Following a simpler path from prep to crown

By Dr. Carlos Eduardo Sabrosa, Brazil

Indirect restorative procedures can be time-consuming and complicated: many different processes from impression taking to cementation are carried out in the dental office, and in each of them, different strategies may lead to success. However, some of the available materials and techniques will involve a lot of effort, while others enable users to proceed quickly and simplify the complete procedure. A simplified workflow from prep to crown that really makes life easier for the dental practitioner is described below.

**Fig. 1:** Initial situation. The failed composite restoration covering a large part of the left mandibular first molar’s occlusal surface needs to be replaced.

**Fig. 2:** Due to the size of the restoration, the amount of remaining tooth structure might not be sufficient to ensure the required stability for a direct composite restoration.

**Fig. 4:** Following tooth preparation, a temporary crown is produced chairside with 3M™ TempSure™ 4 Temporization Material. This material exhibits a high strength and a natural gloss without polishing.

**Fig. 5:** One week after the preparation procedure, healthy soft tissue conditions are obtained. They lay the foundation for a high-quality precision impression.

**Fig. 6:** In order to allow for a detailed capture of the preparation margins, the gingival tissues are retracted using the double-cord technique. Alternatively, a single cord may be applied in combination with 3M™ Adhesive Restorative Paste.

**Fig. 7:** Monophase impression taken with 3M™ Im- pursium™ Permix™ Soft Polyether Impression Mate-
rial. A very detailed representation of the preparation margins is obtained with this simple technique.

**Fig. 8:** Situation at intraoral try-in of the crown. It is made of a 3M™ laval™ Zirconia coping and an IPS e.max Ceram (Vivadent) porcelain layer ideal intraoral conditions (smooth margins, healthy tissue) are visible.

**Fig. 9:** Sandblasting of the crown’s intaglio surface to create a microtextured surface structure that is beneficial for cementation. This procedure is recommended for oxide ceramic materials.

**Fig. 10:** Application of self-adhesive resin cement* into the crown. This proven product offers a simplified procedure since it eliminates the need for separate etching, priming and bonding.

**Fig. 11:** Situation after crown placement, removal of the excess cement and thorough cleaning. The crown blends in nicely with the surrounding tooth structure.

**Fig. 12:** At the check-up several days after crown placement, a great overall picture is obtained. The patient is happy with the final restoration in terms of aesthetics and function.

*Relyx™ U200 self-adhesive resin cement in the MEA Region

**Dr. Carlos Eduardo Sabrosa, Rio de Janeiro, Brazil**

Dr. Sabrosa is an Associate Professor at the State University of Rio de Janeiro Dental School. He received his DDS in 1992 from the State University of Rio de Janeiro Dental School and the Clinical Advanced Graduate Studies (CAGS) in Prosthodontics from Boston University Goldman School of Dental Medicine in 1996. He earned the Steven Gordon Research/Teaching Grant Award in 1993 from the American College of Prosthodontics. Dr. Sabrosa also received his MSD and DScD in Prosthodontics/Biomaterials from Boston University Goldman School of Dental Medicine in 1997 and 1999 consecutively. He has a private practice, focused in Oral Rehabilitation and Implantology, in Leblon, Rio de Janeiro, Brazil.

**Comments**

The described patient case shows that it is possible to significantly reduce the number of working steps in an indirect restorative procedure. In this way, potential sources of error are eliminated and chair-time is decreased. Key to success is the use of innovative, high-quality materials that do not require polishing and the self-adhesive resin cement all offered by a single manufacturer.

**By 3M**

3M Oral Care participated in the Saudi International Dental Conference from 9-11 Jan 2017 held at the Riyadh International Convention and Exhibition Center.

3M’s presence at the Conference & Exhibition was through a specially designed booth with designated areas for customer hospitality, product displays and 3D holograms.

It was the first time that the “Virtual Reality Experience” was introduced in any Dental Conference in the Kingdom. The experience took the customer inside a virtual Oral Cavity where he could see a Class II restorative procedure being done using 3M™ Filtek™ Bulk Fill Posterior Restorative, Single Bond Universal Adhesive and Self-Lex™ Diamond Polishing system.

3M Oral Care displayed the complete range of products which is loved by millions of customers worldwide. These specifically included products such as Filtek™ Z50 XT Universal Restorative, Filtek™ Bulk Fill Posterior, Ketac™ Molar Glassionomer, RelyX™ U200 Self Adhesive-Cement, RelyX™ Fiber Post 3D, Clarity™ Advanced brackets, and APC™ Flash Free systems to name a few.

3M core products like Single Bond Universal, RelyX™ Cement portfolio, Penta™ Impression portfolio, Temporization portfolio including TempSure™ 4, Stainless Steel Crowns, Pedo Strip Crowns and the Orthodontic portfolio including Victory™ Series Brackets, TADS and Incognito™ were also on display at the booth.

3M also invited renowned speaker Dr. Federico Ferraris from Italy to give a lecture and workshop during the SIDC. The lecture, titled "Composite vs Ceramic" attracted a large number of visitors during the conference. The workshop was conducted on the premises of King Saud University and was attended by 28 eager learners.

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**3M Oral Care at SDS**

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HeraCeram® Zirkonia 750
The "cool" solution for LiSi and zirconia

By Kulzer

Why use two ceramics when all you need is one?
HeraCeram Zirkonia 750. One ceramic for every type of zirconia and lithium disilicate restoration.
HC Zirkonia 750 stands out with its unique and revolutionary adhesive, ultrafine particle size, highly extended gingival range, and increased shade selection. And it's now more antagonist-friendly due to increased density, ensuring long-lasting and unrivalled natural looking restorations.

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For more information take a look at our HeraCeram® Zirkonia 750 Productinformation in the Download-page.

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- Ultrafine particle size. Elevated surface smoothness and density
- Impressive range of chroma dentines ensuring shade accuracy
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Class II DO on Second Bicuspid. Case Study

By Dr. Enrico Cogo, Italy

3D rings are the real topic of Garrison’s systems. The “v” shape of a ring that fits in the interproximal area allows a good fit between the cavity margins and the matrix in the buccal and palatal walls. This results in easier positioning of the composite masses close to the cavity margins, and final remodeling (usually necessary at the time of removal of the matrix) will be very minimal.

The rings also permit a divergence of the interproximal dental elements, which causes a great point of contact.

Garrison systems make second class restorations more simple and more predictable and also reduce the operating time of the finishes when the matrix is taken off.

Pre-op situation. Patient needs to replace an old amalgam restoration on 1.5.

Picture of the cavity after removing the amalgam restoration and after performing the cleaning of cavity.

Situation after removing ring, matrix and wedge. Good position the matrix and the use of an adequate ring allows minimum interproximal finishing at the end of the stratification.

After finishing of the cavity, a sectional matrix Compogis Tight 4.6 mm, a wooden wedge and 3D XR ring are placed. The ring is placed on the wedge and causes a slight divergence which will result in an excellent point of contact at the end of the restoration.

Post-op view after polishing and check occlusion. A good contact area is performed between elements 1.5 and 1.6.

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SDR® Plus – The only bulk-fill material with multiple years of clinical success

By Dentsply Sirona

In 2009, SDR® was the first technology that allowed gsm bulk placement in flowable consistency, providing an unmatched combination of consistency, excellent cavity adaptation, unique self-leveling and minimal shrinkage stress. Now, with the introduction of SDR® Plus, all the benefits of the SDR® technology remains plus expanded indications, more shades, improved wear resistance and increased radiopacity.

While making Class I and Class II restorations faster and easier, the SDR® technology in SDR® Plus material still provides excellent long-term reliability in several 5- and 6-year clinical studies. In fact, the long-term survival rates of bulk fill restorations with SDR® technology proved to be equivalent to those of restorations done in the conventional layering technique, highlighting SDR® Plus as a quality and durable filling material.

Split mouth studies by JWV van Dijken and U. Pallesen®

During the 6-year follow-up, a total of 98 Class I and Class II restorations were evaluated at recall 91 using just Ceram·X® SphereTEC™ in the bulk-fill technique against the same number using just ceram.

“During the six year follow up, the bulk fill technique was proven to be a clinically safe technique; highly acceptable; clinically durable.”

36 month clinical trial results by J. Burgess and C. Munoz®

The initial study entailed 170 restorations where SDR® was bulk filled in increments of gsm and then capped using Dentsply Sirona’s now discontinued composite material Esthet-X® HD. Since the beginning of the trial the restorations have been individually evaluated at 12, 24 and 36 months. At each evaluation the parameters for assessment were fracture and surface defect, proximal contact, recurrent caries, sensitivity and gingival index. The observers conclude:

“During the 5-year follow-up slightly better, but not statistically significant, durability compared to the conventional 2mm layering technique in posterior resin composite restorations.”

36 month clinical trial results

By JWV van Dijken and U. Pallesen®

36 Month clinical trial results

• No adverse effects on gingiva in contact with SDR®
• No post-operative sensitivities
• No failures attributable to SDR®
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36 month clinical trial results

By JWV van Dijken and U. Pallesen®

3. Internal report by Dentsply Sirona representative.

For more information or to request a demo, please contact your local Dentsply Sirona representative.

References

J. Burgess and C. Munoz®

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