Anterior restorations with CAD/CAM veneers made of VITABLOCS Triluxé forte

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Prosthetic restoration of the maxillary incisors is a challenging task for dentists and dental technicians. In the following case study, the authors Dr. David Jäger, Dr. Martin Hammer and Carmen Scheibling (dental technician), describe how they treated a complex initial clinical situation step-by-step with the CAD/CAM feldspar ceramics VITABLOCS Triluxé forte (VITA Zahnfabrik H. Rauter GmbH & Co. KG, Bad Säckingen, Germany).

Case study

A patient presented in the dental practice with severe discoloration caused by a course of tetracycline given to her as a child. The psychological strain on the 38-year-old patient was increased by the palatal inclination of teeth 11 and 21. She was looking for a quick and efficient solution which would meet her expectations in terms of aesthetics without having orthodontic pretreatment. The practitioners, the dental technician and the patient therefore decided on a digital workflow with the feldspar ceramics VITABLOCS Triluxé forte. The material allows for a natural look in the anterior tooth area thanks to its integrated shade gradient.

Mock-up phase

A wax-up was made using dental impressions and used as the foundation to discuss the treatment goals with the patient. Using a silicone index and composites, mock-ups were produced similarly in the laboratory. The severely discolored middle incisors were modified, as well as the length and gradient of the incisal edges for 12 and 22. “During the trial, the patient was quickly convinced of the potential positive results and decided on four veneers,” dental technician Carmen Scheibling reported at the final planning meeting. This was followed by a minimally invasive preparation of the teeth and impressions being taken.

CAD/CAM process

“I corrected and duplicated the mock-up and scanned in the plaster model in the laboratory,” said Scheibling, explaining the next steps. The master model made during the preparation was also digitalized. “In order to cover the severe discoloration, we decided on the multi-chromatic VITABLOCS Triluxé forte blank, due to its integrated harmonic shade gradient,” the dental technician said, justifying the choice of material. Thanks to the mock-up data set, the restorations could be created in the lab using the CEREC SW 3.8 design software and milled using the CEREC MC XL milling system (Sirona Dental, Bensheim, Germany).

Individualization and integration

“To deepen the chroma in the cervical area even more, I worked with a well-balanced mixture of VITA VM 9 CHROMA Plus 2 and CP3 during the individualization, I was able to achieve more light dynamics on the distal and mesial edges with EFFECT OPAL 2,” said the dental technician, describing the formative and shading individualization steps. After the try-in, small corrections and the glass firing, the final adhesive integration came next. Carmen Scheibling concludes that “the result was a happy and satisfied patient.”

Fig. 1: Initial situation with severe tetracycline discoloration on 11 and 21.
Fig. 2: Mock-up on 11 and 21 for defining the goal with the patient.
Fig. 3: Mock-ups on all incisors for leveling the gradient of the incisal edges.
Fig. 4: Plaster model for digitalization similar to the intraoral mock-ups.
Fig. 5: Preparation is as minimally invasive as possible and limited to the enamel with retention grooves for the best adhesive bond possible.
Fig. 6: Targeted reduction to harmonize the dental arch.
Fig. 7: The removal of tooth substances ensures that the discoloration is covered.
Fig. 8: Computer-aided design of veneer 21 using mock-up data.
Fig. 9: Computer-aided design of veneer 11 using mock-up data.
Fig. 10: Virtual position of the restoration in VITA Triluxé forte blank from mesial.
Fig. 11: Lumen-side view of the virtual veneer restoration.
Fig. 12: Try-in of the completed restorations with glycerin gel.
Fig. 13: The esthetic results after adhesive integration.

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