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The importance of the contact point in Class II restorations

by Dr. Marco Calabrese

Clinical case

Class II restorations using composite resins present a number of technical problems, including the creation of tight interproximal contact points. A tight proximal contact will balance the mesial and distal forces and prevent food impaction. For a while now, the use of preformed matrices and separator rings, in combination with wedges, has made it possible to obtain good restorations with satisfactory morphology. An even more efficient system has recently been introduced, which combines preformed matrices, innovatively designed wedges, and nickel-titanium rings providing optimum separation that remains consistent over time.

This clinical case demonstrates the procedure for conservative restoration of teeth 15 and 14 using this innovative system.

The radiograph (Figure 1) shows that the patient has a distal carious lesion of tooth 14 and a mesial lesion of tooth 15 (Figure 2). After isolating the operative field with a rubber dam (Figure 3), the cavity on tooth 14 is prepared (Figures 4 and 5) through which the mesial lesion on tooth 15 can be reached (Figure 6) and the tooth is restored (Figure 7). The Palodent® Plus matrix is then placed on tooth 14, with simultaneous placement of a wedge and ring (Figure 8). The unique design of the nickel-titanium ring means that the matrix fits perfectly around the tooth (Figure 9). Next comes the bonding phase; DETREY® Conditioner 36 (36% phosphoric acid) is applied first (Figure 10), followed by XP-Bond® adhesive (wet bonding method). The cavity is then partially filled with SDR® Smart Dentin Replacement (Figure 11); after waiting a few seconds for the products to self-level perfectly inside the cavity, it is polymerised.

The distal wall is created with Ceram•X® mono+ composite, shade A2 (Figure 12). The matrix is removed, leaving minimal amounts of excess material to be removed (Figure 13). The restoration is then completed using Ceram•X mono+ composite, and finished (Figure 14).

Conclusion

Composite restorations performed using techniques designed for amalgams (round matrices) do not create the correct anatomical contours. However, with the use of Palodent Plus sectional matrices it is now possible to create a proximal contact that is elliptical in the buccolingual direction about 1mm apical to the height of the marginal ridge. The interdental papilla fills the space apical to this contact and prevents lateral food impaction. The Palodent Plus system makes it possible to create a good tooth contour adjacent to the papilla, which is necessary to reproduce the original shape.

The use of the innovative DENTSPLY sectional matrix in Class II restorations allows the dentist to produce more predictable and morphologically correct restorations.
Fig. 1. Distal carious lesion of tooth 14 and mesial lesion of tooth 15.

Fig. 2. Occlusal view.

Fig. 3. Isolating the operative field with a rubber dam.

Fig. 4. Accessing the carious lesion.

Fig. 5. Finished cavity on tooth 14.

Fig. 6. Mesial lesion on tooth 15.

Fig. 7. Final restoration of tooth 15.

Fig. 8. Fitting the Palodent Plus matrix to tooth 14, placement of wedge and ring.

Fig. 9. Excellent adaptation of the matrix around tooth 14 thanks to the ring design with V-shaped tines that accommodate the wedge perfectly.

Fig. 10. Bonding phase: applying conditioner (DETREY Conditioner 36).

Fig. 11. Partial filling of the cavity with SDR, Smart Dentin Replacement.

Fig. 12. Creating the distal wall with Ceram•X mono+ composite.

Fig. 13. Applying a final layer of Ceram•X mono+ shade A2 and removing the matrix. Note that there is minimal excess material to be removed during finishing.

Fig. 14. Final restoration of tooth 14, perfect interproximal contacts and bite check.
In a class II of its own

36 Month Clinical Trial Results*

• No failures attributable to SDR®
• No recurrent caries
• No post-operative sensitivities
• No adverse effects on gingival contact with SDR
• No adverse events reported throughout the trial

Advanced Matrix System

• Predictable tight contacts
• Tight gingival seal
• Less flash, less finishing
• Easy-to-use system

36 Month Clinical Trial Results*

• Increments up to 4mm without layering
• Unique self-levelling consistency
• Excellent flow-like cavity adaption
• Compatible with your current adhesive**
• Available in syringes and Compulas®

** chemically compatible with methacrylate-based adhesives and composites.

Bulk fill up to 4 mm

SMART DENTIN REPLACEMENT

Palodent Plus®
Sectional Matrix System

Palodent Plus®
Sectional Matrix System

For better dentistry
With three years of clinical experience, SDR (Smart Dentin Replacement) has become a world success, having been used for direct dental restorations in millions of cases. Thanks to its extremely low polymerisation stress, this bulk-fill composite base material is self-levelling and provides excellent adaptation to the cavity walls. Unlike conventional flowables, SDR can be applied in increments of 4mm in one step.

The Dental Advisor Product Awards are given to those products that stand out from all others in the marketplace in their particular category. These products are chosen after lengthy discussion, voting and agreement by the Dental Advisor Editorial Board. The board consists of Dental Professionals with experience in all areas of clinical dentistry as well as dental research.

In 2012 the Dental Advisor selected 41 products for special recognition and DENTSPLY’s SDR was rated as the ‘Top Composite Bulk Fill’ and has been identified as the composite bulk fill material of choice on the Dental Advisor 2012 Preferred Product List – a list of highly rated (as evaluated by the Dental Advisor) products which acts as a buyer’s guide for dental professionals worldwide. The Dental Advisor Consultants commented that SDR “flowed and adapted to interproximal areas”, “undercuts of preparations were completely filled each time” and “interproximal contacts were nice and tight”. 73% of the Dental Advisor Consultants rated SDR as better than their current flowable composite and would be willing to switch.

SDR is designed for use as a base in large class I and class II cavities, a liner in smaller class I cavities, a fissure sealant and as a filling for defects or undercuts in tooth preparations for crowns, inlays or onlays. SDR can be overlaid with any methacrylate-based adhesive or composite.

For more information about SDR please visit the DENTSPLY website at www.dentsplymea.com
Endo-Resto Navigator demonstrates added value of certified treatment systems

Everything at a glance - everything from one source

Restorative dentistry is a complex field. The Endo-Resto Navigator by DENTSPLY DETREY shows the safest route to treatment success. Dr Markus Kopp, International Marketing Manager of the company and a former manager at its clinical research department in Constance (2002–2007), explains how the Navigator simplifies everyday clinical practice.

Question: Dr Kopp, the new Endo-Resto Navigator by DENTSPLY DETREY is a simple sheet of A4 paper showing a flowchart. How do you feel this representation can benefit the dental team?

Dr Markus Kopp: You are right; we have compressed our Endo-Resto Navigator to fit on an A4 sheet and made it available as a laminated card. However, this compact form is actually quite unique as it presents virtually all treatment procedures in restorative dentistry and its related fields at a glance. I had been thinking for some time that such an overview would be desirable, as our product portfolio has grown to include so many individual products. The Endo-Resto Navigator not only arranges these products by indication, but also shows how they are interrelated.

Question: The Endo-Resto Navigator displays the areas where DENTSPLY DETREY products support the dental team. How would you define this area and its boundaries?

Kopp: Ultimately, it is all about restoring the tooth – whether directly or as a preliminary step for an indirect restoration. Incidentally, restorative treatment of the clinical crown plays an essential role following endodontic treatment. Endodontic treatment ends with the bacteria-tight closure of the access cavity – it is not enough to simply fill the root canal. We must keep in mind that the endodontic and restorative disciplines are closely related and interdependent. For this reason, the Endo-Resto Navigator covers both the restorative segment and the endodontic specialities of our Swiss colleagues at DENTSPLY Maillefer in Ballaigues. The treatment processes shown here end where the prosthetic treatment begins. The DENTSPLY DETREY range does not include materials for definitive all-ceramic or metal-ceramic crowns (although it does include materials for cementation and for preparatory tasks, such as for a core build-up). DeguDent, who are part of the Prosthetics franchise, offer a range of product solutions which complement the DeTrey materials.

Question: Interaction between different disciplines, a variety of individual products – and now you increasingly talk about “systems”. Hasn’t this term been overused a bit recently? Is there any product left today that does not claim to be or be part of a system?

Kopp: You certainly have a point there. To me it would feel rather trivial to put a few products in a box and claim that this, from now on, is a system. Any time DENTSPLY DETREY uses this term, what we are referring to is a certified treatment system or CTS. In other words it is not enough to define several excellent products as components of a specific treatment procedure. Rather, their particular combination must add value for the dental team. In addition, the complete system must have demonstrated its superior performance. Hence our use of the term “certified”.

Question: That sounds good, but is it appreciated by dentists and their assistants in everyday clinical practice?

Kopp: Our Endo-Resto system is a good example. It includes the special AH Plus® Cleaner that clears the root canal of excess uncured AH Plus sealer residue and ensures that the adhesive forces of XP Bond® can unfold their full potential. The interaction of these components will result in increased certainty of a successful treatment, especially in single-session endodontic/coronal restorations – a tangible benefit for the dental team. The XP Bond adhesive is used to line the cavity floor and walls, ultimately followed by creating a bacteria-tight seal using the SDR® flowable composite. All of these products are components of our Endo-Resto system. The results for the Core&Post system are quite similar: studies have demonstrated the strong bond between XP Bond, the associated fibreglass pin, the core build-up material and the hard tissues of the tooth. In particular, the adhesive reliably polymerizes even in the total darkness usually present in the root canal, thanks to the Self Cure Activator, SCA is an added benefit that results from the successful interplay of the individual products. The result of using a system is a stable and permanent adhesive bond, just what the dental team wants and needs for the patient.
Question: Frequently, dental teams will have developed their own routines over the years, using a custom combination of products which work pretty well in everyday practice. What are the advantages of using certified treatment systems or of using several of them as listed by the Endo-Resto Navigator?

Kopp: First of all, this is a matter of quality assurance. You already mentioned it yourself – you said that things work “pretty well in everyday practice”. “Pretty well” implies that there is a residual risk; the clinical performance of the product combination in question will, as a rule, not have been assured independently. But dentists and their teams are increasingly obliged not only to work conscientiously, but also to provide traceable documentation. If the combination of a certain bond with a particular root canal post or a particular composite is challenged, the following is true if the products are from the same treatment system: “Because this is a certified treatment system where optimal interaction of the individual components is supported by scientific studies and guaranteed by the manufacturer. In this way, the manufacturer has voluntarily accepted to share responsibility.” Simplified and intelligent handling characteristics are another advantage of a CTS. For the systems of DENTSPLY DETREY, I can say that we always arrange the components intelligently in a dedicated tray, meaning that at every point of the procedure, the next product – cleaner, adhesive, composite or whatever it is – is readily at hand, and in just the right quantity. In addition to quality assurance and fast and easy handling, there is also a cost advantage, particularly if several of the CTS presented on the Endo-Resto Navigator are used in the dental surgery.

Question: Dr Kopp, your work at DENTSPLY DETREY gives you a broad insight into the market for dental products in many countries on several continents. I would like to take this opportunity to take a step back to look at the larger picture. Do dental teams across diverse countries have similar questions?

Kopp: In principle, yes, but there are significant differences in the overall approach. We observe a higher level of price sensitivity in the so-called “emerging markets”, to the point where people, in order to get a cheaper offer, are willing to compromise elsewhere. However, independent of country-specific arrangements, quality assurance measures, including certified treatment systems, will and must be given an ever more focal position for Europe to secure its leading position in the world of dentistry in the long term. I believe that herein lies an opportunity we must seize and here the Endo-Resto Navigator can make a valuable contribution.
Protaper NEXT is the newest innovation to the Protaper system, which has been the gold standard in endodontics for many years. It is an efficient solution for endo practitioners seeking a versatile, flexible system that will handle the vast majority of root canal treatments. Protaper NEXT’s innovative off-centred rectangular cross section gives the file a snake-like “swaggering” movement as it moves through the root canal. The rotation of the off-centred cross section generates enlarged space for debris hauling. Optimisation of canal tracking is also achieved due to the “swaggering effect”.

M.access™, from DENTSPLY Maillefer, is a comprehensive and affordable hand file range. The complete range is designed to deliver quality at an affordable price. M.access stainless steel files are ergonomically designed, with ISO colour coded handles.

The new curing light from DENSPLY provides a slim pen-style design with a long, rotatable tip and a one-button control activating a 20 second curing cycle. The SmartLite Focus is instantly ready to use upon purchase without the need for initial charging, and the “Smart Recharge Technology” checks the curing light’s battery conditions and initiates the appropriate charging mode – providing virtually permanent availability.
MEAvest is a carbon-free, phosphate-bonded and plasterless universal investment material which is suitable for the precision casting of non-precious and precious dental alloys. MEAvest may be used for the conventional, as well as for the rapid burnout method of heating. For this purpose the special liquid must be used. MEAvest is the perfect partner for MEAlloy, the porcelain alloy ideal for single units, bridge units, long-span bridges, Maryland bridges and implant restorations.

NUPRO Sensodyne prophy paste provides immediate sensitivity relief while delivering excellent polishing and stain removal properties. It is powered by NovaMin® a bio-available calcium phosphosilicate. NUPRO Sensodyne delivers tooth desensitisation, tubule occlusion and stain removal in one easy to use solution.

DENTSPPLY Middle East & Africa Website and Newsletter

The DENTSPPLY MEA website aims to deliver everything you need to know about DENTSPPLY products in one place.

Product Information

The site has recently been redeveloped to make navigation around DENTSPPLY's vast portfolio much easier. Full details on all our products, including reorder codes, brochures, videos and frequently asked questions can be found on the detailed product pages.

Education Counts

A new addition to the website is a comprehensive education calendar, which shows the details of upcoming exhibitions, courses and workshops across the MEA region. Contact details are included for each event.

Our education section also includes support guides and videos on some of our products so you can learn more about them.

To receive the most up-to-date information about DENTSPPLY products and events in MEA please subscribe to our email newsletter.

Visit: www.dentsplymea.com/newsletter and enter your details.
There was more change in clinical endodontics from about 1985 to 1995 than in perhaps the previous 100 years combined. In these ten years, clinical endodontics changed forever with the emergence of four game-changing technologies. First, superior vision became attainable with the integration of the dental operating microscope (DOM). Second, piezoelectric ultrasonic energy, in conjunction with the DOM, drove microsonic instrumentation techniques that were minimally invasive, efficient, and precise. Third, canal preparation procedures became more predictably successful with the emergence of NiTi files. Finally, this decade of extraordinary change concluded with the introduction of mineral trioxide aggregate (MTA). This remarkable and biocompatible restorative material has become the standard for pulp capping and has salvaged countless teeth that previously had been considered hopeless.

With the advent and integration of these four technologies, education commenced, was initially met with resistance, then became what many clinicians recognized they must do. During the next ten years, scientific evidence validated improvement in many endodontic procedures and outcomes. Education continued, training improved, and research results led to an ever-increasing number of dentists integrating these technologies into clinical practice. Virtually each and every procedural step that comprises start-to-finish endodontics was re-examined, refined, and could be performed at a remarkable skill level. Recently, considerable attention has focused on lasers, CT imaging, and devices to radically improve disinfection. Just as the technologies of the previously mentioned decade led to the birth of a new kind of endodontics, these newer technologies hold great promise to improve the future care we provide patients.

Perhaps the greatest international attention in recent years has focused on methods to improve endodontic disinfection in an anatomically complicated space. Although there are many devices purported to enhance disinfection, the method selected should be readily affordable, easy to use, safe, and must fulfill its intended purpose. The EndoActivator® System (DENTSPLY) represents a new technology and has considerable scientific evidence validating its use in several commonly performed endodontic procedures (Figure 1). This article will briefly describe the EndoActivator and how to use this device to improve disinfection, adapt and remove calcium hydroxide, predictably move MTA into root defects, and more effectively remove residual obturation materials in the retreatment situation.

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Endodontic Advancements

Game Changing Technologies

by Dr. Clifford J. Ruddle, DDS, FICS, FACD

Dr. Clifford J. Ruddle is Founder and Director of Advanced Endodontics and the Director of Endodontics at the Scottsdale Center for Dentistry. He is an Assistant Professor of Graduate Endodontics at Loma Linda University and University of California, Los Angeles, is an Associate Clinical Professor at University of California, San Francisco, and is an Adjunct Assistant Professor of Endodontics at University of the Pacific, School of Dentistry. As an inventor, Dr. Ruddle has designed and developed several instruments and devices that are widely used internationally. He is well known for providing superb endodontic education through his lectures, clinical articles, training manuals, videos and DVDs. Additionally, he maintains a private practice in Santa Barbara, California. He can be reached at (800) 753-3636 or www.endoruddle.com.

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Fig. 1

The EndoActivator System may be utilized to perform a variety of endodontic procedures easier, safer, and more effectively.
EndoActivator System

The EndoActivator System is comprised of a cordless, contra-angled, three-speed, battery-operated handpiece. The handpiece produces sonic energy to drive variously sized EndoActivator tips. The EndoActivator tips have an easy snap-on/snap-off design and are color-coded yellow, red, and blue, closely corresponding to sizes 15/02, 25/04, and 35/04, respectively. The tips are made from a medical-grade polymer, are strong, and are appropriately flexible. When activated, these polymer tips will not cut dentin and create a smear layer. Importantly, an activated polymer tip will not break, internally ledge, externally transport a foramen, or perforate a canal. The following will identify the increasing role of the EndoActivator to improve treatment in four commonly performed endodontic procedures.

Disinfection

The EndoActivator represents a clinical breakthrough in clinical disinfection. In the context of this article, the word “disinfection” or “cleaning” will be used interchangeably and will refer to debridement, the elimination of the smear layer, and the disruption and removal of microorganisms (biofilm), when present, from all aspects of the root canal system.

Factors Influencing Disinfection

In a previously referenced article entitled “Endodontic Disinfection: Tsunami Irrigation,” I described those factors which, singularly or in combination, serve to influence disinfection. A brief review of the more important factors would include preparing a complete access cavity, a prerequisite for successful endodontics. Skillfully negotiating the full length of any given canal is fundamental prior to initiating safe, efficient, and predictable shaping procedures. Well-shaped canals promote the exchange of irrigant and the three-dimensional cleaning and filling of root canal systems (Figure 2). Fully shaped canals hold a larger volume of irrigant that can potentially circulate, penetrate, and clean into all aspects of the root canal system. Disinfection will also be influenced by the preparation technique selected.

The cross-section of a file is another factor that influences cleaning a root canal system. Evidence is emerging that demonstrates radial landed files burnish and trap more lateral debris than do active cutting files. Additionally, the dimensions of the final preparation also serve to influence disinfection. Great debate continues regarding how large in diameter to prepare the foramen, with apparent little appreciation for how the taper of the final preparation and the exchange of irrigant serve to actually clean a root canal system. The most important reagents used to promote disinfection include a 6% solution of NaOCl and a 17% solution of EDTA. Regrettably, there is little agreement regarding the ideal temperature of the irrigant, the frequency of irrigation, or the volume of irrigant dispensed. Additionally, there is no consensus as to the required time for any given reagent to complete its intended purpose. Other factors that serve to influence disinfection are the gauge of the canuli, its depth of insertion, and whether the irrigant is delivered laterally or through the end of the canuli.

Disinfection with the EndoActivator

Perhaps the most important aspect of disinfection is choosing to utilize an active versus a passive irrigation method. Active irrigation is intended to initiate fluid hydrodynamics. There is increasing evidence to support that fluid activation in well-shaped canals plays a strategic role in cleaning into all aspects of the root canal system, including into dentinal tubules, lateral canals, fins, webs, and anastomoses. The greatest focus today is on how to safely activate any given solution to maximize its exchange and hydrodynamic phenomenon.

The EndoActivator System provides a safe, easy, and affordable method designed to clean a root canal system. In clinical use, the efficacy of the EndoActivator is immediately appreciated. During use, the action of the vibrating tip frequently produces a “cloud” of debris that can be clinically observed in a fluid-filled pulp chamber. This hydrodynamic activation serves to improve the penetration, circulation, and flow of irrigant into the more inaccessible regions of the root canal system (Figure 3a). Cleaning root canal systems is the opening for three-dimensionally filling and long-term success.

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Calcium Hydroxide
When properly scheduled, the vast majority of endodontic treatment procedures can be accomplished in one visit. However, certain cases require a second visit to satisfactorily accomplish the endodontic goals. In these instances, calcium hydroxide has been advocated and widely utilized as an interim intracanal medicament. Radiopaque calcium hydroxide may be placed into a prepared canal using a syringe system with a screw plunger and an appropriately sized dispensing canul. Once this reagent has been loosely placed within a canal, this material can be readily adapted to the canal walls using a pre-selected EndoActivator tip. The loose vibrating tip will readily adapt calcium hydroxide against the shaped dentinal walls, the eccentricities of the rounder aspect of canals, and into root defects. The international peer-reviewed literature consistently states that perhaps the only way to completely remove calcium hydroxide from the root canal system is to use active irrigation. The EndoActivator’s strong, flexible, and non-cutting tips provide a safe way to both adapt and remove calcium hydroxide from the root canal space.

MTA
Over the years, since its introduction into routine clinical endodontics, MTA has been used for a variety of purposes. After mixing, picking up, and delivering MTA into any given tooth, the challenge is to move and tightly adapt this material, as an example, into a root defect.2 Traditionally, laboratory procedures, performed in conjunction with prosthetic dentistry, have used vibrating energy to effectively move dental stone into an impression mold, precisely replicating the detail while eliminating voids. Utilizing this analogy, MTA can be readily adapted apically and laterally into any given root canal or defect using vibrating sonic energy from the EndoActivator.3 As an example, it is profoundly safer and more predictable to vibrate MTA below the orifice, around a canal curvature, and into a root defect using flexible and noncutting polymer EndoActivator tips. In simulation, it is easy to visualize how MTA slumps, moves, and adapts within any given region of a canal when this material is adapted with the appropriately sized EndoActivator tip (Figure 4).

Residual Obturation Materials
For many endodontists, a great deal of each clinical day is spent nonsurgically retreatting failing endodontically treated teeth. During endodontic retreatment, it is normal to encounter teeth whose root canals were previously filled with gutta percha, carrier-based obturators, silver points, or paste fillers. After removing the bulk of a previously placed obturation material from the endodontic space, residual obturation material/sealer is routinely visualized and present within the eccentricities of the rounder aspects of canals, including grooves, fins, web, anastomoses, dentinal tubules, and lateral canals. These residual obturation materials serve to block the exchange of solvents and cleaning reagents, and compromise retreatment disinfection and success. Fortunately, the EndoActivator’s single-use polymer tips may be activated and used within a solvent-filled pulp chamber to enhance the removal of residual obturation materials. Placing a vibrating polymer tip into a solvent-filled canal will encourage the disruption and removal of residual obturation materials, which in turn will promote the more effective exchange of irrigant. Clinically, this phenomenon is readily appreciated by observing remnants of obturation materials moving into solution and the subsequent discoloration of the clear solvent fluid within the pulp chamber (Figure 5).

Future
The greatest improvements that have occurred in clinical endodontics can be directly related to the phenomenal advancements in technology. In the future, procedural breakthroughs, like in the past, will be largely driven by continued advancements. Many of the new technologies hold great promise to make endodontics easier, better, and faster. With genius, imagination, and hard work, the field of endodontics is moving ever closer to fulfilling its promise to the general public that, when properly performed, endodontic treatment is painless, can frequently be done in one visit, and is predictably successful.

References:

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PROTAPER® NEXT™

the future gold standard

PROTAPER NEXT is the newest innovation to the PROTAPER® system, which has been the gold standard in endodontics for many years. It is an efficient solution for endo practitioners seeking a versatile, flexible system that will handle the vast majority of root canal treatments.
DENTSPLY has successfully redesigned the renowned Cavitron ultrasonic scaling unit by focusing on a true down-to-earth approach to ergonomics and comfort. The new breakthrough Tap-On™ Technology allows the user increased flexibility for improved ergonomics. A single, light tap on the foot pedal suffices to activate and deactivate the Cavitron Plus Ultrasonic Scaling Unit and Cavitron JET Plus Ultrasonic Scaler with Air Polishing System. Furthermore, the new Prophy Mode Auto Cycles alternate automatically between air polishing and rinse, according to individually pre-selected time intervals.

Designed to improve patient comfort the Cavitron product range continues to innovate as demonstrated by the latest developments in the established ultrasonic scaling and air polishing units. The Cavitron Ultrasonic Scaler and Prophy Jet swivel handpiece now have an ergonomically designed counterpart with the Tap-On foot pedal.

There is no need to keep the foot pedal depressed during the treatment phase; a single tap is more than adequate. The enhanced water control mechanism allows for precise and convenient adjustment of lavage on the handpiece to the preferred setting. Additional power options for both the units enable quick removal of tenacious calculus.

Cavitron JET Plus takes ergonomics and efficiency in air polishing to a new level with its innovative Prophy Mode Auto Cycles. This brand new technology offers automatic alternation between air polishing and rinse mode. There is no need for the clinician to tap the pedal for each switch. The duration of the automatic cycles – none (manual mode), short, medium or long - can be selected according to individual preferences and clinical requirements.

The benefits of Prophy Mode Auto Cycles and Tap-On Technology are also integrated into the new Cavitron Prophy JET-Air Polishing and Prophylaxis System which is expected to launch in September 2013.

Clinicians and patients can continue to rely on the unique Cavitron System: benefits such as Blue Zone™ offer an extended low power range for improved patient comfort in subgingival scaling. The patented Sustained Performance System (SPS™) is designed to maintain tip stroke automatically regardless of clinical load and conditions. It supports scaling effectiveness even at ultra-low power settings. The hands-free Boost Mode ensures quick removal of tenacious calculus with a temporary power boost. Rinse Mode simplifies irrigation or flushing of debris in the procedural area.

Due to its magnetostrictive technology the Cavitron Ultrasonic scaler is less technique-sensitive than other systems and therefore user-friendly in general. Anatomically optimised inserts allow for a careful and thorough removal of calculus and biofilms in virtually any clinical case: SlimLine® is designed for hard-to-reach areas and subgingival usage, PowerLine™ is suited for supragingival areas, THIInsert® is especially thin for narrow interproximal zones and SofTips™ are developed for implants. Autoclavable inserts and handpieces provide assurance against cross-contamination.

For more information on Cavitron Plus Ultrasonic Scaling Unit and Cavitron JET Plus Ultrasonic Scaler and Air Polishing System, please visit the DENTSPLY website at www.dentsplymea.com.
Choosing the correct ultrasonic insert can help you to work more efficiently and provide a higher level of comfort for you and your patients. Most patients require more than one type of insert during a single visit.

DENTSPLY offers a range of inserts alongside their Cavitron® units to provide optimised solutions for your clinical situations:

Slimline® FSI® (Focused Spray Inserts)
These instruments adapt to the natural root surface in every quadrant to ensure a highly efficient, non-cutting treatment. Available in straight, left or right angles and with the Bellissima™ soft-grip handle for exceptional comfort. The “focused spray” technology provides reliable lavage even in deep pockets. For order codes please visit www.dentsplymea.com/cavitron-fsi-slimline-inserts

PowerLine™ FSI® (Focused Spray Inserts)
These instruments provide increased scaling and deplaquing performance with less water and are specifically designed to efficiently remove heavier calculus deposits. The PowerLine inserts are also available with the Bellissima soft grip handle for exceptional comfort. For order codes please visit www.dentsplymea.com/focus-spray-inserts

THINsert™ Ultrasonic Insert
With a 47% thinner tip diameter than the FSI Slimline straight inserts, the THINsert allows access to difficult areas such as misalignments, interproximal areas and areas of tight tissue attachment whilst offering the ability to work at all power levels. 81551   THINsert 30K insert

SofTip™ Implant Insert
The SofTip insert removes plaque and calculus around titanium implants and abutments while providing the benefits of lavage. 90411   SofTip 30K insert 380059 SofTip disposable tips (100) 380060 SofTip wrench

Data on file
NUPRO® Sensodyne® Prophylaxis Paste

4-week clinical study by Milleman et al.

Clinical Study Shows Immediate and Long Lasting Performance of NUPRO® Sensodyne® Prophylaxis Paste.

NUPRO Sensodyne, DENTSPLOY’s unique prophylaxis paste with NovaMin®, offers immediate relief with a clinically proven lasting sensitivity reduction level after just one application. Nupro Sensodyne Prophylaxis Paste requires no additional treatment steps or new application methods as it replaces conventional chair-side pastes in a regular prophylaxis treatment. It combines all the benefits of current prophylaxis pastes and desensitizing pastes for professional use including stain removal, polishing and desensitizing.

Hypersensitivity patients experience pain sensations not only in their daily life but also in standard prophylaxis treatments. The immediate sensitivity relief of NUPRO Sensodyne Prophylaxis Paste makes the treatment far more comfortable. Therefore it can also contribute to a better recall compliance of patients who suffer from sensitivity problems as practitioners have stated.

NUPRO Sensodyne Prophylaxis Paste patented agent NovaMin, desensitizes exposed dentin surfaces by physically occluding the dentin tubules. In the moist environment of the oral cavity NovaMin quickly releases sodium ions which increase the pH. Thereupon Ca2+ and P5+ ions are released. They interact with demineralized dentin and form a hydroxyapatite-like mineral layer that covers the dentin surface, closes the tubuli and serves as an efficient barrier against the transmission of stimuli and irritations to the nerve.

A recent 4-week clinical study¹, conducted by J.L. Milleman et al. at Salus Research in Fort Wayne, Indiana (USA), compared the effectiveness in dentin hypersensitivity reduction of NUPRO Sensodyne Prophylaxis Paste to a conventional prophylaxis paste. The results for NUPRO Sensodyne Prophylaxis Paste with and without fluoride show an immediate sensitivity relief directly after the application. A lasting performance of the desensitizing effect was confirmed by a further sensitivity measurement 4 weeks after the single chair-side application of NUPRO Sensodyne Prophylaxis Paste.

After a baseline assessment with tactile and air blast stimuli the 139 patients enrolled in the study were divided into three treatment groups: For group A NUPRO Sensodyne Prophylaxis Paste without fluoride was used, group B received a treatment with NUPRO Sensodyne with fluoride and group C, the control group, was treated with a conventional prophylaxis paste without fluoride.

After the prophylaxis procedure the two NUPRO Sensodyne groups showed a significant immediate sensitivity relief: Tactile improvements were 86% (group A) and 67% (group B), air blast improvements 49% (group A) and 43% (group B). In contrast to these findings the measurements of the control group C displayed a statistically significant different pattern with tactile improvements as low as 9% and air blast improvements of merely 4%.

This substantial difference in performance remained constant in the course of time as a further measurement 28 days later confirms. The impressive results of the NUPRO Sensodyne groups show a lasting desensitizing effect. Tactile improvement scores stayed at their initial level with 88% for group A and 65% for group B. Air blast improvements were as high as 50% (group A) and 34% (group B). Whereas tactile improvements of the conventionally treated group C were only 10%, and with a score of solely 1%, air blast improvements had practically faded away.

The results clearly demonstrate that both NUPRO Sensodyne Prophylaxis Pastes are effective in immediate and lasting sensitivity relief. There was no statistical difference between the NUPRO Sensodyne Prophylaxis Pastes with or without fluoride.

NUPRO Sensodyne Prophylaxis Paste is available with or without fluoride in the flavours orange and spearmint and two different package sizes: jar (340g) or 175 patient dose cups.

For more information on NUPRO Sensodyne Prophylaxis Paste, please visit the DENTSPLY website at www.dentsplymea.com

Reference

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