

Adhesive cementation of a Zirconia Maryland bridge with 3M™ Scotchbond™ Universal Plus Adhesive and 3M™ RelyX™ Universal Resin Cement



Clinical case

Dr. Sven Mühlemann

About the case

A 16-year-old patient presented with the loss of the maxillary right lateral incisor due to a root fracture following trauma. The adjacent central incisor remained intact and healthy. Utilizing this tooth as the abutment for a one-wing Maryland bridge provided a minimally invasive, fixed prosthetic solution suitable for a young patient.

Post-extraction, alveolar ridge preservation was achieved through the application of xenogeneic bone graft material combined with a connective tissue graft harvested from the palate. This approach maintained the soft tissue volume at the pontic site, ensuring optimal esthetic outcomes. To preserve the integrity of the abutment tooth, no grooves or mechanical retention features were prepared, resulting in a Maryland bridge without retention or resistance form.

A one-wing zirconia Maryland bridge requires a reliable bond to both enamel and zirconia. This was accomplished using 3M™ RelyX™ Universal Resin Cement in combination with 3M™ Scotchbond™ Universal Plus Adhesive as both the zirconia primer and the tooth adhesive within a total-etch protocol.

Featured products:

3M™ Scotchbond™ Universal Plus Adhesive

3M™ RelyX™ Universal Resin Cement



About Dr. Sven Mühlemann

Sven Mühlemann maintains a private practice specialized on prosthodontics and implantology in Zurich. After graduation cum laude in 2006, he worked as a full-time associate in a private practice in Zurich. Thereafter, he completed a 3-year postgraduate training in Reconstructive Dentistry at the Clinic of Reconstructive Dentistry at the University of Zurich in 2013.

He was the recipient of an ITI scholarship at the Harvard School of Dental Medicine, Boston, USA. Between 2014 and 2021, he was a full-time Senior Teaching and Research Assistant at the Clinic of Reconstructive Dentistry in Zurich. He is a Swiss-certified specialist of Reconstructive Dentistry and in Oral Implantology.

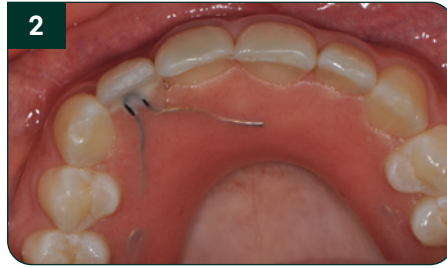
Since 2019, he is the president of the Swiss Society of Oral Implantology, and an ITI fellow. Between 2016-2020 he was a member of the Junior Committee of the European Association for Osteointegration (EAO). In 2019 he won the EAO Prize for Clinical Research in Prosthetics. He has lectured extensively in Europe, has more than 50 peer-reviewed publications on clinical research.

Case overview

Refer to instructions for use (IFU) for complete product information.



Clinical situation three months after extraction of the lateral incisor with simultaneous alveolar ridge preservation.



Provisional removable prosthesis.



Shaping of the pontic site soft tissue by applying flowable composite to the acrylic tooth of the removable prosthesis.



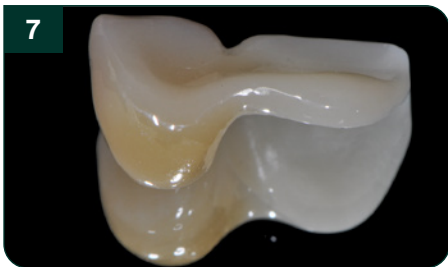
Final developed pontic site.



Pontic site occlusal view. The central incisor abutment tooth was left unprepared.



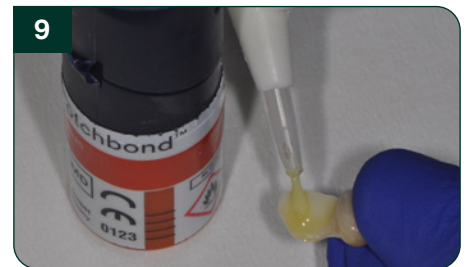
One-wing Zirconia Maryland bridge on printed model.



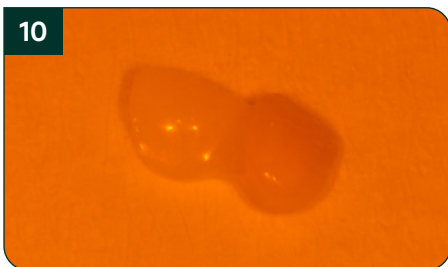
One-wing Zirconia Maryland bridge.



Sandblasting of the Zirconia bonding surface after final try-in.



Application of 3M™ Scotchbond™ Universal Plus Adhesive for 20 seconds followed by gentle air drying.



Storage of Maryland bridge under light protection until seating.



Cleaning of palatal tooth surface by sandblasting after cord placement.



Etching of central incisor bonding surface. Neighboring tooth was protected with a mylar strip.

Case overview

Refer to instructions for use (IFU) for complete product information.



Etched enamel bonding surface of central incisor.



Application of 3M™ Scotchbond™ Universal Plus Adhesive for 20 seconds followed by gentle air drying.



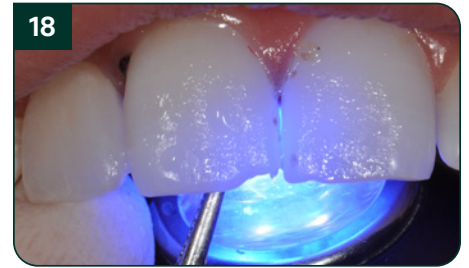
Application of 3M™ RelyX™ Universal Resin Cement.



Bridge seated.



Initial cement excess clean-up while holding bridge in place.



Light curing with fixation of Maryland bridge.



Final excess cement clean-up with a micro scaler.



Final situation.



Final situation.



Final situation.



Solventum Dental Solutions

1-800-634-2249
Solventum.com

[Learn more at Solventum.com](https://www.solventum.com)

© Solventum 2026. Solventum, the S logo and RelyX are trademarks of Solventum or its affiliates. 3M, the 3M logo and Scotchbond are trademarks of 3M.