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.

The described patient case shows that it is possible to significantly reduce the number of working steps and chair-time is decreased. Key to success is the use of innovative, high-quality materials that are not only beneficial for cementation. This procedure is recommended for oxide ceramic materials.

**Comments**

The described patient case shows that it is possible to significantly reduce the number of working steps. 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 offer ease of use and lead to increased efficiency in the dental office. These include the above-mentioned monophase impression material, the bulk fill composite, the temporization material that does not require polishing and the self-adhesive resin cement all offered by a single manufacturer.

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

![Image 1](image1.jpg)

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

![Image 2](image2.jpg)

**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.

![Image 3](image3.jpg)

**Fig. 3:** Upon removal of the old filling, it becomes clear that a crown is needed to ensure the required stability. The tooth is built up with 3M™ Filtek™ Bulk Fill Posterior Restorative, which may be placed in conjunction with 3M™ Single Bond Universal Adhesive and in increments of up to 5 mm.

![Image 4](image4.jpg)

**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.

![Image 5](image5.jpg)

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

![Image 6](image6.jpg)

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

![Image 7](image7.jpg)

**Fig. 7:** Monophase impression taken with 3M™ Impregum™ Permix™ Soft Polyether Impression Material. A very detailed representation of the preparation margin is obtained with this simple technique.

![Image 8](image8.jpg)

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

![Image 9](image9.jpg)

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

![Image 10](image10.jpg)

**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.

![Image 11](image11.jpg)

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

![Image 12](image12.jpg)

**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.

**3M Oral Care at SDS**

By 3M

3M Oral Care participated in the Saudia International Dental Conference from 17-20 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.

3M Oral Care displayed the complete range of products which is loved by millions of customers worldwide. These specifically included products such as Filtek™ Z500 XT Universal Restorative, Filtek™ Bulk Fill Posterior, Ketac™ Molar Glassionomer, RelyX™ U200 Self-Adhesive Cement, RelyX™ Fiber Post 3D, Clarity™ Adhesive, Duraphth™, Lava™ and Leucite Reinforced Glass Ionomer.

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™ Fill&Fil Bulk Fill Posterior Restorative, Single Bond Universal Adhesive and Self-Lex™ Diamond Polishing System.

3M Oral Care displayed the complete product range including Single Bond Universal, RelyX™ U200 Self-Adhesive cement, Protemp™ 4 Temporization Material, Protemp™ 3 Temporization Material and 3M™ Single Bond Universal.

3M Oral Care’s booth was a hub of activity throughout the event with an average of 100 visitors during the conference.

The workshop was conducted on the premises of King Saud University and was attended by 28 eager learners.

Dr. Carlos Eduardo 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/Clinical Award in 1995 and 1996 and the Tylman Research 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 Lapa, Rio de Janeiro, Brazil.

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**3M Oral Care**

Dr. Federico Ferraris from Italy to give a lecture and workshop during the SIDC. The workshop, titled ‘Compos-
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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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- Impressive range of chroma dentines ensuring shade accuracy
- Low temperature firing. No chance of warpage or discolouration.

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 Compocore 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.

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

By Dentply Sirona

In 2009, SDR® was the first technology that allowed grnm bulk placement in flowable consistency, providing an unmatched combination of consistency, excellent cav-ity adaptation, unique self-leveling and minimal shrinkage stress. Now, with the introduction of SDR® Plus, all the benefits of the SDR® technology remain 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 J.W.V van Dijken and U. Pallesen1,2

During the 6-year follow-up, a total of 98 Class I and Class II restorations were evaluated at recall 49 using SDR® and ceram.x® SphereTEC™ in the bulk-fill technique against the same number using just ceram.x® SphereTEC™ in the layering technique. The observers concluded that the SDR® technology was clinically safe, gave highly acceptable clinical durability, and noted that the clinical performance and failure rate was equivalent to conventional layering (5 failures in both test and control group).

During the 5-year follow-up, a total of 83 Class I and Class II restorations were evaluated at recall 52 using SDR® and ceram.x® SphereTEC™ in the bulk-fill technique against the same number using just ceram.x® SphereTEC™.

“The use of a 4mm incremental technique with the flowable bulk-fill resin composite showed during the 5-year follow up slightly better, but not statistically significant, compared to the conventional 2mm layering technique in posterior resin composite restorations.”

36-month clinical trial results by J. Burgess and C. Munoz3

The initial study entailed 150 restorations where SDR® was bulk filled in increments of grnm and then capped using Dentply Sirona’s new discontinued composite material Esthet-X™. 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. We are pleased to announce that the key findings of the clinical evaluation were as follows:

- No failures attributable to SDR®
- Acceptable performance with respect to safety and efficacy after 3 years
- No post-op failures have been reported related to SDR®
- No recurrent caries associated with SDR®
- No reports of adverse events
- No adverse effects on the gingiva in contact with SDR®

“There were no observations of recurrent caries associated with the low stress resin and no reports of adverse events throughout the duration of the trial.”

Conclusion

With more than 50 million applications since its introduction in 2009 and superior performance in clinical studies, it comes as no surprise that SDR® Plus has become the bulk fill technology of choice for the creation of reliable direct restorations.

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

References


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