

Two CEREC Tessera crowns and two inlays – Quadrant rehabilitation

Case Description

A 53-year-old female patient visited my practice with insufficient fillings in the second quadrant. According to the patient, the restorations were about 15 years old. She wanted them to be completely rehabilitated and restored metal-free. At a follow-up visit, she complained about inflamed gingiva in the area of the two left upper molars, and she was also troubled by the inadequate esthetics of the PFM crowns on teeth 26 and 27. The clinical examination revealed relatively severe bleeding on probing, with open crown margins. The intraoral radiograph confirmed these findings. Probing depths were between 2-4 mm. Iatrogenic gingivitis was diagnosed; the patient's oral hygiene was very good. The composite filling on tooth 25 showed an open discolored joint with incipient secondary caries, and a distinct step was palpable toward the cervix of tooth 24 on the filling. All teeth were vital and pain-free. Due to the small interocclusal distances, it was clear that very little space would be available for new crowns. For this reason, a medium-strength ceramic was required to fabricate the crowns for teeth 26 and 27 in a correspondingly thin layer of thickness. Teeth 24 and 25 would each receive an inlay to restore optimum function. After the preparation of all four teeth, an intraoral scan with CEREC Primescan was performed and completed in under three minutes. The inlays and crowns were then designed in the CEREC Software. In the lateral view, the final bite position could be displayed and precisely checked. The crowns were produced in CEREC Primemill using the Extra Fine grinding mode from the advanced lithium disilicate block CEREC Tessera in 15 minutes each. The filigree crown margin was a particularly impressive feature. The high accuracy of fit achieved in this way made post-processing virtually superfluous. Prior to cementation, the crowns were treated with the DS Universal Stain and Glaze System (Dentsply Sirona) and fired in CEREC SpeedFire. Adhese Universal and Variolink Esthetic (Ivoclar Vivadent) were used for cementation. Due to the shallow cavity depth for the inlay preparations and because of the thin tapered margins of the inlays, it was not possible to use a ceramic for this, as the layer thickness would not have been sufficient. Instead, they were milled out of a composite block (Tetric CAD, Ivoclar Vivadent) in Extra Fine mode and adhesively cemented with Adhese Universal & Variolink Esthetic (Ivoclar Vivadent).

Discussion

The restoration of the second quadrant with two inlays and two full crowns was carried out chairside in a single visit of about four hours. This was possible due to the time-saving fabrication of the restorations with CEREC Primemill. The main challenges were the very low dye height at 26 and 27, and the shallow cavity depth for the inlays. These circumstances led to the decision to restore the teeth with different materials that give a very good esthetic result, which also pleased the patient.



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Before:

Insufficient fillings in the second quadrant. The restorations were about 15 years old.



After:

Chairside-fabricated crowns made from CEREC Tessera (teeth 26/27). Inlays for teeth 24 and 25 with Tetric CAD, Ivoclar Vivadent.

Clinical Images



Patient with insufficient fillings in the second quadrant and inadequate esthetics of the PFM crowns on teeth 26 and 27. The composite filling on tooth 25 showed an open discolored joint with incipient secondary caries, and a distinct step was palpable toward the cervix of tooth 24 on the filling.



Final crown and inlays - occlusal.

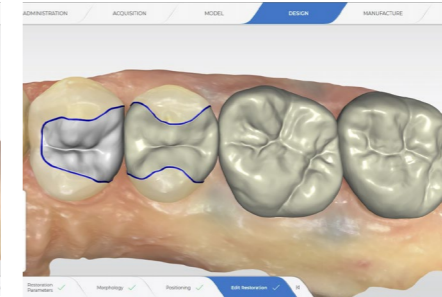


Final crown and inlays - palatal.

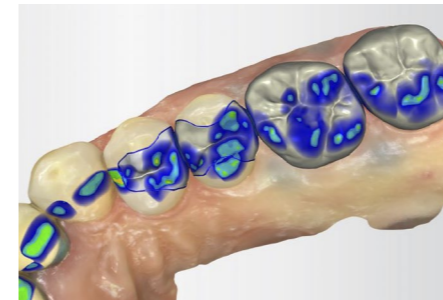
Workflow Images



Intraoral scan of the insufficient fillings, using CEREC Primescan.



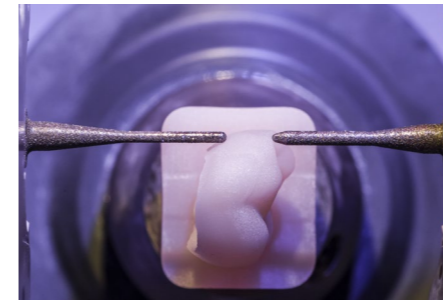
Design proposal generated with the "biogeneric individual" function.



A slight modification of the design proposal was needed to adjust the occlusal contacts.



Buccal preview of crowns in CEREC Software.



Crown being milled in CEREC Primemill.



Final crown without final preparation.