3M Science. Applied to Life.™

CLINICAL CASE

# Art meets science: preserving structure and function with Glass Ceramic Onlays

**A case study by Dr. Giuseppe Marchetti, DDS, Italy**
featuring 3M™ RelyX™ Ultimate Adhesive Resin Cement and 3M™ Scotchbond™ Universal Adhesive


A patient presented with failing amalgam filling in lower molars. Because there was a good amount of existing tooth structure, the decision was made to use a minimally invasive approach. Glass ceramic onlays were used to achieve function with good esthetics.

**Fig. 1: Initial situation with failing amalgam fillings.**

**Fig. 2: Removal of amalgam and caries.**

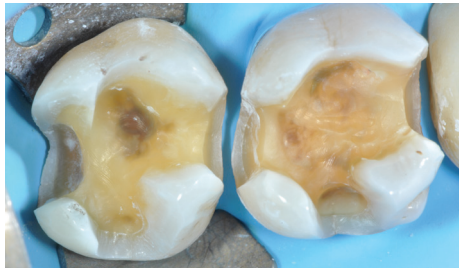

**Fig. 3: Final view of cleaned cavities.**

**Fig. 4: Application of the 3M™ Scotchbond™ Universal Adhesive in self-etch mode on dentin. Rub for 20 seconds and air thin for 5 seconds.**

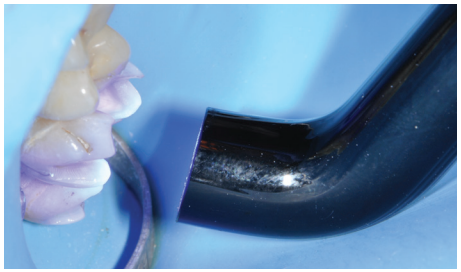

**Fig. 5: Followed by light cure of adhesive for 10 sec with 3M™ Elipar™ DeepCure-S LED Curing Light.**

**Fig. 6: Application of 3M™ Filtek™ Bulk Fill Flowable Restorative in order to render the cavity suitable for impression.**

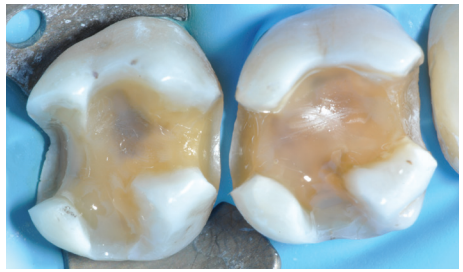

**Fig. 7: Final view after composite light curing and polishing.**

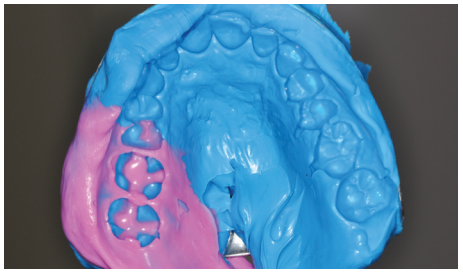

**Fig. 8: Impression with 3M™ Imprint™ 4 VPS Impression Material (light and heavy body).**

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Fig. 9: Ceramic onlays on the laboratory cast.

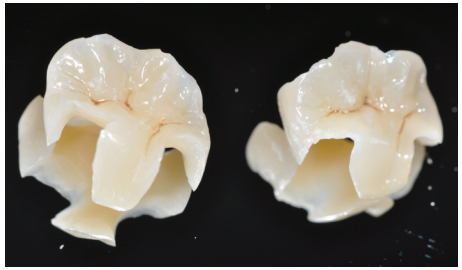

Fig. 10: Ceramic onlays ready for cementation.

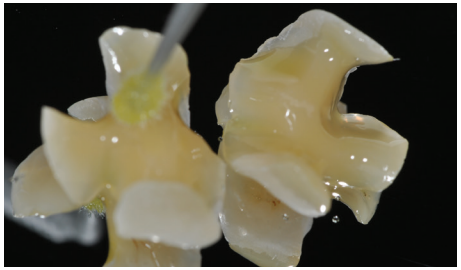

Fig. 11: After etching with hydrofluoric acid, apply 3M™ Scotchbond™ Universal Adhesive to the inner surface of the onlay, rub for 20 seconds, then air thin for 5 seconds until no more movement of solvent is seen. Apply Scotchbond Universal Adhesive according to tooth surface per Instructions for Use (IFU).

Fig. 12: Apply 3M™ RelyX™ Ultimate Adhesive Resin Cement to adhesively cement the onlays.

Fig. 13: Isolation of neighboring teeth and cementation of the first onlay. Apply 3M™ Scotchbond™ Universal Adhesive to the surface of flowable material, rub for 20 seconds, then air thin for 5 seconds before applying 3M™ RelyX™ Ultimate Adhesive Resin Cement.

Fig. 14: View after cementation of both onlays and excess cement removal.

Fig. 15: Checking occlusion after light curing or allowing the material to self cure per Instructions For Use (IFU).

Fig. 16: Final restorations in place.

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