Aesthetics with all-ceramics and tooth whitening

Author: Dr Marcus Striegel, Germany

Many dentists continue to have reservations about bleaching and are hesitant to include tooth whitening in the range of services they offer to their patients. At the same time, increasing numbers of patients are more aware of their teeth and tooth colour. Many people feel upset about their teeth not meeting their expectations of an ideal aesthetic appearance.

A smile that is marred by a dark anterior tooth can be restored to its natural beauty by means of a minimally invasive bleaching treatment in the dental practice—a treatment that is cost-effective and will leave most patients completely satisfied.

Surveys have shown that over 90 per cent of patients are highly satisfied with the results achieved by whitening discoloured or yellowish teeth with bleaching materials applied under the supervision of a dental professional. However, it is essential to have a thorough understanding of the aetiology of the discolouration and to adhere strictly to the indication guidelines regarding
the risks and limitations of bleaching, to ensure that the treatment provides safe and predictable results in practice.

_Case presentation_

A young female patient presented with a request for a lighter tooth shade. Teeth 12, 11 and 21 had previously been restored with ceramic crowns. In the course of the patient’s consultation, the need for replacing the existing crowns was discussed.

It is often advisable to commence the bleaching treatment in one jaw only, to demonstrate the outcome of the whitening process to the patient and align the treatment to the patient’s expectations. This simple step soon raised the patient’s enthusiasm for the treatment.

_How can I access the ‘world of bleaching’?_

Tooth whitening, using a deep-drawn tray and appropriate gels in the practice or at home, is an established bleaching method, even if this option is not quite as spectacular for the patient as bleaching with laser or UV-light. Deep-drawn trays are produced in a relatively straightforward procedure using thermoformable material on a stone model. It is worthwhile equipping the practice with a basic thermoforming unit, if you have not already done so. Various concentrations of carbamide peroxide preparations are available on the market. Higher concentrations provide faster results, but they involve the increased risk of reversible side effects, such as a burning sensation of the gums and hypersensitivities. It is important to provide the patient with clear guidance on how to apply the whitening gel.

According to the treatment plan, the upper jaw was first bleached using VivaStyle gel (Ivoclar Vivadent) containing 16 % carbamide peroxide and a tray. The patient wore the tray for one hour a day over a three-week period. In the course of the subsequent recall visit, she decided to extend the treatment to the lower jaw. Figures 2a and b show the teeth at the end of the bleaching treatment. Compared with the shade of the crowns on teeth 12, 11 and 21, the bleaching effect is clearly noticeable.

Normally, the degree of brightness achieved during the bleaching process will slightly decrease upon completion of the treatment. It is therefore necessary to wait at least two weeks before initiating any further treatments. In the present case, the existing crowns were replaced two months after completion of the whitening procedure.

Figures 3a to c show the prepared teeth. The original dentine shade contrasts with the shade of the adjacent bleached teeth. In this case, we did not have to forgo the aesthetic advantages of glass-ceramic materials, as special opaque ingots

Figs. 1a & b. Initial situation: tooth shade of the existing restoration (A3.5).
Figs. 2a & b. Tooth shade after the application of VivaStyle 16 % for three weeks. The shade of the natural teeth is clearly lighter than the shade of the existing restorations.
Figs. 3a–c. Prepared teeth and oral situation after cementation.
Fig. 4. Final situation.
industry report _ all-ceramics & tooth whitening

that are capable of masking the shade of the tooth preparation are now available. We decided to re-
store the teeth of our patient with IPS e.max Press (Ivoclar Vivadent) in combination with the
veneering ceramic IPS e.max Ceram (Ivoclar
Vivadent). This ceramic not only offers a variety of
aesthetic possibilities, but can also be cemented
using a conventional technique because of its
high flexural strength. Whenever possible, we
prefer using an adhesive cementation technique
in conjunction with an aesthetic dual-curing luting composite. Variolink II (Ivoclar Vivadent) is a
proven adhesive composite that has been used for
many years in dental practice. The possibility of
enhancing the shade effect of the final restora-
tion by selecting an appropriate cement shade
can be advantageous in some cases.

The result speaks for itself: the crowns harmo-
niously blend into the anterior region and com-
plement the outcome of the treatment in terms of
shade and shape.

_Conclusion_

The whitening of discoloured tooth structure
can be effectively integrated into a practice con-
cept that helps patients to overcome their initial
fear of dental treatment. As this type of treat-
ment should always be performed under the
supervision of a dental professional, patients are
given a detailed consultation to establish their
requirements prior to commencing the treat-
ment. In the process, patients are made more
aware of the range of prophylactic measures
and high-quality dental treatments available to
them. The combination of all-ceramic resto-
ration and bleaching can form an aesthetic
treatment strategy to enhance the smile of
patients in a straightforward fashion with a high
success rate._

Fig. 3a

Fig. 3b

Fig. 3c

Fig. 4

_author info_

Dr Marcus Striegel
Ludwigsplatz 1a
90403 Nürnberg
Germany

E-mail:
striegel@praxis-striegel.de