The centre of the aesthetic zone made of VITABLOCS TriLuxe forte

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The central incisors in the upper jaw are the dominant stars of the aesthetic zone. In a smile, the remaining teeth are only like useful extras, making the central incisors appear even more beautiful.[1] The central symmetrical positioning[2] with the correct proportions[3] according to the aesthetic rules,[4] determines whether these two teeth can develop to their full potential. In the following case study, dentist and Assistant Professor Dr Julian Conejo (University of Pennsylvania, School of Dental Medicine, Philadelphia, USA) shows how the polychromatic feldspar ceramic VITABLOCS TriLuxe forte which is based on the world´s first CAD/CAM material recipe and gold standard[5] meets this aesthetic challenge.

Case study

A 25-year-old patient visited the dental practice because she was dissatisfied with the aesthetics of her crown restorations on 11 and 21 (Fig. 1). During the clinical examination, a deficient all-ceramic crown was observed on tooth 11 and a VMK crown on 21. From a morphological perspective, both crowns appeared too square and too large. The incisal edges did not harmonise with each other, or with tooth 21 and the course of the lower lip. The all-ceramic crown on 11 was far too opaque compared to the natural dentition and therefore appeared lifeless. The shade of the VMK crown on 21 did not match the restoration of the adjacent tooth or the remaining natural tooth structure. The decision was made to provide the two teeth 11 and 21 with new crowns using the digital workflow. VITABLOCS TriLuxe forte was selected as restoration material because the blanks have a natural appearance,[6] are true to the VITA shade standard[7] and have a natural shade gradient.[8] The successful use of feldspar ceramics in the anterior region has also been proven several times in clinical studies.[9,10]

The crowns were slit and removed from the stumps following local anaesthesia. After careful subsequent preparations and cleaning of the stumps, retraction cords were placed. Tooth shade determination followed with VITA classical A1 – D4. The shade B1 was chosen and was documented in photographs in the laboratory using the corresponding shade tabs for orientation. An intraoral scan with Primescan was used to create a virtual model in the CEREC Software 5.1, which could be used to design the crowns made of VITABLOCS TriLuxe forte. After the preparation margins had been defined, the biogeneric proposal of the software was modified. Monolithic fabrication enabled a slimmer crown design that complied with the aesthetic requirements and harmonised with the morphology of the adjacent teeth. After nesting, the crowns could be fabricated simultaneously with CAD/CAM support in the VITA SYSTEM 3D-MASTER shade 1M1 in the CEREC MC XL milling unit.

After the crowns had been separated from their attachments, they were ground back and the micromorphology was worked out with fine diamonds. Rubber polishers were used for smoothing. Minimal characterisations and glaze were then applied using the VITA AKZENT Plus stain system. This was followed by an intraoral fit check with blue silicone. After conditioning, fully adhesive cementation was carried out using the universal bonding system PANAVIA V5 (Kurary Noritake, Tokyo, Japan). The final images show that the VITABLOCS TriLuxe forte blanks selected for the patient resulted in restorations that absolutely simulated natural teeth (Fig. 2). The monolithic restorations integrated harmoniously into the centre of the maxillary front. Consideration of the aesthetic rules and the natural morphology in combination with the right choice of material were decisive factors for the success of the treatment.

Fig. 1 Initial situation: The two crowns on 11 and 21 did not harmonise morphologically with the dental arch

Fig. 2 Result: A highly aesthetic result harmonised with the natural teeth

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