primarily being involved in adhesive development. He received his Bachelor of Science Degree in Biology from Kent State University in 1983.



Todd Oda, Product Development Specialist, 3M Unitek

Todd Oda is a Product Development Engineer at 3M Unitek. He has over 12 years of experience in the orthodontic industry focusing on developing innovative self-ligating brackets. He received his B.S. in Mechanical Engineering from California State University, Long Beach. Todd has over 25 years of experience in the medical, semiconductor and welding industries.

Introduction

Self-ligating brackets have been available to orthodontists since as early as 1935 and have typically been of two types, either *passive* or *active*. In the *passive* SL bracket type, the slot closing mechanism does not exert a force upon the archwire, regardless of the size of the archwire. With the *active* SL bracket type, a slot closing mechanism applies force against the archwire, providing a seating force, specifically with larger archwire sizes.

In 2004, 3M Unitek introduced the SmartClip™ Self-Ligating Bracket, a uniquely designed passive self-ligating system that was successfully adopted into the orthodontic marketplace. More recently, recognizing that practitioner preference for the type of self-ligating mechanism varies, 3M Unitek developed the Victory Series™ Active Self-Ligating Bracket, which offers clinicians an active self-ligating appliance.



Victory Series™ Active Self-Ligating Bracket

Bracket Design and Materials

The Victory Series Active SL Bracket uses a “C” shaped spring door as the ligating and wire activation mechanism. The door with these brackets easily slides open to release the archwire, using standard orthodontic instruments. Special opening tools are not needed. The upper and lower brackets all open toward the occlusal plane for ease of opening and to reduce the risk of harming the patient’s gingiva during mechanism operation.

Victory Series Active SL Brackets are both passive and active, depending upon the archwire being used. The bracket functions as a passive bracket with small round archwires, offering low friction for efficient tooth movement during leveling and alignment. There is an intermediate or interactive phase with mid-sized rectangular or small square archwires, during which the bracket adds control in the working phase. Finally, the bracket becomes active with larger rectangular archwires, facilitating excellent tooth control.

Figures 1, 2 and 3 illustrate the passive/active interaction between the archwire and the bracket.

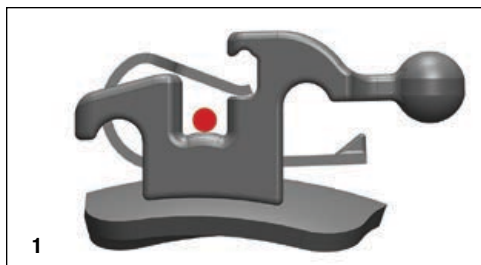


Figure 1: Victory Series™ Active SL Bracket with 0.014" Archwire (**Passive**).

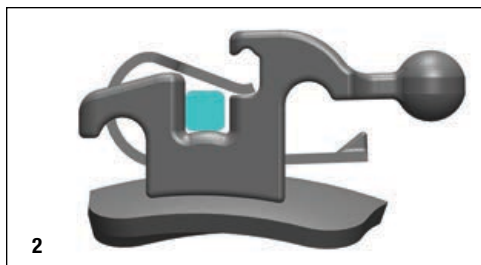


Figure 2: Victory Series™ Active SL Bracket with 0.020"×0.020" Archwire (**Interactive**).

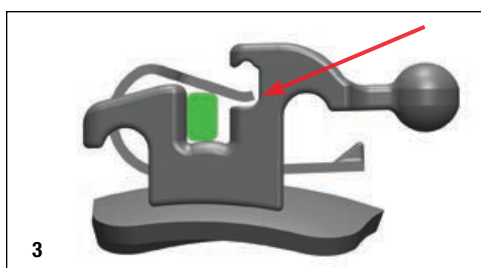


Figure 3: Victory Series™ Active SL Bracket with 0.016"×0.025" Archwire (**Active**).

Door is lifted off of ledge and bracket becomes active.

Rotation Built into Bracket Base

A problem area experienced by many orthodontic bracket systems is the archwire transition in the lower cuspid area. To help reduce the frequency of having to perform 1st order bends, a 2° base rotation was added to the lower cuspid brackets. This helps smooth the archwire transition between the lateral and the cuspid brackets and between the cuspid and the bicuspid brackets. Figure 4 illustrates the effect of having a small amount of rotation built into the bracket base.

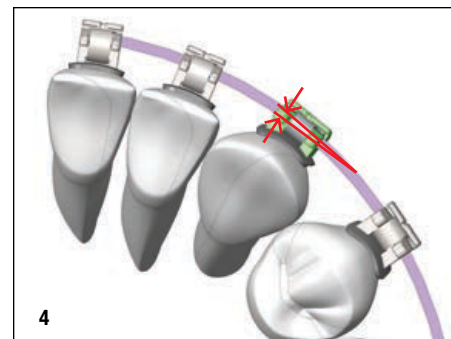


Figure 4: Illustrates cuspid bracket interaction with adjacent brackets.

Radiused Archwire Slots

Generous radii at the mesial and distal ends of the archwire slot are designed to reduce archwire friction. It is commonly believed that smooth large radii on the M/D edges of the archwire slot helps reduce archwire "ratcheting" and friction as the teeth unravel and the archwire slides within the lumen of the bracket. Figures 5, 6 and 7 compare the Victory Series Active SL Bracket to American's Empower® bracket and to GAC's In-Ovation® R bracket.

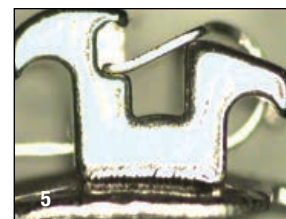


Figure 5: Victory Series™ Active SL upper cuspid bracket.

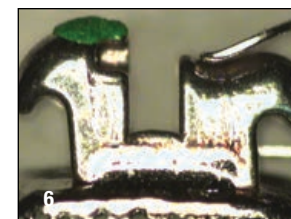


Figure 6: American Empower® upper cuspid bracket.

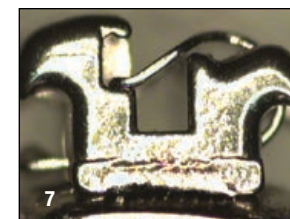


Figure 7: GAC In-Ovation® R upper cuspid bracket.

Durable Materials

The Victory Series Active SL Bracket is an all metal bracket designed to handle the hostile conditions in the oral environment. The bracket body is made from heat-treated 17-4 PH stainless steel for optimum bracket strength, while maintaining good hook bendability. The 304L stainless steel base features 3M Unitek's 80-gauge mesh for strong reliable bonding.



The door is made from heat treated MP35N alloy featuring 75% cold rolling for high durable strength that provides good tooth control throughout the entire length of treatment (see inset). The combination of door design and material were chosen very deliberately, as they affect door function and reliability. Advanced R&D and manufacturing expertise ensure that the door is durable and reliable through the entire length of treatment.

The entire bracket assembly undergoes a proprietary 3M Unitek developed process that makes the bracket extremely corrosion resistant, based on internal accelerated corrosion testing. All the material surfaces are passivated, leaving a surface that is highly resistant to corrosion. Corrosion on the mesh side of the base or the edges of the base is typically a major source of tooth enamel staining. Having an entire bracket assembly (including the base) that is very corrosion resistant is critical to preventing tooth enamel staining.

Mechanism Operation

The Victory Series Active SL Bracket was designed to be easily opened using a common orthodontic instrument with a pointed tip. The door can be opened from the facial surface of the bracket by inserting the tip of an instrument into the U-notch on the door and gently pulling the door open as shown in Figure 8. A special feature was designed into the gingival wall of the archwire slot to help prevent the tip of the instrument from being blocked by the wall of the archwire slot as the door is opened. This allows the door to be easily opened from the facial surface of the bracket.

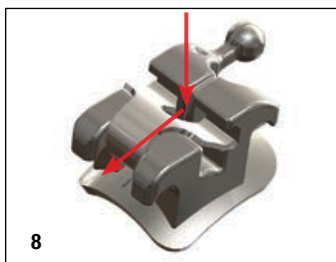


Figure 8: Door opening using U-notch.

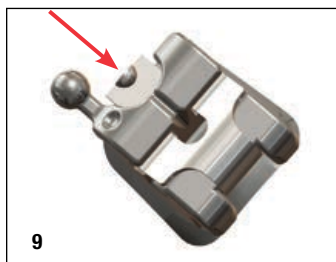


Figure 9: Door opening using gingival tab.

Cold Rolling Process

The stiffness and strength properties of the door are extremely important for proper bracket functionality and for achieving acceptable *active* operation of a self-ligating bracket. Both cold rolling and precipitation hardening are used to achieve superior mechanical properties for the door. Cold rolling is a precision metal forming process that mechanically hardens MP35N, the door material.

During the cold working process, the grains in the metal are squeezed to become elongated and concentrated with entangled dislocations that greatly increase the material's strength. A higher level of cold rolling (i.e. 75% vs 25%), results in a material with higher tensile strength and wider range of elasticity.

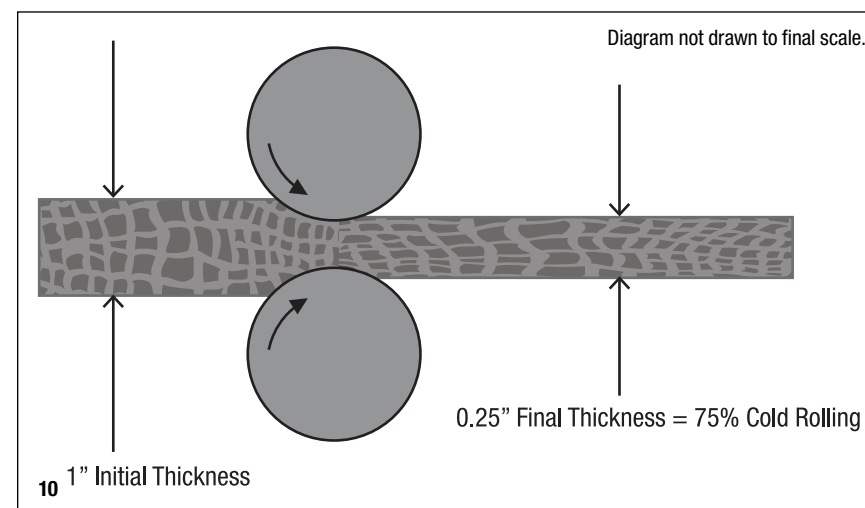


Figure 10: Cold rolling process.

The door can also be opened from the gingival side of the bracket using the gingival tab with the same instrument. Simply push the door towards the occlusal plane as shown in Figure 9. The Unitek™ Double-Ended Ligature Director (REF 900-815) works well for opening the doors using both methods.

Material Properties

Both the design and material properties of the door and bracket are integral to the functionality and durability of the finished product. Victory Series Active SL Brackets underwent extensive Finite Element Analysis (FEA) to ensure that the design would meet the necessary strength and durability requirements required for a device operating in the oral environment. FEA is an engineering tool that is used in conjunction with 3D solid models to determine stresses and strains within a part based on predetermined load inputs.

To accelerate the development cycle of the Victory Series Active SL Bracket System, FEA was used in the early stages of the product development cycle to simulate the effect of critical loads on the orthodontic bracket. FEA simulations such as labial loads on the door caused by the archwire and door opening/closing forces were all optimized using FEA to match typical performance requirements in orthodontic treatment.

Customer Acceptance Evaluation

3M recruited competitive bracket users to evaluate the Victory Series Active SL Brackets. The brackets were used in conjunction with the evaluator's current active door self-ligating systems, which included the In-Ovation® R System (GAC International), Empower® Brackets (American Orthodontics) or Speed System™ Brackets (Strite Industries). Input from evaluators was collected at the bonding appointment and at each subsequent follow-up visit. The doctors provided feedback on door performance, instrumentation, and overall performance compared to their current bracket.

One common issue with active door self-ligating brackets is distortion of the door from improper technique or excessive door opening forces. Throughout the evaluation period where hundreds of bracket doors were opened and closed, zero doors were reported as damaged from the opening or closing operations. The ease of door opening and closing was also surveyed at each appointment. Doctors most often felt that the doors were easier or the same to open and close as their current active door self-ligating brackets. During the evaluation, the clinicians used either a common scaler or other active door bracket opening instruments. Nearly all evaluators closed the doors with their fingers.

Victory Series Active SL Brackets use the same 80-gauge mesh base as standard Victory Series™ Metal Brackets. Bond failure rate during the evaluation was a very low 2.2%.

Patients progressed from initial Nitinol archwires (0.012 to 0.016 inch) to larger beta-titanium or stainless steel archwires (0.018×0.018 to 0.019×0.025 inch). Overwhelmingly, doctors felt that they did not need to alter their archwire progression from what they used with their current active self-ligating brackets.

Another common issue with this type of bracket is calculus buildup that prevents door opening. If calculus buildup prevents the door from opening, acetic acid (vinegar) or phosphoric acid (etchant) has been successfully used by doctors in the past on similar bracket designs to help dissolve the calculus. During the trial period, calculus buildup was not experienced with the Victory Series Active SL Brackets.

Over the course of the evaluation, the majority of the evaluators stated that the Victory Series Active SL Bracket performed as well as or better than their current active self-ligating bracket. Of note, Victory Series Active SL Brackets are available with APC™ Adhesive coating to reduce chair time and improve bonding efficiency. APC Adhesive was not included in the comparative bracket evaluation, as the competitor brackets did not offer this feature.

Conclusion

3M Unitek developed Victory Series Active Self-Ligating Brackets with a specific goal; overcome existing active self-ligating appliance deficiencies and fulfill clinician expectations. Starting with practitioner experience and input, 3M Unitek re-evaluated both materials and design parameters to create a new bracket that offers high performance standards in an active self-ligating bracket. Designs were thoroughly evaluated prior to making any prototypes using Finite Element Analysis. Additionally, extensive laboratory tests were conducted and new manufacturing techniques were developed for the production of the bracket line.

Victory Series Active SL Brackets were tested by evaluators familiar with other competitive active self-ligating brackets, with positive results. The combination of advanced design, specifically selected door material, quality manufacturing and comprehensive testing assure clinicians that Victory Series Active SL Brackets are an excellent choice in active self-ligating brackets.

Digital Workflow



Dr. Neil Warshawsky

Dr. Warshawsky is the founder and owner of Get It Straight Orthodontics, a leading-edge orthodontic practice in the Chicago area. A board certified orthodontic specialist since 1992, he has over 15 years of experience with cleft palate and craniofacial cases, and lends his support to all of the craniofacial teams in and around the greater Chicago area. His practice uses state-of-the-art orthodontic treatments to deliver healthy, aesthetic results. Dr. Warshawsky was one of the first

orthodontists outside of Europe to begin using the 3M Unitek Incognito™ Appliance System in 2003. Since then his practice has become one of largest volume users of Incognito Appliances in North and South America. Dr. Warshawsky received his DDS, MS and Certificate of Orthodontics from the University of Illinois at Chicago, and is a member of the World Federation of Orthodontics.

Every so often, there seems to be a shift in orthodontics which impacts the majority of practitioners in some way. One major example of this would be the widespread use of nickel titanium wires. I cannot imagine that too many orthodontists do not feel that NiTi wires revolutionized orthodontics and confirmed that light forces move teeth in a biologic manner.

Another significant and recent change in orthodontics is the use of computers, smartphones and tablets. Estimates are that one in four people in the United States own one of the three items just mentioned. It's further understood that many people, in fact, utilize up to all three on a daily basis. The use of these devices has created a shift in information technology, as news is now delivered in a much quicker fashion relative to past history.

Data delivery, in my estimation, is the new currency of the next generation. People read the news online, capture celebrations and emergencies on their smart devices, watch newly released movies via their computers and tablets, purchase their music online, and can even order a pizza for delivery from their personal devices. It is a strange thought to ponder, but our

**“Data delivery...
is the new currency
of the next generation.”**

children's generation may be the ones to witness the extinction of the printed daily newspaper. So for this reason I believe to create and maintain a vital practice in today's environment, you must be in control of the technology to deliver the goods and attract our “new breed” of patient.

Products like prebuilt custom Incognito™ Hidden Braces and clear aligners clearly fulfill the aesthetic desires of these new digital omnivores. In fact, oftentimes I can tell a patient is a member of this classification when they come in for a consultation because they will ask for a product by name, and recount stories of patient experiences that they observed on YouTube.

Funny, they never taught me about that when I attended dental school. A common requirement for any of these systems is PVS impressions, which are then physically shipped to the lab for fabrication. The process, by default, is a long one, with extreme temperature swings due to shipping, as well as expensive shipping fees on top of the lab costs.

It is this drive to create custom work on the spot that is fueling the next big game changer in orthodontics, digital impressions. 3M, a global manufacturer of a kaleidoscope of products including, but not limited to, orthodontic supplies as well as custom impression materials, recognized the overall need in oral care for a relatively easy to use digital impression system.

To answer the need for a digital yet economical solution to accurate physical impression materials, 3M has created the 3M™ True Definition Scanner to acquire digital intraoral impressions for any type of dental manufacturing. To be clear, this scanner works on both a single unit as well as an entire dental arch. It incorporates digital treatment planning and design, collaborating across multiple industry platforms regardless of brand. Most importantly, it reduces the time required to manufacture custom-made appliances. Intraoral scanners have recently come to the technology forefront in dentistry as the new “Holy Grail” with the promise to eliminate the dreaded physical impression. If successfully adopted, this is sure to be the next industry trend. Of course, at the end of the day, it will legitimately only be adopted if doctors can make money and dentistry can be made easier, faster, and more precise. This new process of appliance manufacturing, known as the digital workflow, surely has the potential to affect all tenants of dentistry, not just orthodontics! For purposes of this article, I will discuss how I use the 3M True Definition Scanner in my office for building Incognito Lingual braces and other custom-made appliances.

To begin with, I have multiple people trained to use the scanner and have been using it for a year. We have found the learning curve to be fast, and we can inspire proficiency in scanning in less than a few days if my student is inspired. My staff thinks and acts like it is a toy, so honestly I have had little trouble picking up the scanner and creating usable data. All new patient experiences in our office begin with a pleasant trip to the records room for diagnostic records. In our office we use Dolphin Imaging, which catalogs our initial photography and diagnostic films. Typically the patient can have a cone beam image and all eight diagnostic photos taken in a few short minutes in our office. Once the images are loaded in the Dolphin software, the 3M button is clicked on the main toolbar and all of the records automatically upload to the Unitek™ Treatment Management Portal (TMP) and an account is established if the patient is new to the practice. What is important to understand is that Unitek™ TMP is an advanced orthodontic case management platform. Uploading your records automatically creates a HIPAA-compliant backup of your records and best of all, it costs you nothing!



Figure 1: The scanner screen is visible to the patient.

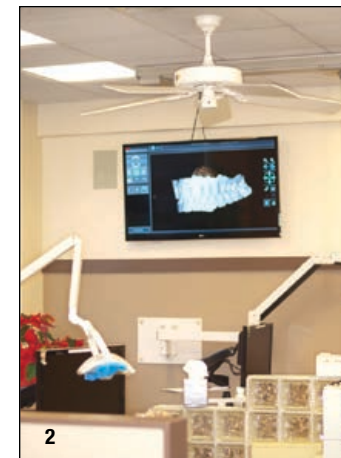


Figure 2: Create awareness of the digital scanning process throughout the office.

Upon completion of the photos and X-rays, we move the patient from our records room into a chair in our main orthodontic bay. The scanner is on a cart so we typically place it facing the patient on their left side. We do this so that the patient may watch as we manipulate the touch screen to build the 3D image of the teeth (Figure 1). A positive point of contention for digital scanning is that many people fear taking impressions. We have utilized this fact as an asset in our office and we now heavily promote the fact that we are not taking impressions anymore.

In my estimation this is a primo opportunity for you to get patient “buy in” and support. The “wow” factor cannot be argued with. We make our patients understand that they are lucky that we have and utilize digital impressions for their benefit. My staff averages just a few short minutes per arch, and when we are complete, we even give them an opportunity to manipulate their own model to evaluate their teeth. My goal is to create patient emissaries, “bought in” individuals who are so impressed with our office that they feel compelled to spread the word about the pleasant and unique experience in our office that did not involve physical impressions! This is huge, as it appeals to all patients regardless of age.

To help this conversation occur in our practice, I have hung a 47-inch LED monitor high above our main orthodontic bay to allow anyone in the back of the office to see the scans as they occur (Figure 2). Its sole purpose is to create awareness that we offer this service and I can proudly say that it has met with widespread acceptance.

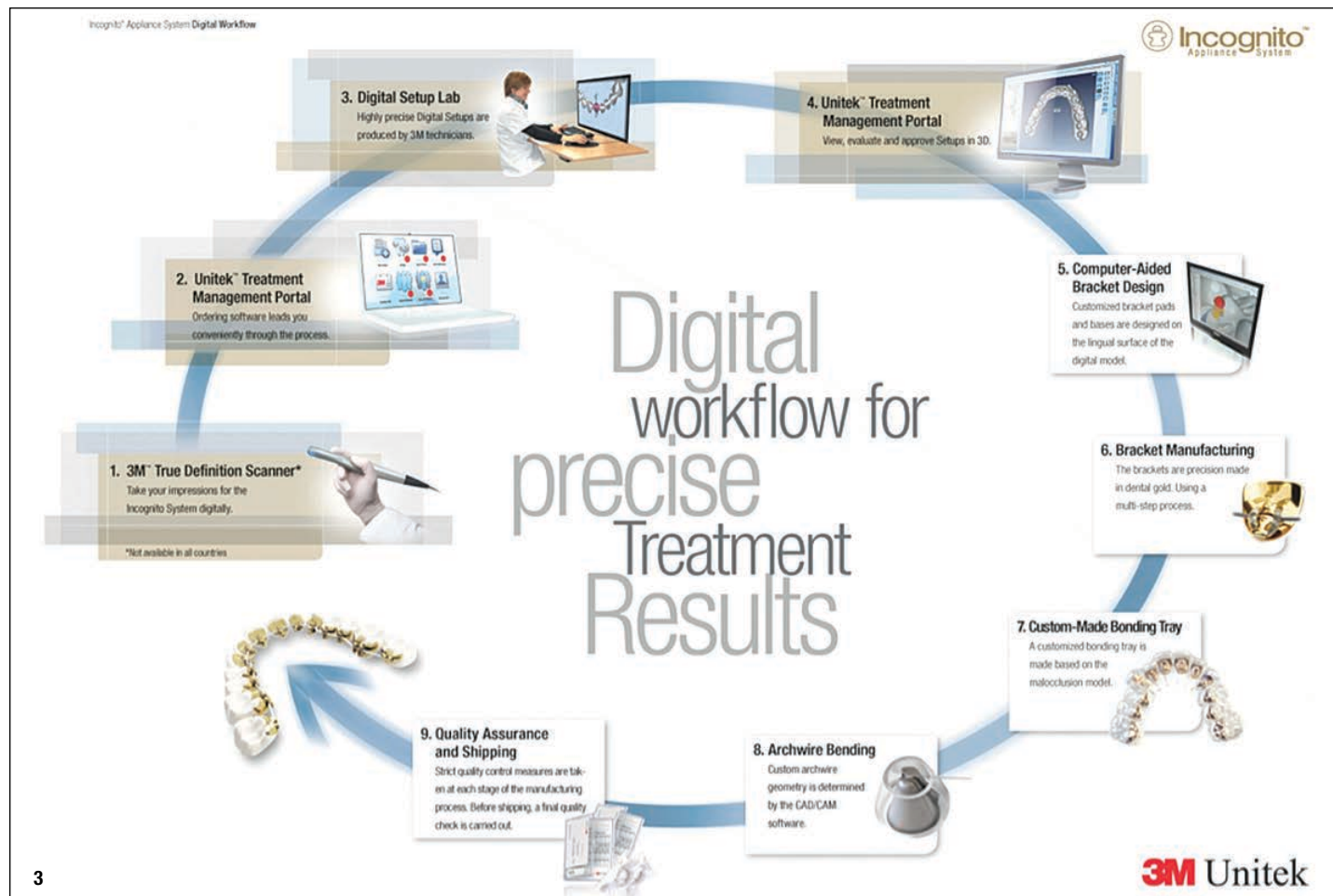


Figure 3: Digital workflow.

It is incredible to think on any given day, I can easily have north of 100 individuals come through our office in any number of capacities; i.e., as a patient, parent, driver, postal worker, etc. . . but they can all see this monitor. Spreading the word is easier than you think, and it can be a very good tipping point on a consult to convert them into an immediate start. More than once, I have scanned a patient at no charge as they waited to see me for an initial exam. Think about what that says for your reputation!

Figure 3 clearly depicts how utilizing a digital scan instead of a PVS impression will save time overall. The result ultimately is that we receive our patients' Incognito™ Appliance System more quickly.

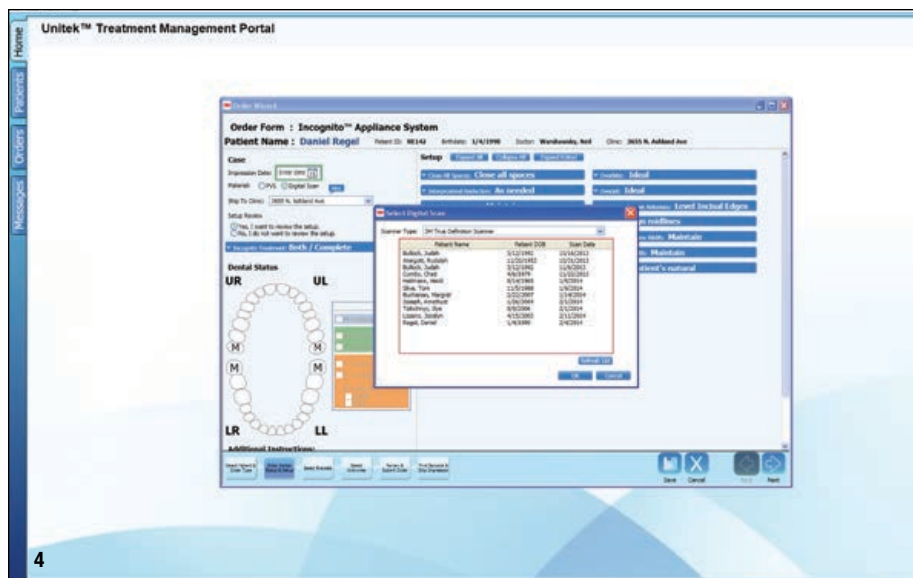


Figure 4: Unitek™ Treatment Management Portal Order Form for the Incognito™ Appliance System.

Once the scan is completed, the process to order an Incognito Appliance System is the same as if PVS impressions were taken with one exception. There is a new window in the Unitek TMP (Figure 4) software that now immediately uploads your scan into the 3M manufacturing platform. This new workflow will reduce the manufacturing cycle by one to two weeks, depending on where you live and the time of the year.

The rest of the order form for Incognito Appliances will remain the same and will be completed online using Unitek TMP. Earlier this year, a trusted connection was also announced with Align Technology for digital production of the Invisalign® system.

One of the newest tricks we now use our scanner for is to prepare for debanding a case. In our office, when we identify that a case is ready to deband, oftentimes an impression is taken by the staff with the braces on, and poured up to build a Hawley retainer. Using the 3M™ True Definition Scanner, we now scan that patient's upper arch and transfer the actual scan file, referred to as the STL files, directly to the lab of our choice. That lab then grows a physical model using a 3D printer, and it is delivered back to us in time to deband the case a few short

“Upon leaving our office, patients are presented with a very unique present – a physical model of their teeth.”

weeks later. What needs to be noted, though, is that the fit of the retainer is perfect. Upon leaving our office, patients are presented with a very unique present – a physical model of their teeth. They are instructed to call us and return the model to us if they lose or break their retainer.

The day the braces are removed, or shortly thereafter, as part of our diagnostic records, we take a digital scan of our patient. We let all of our patients know that as a courtesy we will now keep an archived copy of their finished result “stored in the Cloud” at no charge. If they lose or break their retainer, we typically grow a model of the finished result and can produce another retainer (any style of their choice) with little to no effort. In fact, these new 3D printed models are so strong that they can withstand going through our Druformat Scan positive pressure lab machine multiple times. As a result, we now offer patients the option to purchase a four-pack of clear aligners that we ultimately can build in-house. It is a win-win for both my bottom line and the patient as they do not have to go “dumpster diving” in front of their friends and feel the wrath of parental guilt for tossing a retainer, simply because they are an over-scheduled teenager who made an honest mistake. I say forget the dog days of past years when no patients want to come... now we always have a project for idle hands to work on in office. So to answer the point I brought up earlier, I feel the 3M True Definition Scanner is a stand-alone income stream within my practice, that not only is helping us do our job faster and better, it is actually helping us to stand out as a center of excellence.

Consistent with the vision for the future, this is yet another example of 3M's commitment to healthcare and innovation. With products like the 3M True Definition Scanner and custom Incognito Appliances, not only are you getting a complete custom orthodontic solution that no other manufacturer can provide, you are positioning your practice to be on the cutting edge of orthodontics. Supply and demand will ensure that your practice will be poised for frenzied growth at a time when the economy is stagnant and flat.

Report: Incognito™ Appliance System Annual Users Meeting 2013



Paris Hosts Huge Incognito™ Appliance System Annual Users Meeting

More than 400 orthodontists and assistants from 45 countries gathered recently in Paris at the Westin Vendôme conference hotel for the combined 7th International and 11th French Incognito™ System Users Meetings. The December, 2013 jointly-held event featured a full day of lectures, live demonstrations and hands-on experience with new products. A special program for assistants was also included.



Clinical Excellence, Now and Into the Future

“Clinical Excellence” was the theme for the meeting, which was highlighted by an expert panel of international speakers who offered insights into their latest treatment experiences with the Incognito system. The program also included introduction of product innovations such as the new flatter profile for posterior brackets for the system, the new Clear Precision Tray for indirect bonding, fully digital workflow and the 3M™ True Definition Scanner.

Digital Workflow

Pioneering technologies were a central topic at the meeting. Dr. Robert Lawson, Edinburgh, Scotland, discussed tooth position planning which can now be optimized thanks to the digital setup and the doctor review possible with 3D images. Dr. Lawson tested a wide range of lingual bracket procedures before choosing the Incognito System.

In a live demonstration, Dr. Andrea Thalheim, pioneer in lingual correction systems and clinical advisor for TOP-Service für Lingualtechnik GmbH, examined 3D PDF documentation and discussed the advantages of the digital setup in comparison to the manual setup. This topic was also examined by Dr. Laila Hitmi, lecturer at the faculty of oral surgery at Descartes University in Paris, in a parallel French-speaking workshop, together with Dr. Laurent Petitpas and Dr. Thierry Roubaud.



The precision of the Incognito appliance was presented by Dr. Adam Schulhof, New York, who highlighted how the use of the 3M™ True Definition Scanner can increase precision even further, for example, when making a digital jaw impressions.

Gap Closure with Incognito™ Appliances

An insight into the sophisticated types of treatment given after extraction was offered by Dr. Toru Inami, President of the Japan Orthodontic Board. Dr. Inami guided attendees through the treatment phases and gave examples of the strengths of the Incognito System in the hands of experienced orthodontists. Gap closure with lingual appliances after extraction was also the subject of the talk given by Dr. Leandro Fernández from Malaga who presented his clinical experiences with the new flatter Incognito brackets.

Dr. Laila Hitmi spoke on the pre- and post-operative interplay between oral surgeons and orthodontists and highlighted the significance of the choice of arch and ligatures in pre-operative management, amongst other things. Dr. Hitmi also gave tips on finishing using the Incognito System. Prof. Dr. Young-Guk Park from Kyung Hee University in Seoul, Korea, also

discussed the Incognito System in association with oral surgery, pre-operative planning and post-operative realization. In his experience, 3D depiction offers a precise starting point for an aesthetic, efficient and, above all, predictable result.

Bonding and Precise Positioning

The significance of indirect bonding for optimum bracket position and, with this, for treatment success, was examined by Prof. Dr. Dietmar Segner, orthodontist and lecturer at Hamburg University, among others. His presentations on the first clinical experiences with the new Incognito Clear Precision Tray were met with great interest. This new-style transfer tray designed for Incognito appliances eliminates manual positioning errors as it is created exclusively on the basis of the digital setup data. Furthermore, the findings of his comparative studies on bracket adhesion losses were also of considerable clinical interest.

The new Incognito™ Lite Appliance System with splint and the clinical and application benefits of this small and precise solution were presented by Dr. Esfandiar Modjahedpour who manages an orthodontic practice in Krefeld. He also reported on his experiences in Class II Correction cases and a new component of the Incognito System for fixing the Forsus™ springs in the lower jaw.

Dr. Skander Ellouze from Tunis, an expert for self-ligating and lingual systems and lecturer at Bordeaux University among others, discussed the correction of asymmetrical malpositions.

Preparations for the 2014 and 2015 Users Meetings are already underway. Don't miss your opportunity to attend. Contact 3M Unitek for more information.



Save the Date!

International Incognito™ Appliance System
Users Meetings

November 22, 2014

Villa Miani
Rome, Italy

March 13-14, 2015

Hotel Waldorf Astoria
Orlando, Florida USA

Incognito™ Appliance System Courses 2014-2015



Guadalajara, Mexico May 6-7, 2014

Speaker Dr. Victor Rico
Language Spanish
Contact 3M Unitek Latin America
Jair Lázarin
+52 55 52700 0400 ext. 1422
jlazarin@mmm.com

Milano, Italy May 16-17, 2014

Speaker Dr. Roberto Stradi
Language Italian
Contact 3M Unitek Italy
+39-02-7035-3524
nmarangoni1@mmm.com

Munich, Germany May 16-17, 2014

Speaker Dr. Esfandiar Modjahedpour
Language German
Contact 3M Unitek Germany
Brigitte Mader
+49 8191-9474-5015
brigitte.mader@mmm.com

Campinas, São Paulo, Brazil June 6-7, 2014

Speaker Dr. Victor Rico
Language Spanish
Contact 3M Unitek Latin America
Jair Lázarin
+52 55 52700 0400 ext. 1422
jlazarin@mmm.com

Fukuoka, Japan June 18-19, 2014

Speaker Dr. Keizo Hirose
Language Japanese
Contact 3M Unitek Japan
Yuki Nishikawa
+81 3 6409 3637
ynishikawa@mmm.com

Dubai, UAE June 21-22, 2014

Speaker Dr. Esfandiar Modjahedpour
Language English
Contact 3M Unitek Dubai
Ana Caballero Laporta
+971 437052
acabellerolaporta@mmm.com

Mumbai, India September 17-18, 2014

Speaker Dr. Skander Ellouze
Prof. Anmol S. Kahla
Language English
Contact Indian Lingual Orthodontic
Congress
+91 9769788522 or
+91 9821264508
ilocmbai2014@gmail.com
www.iloc2014.com

3M Unitek India
J. Suresh
+91 9972928905
jsuresh@mmm.com

Sendai, Japan September 17-18, 2014

Speaker Dr. Shoji Sugiyama
Language Japanese
Contact 3M Unitek Japan
Yuki Nishikawa
+81 3 6409 3637
ynishikawa@mmm.com

Kuching, Sarawak, Malaysia October 15-16, 2014

Speaker Dr. Wilson Lee
Prof. Young-Guk Park
Language English
Contact Malaysian Association of
Orthodontists (MAO)
Pre-Congress for the 9th
APOC
+60 82415175
chairperson@9apoc.com,
orgsec@9apoc.com,
secretariat@9apoc.com
www.9apoc.com

Mexico City, Mexico October 23-24, 2014

Speaker Dr. Eduardo Alvarez
Language Spanish
Contact 3M Unitek Latin America
Jair Lázarin
+52 55 52700 0400 ext. 1422
jlazarin@mmm.com

This list is continuously updated. Please refer to www.incognito.net for the latest version.

Incognito™ Appliance System Courses 2014-2015

continued

Incognito™
Appliance System

Moscow, Russia November 1-2, 2014

Speaker Dr. Sergey Popov
Language Russian
Contact aestelior
+7-921-900-1252
aestelior@yandex.ru

Düsseldorf, Germany November 7-8, 2014

Speaker Dr. Esfandiar Modjahedpour
Language German
Contact 3M Unitek Germany
Brigitte Mader
+49 8191-9474-5015
brigitte.mader@mmm.com

Tokyo, Japan November 12-13, 2014

Speaker Dr. Keizo Hirose
Dr. Shoji Sugiyama
Language Japanese
Contact 3M Unitek Japan
Yuki Nishikawa
+81 3 6409 3637
ynishikawa@mmm.com

Hiroshima, Japan December 3-4, 2014

Speaker Dr. Shoji Sugiyama
Language Japanese
Contact 3M Unitek Japan
Yuki Nishikawa
+81 3 6409 3637
ynishikawa@mmm.com

Incognito™ Appliance System Advanced Course

Mexico City, Mexico May 8, 2014

Speaker Dr. Victor Rico
Language Spanish
Contact 3M Unitek Latin America
Jair Lazarin
+52 55 52700 0400 ext. 1422
jlazarin@mmm.com

Dubai, UAE June 23, 2014

Speaker Dr. Esfandiar Modjahedpour
Language English
Contact 3M Unitek Dubai
Ana Caballero Laporta
+971 437052
acaballerolaporta@mmm.com

Incognito™ Appliance System Refresher Course

Frankfurt, Germany October 17, 2014

Speaker Dr. Esfandiar Modjahedpour
Language German
Contact 3M Unitek Germany
Brigitte Mader
+49 8191-9474-5015
brigitte.mader@mmm.com

Incognito™ Appliance System Users Meeting

Rome, Italy November 22, 2014

Speaker Various
Language English with Italian
and Russian translation
Contact Details will follow soon!

Paris, France December 6, 2014

Speaker Various
Language French
Contact Details will follow soon!

Orlando (Florida), USA March 13-14, 2015

Speaker Various
Language English
Contact Details will follow soon!

Save the Date!

International Incognito™ Appliance System
Users Meetings

November 22, 2014 Villa Miani Rome, Italy	March 13-14, 2015 Hotel Waldorf Astoria Orlando, Florida USA
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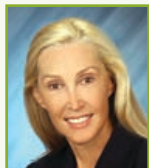
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to www.incognito.net for the latest version.



3M Unitek Live Webinar Schedule

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visit 3MUnitekTraining.com



Better Bonding and the Incognito™ Appliance System

Presenter: Cathy Sundvall

In this new and updated CE webinar, clinical trainer Cathy Sundvall walks you through the most up-to-date steps for successful bonding and rebonding of Incognito™ Appliance System custom lingual brackets. The webinar provides insightful tips applicable to any lingual bonding to help doctors and clinical staff improve techniques and reduce bond failures.

Live Webinar Schedule

CEU: 1

Fri 6/6/14: 12:00 PM ET
11:00 AM CT
9:00 AM PT
Fri 6/6/14: 4:00 PM UTC



Anterior-posterior Control with the Unitek™ Temporary Anchorage Device (TAD) System: Part 1

Presenter: Mohammad Razavi, D.D.S.

In past webinars, Dr. Moe Razavi has reviewed the benefits of using the palate as the source of anchorage for en masse retraction of the maxillary anterior teeth. The Unitek™ Temporary Anchorage Device System, combined with the custom designed TransPalatal Arch (TPA), cannot only be used to control the final position of the maxillary incisor teeth, but can also allow for control of almost every tooth in the mouth. In this segment, Dr. Razavi reviews treatment mechanics for anterior-posterior (AP) correction through molar distalization in both the maxillary and mandibular arches using a combined TPA/TAD system anchored in the palate.

Live Webinar Schedule

CEU: 1

Fri 6/13/14: 12:00 PM ET
11:00 AM CT
9:00 AM PT
Fri 6/13/14: 4:00 PM UTC



Planning for Success: Orthodontic Team Strategies

Presenter: Dr. Lisa Alvetro

Part of the Alvetro Practice Management Series

Do you struggle with goals, budgeting, or management in your office? Ineffective strategic planning can limit practice success. In this webinar, Dr. Lisa Alvetro poses the question, "If you don't know where you are going, how do you get there?" Dr. Alvetro shares the systematic process that she and her team utilize to identify goals, define practice direction and allocate resources.

Live Webinar Schedule

CEU: 1

Fri 6/20/14: 12:00 PM ET
11:00 AM CT
9:00 AM PT
Fri 6/20/14: 4:00 PM UTC

3M Unitek Live Webinar Schedule *continued*

For more information,
visit 3MUnitekTraining.com



Strategic Growth: More Than Just Case Starts

Presenter: Dr. Lisa Alvetro

Part of the Alvetro Practice Management Series

Although the number of new patients is an important metric for an orthodontic practice, focusing on this alone can overlook many opportunities for growth and improvement. Learn techniques to make your practice the best it can be by using Dr. Lisa Alvetro's approach to scheduling, staffing and organizational management.

Live Webinar Schedule

CEU: 1

Fri 8/22/14: 12:00 PM ET
11:00 AM CT
9:00 AM PT
Fri 8/22/14: 4:00 PM UTC



Anterior-posterior Control with the Unitek™ Temporary Anchorage Device (TAD) System: Part 2

Presenter: Mohammad Razavi, D.D.S.

Continuing his exploration of the Unitek™ Temporary Anchorage Device System, Dr. Moe Razavi describes the use of indirect anchorage to protract posterior dental segments in both the maxillary and mandibular arches. Specifically, he presents how to utilize a combined TransPalatal Arch (TPA) / TAD system to protract maxillary posterior segments in canine substitution cases, as well as protraction of mandibular molars using indirect anchorage to close the space of congenitally missing second premolar teeth.

Live Webinar Schedule

CEU: 1

Fri 10/17/14: 12:00 PM ET
11:00 AM CT
9:00 AM PT
Fri 10/17/14: 4:00 PM UTC

Additional webinars are added on a regular basis. Check 3MUnitekTraining.com for additional information and updates.

Save the Date!
September 19-20, 2014

Forsus™ Class II Correctors
Dr. Lisa Alvetro
Newport, Rhode Island
Watch for further details.



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- > Efficiencies for Ligated and Self-Ligating Appliance Systems
- > Minimizing Bond Failures for Direct and Indirect Bonding
- > Controlling Class II Correction

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- > The Right Approach for Any Patient: Communication Techniques with Strategies from the Insights Discovery® Program.



June 6-7, 2014

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Predictability of Treatment Results with the Incognito™ Appliance System: Case Report of a Bilateral Cross Bite in an Adult Patient



Dr. Federico Saverio

Medical Doctor

Specialist in Orthodontics

Active Member E.S.L.O. and W.S.L.O.

Private practitioner in Milan, Italy

Summary

Patients today ask more and more for an aesthetic improvement of their smile, achieved through invisible devices.

When this young adult patient (28 years old) came to visit our practice, he was already well informed about the potential of the lingual technique and therefore very determined to solve his problem uniquely by means of an invisible appliance. (Figure 1A-C).



Figure 1A-C



The intraoral view shows a Class I molar and canine relationship with a moderate tooth crowding in the upper and lower front along with a bilateral molars and upper left premolars cross bite.

In the occlusal view, we can see that the upper jaw is constricted in the lateral sectors whereas the lower arch is expanded in the diastoric segments. (Figure 2A-G).

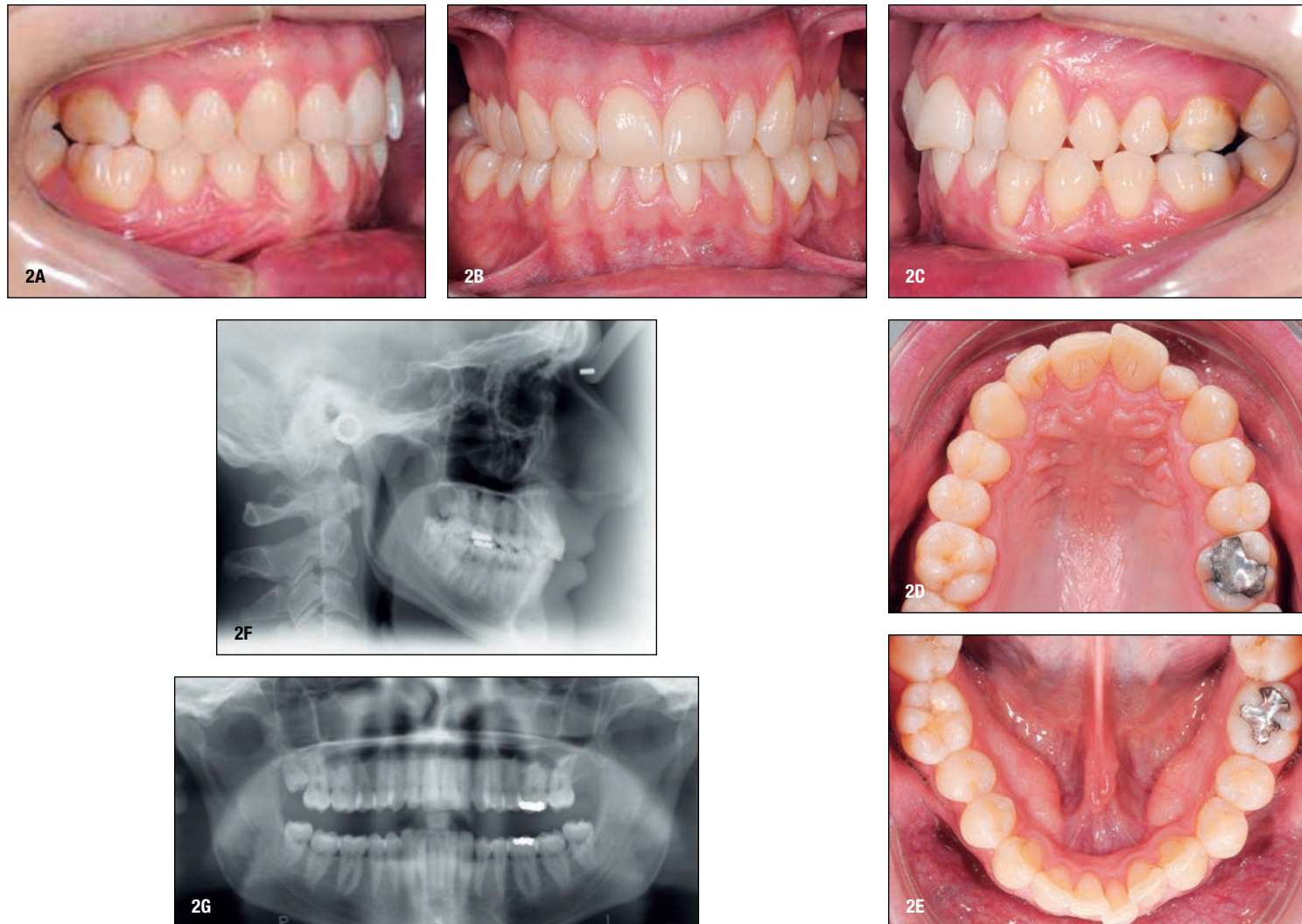


Figure 2A-G



Figure 3A-D

Beyond the tooth crowding correction and the enhancement of the coordination between upper and lower jaw, the treatment aimed to solve the cross bite in the lateral sectors and create the necessary space for the aesthetic reconstruction of the UL2 (22), which was smaller than the contra lateral tooth.

After the initial rounding of the arches shape and a moderate IPR in the lower front area, the use of archwires with a progressively wider cross-section allowed a better transversal

expansion of the upper jaw, and thanks to the criss-cross elastics, while preserving the osseous and periodontal tissues.

In both arches, all Incognito™ lingual brackets are ribbonwise VH, with a self-ligating slot in the mandibular anterior segment. (Figure 3A-D).

Archwire Sequence

Upper arch

- .016 superelastic NiTi
- .016×.022 superelastic NiTi
- .018×.025 superelastic NiTi
- .016×.024 SS
- .0182×.0182 TMA
- .0182×.025 TMA

Lower arch

- .014 superelastic NiTi
- .016×.022 superelastic NiTi
- .018×.025 superelastic NiTi
- .016×.024 SS
- .0182×.0182 TMA



Figure 4A-C

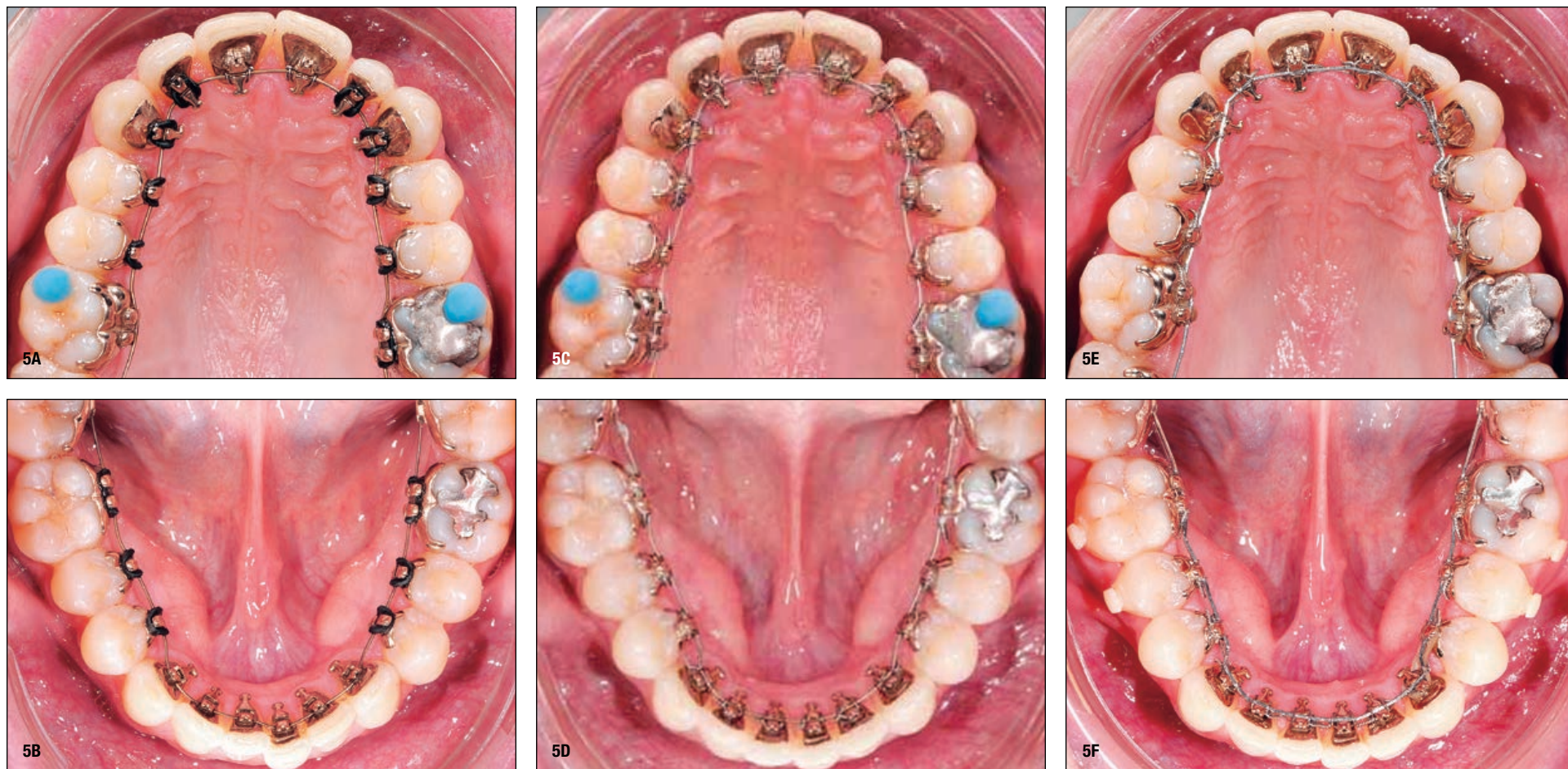


Figure 5A-F

The 20-month long treatment began in January 2010. At the end of the therapy, the patient underwent tooth bleaching and aesthetic build up of the UL1 and UL2 (21 and 22).

Since September 2011, he is wearing a fixed retainer with splints from the upper right to the upper left canine and from the lower right to the lower left canine. A maxillary Essix retainer has also been used. (Figure 5A-F).





Figure 8A-F

If we compare the intraoral and occlusal images of the patient's occlusion at the end of the treatment with the setup used to create the Incognito appliances, we can clearly recognize the high degree of predictability of the Incognito lingual appliance system.

The desired result has been relatively simply achieved, with an ease that, in our clinical experience, we haven't experienced with other techniques. (Figure 8A-F).

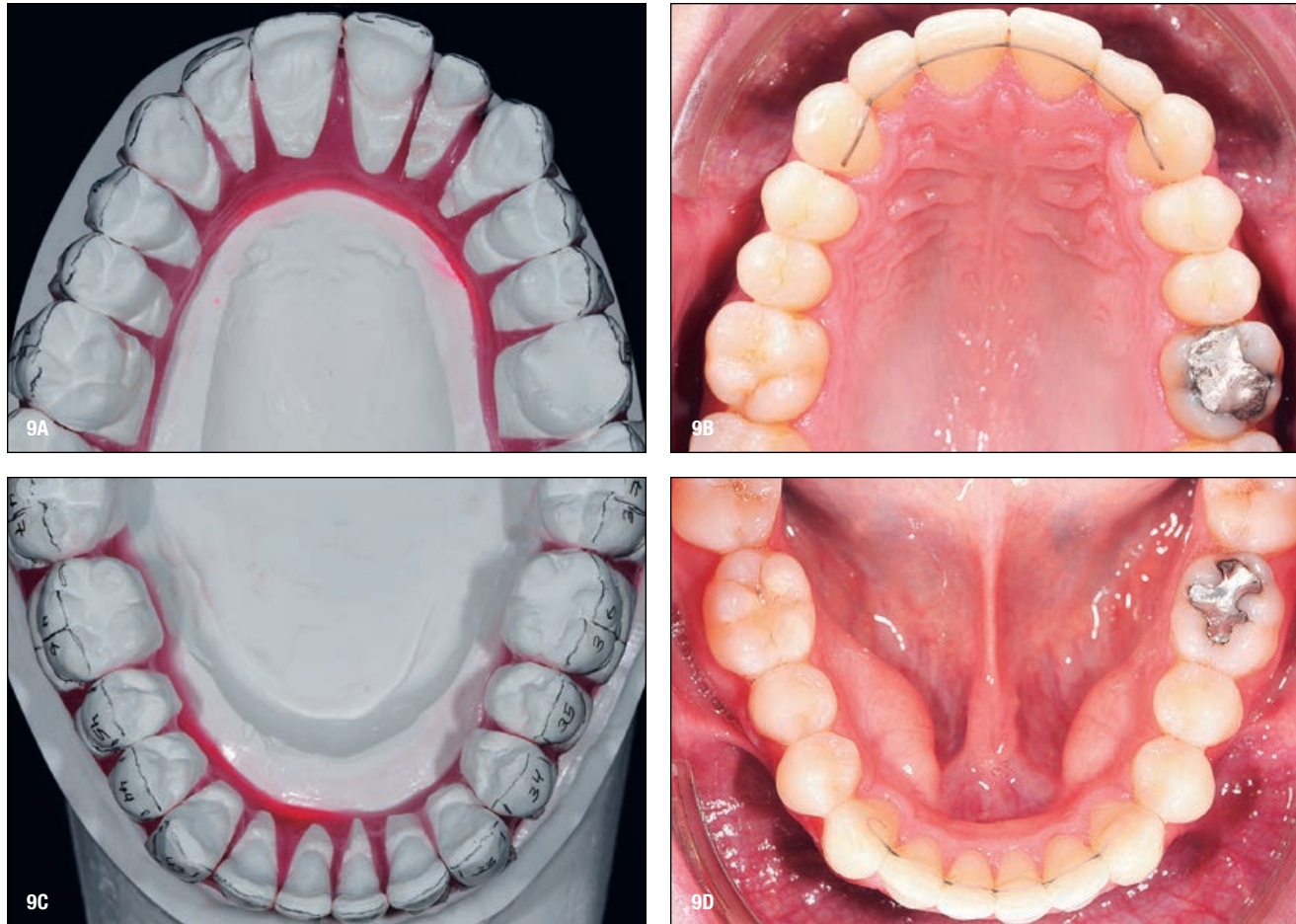


Figure 9A-D

Acknowledgments:

Dr. Laura Morosini - Orthodontist

Dr. Stefano Mastroberardino – Dental Restorative Specialist

Orthodontic Perspectives Innova



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