

Successful communication in the fabrication of all-ceramic restorations



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Success in solving aesthetic and occlusion problems is only possible with detailed communication between dentist and technician, which undoubtedly should include photos of the patient. These important ingredients are emphasized in the following case.

A 68-year-old patient presented to my practice requesting improved dental aesthetics. The clinical examination revealed that: the 11 and 21 crown margins were unaesthetically visible due to the recession that had occurred, the entire dentition had widespread black triangles and worn teeth due to attrition, and the 15 and 16 were mesially tipped due to the missing 14. Extraoral photographs were then taken: at rest, smiling, with mouth closed in a frontal view, from posterior side views (right/left) and from an upper occlusal and lower occlusal view. A lower diagnostic wax-up was created onto a duplicate model, as 34 to 36 and 44 to 46 were waxed to ideal anatomic contours. With the aid of Digital Smile Design, and after temporisation, 36 and 46 monolithic lithium disilicate crowns were fabricated onto CAD/CAM zirconia abutments (which were fixated to the implants), then stained/glazed. Also, 34, 35, 44 and 45 monolithic lithium disilicate crowns were

fabricated, then stained/glazed. As well, shortened lithium disilicate veneers were made for teeth 33 and 43 in order to create more anatomic aesthetics and also to create canine guidance.

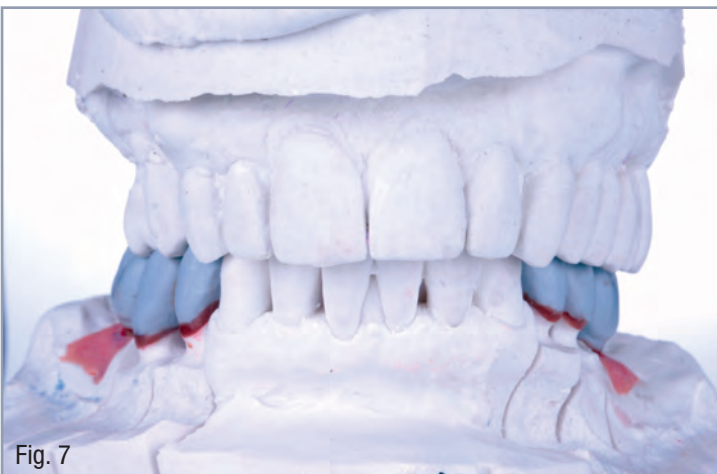
In the maxilla, single lithium disilicate crowns were fabricated from 15 to 24, with the 13 to 23 being layered, and the 15 and 24 being stained/glazed only, because they were monolithic crowns, as agreed upon by the laboratory and myself. A layered zirconia bridge was fabricated from 25 to 27.

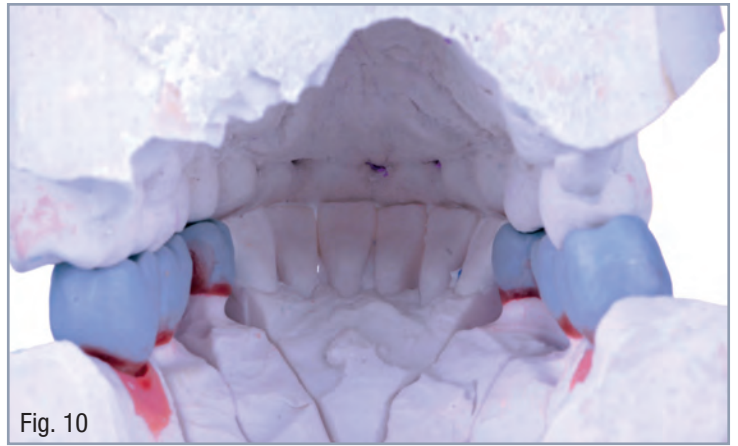
All of the above materials were:

- 1) carefully selected according to the tooth's position in the arch and
- 2) discussed thoroughly between the laboratory and myself



Figs. 1 - 6 — A myriad of initial problems





Figs. 7 - 10 — Wax modeling from 34 to 36 and 44 to 46



Figs. 11 - 15 — Zirconia abutment and crowns made of lithium disilicate on the model ...



Fig. 16 — ... and then cemented in situ



Fig. 17



Fig. 18

Fig. 17 - 18 — Upper tooth preparations



Fig. 19 — The upper master model



Fig. 20 — 15 to 27 Initial wax modeling



Fig. 21 — The wax-up in detail



Fig. 22



Fig. 23

Figs. 22 - 23 — Articulator set for accurate excursions



Fig. 24 — Modeling for canine veneers in the lower jaw



Fig. 25 — Finalized wax modeling



Fig. 26 — The restorations fabricated from the wax forms and set upon the upper model



Fig. 27 — The 33 and 43 veneers up close



Fig. 28 — The individual ceramic crowns, veneers and bridge



Fig. 29

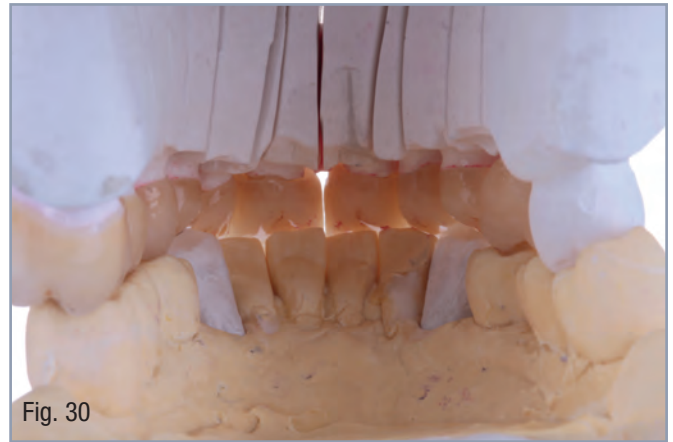


Fig. 30



Fig. 31



Fig. 32

Figs. 29 - 32 — The finished restorations on the models



Figs. 33 - 34 — The finished work on a Geller model



Figs. 35 - 36 — The 25-27 zirconia posterior bridge which was layered



Fig. 37 — The 33 veneer on the model

Fig. 38 - 39 — All the restorations cemented into place



Fig. 40 — Frontal view of the upper restorations after cementation

Fig. 41 — Canine guidance was established via the new 33 and 43 shortened veneers



Fig. 42



Fig. 43

Fig. 42 - 43 — Right and left views of the cemented restorations



Fig. 44 — The final result in maximum intercuspation



Fig. 45 — Beautiful aesthetics



Fig. 46 — Balanced excursions



Fig. 47



Fig. 48

Fig. 47 - 48 — Before and after

About the authors

Francesco Romagnoli was born on February 24, 1967 in Modena, Italy and graduated from Dental School with distinction from the University of Modena. Since 2007, in addition to owning his own practice, he regularly holds courses with well-known dental specialists internationally on the topics of conservative, periodontal and prosthetic dentistry. In 2012, he was an implantology specialist at the University of São Paulo (Brazil).

Simone Maffei graduated in 1996 as a dental technician and has taught many international courses with a focus on dental photography. He has published numerous articles on dental photography and smile aesthetics in international journals and currently teaches courses on the topics of dental and technical photography, digital smile design, and ceramic veneering and layering techniques. He currently owns his own dental laboratory.