A CEREC Tessera crown – First upper molar in 90 minutes

Case Description

A 49-year-old male patient visited my practice with pain in the first upper molar, which he described as occurring when he bit down. The tooth had been restored with an extensive yet insufficient composite filling that already showed visible fractures. The clinical examination also revealed a carious defect. A treatment plan was drawn up for a full-surface restoration. Because of the bite pain, this needed a high-strength material. As the tooth was visible during speech, the material also had to meet high esthetic standards. CEREC Tessera from Dentsply Sirona was selected in shade HT A2 – a material that met all the requirements in equal measure. CEREC Tessera is an advanced lithium disilicate ceramic for the CEREC workflow, offering a very good combination of strength and esthetics. After tooth preparation, the intraoral scan was performed with CEREC Primescan. The crown was then designed in the CEREC Software. CEREC Primemill was used for manufacturing: the CEREC Tessera block was placed in the milling unit and the crown was produced using the pre-touch mode. The result was impressive with its excellent marginal stability. In the following steps, the crown was first pre-polished, glazed and then customized with stain. The buccal stain consisted of a mixture of the Olive and Sunset shades (Universal Stains, Dentsply Sirona), while the Universal Stains Mahogany shade was best suited for the occlusal stain. The desired gloss was achieved by applying two coats of spray glaze (DS Universal Spray Glaze Fluo, Dentsply Sirona), one from the buccal side and one from the lingual side. After air drying, the crown was fired in CEREC SpeedFire. This process took only four and a half minutes. A post-polish concluded the manufacturing process. Prior to applying the crown, the enamel of the prepared tooth was selectively etched. The translucent Calibra Ceram cement from Dentsply Sirona enabled a stable final restoration. The patient was extremely positive about the short treatment time of only 90 minutes in total. He was interested in the digital technology used, followed the process with excitement, and was very satisfied with the esthetic result.

Discussion

The decisive factor for the restoration of the first upper molar with a crown was the patient's pain when biting down. Replacing the filling would have been only a temporary solution. The crown solves the problem from a functional point of view and offers excellent esthetics simultaneously thanks to the new material. Restoration in a single visit was possible due to the digital CEREC workflow, the efficient fabrication of the restoration with CEREC Primemill, and the glaze firing in CEREC SpeedFire, which took only a few minutes.

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Before:

First upper molar had been restored with an extensive yet insufficient composite filling that already showed visible fractures.

After:

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

Clinical Images

Pre-op with decay and composite filling breaking down.

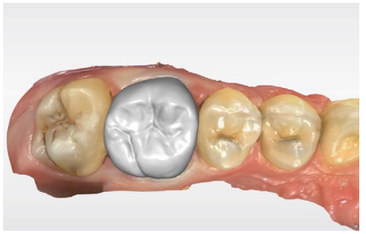
Crown preparation.

Final crown – occlusal.

Final crown – buccal.

Workflow Images

Crown margination.

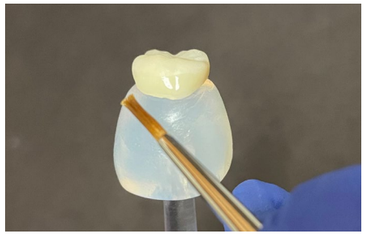


Final restoration – occlusal.

Final restoration – buccal.

Manufacture preview of final crown.

Occlusal surface of milled crown. The sprue was removed, and it was pre-polished next.



For the glaze and optional stain step, the crown is placed on a moldable silicone. Buccal stain is added with a brush. A mixture of two shades – Olive and Sunset (Universal Stains by Dentsply Sirona) – was used.

The crown is placed on top of the CEREC SpeedFire honeycomb tray with a firing pad. It must be centered on the pad. The construction is then placed in CEREC SpeedFire.