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: In order to allow for a detailed capture of the preparation margins, the gingival tissues are reflected using the double-cord technique. Alternatively, a single cord may be applied in combination with 3M™ Advantage Restoration Paste.

Fig. 3: Upon removal of the old filling, it becomes clear that a crown is needed to ensure the required stability for a direct composite restoration.

Fig. 4: Following tooth preparation, a temporary crown is produced chairside with 3M™ Protemp™ 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 reflected using the double-cord technique. Alternatively, a single cord may be applied in combination with 3M™ Advantage Restoration Paste.

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

Fig. 8: Situation at intraoral try-in of the crown. It is made of a 3M™ lavo® Zirconia coping and an IPS e.max® Ceram (fusible Vivadent) porcelian layer. Ideal intraoral conditions (smooth margins, healthy tissue) 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 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.

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 tempORIZATION material that does not require polishing and the self-adhesive resin cement all offered by a single manufacturer.

*Rebonds™ LDGO self-adhesive resin cement in the MEA Region

3M Oral Care at SDS

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™ Z250 XT Universal Restorative, Filtek™ Bulk Fill Posterior, Ketac™ Molar Glassionomer, Relynx™ Carpo Self-Adhesive Cements, Relynx™ Fiber Post 3D, Clarity™ Advanced brackets, and APC™ Flash Free systems to name a few.

3M core products like Single Bond Universal, Relynx™ Cement portfolio, Penta™ Impression portfolio, Temporization portfolio including Protaper™ 4, Stainless Steel Crowns, Pendo 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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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/ 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 Leblon, Rio de Janeiro, Brazil.
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For simplicity, convenience and reliability, 3M™ RelyX™ U200 Self-Adhesive Resin Cement is your “go-to” product for a wide range of indications. Thanks to the dual-cure, self-adhesive chemistry, U200 cement delivers high adhesion, resistance to discoloration, long-term stability and more.

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General cementation, oxide ceramic restorations, posts and bridges

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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.

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 Product information in the Download page.

The advantages at a glance:
- One ceramic for all types of zirconia and lithium disilicate
- Adhesive 750: Our unique single bonding strategy
- Ultrafine particle size: Elevated surface smoothness and density
- Impressive range of chroma dentines ensuring shade accuracy
- Low temperature firing: No chance of warpage or discoloration

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.

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 restoration.
EYE OPENING

Stellaris 3D
Superior CBCT for every indication

- Ready for Every Diagnosis
- Compact and Modern
- Power of Touch

Find out more on www.fonadental.com
The observers conclude:
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.\textsuperscript{10}

36 month clinical trial results by J. Burgess and C. Munoz\textsuperscript{2}
The initial study entailed 190 restorations where SDR was bulk filled in increments of 4mm and then capped using Dentply Sirona’s new discontinued composite material Esthet-X\textsuperscript{®} 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 follows:
- There were no failures attributable to SDR\textsuperscript{®}
- Acceptance performance with respect to safety and efficacy after 3 years
- No post-operative sensations

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

By Dentply Sirona

In 2009, SDR\textsuperscript{®} was the first technology that allowed 4mm 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\textsuperscript{®} 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\textsuperscript{®} 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\textsuperscript{®} technology proved to be equivalent to those of restorations done in the conventional layering technique, highlighting SDR\textsuperscript{®} Plus as a quality and durable filling material.

Split mouth studies by JWV van Dijken and U. Pallesen\textsuperscript{1,2}

During the 6-year follow-up, a total of 98 Class I and Class II restorations were evaluated at recall. 49 using SDR\textsuperscript{®} and ceram.x\textsuperscript{®} SphereTEC\textsuperscript{™} were evaluated at recall. 91 using SDR\textsuperscript{®} and ceram.x\textsuperscript{®} SphereTEC\textsuperscript{™} in the bulk-fill technique against the same number using just ceram.x\textsuperscript{®}.

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

Fig. 1: 6-Year Clinical data

“Every year new challenges arise in our everyday practice, but our clients’ demands are increasing. At the same time we are faced with an increasing pressure to find new solutions. A dental composite must be versatile, anxiolytic and valuable in terms of both clinical and economic aspects.”

JWV van Dijken and U. Pallesen

Survived: 88
Failed: 4

Survived: 85
Failed: 6

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3. Internal report 11795 540 (2012-02-17), Data on file

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5 YEAR FOLLOW-UP 11

6 YEAR FOLLOW-UP 10

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