

3MSM Health Care Academy

Aesthetic all-ceramic restoration of endodontically treated upper premolar.

Clinical dentistry and photography by: Dr Giuseppe Chiodera, Brescia, Italy

About the case

45-year old female patient came to the office in need of a final restoration of the first upper premolar after initial endodontic treatment. The aim was to achieve an aesthetic result and to protect the weakened cusps of the premolar, which were at high risk of fracturing. For efficiency reasons, 3M™ Filtek™ One Bulk Fill Restorative was used to create a core build-up. 3M™ Impregum™ Super Quick Material was the material of choice for impression taking. This allowed for some extra time to be spent on the challenging preparation and capturing all important details.

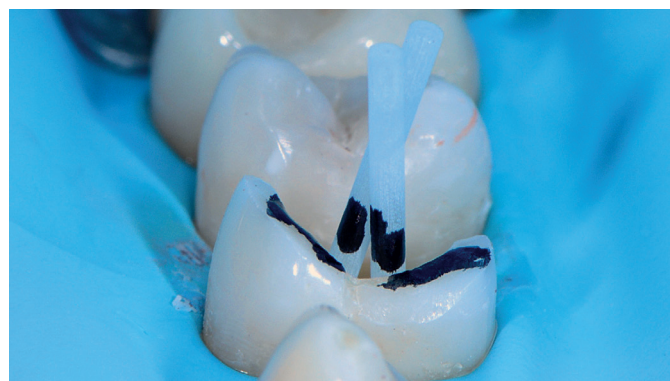


Figure 2: Situation after root canal treatment, try-in of two 3M™ RelyX™ Fiber Post Glass Fiber Posts (size 0) and determination as well as marking of their final length.

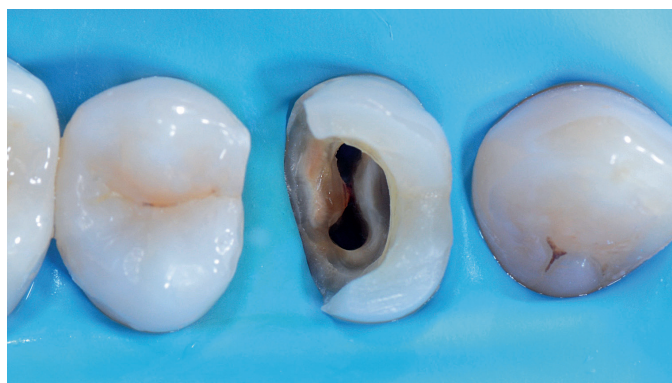


Figure 1: Initial situation: Upper first premolar in need of final restoration after initial endodontic treatment.



Figure 3: Proximal box elevation with 3M™ Filtek™ One Bulk Fill Restorative and try-in of the extra-orally shortened 3M™ RelyX™ Fiber Posts.



Figure 4: Application of 3M™ RelyX™ Unicem Aplicap™ Self-Adhesive Resin Cement into the root canal using an elongation tip.



Figure 8: Syringing of 3M™ Impregum™ Super Quick Light Body Polyether Impression Material around the preparation for the 1-step impression technique.



Figure 5: 3M™ RelyX™ Fiber Posts after cementation and core build-up accomplished with 3M™ Filtek™ One Bulk Fill Restorative, shade A2.

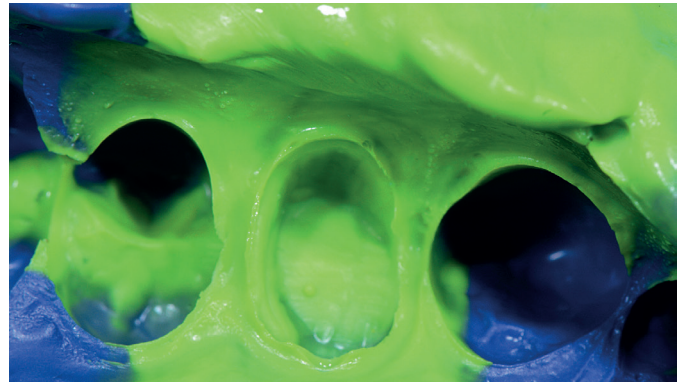


Figure 9: Close-up view of final impression made with 3M™ Impregum™ Super Quick Polyether Impression Material (Heavy Body/Light Body).



Figure 6: After final preparation, 3M™ Astringent Retraction Paste is inserted into the sulcus and applied around the preparation for retraction and moisture control before impression taking. After 2 minutes the paste was completely removed.



Figure 10: Selective etching of the enamel with 3M™ Scotchbond™ Universal Etchant for 15 seconds.



Figure 7: Clean and clearly visible preparation margin with pilot cord in the sulcus prior to impression taking.

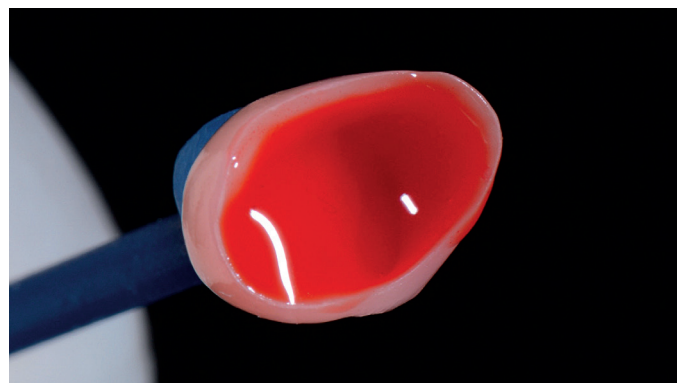


Figure 11: Etching of the all-ceramic restoration's intaglio surface (IPS e.max® CAD, Ivoclar Vivadent) with 5% hydrofluoric acid for 20 seconds.



Figure 12: Application of 3M™ Scotchbond™ Universal Adhesive to the prepared tooth surface.

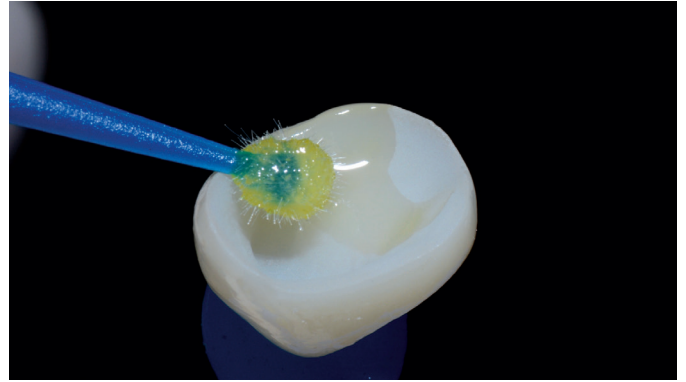


Figure 14: Application of 3M™ Scotchbond™ Universal Adhesive to the all-ceramic restoration for 20 seconds and air-drying for 5 seconds.

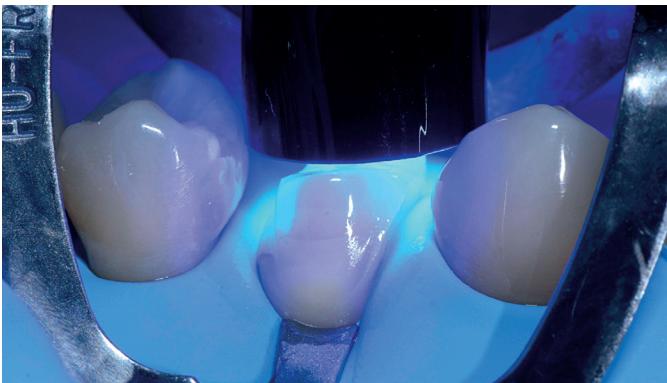


Figure 13: Following air-drying for approx. 5 seconds, the universal adhesive is light cured for 10 seconds.



Figure 15: Final perfectly fitting and aesthetic all-ceramic overlay restoration immediately after cementation using a composite restorative material.



Dr Giuseppe Chiodera

Graduated in Dentistry at the University of Brescia in 2004. In the same year winner of a scholarship at Kings College University of London. Author and co-author of articles in national and international journals. StyleItaliano member. Speaker at national and international conferences: topics include diagnosis, prevention, adhesive restorations, bleaching, ozone and laser. Private practice from 2004 dedicated primarily to conservative dentistry, adhesive aesthetic restorations, active care, endodontics and new technologies.

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Dr Chiodera has received an honorarium from 3M Oral Care.