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 (MiCD) concept, introduced by Dr Sushil Koralia 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 Introral 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

- Tooth preparation – Diamond Bur FG, Super-Snap Coarse Disk (Black)
- Restoration – Beautifil II LS – shade A2O, A2, Beautifil Injectable - shade A20, A2, Beautifil Injectable - shade INC
- Finishing & Polishing – Fine Dia Disk
- Adhesive system (FL-Bond II)
- Bonding system – Etchant and 2 step Translucent enamel shade
- Enamel – shade HVT (High-Value Translucent enamel shade)

Shade Selection

Vita Shade guide was used for shade selection while tooth was hydrated. Black and white photo is recommended for assessing value. Shade A2 was selected. (Fig. 2)

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 analysed and identified that each tooth required a different recipe for layering the composite material. (Fig. 3)

Tooth Preparation

- Rubber dam isolation from premolar to premolar, Rubber dam in place
- Infinite bevelling of margins to eliminate contamination with sulcular fluid. (Fig. 4)
- Horizontal motion strokes for further retraction of gingiva to eliminate contamination with sulcular fluid (Fig. 4)
- Infradental bevelling of margins to blend the composite material on both sides, labial and palatal with a round ended tapered Diamond bur

Step by Step Restorative Technique

Bonding system – Etchant and 2 step Translucent enamel shade

Adhesive system (FL-Bond II)


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Silicon putty index made from the plaster model to create an enamel shell to guide the build-up of the palatal enamel layer.

Before and after

For aesthetic restorations to exceed patient expectations for aesthetic restorations with less invasive treatment.

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Amongst the list of VIP attendees of the Emirates Medical Association Conference in collaboration with the Federation of Conservative Dentistry: Innovations for the theme "Contemporary Conservative Dentistry." The event was under the patronage of His Highness Sheikh Dr Sultan bin Mohamed 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 comes 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 attendees from over 20 countries.

Amongst the list of VIP attendees included Prof. Elsiddig Ahmed El-Mustafa El Sheik, Vize Chancellor for Academic Affairs, attended the ConsAsia along with Prof. Qasimya Hamid Al Heesy, 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. Byenong Hoon Cho, President of the AOFCD and ConsAsia 2018, 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. Byenong Hoon Cho, President of the AOFCD and ConsAsia 2018 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 Byenong 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 2013, Seoul, Korea, the immediate past president of Korean Academy of Conservative Dentistry (KACD), and currently 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 ConsAsia, which is hosted by European Federation of Conservative Dentistry (EFCD). 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; it was possible to establish AOFCD and hold ConsAsia. The international ConsAsia 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 pertaining to the scope of Conservative Dentistry. The use of a proper protocol for finishing and polishing helped achieve a glazed-like composite surface similar to ceramic or natural teeth as evident from the extreme close-up clinical photographs.

Conclusion

The before and after clinical photos of this patient case highlights that predictable life-like restorations can be created to mimic composite surface using a conservative approach with minimal clinical preparation, selection of the right type and shades of composites followed by a comprehensive finishing and polishing protocol.

Acknowledgement

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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 (AOFCD). 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.

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In the early days of 2015, 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 ConsAsia meeting) and then the decision of the first preparatory meeting, the LOC for the first ConsAsia