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 restora-
tion 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. 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 con-
junction with 3M™ Single Bond Universal Adhesive
and in increments of up to 5 mm.

Fig. 4: following tooth preparation, a temporary
crown is produced chairside with 3M™ Protemp™ 4
Temporary Material. This material exhibits a high
strength and a natural glass 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 impres-
sion.

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 sin-
gle cord may be applied in combination with 3M™
Adhesive Restorative Paste.

Fig. 7: monophase impression taken with 3M™ Im-
pression™ Pedex™ Soft Polyether Impression Mat-
erial. A very detailed representation of the preparation
margins is obtained with this simple technique.

Fig. 8: situation at introral try-in of the crown. It is
made of a 3M™ Ivoro™ Zirconia coping and an IPS
emax® Crown (fascio®Vestadent) porcelain lags ideal
introral conditions (smooth margins, healthy tis-
se) are visible.

Fig. 9: sandblasting of the crown’s intaglio surface
to create a microretentive surface structure that is
beneficial for cementation. This procedure is recom-
manded for oxide ceramic materials.

Fig. 10: application of self-adhesive resin cement* into the crown. This proven product offers a simpli-
fied procedure since it eliminates the need for sepa-
rate 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.

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 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 temporoization 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

3M Oral Care at SDS

By 3M

3M Oral Care participated in the Sau-
di International Dental Conference from 9-13 Jan 2017 held at the Riyadh International Convention and Exhi-
bition Center.

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

It was the first time that the “Vir-
tual Reality Experience” was intro-
duced 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 us-
ing 3M™ Filtek™ Bulk Fill Posterior
Restorative, Single Bond Universal
Adhesive and Sof-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 Poste-
rior, Ketac™ Molar Glassionomer, Relyx™ U200 Self-Adhesive-Cement, Relyx™ Fiber Post 3D, Clarity™ Ad-
vanced brackets, and APC™ Flash
Free systems to name a few.

3M core products like Single Bond
Universal, Relyx™ Cement portfo-
lio, Penta™ Impression portfolio,
Temporization portfolio including
Protemp™ 4, Stainless Steel Crowns,
Pedo Strip Crowns and the Ortho-
dontic portfolio including Victory™
Series Brackets, TADS and Incog-
nito™ were also on display at the booth.

3M also invited renowned speaker
Dr. Federico Ferrari from Italy to
give a lecture and workshop during
the SIDC. The lecture, titled Compos-
ition vs Ceramic’ attracted a large num-
ber of visitors during the conference.
The workshop was conducted on the
premises of King Saud University and
was attended by 28 eager learn-
ners.

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HeraCeram® Zirkonia 750

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 antagonist-friendly due to increased density, ensuring long-lasting and unrivalled natural looking restorations.

There are no limits! HeraCeram Zirkonia 750 has all the aesthetic and professional resources you need to recreate nature on all-ceramic frames. It offers an impressive new range of chroma dentines, our unique Adhesive 750 with increased wettability, and the largest range of gingiva shades currently available. You now have the resources to deliver simple everyday restorations, as well as finely detailed and high-end individualised restorations of supreme quality – with a single ceramic for all ceramic frames (CTE of 10.2 to 10.5 µm/mK).

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

The advantages at a glance:

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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.

Dr. Enrico Cogo DDS
Dr. Cogo graduated from the University of Ferrara, Italy with a degree in Dentistry in 2005. Since 2006, he has been a visiting professor at the Dental School of the University of Ferrara. Dr. Cogo is also a frequent speaker at courses and conferences on dental bleaching and esthetics, as well as direct and indirect adhesive restorations. He is the author of several scientific articles in national and international journals, and with his associates, Pietro Sibilla and Roberto Turrini, wrote the book “Sbiancamento dentale: metodi per il successo,” edited by Quintessenza Edizioni and translated into German. Dr Cogo also has private practices in Legnago (Ferrara), Ferrara, Goito (Mantova) and San Giuseppe (Ferrara).

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 Companion 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.

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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 gnm 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 remains plus expanded indica- tions, more shades, improved wear resistance and increased radiopac- ity. While making Class I and Class II restorations faster and easier, the SDR® technology in SDR Plus mate- rial 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. Pallesen10-11 During the 6-year follow-up, a total of 98 Class I and Class II restorations were evaluated at recall 92 using SDR® and Ceram.X® SphereTEC™ in the bulk-fill technique against the same number using just Ceram.X®. In the bulk-fill technique against 91 using just Ceram.X® SphereTEC™ composite in the layering technique. The observers concluded: “During the six year follow up, the bulk fill technique was proven to be a clinically safe, gave highly acceptable clinical durability, and noted that the clinic- cal performance and failure rate was equivalent to conventional layering (x 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 92 using SDR® and Ceram.X® SphereTEC™ in the bulk-fill technique against the same number using just Ceram.X®. The observers concluded: “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. Munoz12 The initial study enrolled 170 resto- rations where SDR® was bulk filled in increments of gnm and then capped using Dentsply Sirona’s new 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. We are pleased to announce that the key findings of the clinical evaluation were as fol- lows: • There were no failures attributable to SDR® • Acceptable performance with re- spect to safety and efficacy after 3 years. • No post-operations have been re- ported related to SDR® • No recurrent caries associated with SDR® • No reports of adverse events • No adverse effects on the gingiva in contact with SDR®

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

“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.”

References
1. van Dijken JWV, Pallesen U, 2017: Split mouth studies vs. conventional layering technique; highly acceptable; clinically durable.”

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

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