Predictable steps to Biomimetic Class IV restorations

By Dr Anand R. Nanekar, India

Introduction
Composite Artistry has become an important element of direct restorative treatment in dental practice today enabling clinicians to create life-like restorations with individualized characterizations to match the patient’s natural teeth.

Anterior restorations in the aesthetic zone tend to constantly challenge the clinician’s skill; therefore it is important to plan carefully by combining art and science. Adopting the Minimally invasive Cosmetic Dentistry (MID) concept, introduced by Dr Sushil Kotala in my treatment protocol with emphasis on preservation of natural tooth structure “Do No Harm Dentistry” has helped create predictable aesthetic restorations that exceed patient expectations. Fractured upper central incisors are one of the most common cases of dentoalveolar trauma in the permanent dentition. The following clinical case highlights a simple technique to achieve predictable aesthetics with natural optical characteristics in a class IV restoration using a sculptable bio-mimetic direct restorative “Beautifil II LS”.

Patient Case
A 35 years old male patient visited our dental office with a complaint of chipped upper front teeth (tooth # 11,21) resulting from a childhood injury with no pain or sensitivity. The patient requested to enhance his smile with minimally invasive treatment.

Treatment Plan
After Intraoral examination, photographs were taken (Fig. 1) and a treatment strategy was formulated keeping in mind the patient high expectations for aesthetic restorations with less invasive treatment. A direct composite restorative material with low shrinkage, predictable aesthetics, sculptable handling and easy polishability - Beautifil II LS was selected. High value translucent enamel shade was identified to create optical effects of youthful teeth.

Materials

Before and after

Step by Step Restorative Technique

Shade Selection
Vita Shade guide was used for shade selection while teeth was hydrated.

Mock Up
- An impression is taken and model poured using die -stone material.
- Freehand build up of composite for both teeth to evaluate the final outcome. Both teeth were carefully analyzed and identified that each tooth required a different recipe for layering the composite material.
- Silicon putty index made from the plaster model to create an enamel shell to guide the build-up of the palatal enamel layer.

Tooth Preparation
- Rubber dam isolation from pre-molar to premolar, Rubber dam in place.
- Tooth preparation from labial and buccal fluid. (Fig. 4)
- Infinite bevelling of margins to eliminate contamination with sulcular fluid. (Fig. 4)
- Infiltration. (Fig. 5)
- A2O shade selected. (Fig. 2)
- Shade A2 matches with natural dentition compared to A1 recommended for assessing value. Shade A2 was selected. (Fig. 2)
- Vita Shade guide was used for shade selection. "Beautifil II LS" shade A20, A2, Beautifil Injectable - shade A2 was selected. (Fig. 5)
- Both teeth were carefully examined and identified that each tooth required a different recipe for layering the composite material. (Fig. 3)
- Silicone putty index made from the plaster model to create an enamel shell to guide the build-up of the palatal enamel layer.

Bonding system – Etchant and 2 step Adhesive system (FL-Bond II)

Fig. 1: Fractured maxillary anterior incisal edge of tooth #11 and 21
Fig. 2: Black and white photo taken with classic Vita shade guide for value assessment, Shade A2 matches with natural dentition compared to A1
Fig. 3: Buccal view of the composite build-up on the tooth model, showing differences of a fractured incisal edges
Fig. 4: Rubber dam isolation with floss ties
Fig. 5: Labial bevelling of fractured area
Fig. 6: Smoothing incisal edge with the Super Snap Black disk
Fig. 7: Putty index checked intra orally after placing rubber dam
Fig. 8: Palatal shell made using Shofu Injectable ML enamel shade
Fig. 9: Build-up of deep dentin with Shofu Beautifil II LS A20, note the different amount placed in each tooth
Fig. 10: Thin layer of Beautifil II LS shade A2, placed after placement of Camiran anterior matrix band with silicon wedge between both central incisors for better contact and contour of the tooth
Fig. 11: Final enamel layer build-up with Beautifil II Enamel shade HVT of high-value translucent enamel shade
Fig. 12: After contouring, finishing done with dura white stone

Both sides, labial and palatal with a rounded tapered Diamond bur

For further retraction of gingiva to eliminate contamination with sulcular fluid (Fig. 4)

No Harm Dentistry” has helped create predictable aesthetic restorations in a class IV restoration using a sculptable bio-mimetic direct restorative “Beautifil II LS”, enabling clinicians to create life-like restorations with individualized characterizations to match the patient’s natural teeth.
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Interview: "The participants can share the up to date knowledge about the subjects in the field of Conservative Dentistry."

By Dental Tribune MEA

SHARJAH, UAE: The University of Sharjah organized the first regional ConsAsia 2018 conference of the Asian Oceanian Federation of Conservative Dentistry last December. The event was under the patronage of H.H. Sheikh Dr. Sultan bin Mohammad Al Qasimi, Member of the Supreme Council, Ruler of Sharjah, and President of the University of Sharjah.

The University inaugurated the first regional ConsAsia 2018 International Conference as part of the annual meeting of the Asian and Oceanian Federation of Conservative Dentistry (AOFCD). The conference covers under the theme ‘Contemporary Conservative Dentistry. Innovations for Tomorrow’s Practice’ the University’s College of Dentistry organized the Conference in collaboration with the AOFCD and the Dental Division of the Emirates Medical Association (EMA), and with the participation of over 300 participants from the region.

Amongst the list of VIP attendees included Prof. Elidigier Ahmed El-Mustafa El-Shker, Vice Chancellor for Academic Affairs, attended the ConsAsia along with Prof. Qutaiba Hamdi Al Healy, Vice Chancellor for Medical Colleges and Health Sciences and Dean of College of Dental Medicine; Mr. Majid Al Jarwan, Vice Chancellor for Public Relations; Prof. Byeong-Hoon Cho, President of the AOFCD and ConsAsia 2019, Prof. Hien Chi Ngo, Dean of the College of Dental Medicine; Dr. Aisha Sultan, President of the Dental Division of the EMA, and a number of faculty and staff members at the University.

Dental Tribune had the pleasure to interview Prof. Byeong-Hoon Cho, President of the AOFCD and ConsAsia 2019 to get his view on the conference in the Middle East and beyond.

Could you please share with us an introduction about yourself and your experience as president of the AOFCD.

I am Byeong-Hoon Cho, Professor of Department of Conservative Dentistry, Seoul National University School of Dentistry, Seoul, Korea. I am also the founding President of the Asian-Oceanian Federation of Conservative Dentistry (AOFCD), the President of the Local Organizing Committee (LOC) for its inaugural scientific meeting, ConsAsia 2019, Seoul, Korea, the immediate past president of Korean Academy of Conservative Dentistry (KACD), and currently the Editor-in-Chief of the Restorative Dentistry & Endodontics. I am establishing the AOFCD and organizing its biennial scientific meeting, ConsAsia.

When the ConsAsia initiative was proposed by the KACD, 16 scholars from 9 countries joined the first preparatory meeting and showed interests in founding an international organization in the field of Conservative Dentistry. Although the Conservative Dentistry is a very dynamic discipline, there had been no international organization, except Consiluria, which is hosted by Europe Federation of Conservative Dentistry (EFC). I felt they were eager for a platform where they could collaborate and communicate with each other in education, research, and practice in the field of Conservative Dentistry.

Considering the dynamic features of conservative dentistry, we all needed to have a platform where we can meet and communicate with each other and collaborate for the innovation and the future of Conservative Dentistry, so it was possible to establish AOFCD and hold ConsAsia. The international ConsAsian scientific conference will promote academic pride and clinical excellence for scholars, researchers, students, and clinicians in the field of Conservative Dentistry, ultimately contributing to the quality of care and improving oral health in the region.

For our MEA audience, could you please provide more information about the AOFCD and ConsAsia?

It is established to contribute to the promotion of oral health in the public interest and to facilitate communication and cooperation amongst the members in the Asian and Oceanian regions by encouraging excellence in the clinical practice, teaching and research in the scope of Conservative Dentistry.

In the early days of 2016, the ConsAsia initiative was proposed by the KACD to construct a network among the clinicians, researchers, and scholars of Asian and Oceanian countries in the field of Conservative Dentistry, and as a result, to contribute to improving the oral health of the populations in these areas. Hence, the KACD proposed to establish AOFCD and to hold biennial ConsAsia scientific meetings.

At first, scholars from 9 countries (Australia, Hong Kong, India, Japan, Korea, Singapore, Malaysia, New Zealand, and Taiwan) agreed with the initiative and met first in Seoul, Korea, on October 21, 2016 (first preparatory meeting). After the decision of the first preparatory meeting, the LOC for the ConsAsia