A NEW FORMULA FOR AESTHETIC MONOLITHIC LONG-SPAN RESTORATIONS

WITH "KATANA™ Zirconia" YML

CASE BY CDT DANIELE RONDONI

Born in Savona in 1961 where he lives and has worked in his own laboratory since 1982 with his collaborators. Graduated from the dental technician school IPSIA "P. Gaslini" in Genoa in 1979. He continued his education by attending relevant workshops for the "Italian dental school" and broadened his professional experience in Switzerland, Germany and Japan. Since 2011 Kuraray Noritake Dental International Instructor.

Usually, the aesthetic potential of a dental ceramic material – specifically its translucency – may be increased only at the expense of a decreased flexural strength. For this reason, there has been a lack of highly translucent materials suitable for the production of beautiful monolithic long-span restorations. The launch of dental zirconia with different levels of translucency and strength in a single blank has changed the situation.

One such material is "KATANA™ Zirconia" YML from Kuraray Noritake Dental Inc. It has a multi-layered structure with a high flexural strength of 1,100 MPa, a high chroma and a reduced translucency in the lower half of the blank. While the flexural strength and chroma are reduced in the upper body and incisal areas, the translucency increases as is the case in natural teeth. This leads to an unlimited indication range – provided that some design and positioning rules are respected. In order to check whether these rules limit the dental technician's design flexibility and whether the aesthetic potential is high enough for monolithic anterior restorations, we checked its processing and optical properties thoroughly. The following case example gives readers an impression of what is possible with this innovative multi-layered material.

Fig. 1
"KATANA™ Zirconia" YML 4-unit and 6-unit bridges after milling and sintering. A natural vestibular surface texture plays a decisive role in the creation of aesthetic monolithic restorations.

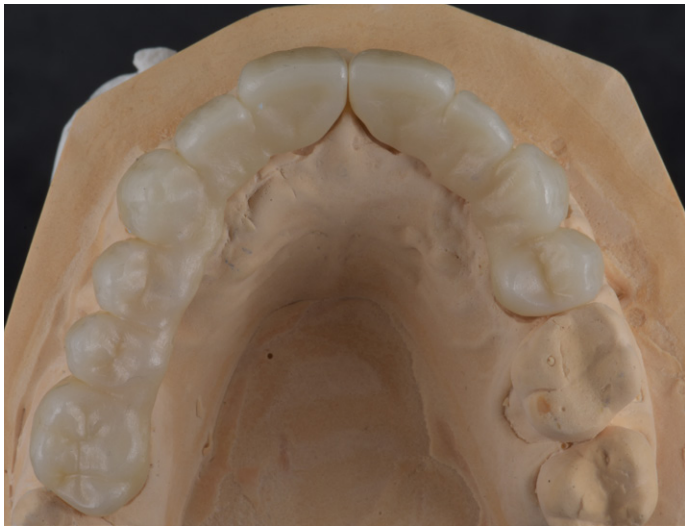

Fig. 2
Occlusal view of the two monolithic bridges. The lingual surface design facilitates oral hygiene procedures.

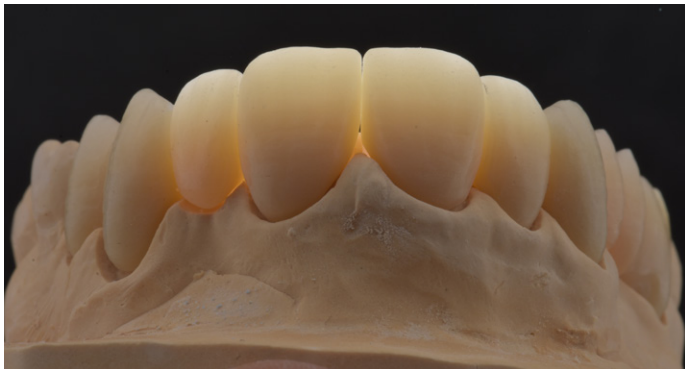

Fig. 3
A light source behind the restorations reveals the incisal translucency.

Fig. 4
Buccal view of the 4-unit bridge.

Fig. 5
Buccal view of the 6-unit bridge.

Fig. 6
Frontal view of the two bridges on the model after ultra-micro layering with “CERABIEN™ ZR” FC Paste Stain (Kuraray Noritake Dental Inc.).

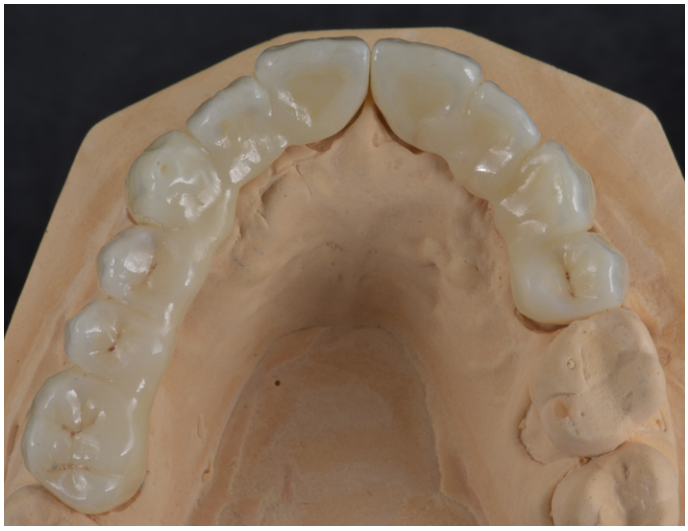

Fig. 7
Occlusal view of the stained and glazed restorations.

Fig. 8
Stained and glazed restorations and their translucency in transmitted light.

Fig. 9
Buccal view of the finished 4-unit bridge.

Fig. 10
Buccal view of the finished 6-unit bridge.

FINAL SITUATION

Fig. 11
Buccal view of the 6-unit bridge cemented in the patient's mouth.

Fig. 12
Buccal view of the 4-unit bridge cemented in the patient's mouth.

With this new type of multi-layered zirconia, it is possible to produce aesthetic monolithic restorations suitable even for use in the anterior area. A high design flexibility is offered despite strength gradation, and the high translucency in the incisal area is responsible for a natural look after sintering. Ultra-micro layering and glazing on the monolithic surface will be sufficient to produce outcomes to our patients' satisfaction.

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LW34-01 02/2022