

The three pillars of aesthetics

Authors_ Dr Julio Reynafarje Reyna & Dr Gustavo Watanabe Oshiro, Peru

_How often do we encounter heavily stained anterior teeth in dental practice? Nearly every clinician has come across this problem at least once. In such cases, an invasive approach is usually required, i.e. the teeth need to be prosthetically restored with ceramic veneers or even crowns. However, since the concept of "minimal invasiveness" has attracted quite a following recently, it might be a good idea to start rethinking our ways of dealing with stained anterior teeth. Today's state-of-the-art composites enable dental professionals to use minimally invasive treatment protocols and achieve outstanding restorative results.

aspects: shape, shade and surface texture. These are the three indispensable pillars without which the aesthetic restoration of anterior teeth would be impossible. However, in most cases attention is only paid to one of the aspects, namely shade. Why is this so? This article will show how all the three elements can be taken into account in order to achieve an aesthetic outcome.

_Preoperative situation

A female patient presented to our dental practice with a stained central incisor (Figs. 1 & 2). She refused to have the tooth prosthetically restored with ceramic material and expressed her desire to receive minimally invasive treatment. We decided to apply a direct restorative technique using a

Training courses held on the subject of aesthetic dentistry usually focus on three basic

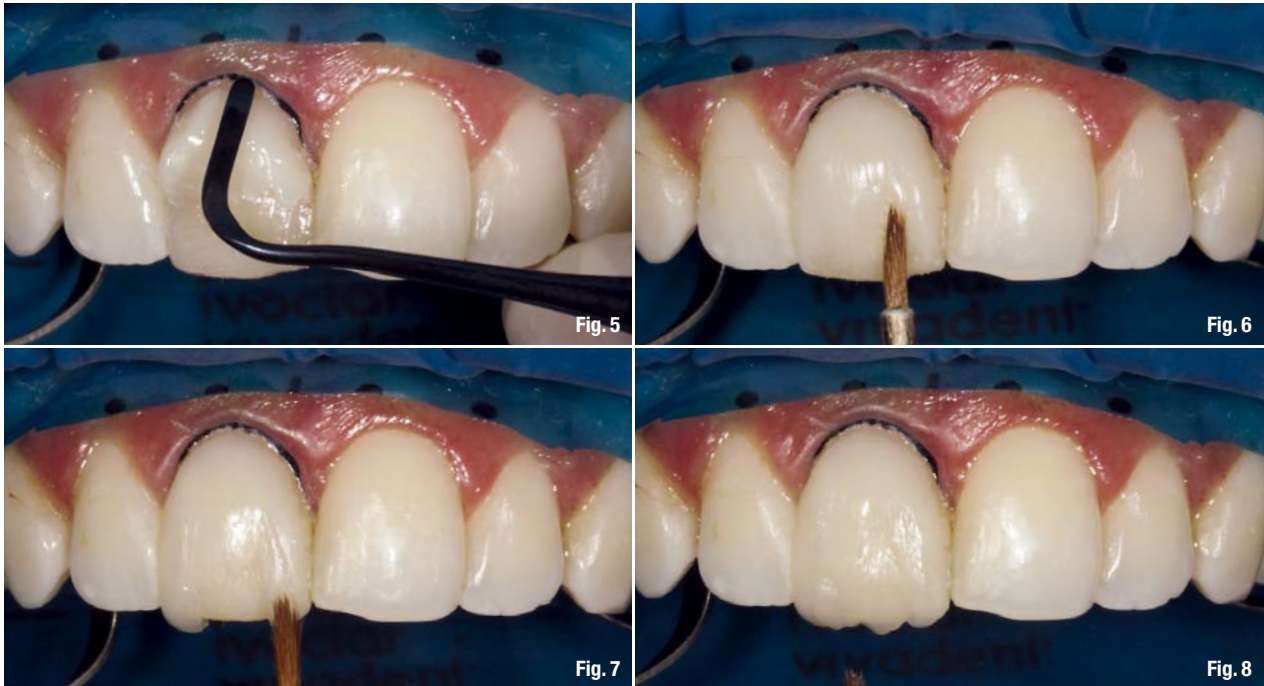
Fig. 1 _Initial situation: severely stained tooth #11.

Fig. 2 _A close-up of the upper anterior teeth shows that the aesthetic appearance is poor.

Fig. 3 _Situation after minimally invasive preparation of the tooth.

Fig. 4 _The adhesive was brushed onto the tooth structure for 10 seconds.





state-of-the-art composite resin (IPS Empress Direct, Ivoclar Vivadent).

Initial steps and tooth preparation

As the degree of tooth discolouration varied from mild to medium, a preparation depth of 0.3 to 0.5 mm was sufficient. Following minimally invasive preparation, a retraction cord was placed to prevent contamination of the working field with sulcus fluid (Fig. 3). When fabricating layered restorations, the application of the adhesive is the step most prone to error. Therefore, it is advisable to use an adhesive system that is easy-to-use, but provides reliable adhesion.

In the case presented, we decided to use Excite F adhesive (Ivoclar Vivadent). After having conditioned the enamel with phosphoric acid gel (Total Etch, Ivoclar Vivadent) for 30 seconds, the adhesive was brushed onto the tooth structure for 10 seconds (Fig. 4) and blown to a thin layer with a weak stream of air. Subsequently, the adhesive layer was light-cured for 10 seconds with the bluephase curing light using the low power mode. Then, the first composite layer was placed. In order to achieve optimum masking, we chose to use the opaque B2 shade from the IPS Empress range of dentine materials.

Layering

Mimicking the shape and shade of natural teeth is a huge challenge and requires considerable attention to detail. In order to achieve the

same reflections as those of natural teeth, the dentine shade was applied in the form of an arch. As the composite material readily adapted to the preparation margins, only light pressure with the modelling spatula (Fig. 5) had to be applied.

The composite increment was deliberately moulded with a slight taper towards the centre of the tooth. In this way, an invisible transition to the subsequently placed increments was ensured (Fig. 6). Then, the composite was light-cured with the bluephase curing light for 15 seconds using the soft start mode.

Fig. 5_In the gingival portion, composite was applied in an arch shape to follow the gingival outline (B2 Dentine).

Fig. 6_The composite was adapted to the natural tooth structure.

Fig. 7_Placement of composite in the proximal portion of the tooth. An “arch” was moulded in this region too.

Fig. 8_The A1 Dentin shade was chosen for the central portion of the tooth (mamelon area). The incisal edge was covered with translucent opalescent material.

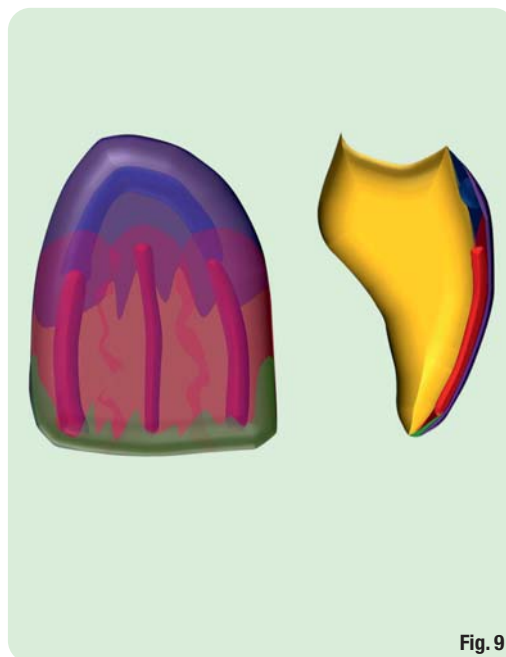


Fig. 9 Layering scheme showing the masking composite layers.

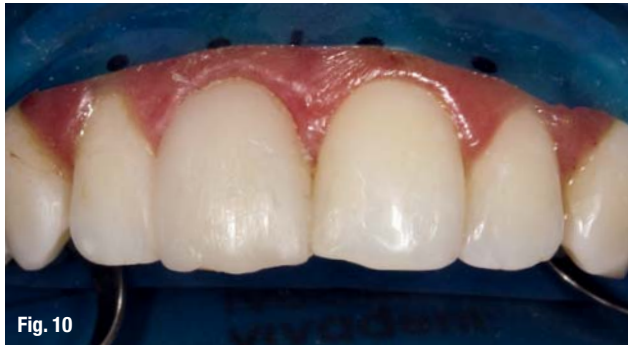


Fig. 10_Application of the enamel layer (B1 Enamel).

Fig. 11_Final polishing of the restoration with the Astropol system.

Figs. 12 & 13_The final result: aesthetic reconstruction of tooth #11 involving minimum loss of tooth structure.

After having moulded the gingival "arch", which outlined the gingival margin of the veneer, the proximal portions were moulded in a similar fashion. As each layer was thinned out, the different shades and shapes blended well into each other (Fig. 7). Once the mamelon-type increment had been placed in the centre, the discolouration was completely masked. The A1 Dentin shade was used in both the proximal and central areas.

To copy the appearance of the adjacent teeth, a translucent opalescent material was applied along the incisal edge. Finally, the entire composite build-up was covered with a layer of IPS Empress Direct B1 Enamel as indicated in the layering scheme (Figs. 8–10).

Finishing

In order to reproduce the morphology and anatomy of natural teeth closely, just as much effort should be applied in finishing the restoration as in layering it. Following polymerisation, attention was paid to creating an optimal surface texture. First, the restoration was pre-contoured with fine-grit burs to remove possible composite excess. Fine-grit instruments provided the advantage of allowing an optimal shape to be achieved in a controlled fashion. Moreover, the inadvertent creation of undesirable retentions or depressions was avoided. After pre-contouring the restoration, finishing and polishing were performed using the Astropol system (Ivoclar Vivadent; Fig. 11).

Conclusion

With state-of-the-art composites such as IPS Empress Direct, natural-looking restorations can be created. Easy-to-use materials in combination with individual layering schemes enable the employment of minimally invasive treatment procedures, even in cases in which indirect restorations would normally be indicated. By selecting a suitable restorative and following the treatment protocol described in this article, the three pillars of aesthetics can be taken into account in the restoration of anterior teeth (Figs. 12 & 13).

<u>contact</u>		cosmetic dentistry
	Dr Julio Reynafarje Reyna Jr Grimaldo del Solar 231, Office 101 Miraflores, Lima 18 Peru cda_peru@live.com	
	Dr Gustavo Watanabe Oshiro Miguel Angel 220 San Borja, Lima Peru gustavowatanbeo@hotmail.com	



ANNUAL DENTAL TRIBUNE STUDY CLUB

SYMPOSIA AT THE GNYDM

NOVEMBER 27TH – 30TH, 2011, STARTING AT 10:00 AM DAILY

brought to you by **NSK**

Greater
New York
Dental Meeting



For the fourth year in a row, Dental Tribune Study Club hosts its annual C.E. Symposia at the GNYDM, offering four days of focused lectures in various areas of dentistry. Find us on the exhibition floor in aisle 6000!

Each day will feature a variety of presentations on topics, which will be led by experts in that field. Participants will earn CE credits for each lecture they attend. DTSC is the official online education partner of GNYDM.

PLEASE SEE PROGRAM DETAILS UNDER WWW.DTSTUDYCLUB.COM/GNYDM

**PREMIUM
PROGRAM**

EARN 24 C.E. CREDITS

24h
CE







REGISTER NOW: WWW.GNYDM.COM

ATTENDEES MUST PRE-REGISTER AS GNYDM VISITORS FOR FREE.







SUNDAY, NOVEMBER 27

-  10:00 - 11:00 DR. HOWARD GLAZER // COURSE NO. 3780
GIOMERS: NEW GIANTS OF MI DENTISTRY
-  11:15 - 12:15 DR. SHAMSHUDIN KHERANI // COURSE NO. 3790
COMPREHENSIVE DENTISTRY USING DIGITAL IMPRESSION TECHNOLOGY
-  12:45 - 1:45 DR. RON KAMINER // COURSE NO. 3800
MINIMALLY INVASIVE DENTISTRY: TIPS AND TRICKS TO MAXIMIZE SUCCESS
-  2:00 - 3:00 DR. LOUIS MALCMACHER // COURSE NO. 3810
THE HOTTEST TOPICS IN DENTISTRY
-  3:15 - 4:15 DR. BRIAN NOVY // COURSE NO. 3820
TECHNOLOGY TO IMPROVE YOUR CARIES MANAGEMENT
-  4:30 - 5:30 DR. GEORGE FREEDMAN // COURSE NO. 3830
EVOLVING CONSERVATIVE RESTORATIONS




TUESDAY, NOVEMBER 29

-  10:00 - 11:00 DR. GREGORI KURTZMAN // COURSE NO. 5690
CORE BUILDUPS, POST & CORES AND UNDERSTANDING FERRUL
-  11:15 - 12:15 DR. PAUL GOODMAN // COURSE NO. 5700
CAPITALIZE ON THE HIDDEN IMPLANT PRODUCTION IN YOUR PRACTICE
-  12:45 - 1:45 DR. GEORGE FREEDMAN AND DR. FAY GOLDSTEP // COURSE NO. 5710
THE DIODE LASER: THE ESSENTIAL SOFT TISSUE HANDPIECE
-  2:00 - 3:00 DR. SELMA CAMARGO // COURSE NO. 5720
LASERS IN ENDODONTICS: CLINICAL APPLICATION FOCUS ON DIFFICULT CASES
-  3:15 - 4:15 DR. STANLEY MALAMED AND DR. MIC FALKEL // COURSE NO. 5730
LOCAL ANESTHETIC PERFORMANCE: FICTION, FACT AND ADVANCEMENTS (PRECISION BUFFERING)
-  4:30 - 5:30 DR. ENRICO DIVITO // COURSE NO. 5730
MINIMALLY INVASIVE ENDODONTICS USING PHOTON INDUCED PHOTOACUSTIC STREAMING (PIPS)

MONDAY, NOVEMBER 28

-  10:00 - 11:00 DR. FAY GOLDSTEP // COURSE NO. 4670
WHAT PATIENTS WANT... WHAT DENTISTS WANT: EASY, HEALTHY DENTISTRY!
-  11:15 - 12:15 DR. DAMIEN MULVANY // COURSE NO. 4680
WHY VIEW YOUR 3D PATIENTS WITH 2D IMAGES? A COMMON SENSE APPROACH TO 3D IMAGING IN THE GENERAL PRACTICE
-  12:45 - 1:45 DR. LARRY EMMOTT // COURSE NO. 4690
REMEMBER WHEN "E" WAS JUST A LETTER? USE E-SERVICES TO IMPROVE PATIENT CARE AND INCREASE PROFITABILITY
-  2:00 - 3:00 DR. GEORGE FREEDMAN AND DR. FAY GOLDSTEP // COURSE NO. 4700
DIODE LASERS AND RESTORATIVE DENTISTRY
-  3:15 - 4:15 DR. SHAMSHUDIN KHERANI // COURSE NO. 4710
LASER DENTISTRY OVERVIEW WITH AN UPDATE ON CLOSED FLAP OSSEOUS
-  4:30 - 5:30 DR. MARTY JABLOW // COURSE NO. 4720
UNDERSTANDING THE ADVANCES IN SELF-ADHESIVE TECHNOLOGY AND HOW TO INCORPORATE THEM INTO YOUR RESTORATIVE PRACTICE

WEDNESDAY, NOVEMBER 30

-  10:00 - 11:00 DR. IRA LAMSTER // COURSE NO. 6600
MANAGEMENT OF THE PATIENT WITH DIABETES MELLITUS: CONSIDERATIONS FOR DENTAL PRACTICE
-  11:15 - 12:15 DR. GEORGE FREEDMAN AND DR. MARC GOTTLIEB // COURSE NO. 6610
ABC'S OF BONDING CERAMIC CROWNS AND CERAMIC REPAIR
-  12:30 - 5:00 **THE 2ND ANNUAL OSSEO UNIVERSITY SUMMIT: IN COMBINATION WITH THE LASER DENTISTRY SUMMIT** // COURSE NO. 6620
- 12:45 - 1:45 DR. RON KAMINER AND DR. ARMIN NEDJAT
MINIMALLY INVASIVE IMPLANT DENTISTRY FOR THE GENERAL PRACTITIONER
- 1:50 - 2:50 DR. DAVID HOEXTER
PLUS MORE PREMIUM LASER DENTISTRY LECTURES!

*THIS PROGRAM IS SUBJECT TO CHANGE



Dental Tribune
DT STUDY CLUB

COURSES | DISCUSSIONS | TECHNOLOGY | ON-DEMAND

For more information, please contact
Julia E. Wehkamp, C.E. Director, Dental Tribune Study Club
Phone: (416) 907-9836, Fax: (212) 244-7185
E-mail: j.wehkamp@DTStudyClub.com