

A CEREC Tessera inlay - Tooth 26, in 100 minutes

Case Description

A 42-year-old female patient came to my practice with mild pain and a bothersome feeling when chewing on tooth 26. On examination, a fractured ceramic restoration was revealed, but no secondary caries. The patient remembered having received this inlay 12 years ago. It consisted of a leucite-reinforced glass-ceramic, which was adhesively cemented. The patient wanted a replacement of the inlay made of tooth-colored material that would last as long as possible. A chairside manufactured inlay made of a modern lithium disilicate material (CEREC Tessera) was planned. It offers a strong combination of improved fracture strength (700 MPa) and translucency, enabling a reduced minimum material thickness of 1.0 mm for adhesively cemented posterior restorations. The good esthetic properties and short processing times predestined CEREC Tessera for this indication. First, the fractured inlay was removed. Subsequently, the margins were finished with fine-grained diamond instruments. The retraction cord placed on the mesial approximal surface was used to control moisture and shift the preparation margin. This was followed by intraoral scanning with CEREC Primescan, inlay design in the CEREC SW 5.1.2 and grinding with CEREC Primemill. The grinding process in "Fine" mode took just over ten minutes. The subsequent try-in focused on checking the occlusal contacts. This was possible because the material was ground out in a pre-crystallized stage. After application of a glaze spray, the restoration was sintered in CEREC SpeedFire with the single-stage glaze program lasting four and a half minutes. The restoration was cemented using the total-etch technique with a universal bonding agent (Prime&Bond active) and a self-adhesive cement (Calibra Universal). No further occlusal adjustments were necessary. Thanks to the exceptional chameleon effect of CEREC Tessera, the restoration blended perfectly with the natural dentition. The patient was very satisfied with the esthetic result.

Discussion

The chairside restoration of the tooth in a single visit proved to be a particularly effective and comfortable solution for this patient, as her commute to the practice was around 50 kilometers. CEREC Tessera was used, a material that offers improved fracture resistance compared to other high-strength glass-ceramics. The rapid sintering cycle further shortened the overall treatment time, enabling the patient to receive a highly esthetic and final restoration in just 100 minutes.



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Before:

Fractured ceramic restoration made from a leucite-reinforced glass-ceramic after a clinical service time of 12 years.



After:

Chairside-fabricated restoration made from an advanced lithium-disilicate ceramic CEREC Tessera.

Clinical Images



12-year-old inlay.

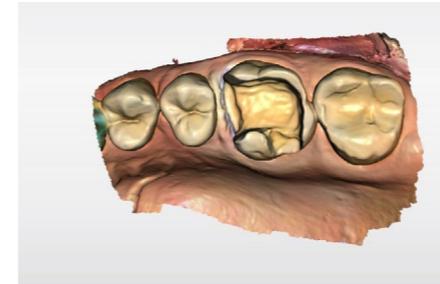


Preparation for a ceramic inlay and placement of a retraction cord prior to intraoral scanning.

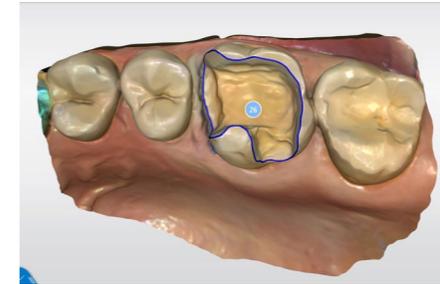


Adhesively luted CEREC Tessera inlay. The inlay was luted with the total-etch technique in combination with a universal bonding agent (Prime&Bond active), and a dual-curing composite cement (Calibra Ceram).

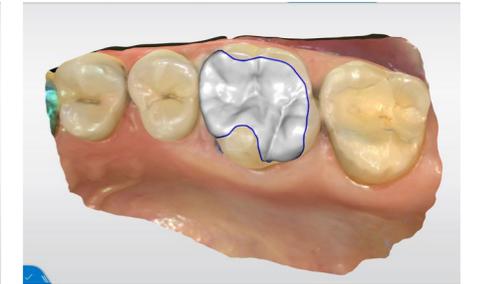
Workflow Images



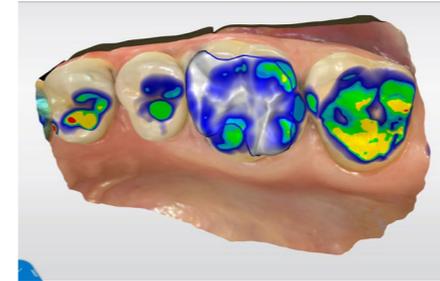
Intraoral scan of the upper and lower jaw using CEREC Primescan.



The preparation limit was automatically detected and marked by the CEREC software.



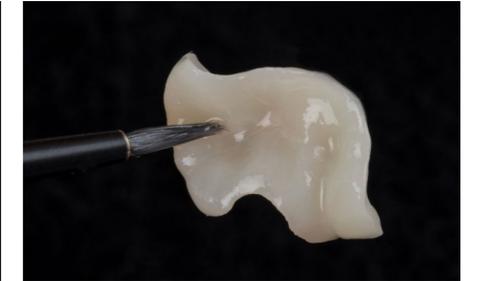
Design proposal generated with the function "biogeneric individual".



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



Restoration milled from an advanced lithium-disilicate ceramic (CEREC Tessera) in CEREC Primemill.



For the final crystallization process, a glaze firing (DS Universal stain & glaze) is mandatory.



The internal surface of the inlay restoration is etched with a 5% hydrofluoric acid for 30 seconds.



A silane coupling agent (Calibra Silane, Dentsply Sirona) was applied prior to adhesive luting of the restoration.