THE BIOACTIVE DUO
TheraCem & TheraCal

STYLE ITALIANO’S GUIDE TO POSTERIOR COMPOSITES
Page 20
For the patient and the dental professional, the experience of dental trauma may be both distressing and costly. For the patient, the immediate concern is always esthetics, with social interactions being foremost in importance followed by time constraints. The financial costs will continue to escalate, as all treatment only repairs the damage, as the dentition does not heal, that is, enamel does not “grow back”. Trauma to the dentition may result in pulpal pathology, even years after the initial event. Endodontic procedures may be time consuming and considered by many patients to be an unplanned major expense. However, the fractured, exposed pulp may be extremely uncomfortable and therefore the patient requires immediate pain relief. For the dental practitioner, emergencies rarely time themselves to fit within the schedule, and yet the treatment rendered should be of the highest standard. The advent of resin based light cured calcium silicate materials has significantly improved the outcomes, both esthetic and pulpally, for dental trauma patients. The ease of placement for these new materials, and their quick application, allows the dental practitioner to treat even the most complicated trauma with ensured success.

**Case Presentation**

A 19 year old healthy male presented for emergency treatment after sustaining a hockey stick injury to his upper left lateral incisor (Figure 1). The trauma had happened approximately a week earlier, but due to school constraints, and the patient’s obvious pleasure with his “red badge of courage”, treatment was delayed until maternal influence was brought to bear. After radiographic examination, anesthesia was obtained (20% benzocaine topical and 1.8 cc Septocaine infiltration) and the loose tooth fragment removed. The diagnosis of complicated crown root fracture was confirmed. The exposed pulp had over grown into a pulp polyp, (Figure 2) a sign of continued vitality, and the function of pulpal stem cell activity1. Placement of rubber dam was attempted but the palatal tang of the clamp repeatedly intruded into the fracture area and could impede proper restoration. Placement onto the palatal tissue pulled the palatal tissue over the fracture area, also impeding complete restoration, so the rubber dam could not be used. The pulp polyp was then surgically amputated with sterile sharp spoon excavator and refined with a new sterile #330 carbide bur in a high speed handpiece with gentle application. Hemostasis and disinfection was obtained with a 3% sodium hypochlorite

**Figure 1.** Complicated crown root fracture of maxillary left lateral incisor due to hockey stick injury.

**Figure 2.** Dental pulp polyp extruding from exposure site, tooth is asymptomatic and patient’s mother is very concerned about the esthetics.

**Figure 3.** The dental pulp polyp has been removed, hemostasis obtained and TheraCal LC placed.
(VistaDent) dampened cotton pellet and TheraCal LC® (BISCO) applied, then light-cured (Figure 3). TheraCal LC is a visible light cured hydrophilic, no HEMA, resin based dicalcium and tricalcium silicate material that promotes pulpal vitality and dentin bridge formation. After the TheraCal LC was cured, the tooth was etched with 32% Uni-Etch® with BAC etchant (BISCO) and thoroughly rinsed, then ALL-BOND UNIVERSAL® adhesive (BISCO) was applied in two coats and light-cured. A pre-fitted incisor clear crown form was filled with a suprafilled resin composite, Estelite Sigma Quick, shade A1, and then placed on the fractured tooth (Figure 4). After light curing, the crown form was removed and the restoration polished (Figure 5). The patient has been followed for standard preventive recare visits and the tooth has remained asymptomatic (Figure 6). Although the restoration has been performing quite well, the patient and guardian have both been informed that further treatment will be necessary for the fractured incisor, especially in the circumstances involving the game of hockey. The necessity of mouthguards and facial protection has been repeatedly discussed.

TheraCal LC has been reported in a number of studies to induced apatite formation, due to the release of calcium ions and by maintaining an alkaline pH that is inductive for mineralization. Although there are other calcium releasing silicate based dental materials, they all require significantly more time to apply and they fail to provide the minimum mechanical properties necessary to support the restoration. Previously recommended procedures, such as, the placement of MTA or calcium hydroxide pastes, left the restoration totally undermined, as the pastes have no adhesive qualities, nor mechanical resistance to occlusal forces. The pastes, or Dycal formulations, all also demonstrated a propensity to dissolve, leaving a space for microleakage and bacterial invasion.

This case presentation is a perfect example of the clinical situation that may present to any dental professional on any day, at any time, requiring the use of light-cured, resin based dicalcium silicate, TheraCal LC.

References:
5 REASONS to Try TheraCal® LC Today!

1. **CALCIUM RELEASE**¹ * stimulates hydroxyapatite and secondary dentin bridge formation²,³
2. **ALKALINE pH** promotes healing and apatite formation²,⁴
3. **PROTECTS AND INSULATES THE PULP**⁵,⁶
4. **SIGNIFICANT CALCIUM RELEASE**¹ leads to protective seal⁵,⁷,⁸
5. **MOISTURE TOLERANT**¹ & **RADIOPAQUE** can be placed under restorative materials and cements

**TheraCal LC - Kit** (H-33014P)
- 4 Syringes TheraCal LC (1g ea.)

**TheraCal LC** (H-3301P)
- 1 Syringe TheraCal LC (1g)

**BUY 2 x TheraCal LC Kit GET 1 TheraCem FREE**
(Value $159.00)

---

**TheraCal® LC CLINICAL TIPS**

5 REASONS to Try TheraCem™ Today!

1. **CALCIUM & FLUORIDE RELEASING**
   Continuous ion release

2. **ALKALINE pH**
   Transitions from acidic to alkaline pH in minutes

3. **EASY CLEAN-UP**
   Specifically formulated to allow for quick and easy removal of cement

4. **HIGHLY RADIOPAQUE**
   Easy to identify on radiographs for quick and effective diagnosis

5. **STRONG BOND TO ZIRCONIA**
   Delivers a strong bond to zirconia and most substrates with no priming, etching or bonding agent required

**$159.00**
- 1 Dual-Syringe (8g), Natural Shade (D-46311P)
- 15 Mixing Tips and Intraoral Tips, Instructions

**BUY 2 x TheraCem, GET 1 TheraCal LC Kit FREE**
(Value $160.00)

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**TheraCem Continuous Release of Fluoride and Calcium**

**Shear Bond Strength to Zirconia**

- TheraCem: 26.8 MPa
- RelyX™ Unicem 2 Automix: 16.7 MPa
- Maxcem Elite™ Chroma: 14.8 MPa
- G-CEM LinkAce™: 22.5 MPa
Now Available in Unit-Dose

ALL-BOND UNIVERSAL™
Light-Cured Dental Adhesive

SINGLE BOTTLE SYSTEM
offers the compatibility and speed for
everyday effective performance

Bisco Simplifies Bonding
1. ALL-BOND UNIVERSAL offers the flexibility for total-, self- or
selective-etch procedures.
2. ALL-BOND UNIVERSAL is compatible with all light-cured, self-
cured, and dual-cured resin composite and cement materials for
all direct and indirect procedures.
3. Other single bottle adhesives may need more than 1 bottle for
indirect restorations, but with ALL-BOND UNIVERSAL, NO
activator is required!

$185.00
Standard Kit (B-7202B0K-EU)

$178.20
50 Unit-Dose (0.20ml) (B-73050K)

$166.00
Refill (6ml) (B-7202P)

$326.70
100 Unit-Dose (0.20ml) (B-73100K)

BUY 3 GET 1 FREE
*At regular price

$363.00

50% OFF

Call To Order: 800.667.8811
Duo-Link Universal™

Ultimate Cementation for All Ceramic, Zirconia and CAD/CAM Restorations

- Quick and easy clean-up
- Easily identified on radiographs for an effective diagnosis
- Low film thickness ensures the restoration is completely seated
- Extremely high degree of conversion / ensures a long lasting restoration placement
- Ideal for all CAD/CAM restorations
- DUO-LINK UNIVERSAL KIT: Outstanding bond strengths to multiple substrates—Zirconia, Ceramics/Lithium Disilicate, Alumina, Metals, Endodontic Posts and Composites.

DUO-LINK UNIVERSAL™ adhesive resin cement is specially formulated for cementation of ALL indirect restorations and provides all of the desired properties for universal cementation.

Porcelain Primer is a silane coupling agent used to improve the chemical bond between porcelain restorations and resin cements resulting in increased bond durability over time.

Z-Prime™ Plus is a single-component priming agent used to enhance adhesion between indirect restorative materials and resin cements. It is a versatile primer for surface treatment of zirconia and alumina ceramics as well as metals/ alloys, composites and endodontic posts.

$127.00

Refills
- 1 Dual Syringe (8g)

Universal (A-19030P), Milky White (A-197MWP)

Buy 4 Get 1 Free

$254.40

20% off

Duo-Link Universal™ System Kit (A-19620K)

Regular Price $318.00

- 1 Dual-Syringe DUO-LINK UNIVERSAL Shade: UNIVERSAL (Base/Catalyst, 8g mixed),
- 1 Bottle ALL-BOND UNIVERSAL (6ml),
- 1 Bottle Z-PRIME Plus (2ml),
- 1 Bottle Porcelain Primer (3ml),

All-Bond Universal™ is the first TRULY UNIVERSAL dental adhesive that combines etching, priming and bonding in ONE bottle.

Call To Order: 800.667.8811
**UNI-ETCH® w/BAC / ETCH 37® w/BAC**

- The only etchants on the market with BAC
- The only etchants thickened with polymers

The addition of Benzalkonium Chloride (BAC) provides enhanced anti-microbial action and bond durability by inhibiting MMP’s activated by acid-etching dentin. Thickened with polymers, Bisco’s etchants rinse away easily and leave tooth surfaces free of residue.

The degradation of acid etched dentine was shown to be caused by the presence of endogenous MMPs in dentine. BAC is effective at inhibiting both soluble recombinant MMPs and matrixbound dentine MMPs in the absence of resins.

---

**CAVITY CLEANSER™**

2% Chlorhexidine Digluconate

Easily applied with brush or cotton pellet.

BISCO’S CAVITY CLEANSER is a 2% solution of Chlorhexidine Digluconate (CHX) intended for cleansing and moistening/rewetting cavity preparations. It is recommended for use upon completion of tooth preparation or etching prior to sealing the dentinal tubules. Cleansing of cavity preparations to remove debris and bacteria will decrease post-operative sensitivity.
**Z-PRIME™ plus**
Zirconia-Alumina-Metal Primer

**5 UNIQUE BENEFITS**

1. Unparalleled bond strengths to Zirconia, Alumina and Metal restorations
2. Compatible with light-cured and dual-cured resin luting cements
3. Versatility and durability with many different substrates and can be used for intra-oral repairs
4. Convenient, single bottle delivery offers ease of dispensing
5. Significantly enhances bond strengths of other resin cements

---

**BIS-SILANE™ PORCELAIN PRIMER**

**Silane Primer**

BISCO’s PORCELAIN PRIMERS are silane coupling agents used to improve bonding between porcelain and resin. They are known to enhance the wettability of composite resins to glass substrates, increase physical, mechanical and chemical bonding of resin to the porcelain, and yield greater resistance to water attack at the bonding interface.

BISCO offers a single component pre-hydrolyzed no-mix silane primer and BIS-SILANE™, a two-part silane coupling agent. BIS-SILANE™ offers additional stability to ensure effective bonding to porcelain.
No Activator needed

NEW CAPSULE

• Integrate with Zirconia
• No sensitivity
• Effortless Clean-up
• Sets at a High pH

Watch VIDEO

Call To Order: 800.667.8811

$249.00
QuikCap Refill
(06-40030-R)
20 (.17ml) Capsules

BUY 4 Get 1 FREE
Free item must be equal or lesser value

$169.00
Ceramir Crown & Bridge
QuikCap Intro Kit
(06-40031)
10 (.17ml) Capsules, 1 Applicator

Buy Kit & 2 Capsules FREE
Easy to Use and Handle

**PROVEN!** Clinicians report ease of use and easy seating

- No etching, priming, bonding or conditioning necessary - Saves Time!
- Moisture tolerant - no need for keeping the preparation dry
- Unique consistency - makes seating of the restoration effortless
- FAST and EASY clean-up - excess material is easily removed

**Superior Biocompatibility**

**PROVEN!** Non-irritating to the pulp – based on undisputed histological evidence

- ZERO postoperative sensitivity*
- Similar to hydroxyapatite
- Thermal properties similar to dental tissue helps minimize stress
- Five-year in vivo calcium aluminate study proves biocompatibility

**3-Year Follow-Up Study Recall Data**

**PROVEN!** Outstanding performance*

Now a 3-year clinical follow-up study confirms the many handling and long-term benefits that are immediately appealing for practitioners and patients alike...

- NO sensitivity
- Exceptional retentive strength
- Superior marginal integrity
- No marginal discoloration
- No secondary caries

---

*No cement related post-op sensitivity was reported in clinical trials, handling evaluations or post market surveillance among more than 25,000 patients.


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**Results of a Three Year Clinical Study**

- Retention: 100%
- Marginal Integrity: 100%
- Marginal Discoloration: 0%
- Secondary Caries: 0%
- Sensitivity: 0%

SMILE LITE MDP

MOBILE DENTAL PHOTOGRAPHY
BY PROF. LOUIS HARDAN

The first “Mini Studio” for beautiful intra oral dental photography harnessing the power of your smartphone. Now you can easily take high quality digital photos for:

- Shade matching
- Artistic pictures
- Every day communication with the lab
- Short video clips
- Patients’ documentation

$789.00

6600 KIT
- SMILE LITE MDP
- MDP, lateral diffusers (2 pcs)
- MDP, polarizing filter

*Phone is not included

Post your pictures to social media using the hashtag
#SmileWithTheLiteOn
for your chance to WIN a FREE Flexipalette kit

Un-retouched images realized with smartphones + Smile Lite MDP.
Lateral diffusers are great for softening light; making the surface textures more prominent.

Polarizing filter removes the reflection from the teeth and helps to determine the value for shade selection. Also, helps you to see the characterizations under the enamel layer.

Flexipalette is a must have for intra-oral photography.

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Composi-Tight® 3D Fusion™ Sectional Matrix System

An all-new system designed to handle even the toughest cases

- Hugs the curves
  Soft-Face™ silicone tips with enhanced marginal ridge anatomy hug the matrix band to the tooth for flash free restorations

- It just keeps going...
  Enhanced durability for extended ring life and greater tooth separation

- Stack it up – Tru-Stack™ technology allows placement of the orange ring (tall) over the blue ring (short) for easier MOD and multiple tooth restorations

Matrix band perfection
Composi-Tight® 3D Fusion™ Full Curve Non-Stick Matrices are three dimensionally contoured, ultra-thin and dead-soft to help you recreate ideal interproximal anatomy.

Ultra Adaptive Wedges
Combining Soft-Face™ adaptive materials, a firm inner core and advanced mechanical features to produce a wedge that truly works. Every time.

- Fins with serious function
  Soft retentive fins smoothly fold down during wedge insertion and then spring back when clear of the interproximal space. Wedge back-out is a thing of the past!

- A real softie
  3D Fusion’s Soft-Face over-mold allows the wedge to do what no other wedge can truly do – actually adapt to interproximal irregularities.

- Tough on the inside
  The firm inner skeleton allows for easy insertion and tooth separation just like a traditional wedge.

$88.00
Refill Matrix Band (50 pk)
BUY 3 GET 1 FREE

$131.00
3D Fusion Wedge Kit
200 wedges (50 ea)
(YFXX4-M)

$117.00
Ring Placement Forceps (XP01)

Composi-Tight® 3D Fusion™ Kit (FX-KFF-10)
Contents:
- 1 – Short Ring (blue)
- 1 – Tall Ring (orange)
- 1 – Wide Prep Ring (green)
- 70 – Assorted Matrix Bands
- 80 – Assorted Ultra-Adaptive Wedges
- 12 – Assorted FenderWedges®
- 1 – Ring Placement Forceps

$725.00

$416.00
3D FUSION™ RING KIT (FXR01)
Includes 3 rings: 1 short ring, 1 tall ring, 1 wide prep ring

$284.00
3D Fusion™ SHORT Ring Refill (FX400) Package of two (2)

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The composite finish line that is. With zero reprocessing and sterilization hassles and a lustrous diamond final gloss, Rally mini-polishers get you across the finish line and on to your next patient.

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Rally's small size and tapered shaft create a truly agile polisher capable of reaching the smallest anatomical features without blocking your visibility.

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Single patient Rally means that you get a clean, fresh, properly shaped polisher every time.

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You don't want to leave a trail of crumbs or spattered polishing paste on the track. Rally's diamond impregnated high shine final polishers won't crumble during use and don't require paste to create a beautiful, durable shine.

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Remove - Choose the Blue
Polishers for fast removal and contouring

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Polishers for smoothing and silky shine

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Polishers for ultra high shine

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Composite Polisher Complete Kit
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Refill

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Blue Coarse Grit Point (FPCC010), 30 ea.
Red Medium Grit Point (FPCM010), 15 ea.
Gray Fine Grit Point (FPCF010), 15 ea.
Blue Coarse Grit Cup (FPCC040), 30 ea.
Red Medium Grit Cup (FPCM040), 30 ea.
Gray Fine Grit Cup (FPCF040), 15 ea.

Do not exceed
maximum speed
Wear breathing protection
Wear eye protection
Use waterspray minimum 50ml/min

Call To Order: 800.667.8811
Comparison Products Why pay MORE?

**Quick-Stat™ FS**

Compare to: Ultradent® ViscoStat ®

15.5% Ferric Sulfate Hemostatic Gel

Stops bleeding when completing impressions, restorations, crown and bridge procedures.

- Ferric sulfate provides faster, longer lasting hemostasis
- Controlled delivery
- Viscous material stays in place when delivered
- Gentle to hard and soft tissues

| **$29.00** | **$52.00** | **$67.00** | **$164.00** |
| Standard Kit | Bulk Syringe Kit | Bulk Syringe Refill | Value Pack |
| 4 x 1.2ml syringes | 30ml syringe, 20 x 1.2ml syringes, 20 Stat-Flo tips | 30 ml syringe | 40 x 1.2ml |
| 01-V502804 | 01-V503555 | 01-V504600 | 01-V502800 |

**Quick-Stat™ FREE**

Compare to: Ultradent® ViscoStat ® Clear

CLEAR Hemostatic Agent

Stops bleeding when completing impressions, restorations, crown and bridge procedures.

- Aluminum Chloride viscous gel that stays where it’s placed
- Surfactant allows for better wound penetration
- Viscous, colorless, non-staining gel
- Controls minor bleeding fast
- Comes with Stat-Flo™ padded tip

| **$29.00** | **$52.00** | **$67.00** | **$164.00** |
| Standard Kit | Bulk Syringe Kit | Bulk Syringe Refill | Value Pack |
| 4 x 1.2ml syringes | 30ml syringe, 20 x 1.2ml syringes, 20 Stat-Flo tips | 30 ml syringe | 40 x 1.2ml |
| 01-V502804 | 01-V503555 | 01-V504600 | 01-V502800 |

**Stat-Flo™ Tips**

Compare to: Ultradent® Metal Dento-Infusor® Tips

For application of hemostatic agents

- Curved cannula for optimal visibility
- Padded brush tip reaches subgingival to provide superior hemostasis
- Universal luer lock style hub

| **$98.00** | **$107.00** | **$409.00** |
| 100/Cup (19ga) | 100/Cup | 500 / bag |
| 01-V312100 | 01-V321400 | 01-V321450 |

**Spira-Flo™ Brush Tips**

Compare to: Ultradent® Inspiral® Brush Tips

Superior placement control = Better outcomes!

Our new Spira-Flo™ brush tips offer controlled delivery of viscous materials, etchants and resins used in most restorative procedures.

- Curved cannula for optimal entry
- Internal spiral channel
- Adjustable brush tip fiber length
- Minimizes bubbles

| **$29.00** | **$52.00** | **$164.00** |
| Standard Kit | Bulk Syringe Kit | Value Pack |
| 4 x 1.2ml syringes | 30ml syringe, 20 x 1.2ml syringes, 20 Stat-Flo tips | 40 x 1.2ml |
| 01-V502804 | 01-V503555 | 01-V502800 |

*Free item must be equal or lesser value*

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Pre-bent Tips

Compare to: Ultradent® Blue Micro® or Black Micro® Tips

Unique polyurethane tip that flexes with your canal!

- Blunt end, pre-bent needle tip
- Universal luer lock style hub
- Opaque hubs - ideal for photo sensitive products

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Visco-Tip™

Compare to: Ultradent® NaviTip® Tips

THE ONLY TIP specifically designed for easy delivery of Calcium Hydroxide and flowable composites!

- Bendable, flexible tip
- Universal luer lock hub with the new Secure-Lock™ hub design

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Vista-Probe™- Irrigating Tips

Compare to: Dentsply®Max-i-Probe® Tips

Closed End, side-port delivery

- Bendable 1” tip
- Universal luer lock style hub
- Closed end, side-port delivery

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BUY 3 GET 1 FREE
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Appli-Vac™- Irrigating Tips

Compare to: Ultradent® Endo-Eze® Tips

Slotted and side-vented for safe irrigation

- Bendable 1” tip
- Universal luer lock style hub
- Slotted and side-vented for safe irrigation

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Luer Lock Syringes

Compare to: Ultradent®

Designed for surgical site irrigation.

- Graduated (cc) increments
- Textured finger grips to minimize slippage
- AUTOCLAVABLE, non-sterile
- Standard luer lock style

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BUY 4 GET 1 FREE
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US-12 Utility Syringe

Compare to: Monoject®

For surgical site and post-surgical home irrigation

- Disposable 12cc utility syringe
- Can be used with silicone- and rubber-based impression materials

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*Free item must be equal or lesser value

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From the leader in endodontic irrigation...

EndoSafe Plus™

Apical Negative Pressure Irrigation

**SIMULTANEOUS IRRIGATION / EVACUATION!**

Similar to Kerr® Endovac Pure® System!

- Working length delivery, flushing of debris & removal of vapor lock
- Minimized risk of apical extrusion
- Continuous exchange of active irrigants
- Low procedural cost compared to competitor

**AutoSyringe™ Kit**

- (1) AutoSyringe™ Handpiece
- (100) Plastic Barrier Sleeves
- (3) Autoclavable Sleeves
- (3) 20mL Canisters
- (20) Canister Liners
- (1) Charging Base

$799.00

FREE - (20) EndoSafe™ Negative Pressure Tips

Value $199.00

$199.00

Refill: (20) EndoSafe™ Negative Pressure Tips

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How to successfully model posterior composites using the right instruments

Composite restorations in posterior teeth have become the first choice for medium and small cavities. The success of these restorations resides upon the layering technique, not only because of the superior aesthetics that can be achieved, but also because shrinkage of composite resins can be compensated for by doing so.

In the following description of a clinical case, the authors give advice on how the use of the right materials and techniques will enable high-quality results in daily work, both aesthetically and clinically. The article particularly emphasizes the importance of using the right kinds of instruments at different stages of the procedure, as the quality of the work and chair-time can be greatly affected by the correct choice of instruments. With this in mind, a set of innovative instruments for aesthetic layering, LM-Arte instruments from Style Italiano, has been developed in cooperation with the Finnish instrument manufacturer LMInstruments.

Clinical case

A young male patient came to the practice with a fractured composite in the distal cusp of the first left molar. An old composite restoration was evident and some decay was found in the gingival marginal area (picture 1).

In addition, an examination revealed gingivitis and plaque in this area probably due to food impaction in the fractured zone. The decision to restore was taken immediately after examination.

A rubber dam seal is necessary to ensure optimal bonding. The isolation was carried out carefully, especially at the gingival margin. A thin spatula (LM-Arte Applica) was used to push the rubber dam gently into the gingival sulcus, the area to be treated was rinsed with plenty of water, and then thoroughly dried to detect any leakage. The cavity was prepared under complete isolation, and all the caries removed from the distal and mesial walls (picture 2).

The cavity was carefully cleaned before applying the bonding agent. The enamel was etched for 15 seconds, the bonding agent applied for 20 seconds, and then the excess blown off. The bonding agent was light cured for 60 seconds. The fine head of the Fissura instrument (LM-Arte Fissura), which is so flexible that it does not damage the bonding layer during use, is ideal for detecting the complete polymerization of the bonding layer. The Fissura instrument was also used to apply flowable composite to the floor of the cavity; its fine tip allows precise placement of the flowable composite.

A circular matrix, wooden wedges and a ring were carefully placed to conform the shape of the restoration and contact points. The matrix was adapted to achieve a rounded shape on the palatal wall.

With the “Applica” spatula a small increment of opaque dentine (A4 dentine) was taken out of the syringe (picture 3) and carried to the margin of the cavity. This spatula is also suitable for transporting and shaping the composite. The Applica instrument is a flexible spatula that can be used to gently smooth the composite in the cavity (picture 4).

To ensure complete adaptation and to eliminate bubbles, this increment is gently but firmly adapted with the “Condensa” instrument (picture 5). The rounded points of this instrument permit delicate adaptation without creating bubbles. After conforming the gingival area, an enamel increment is placed and treated the same way, adapting the material closely to the walls of the matrix, both ridges are formed separately (picture 6).

The contour of the proximal ridges is defined with the tip of the “Applica” in order to give...
a rounded natural shape (picture 6). Prior to polymerization, the composite is pushed against the matrix to ensure that no material tearing occurs during the modeling stage. With very tiny increments, the enamel layer is placed cusp-by-cusp, in order to avoid contraction and to be able to model more precise shapes as the composite will not slump.

These increments are carried to the cavity with the “Applica” spatula and shaped with the thick part of the “Fissura” instrument, which serves as a probe to define the fissure (picture 9), as a sharp point to define cusps and as a spatula to model the ridges and slopes. For the final stages of the occlusal modeling, the development of the slopes and secondary fissures are crucial for the correct aesthetics and function.

Slopes must have a precise shape, if they are too deep they will look unnatural and will accumulate debris, but if they are very flat they will not permit adequate function. The use of the “Condensa” instrument permits modeling sharp, but rounded slopes and secondary fissures with its fine tip (picture 10) and, if sharper structures are required, the thick head of the “Fissura” is suitable for modeling this.

We have highlighted during the layering stage the need for modeling sharp and narrow fissures, this will create a natural appearance to the restoration. After stratifying the enamel layer, it is time to fill up the space we left for the fissures with super colours (dark stains) imitating especially the neighbouring teeth.

With the finest tip available, and specially designed for this purpose, we carry a small amount of dark brown stain to the cavity, to fill up the fissure and model it, thereby obtaining very natural features.

Light cured stains are not only useful for characterization, they help as well with two functions. First of all it seals any gaps we left in the fissure area and second as an aging indicator, as stains tend to disappear slightly over time. After polymerization, it is common to observe excess material, especially bonding agents and some composite overhangs in the proximal areas.

For this purpose we use a specially designed instrument, “Eccesso”, which is fine enough to penetrate into the proximal areas and resistant enough to not be flexible and dangerous. An excellent restoration must be highly polished, to obtain optimal aesthetics and a long lasting result (picture 13).

Colour-coded instruments are a great advantage in our daily work, including helping to create a protocol for our methods and teaching assistants, students and ourselves a repeatable method, and always keeping in mind what will be the next step. Naming the instruments helps as well.

References:

Conclusions
The authors believe that procedure times are inevitably linked to certain obligatory steps (preparation, bonding, build-up with small quantities of composite in order to reduce shrinkage, correct curing times for each layer of material).

Nevertheless, with the instruments and guides that have been presented in this article, the layering technique can be key to the long-term success of the restoration from both a clinical and aesthetic point of view. This enables the clinician to avoid short-term disappointments that require re-facing and a waste of time.

Acknowledgements
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