

CEREC Tessera Advanced Lithium Disilicate chairside partial crown CAD/CAM restoration.

Case Description

A 49-year-old female patient presented with the chief complaint of sensitivity on her lower right second molar. Upon clinical examination, it was possible to observe multiple cracks as well as an extensive Class I composite restoration on the buccal surface of the tooth. Upon removal of the old amalgam restoration under local anaesthesia, we could certify that there were multiple cracks present. A partial crown was planned to follow the minimally invasive dentistry concept. The tooth was built-up with an opaque core build up material in combination with a bulk-fill composite to minimize the effects of the sclerotic dentin in the final esthetics of the restoration. The tooth was then prepared for an Advanced Lithium Disilicate ceramic (CEREC Tessera) partial crown following manufacturer's recommendation with a 1mm clearance for adhesive cementation. For final optical impression, the soft tissue displacement was performed with the double-cord technique and the use of an astringent retraction paste to avoid bleeding during the scanning process. After approximately 3 minutes, the paste was washed off, the top cord was removed, and the optical impression was acquired with CEREC Primescan. The CEREC Software was used to design the restoration that was milled in the CEREC Primemill and glazed with the DS Universal Stain & Glaze kit in the CEREC SpeedFire. After try-in, the intaglio surface of the restoration was treated with 5% HF acid for 20 seconds. The restoration was cleaned in an ultrasonic bath with distilled water for 5 minutes and silane was applied to the treated surface. The tooth was isolated with rubber dam. The prepared surface was cleaned with a glycine powder air abrasion, enamel was selectively etched, and Prime&Bond universal Universal Adhesive was applied to surface for final bonding with Calibra Ceram Adhesive Resin Cement. Final check of the occlusion was performed, and after approximately 120 minutes the restoration was bonded to the tooth successfully.

Discussion

A single-visit chairside CAD/CAM partial crown restoration was fabricated and bonded to a second lower molar tooth. CEREC Tessera Advanced Lithium Disilicate ceramic was chosen as the restorative material due to its excellent esthetics and simple, yet efficient fabrication workflow. Since the material is previously crystallized, the milled restoration needs to be glazed for only 5 minutes to achieve its optimum biaxial strength of approximately >700 MPa. Because of its excellent strength, a minimally invasive preparation with 1mm clearance was performed. The restoration was bonded under complete isolation with Calibra Ceram Adhesive Resin Cement.



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Before:

Failed amalgam restoration needing replacement. Patient complaining of sensitivity and tooth presenting multiple cracks.



After:

Chairside CAD/CAM partial crown restoration fabricated with CEREC Tessera Advanced Lithium-Disilicate glass ceramic.

Clinical Images



Preoperative view of second lower right molar with failing amalgam needing replacement.



Tooth preparation design. Usage of an opaque composite resin as build-up.



Immediate postoperative view of CEREC Tessera partial crown restoration bonded with an adhesive resin cement

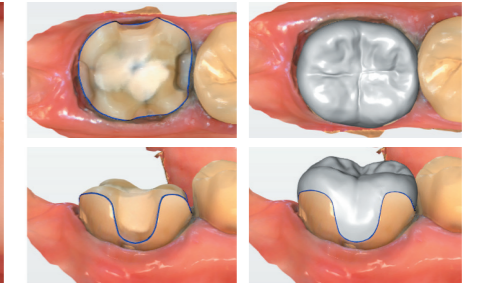
Workflow Images



1. Shade selection. Custom-made CEREC Tessera shade guide.



2. Removal of exiting amalgam restoration.



3. Optical impression and digital design with CEREC Primescan and CEREC Software.



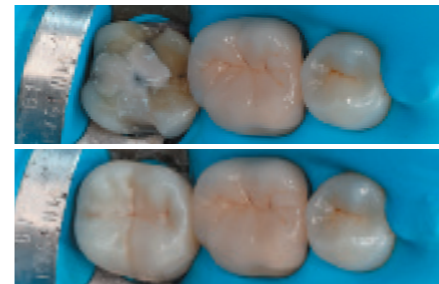
4. CEREC Tessera block and milled restoration.



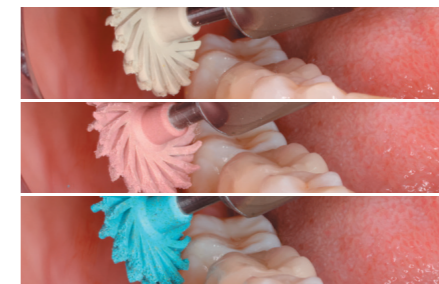
5. Tissue displacement. Double cord technique and astrigent retraction paste (ARP - 3M).



6. Materials: CEREC Tessera restoration, HF, self-etch adhesive and adhesive resin cement.



7. Complete isolation for tooth surface treatment and bonding of CEREC Tessera restoration



8. Finishing and polishing of restoration margins.



9. Immediate postoperative buccal view of CEREC Tessera restoration.