User report on definitive crown restorations (all-ceramic) using the luting composite Vitique

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Introduction

Nothing emphasizes a person's radiance more than the feeling of being a healthy individual. With any form of dental prostheses a dentist is always faced with the psychological acceptance of the prosthesis to be integrated. Nowadays, innovative dentistry offers completely metal-free crown and bridge restorations.
In order to facilitate not only functional but also esthetic restorations in the mouth of a patient an adhesive cementation using the luting cement Vitique is a very good choice.

Case study

Premolar 15 with an 18-year-old partial crown made from a precious metal alloy needs to be restored. The patient requested a non-metal restoration.

Step-by-step procedure

Following a situation impression of the upper and lower jaw with alginate an infiltration anesthesia is applied and the gold restoration removed. The cavity on 25 is prepared for a build-up filling with LuxaCore. By assuring a dry working area and isolating the cavity with a matrix band the defect is treated with a self-conditioning adhesive (Contax). Subsequently LuxaCore (A3 shade) is directly applied into the cavity with a Smartmix cartridge and polymerized for 40 seconds. The premolar is now ready for preparation.
The preparation is done step-by-step using a preparation kit developed by the Göttingen University »Göttinger Präparationsset«. The preparation instruments provide a defined marginal cutting depth of 0.6, 0.8 and 1.0mm. With form congruent finishing burrs a suitable core surface is created. The application specific set of preparation instruments on the handy stand with pictographic labels allows for a quick and systematic selection of the instruments needed for the preparation. After the preparation is completed the work area is cleaned, the situation impression now used as a mold is filled with the Luxatemp composite on 25 and precisely fitted in the mouth.
Using a cartridge system Luxatemp is loaded directly into the impression, i. e. slowly from the bottom of the negative mold, until premolar 25 is filled. For this process the cannula must be submerged in the material at all times in order to produce a bubble-free temporary crown. After 2 – 3 min. in the mouth the impression is removed. The temporary crown is then finished (about 10 min.) with a special composite burr and surface sealer (LuxatempGlaze&Bond).
Following the impression taking with Honigum, the temporary crown is fitted and held firmly in place on the prepared core using the eugenol-free luting cement TempoCem NE.
In a previous step the shade of the core was documented according to a shade key.
Once all excess cement has been removed a shade is selected with the Vita 3 D Master and the corresponding documentation.
When the all-ceramic crown is finished (in this case a CAD/CAM crown made from a Trilux block) the restoration is integrated into the mouth.
The temporary crown is removed and the vitality of the prepared tooth is checked. An infiltration anesthesia is applied, and the core is cleaned. Due to the non-irritating temporary the marginal gums are in good condition. The crown's fit is then checked with a low viscosity silicone (FitChecker).
As a next step the shade of the crown is verified in situ. Initially the crown is tried-in using the transparent try-in paste. If a shade correction is necessary such correction is done using the pigmented try-in paste. Following the try-in, the restoration and the prepared tooth are thoroughly cleaned with water spray.
Since a prefabricated feldspatic ceramic is used here, the crown interior must be conditioned with a hydrofluoric acid gel. After a 60 second reaction time the crown is

Clinical starting point: the premolar with an aging gold inlay is restored with an all-ceramic crown

Cavity after the inlay is removed

Loading the core build-up material DMG LuxaCore

Step-by-step core preparation

Try-in of the all-ceramic crown with Vitique try-in paste

cleaned under water and dried. This step is followed by a silanization with DMG Silane. Simultaneously a self-conditioning adhesive (Contax) is applied to the cleaned core. Subsequently the crown is filled with the Vitique A2.5 base paste. This shade was verified beforehand using the try-in paste and considered appropriate.
The restoration is inserted and positioned on the core under light pressure.
A brief pre-polymerization (2-3 seconds) now allows the removal of coarse excess with a scaler. To prevent oxygen inhibition an oxystop gel (Vitique try-in paste) is applied and the restoration fully polymerized. (40 seconds light cure per tooth surface).
Excess removal is done, for example, with diamond burrs, finishing strips and flexible disks with increasing grit. The restoration margins are then polished with polishing paste and a polishing cup. Finally the occlusion is checked in the mouth and, if necessary, corrected and polished.

Conclusion
Vitique is an extremely user-friendly and economical system for definite veneer, crown, bridge and inlay cementations yielding highly esthetic results. To summarize the material's advantages and special characteristics:
- broad range with 8 shades and three opacity levels
- exactly matching cement and try-in pastes
- 2 different catalyst consistencies (indication specific)
- economical mixing for both light and dual curing applications
- direct, bubble-free material application
- easy excess removal

The material is radiopaque, offers good control of the marginsand sure detection of excess cement.
The variety of try-in pastes offers an optimal selection of definite luting materials and thus facilitates perfectly esthetic overall restoration results.
The esthetic advantage of Vitique is its application for translucent restorations (all ceramic restorations). The claim to offer the highest shade esthetic is confirmed especially in the clinically difficult anterior area.
For me as dentist a natural smile is the best compliment for a successful restoration.

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6
Cleaning and conditioning of the core with DMG Contax


7
Light curing of DMG Contax


8
Coarse excess removal using a scaler


9
Restoration one day after integration