

A CEREC Tessera inlay – First upper molar 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 Software, 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 Spray Glaze with Fluorescence (DS Universal Spray Glaze Fluo, Dentsply Sirona), the restoration was fired in the pre-heated CEREC SpeedFire with the 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 an adhesive cement (Calibra Ceram). No further occlusal adjustments were necessary. Thanks to the excellent chameleon effect of CEREC Tessera, the restoration blended superbly 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 a convenient solution for this patient, as her commute to the practice was around 50 kilometers. CEREC Tessera was used, a material that offers a high level of fracture resistance. The rapid firing 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.

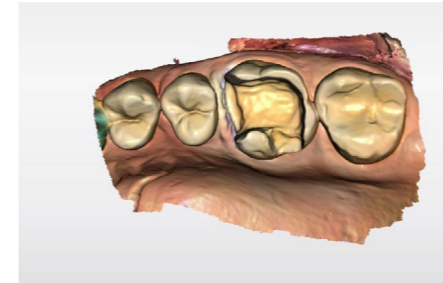


Preparation for a ceramic inlay and placement of a retraction cord prior to intraoral scanning.

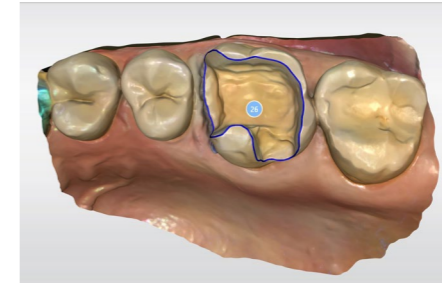


Adhesively luted CEREC T Tessera inlay. The inlay was luted with the total-etch technique in combination with a universal bonding agent (Prime&Bond active), and a dual-curing adhesive composite cement (Calibra Ceram).

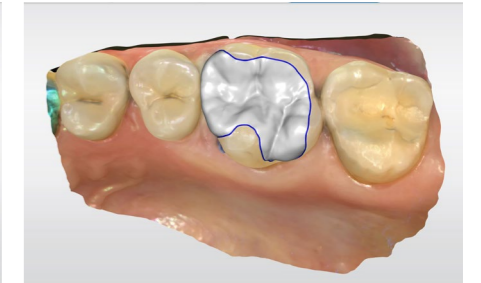
Workflow Images



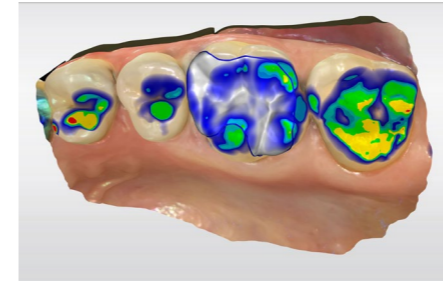
Intraoral scan of the upper and lower jaw using CEREC Primescan.



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



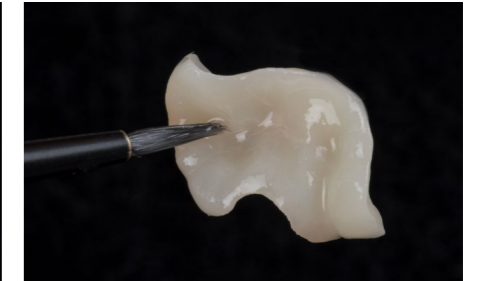
Design proposal generated with the "biogenic individual" function.



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



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



For the final step, a glaze firing (with e.g. DS Universal Stain & Glaze System) is mandatory.



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



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