The time has come for ceramic implants Part 2

Wolfgang Weisser has been working with ceramic implant systems for five years. In the October issue, Wolfgang Weisser described the surgical procedure, the planning and the CAD/CAM process of this patient case, presented in two variants. With the presentation of the prosthetic restoration with composite, 1 part ended and this variant was put up for discussion. The author dedicates this report to his mentor and friend Professor Gerwin Arnetzl, who died in March 2018.

I HAVE FOUR CAPS made of multilayer zircon, two for the composite variant and two for the ceramic facing. The analogue wax-up fabrication lung is still essential for me (▶53) and with this full zirconia coping the occlusal 1.5 mm was reduced for the incisal materials (▶54 and ▶55) and with kneading silicone (dl10, page 78, fig. 33) or a wax plate.
The black areas on the plaster model give me information for the important dynamic function. I obtained this data from the dentist's occlusion protocol.

Then followed the familiar steps for ceramic veneering, wash firing, effect materials and adding the enamel material (▶57 und ▶58). The dentin firing (▶59) showed a good firing result with only one firing process.

Another firing was not necessary and so I could start finishing immediately. Glaze firing (▶60 und▶61) formed the conclusion. I then checked the reconstruction made on the master model.

In this variant, an occlusal veneer with incisal materials was used in order to guarantee a hardness similar to that of natural teeth and thus protect the antagonist. Although it has often been written that solid zirconia is not a problem if polished well, for me as a practitioner polishing in the laboratory is not that easy and in the patient's mouth it is even more difficult. The time factor plays a major role in practice, so polishing there is never as good as in the laboratory.

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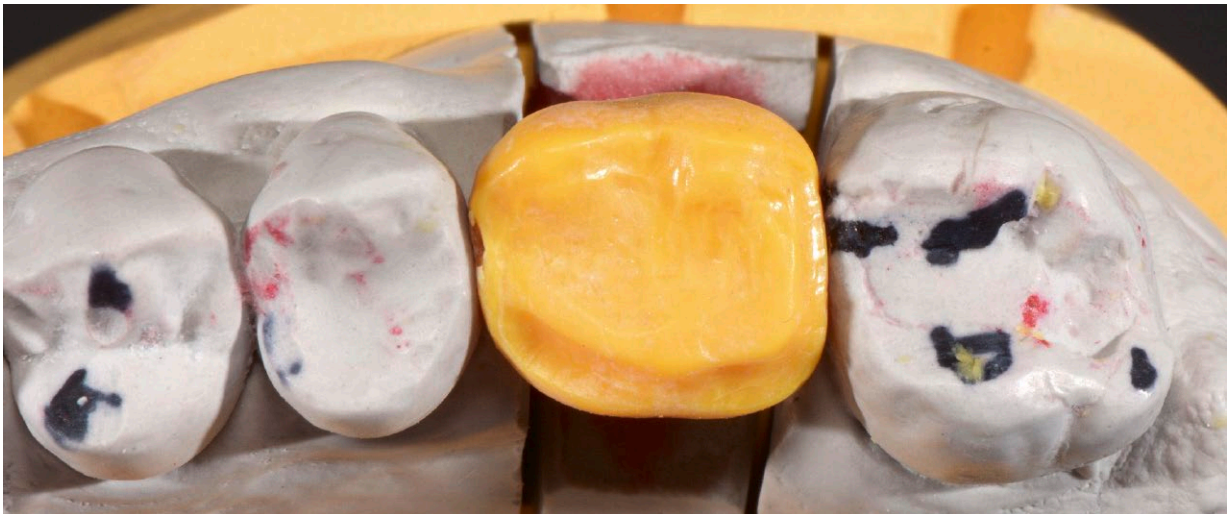
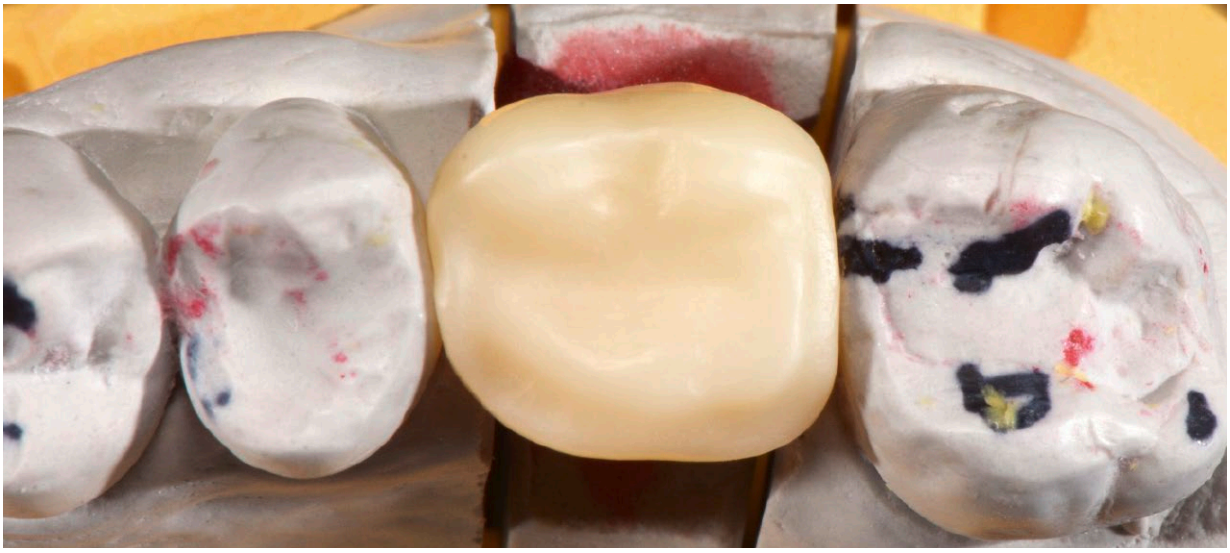


53 Analogously modeled coping ready for double scan



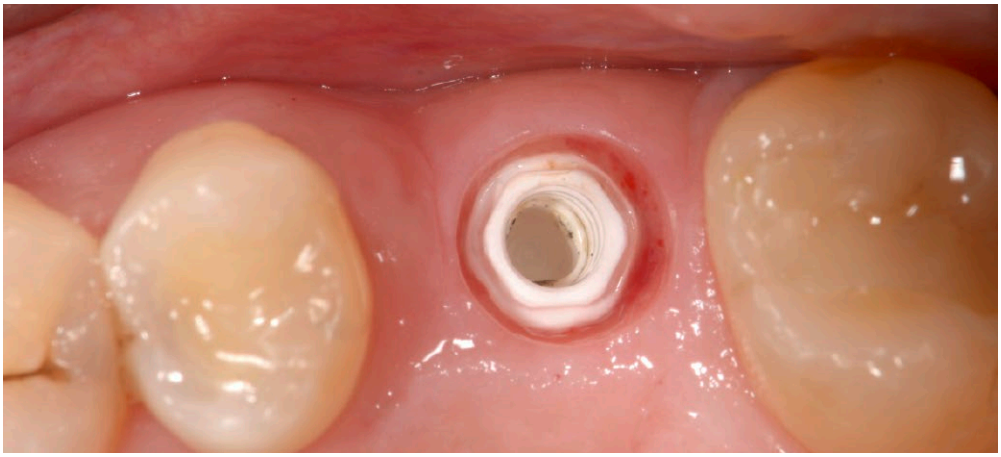
54 to 55 CAD/CAM-milled coping made of multicolor (Pritidenta)

56a and 56b
Wash firing with ceramic initial LiSi (GC)

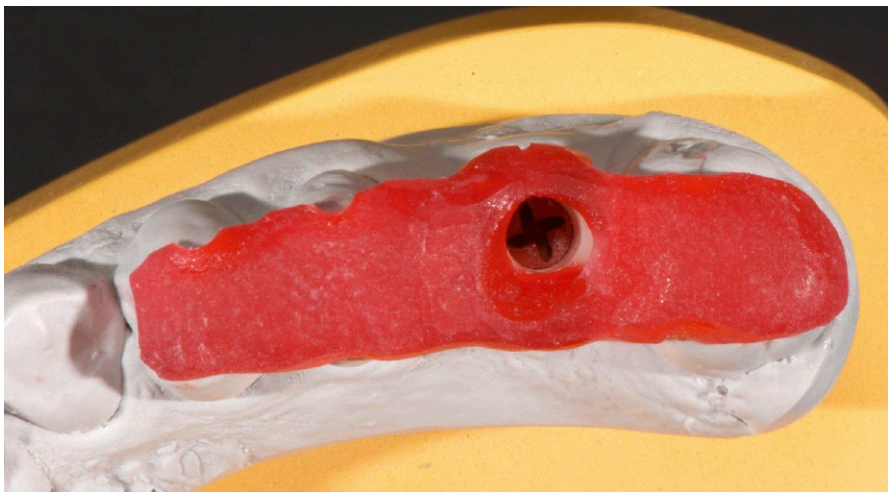
57 to 58b
Apply incisal materials with Initial LiSi (GC)

▶59 to ▶61 Finished occlusal surface ceramically veneered with Initial Lisi (GC) on the master model

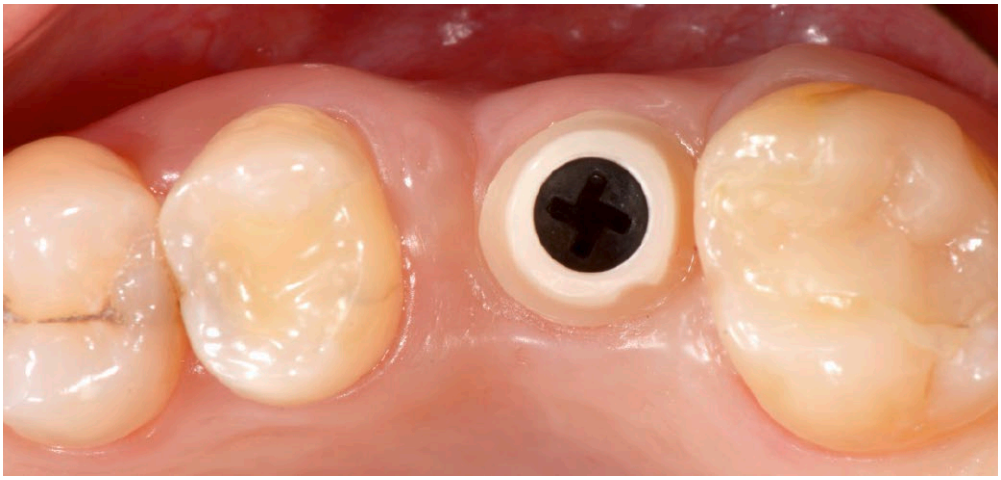
▶62 X-RAY



▶63 View of the inserted Zeramex P6, 4.8 × 10 mm final

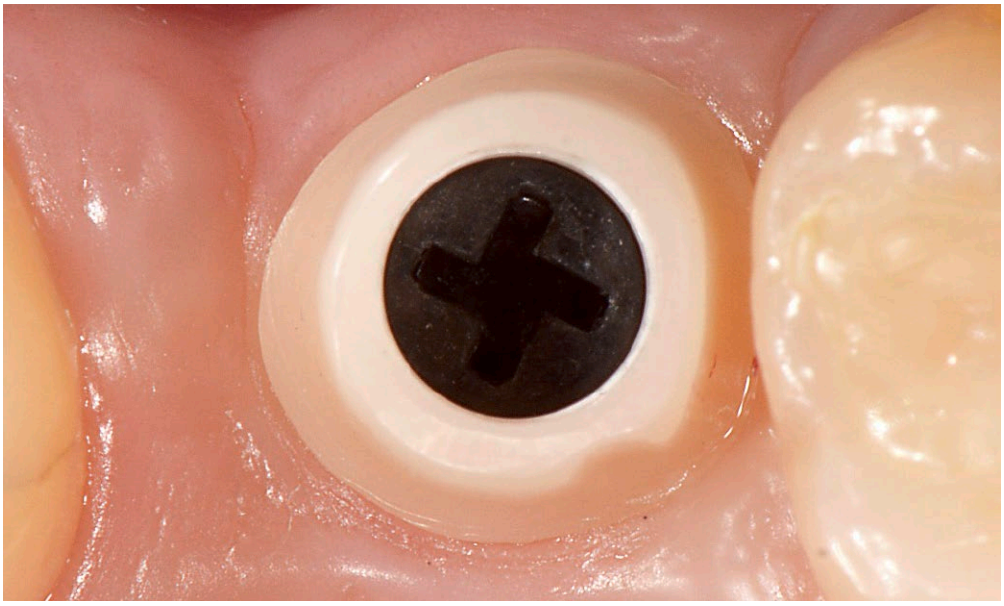


▶64 and ▶65 Important Transfer Key with Pattern Resin (GC)



66a Inserted individual abutment with the VICARBO screw made of carbon fiber reinforced plastic

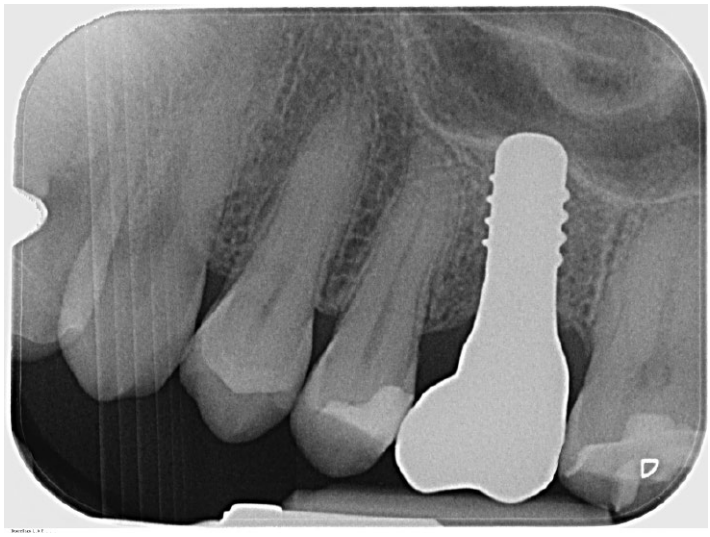
66b and 66c



67 Harmonious integration of the individual abutment Multicolor Pritidenta, precisely designed termination of abutment and crown above the gingiva to keep an eye on the excess when attaching

68 Ceramic-faced crown made of Initial LiSi (GC) on the master model

69 **Finished work in the mouth**



70 **X-RAY**

71 **and** 72 **Work after 18 months in the patient's mouth. The gingiva nestles perfectly against the zirconium materials.**

A transfer key made of pattern resin, which is first made on the master model, is always used for insertion. The final check of the exact position is carried out on the unsawn model (65), this should finally fit like it does in the mouth. This reduces the stress during insertion and ensures reliable implementation of the insertion protocol.

The key is based on the master model. The difference to the unsawn model can be seen in the

final setting of the spherical contact point of the individual abutment. With the un-sawn model, the contact points still have to be filed with a strip. In situ, the individual multicolor abutment adapts well to the gingiva. The VICARBO screw (▶66 und ▶67) reinforced with carbon fiber, forms the core of Zeramex's metal-free implant system. As described initially, this makes it the only fully metal-free two-part implant system on the market. Ensuring an uncomplicated fixation, precise alignment of the abutment and crown was also important to me. Cleaning the adhesive seam prevents adhesive residues from entering the sulcus and causing peri-implantitis. A concluding X-ray image is obligatory.

Conclusion

A two-part implant made of full zirconia, individual zircon abutment, zirconia coping – this is what the future looks like to me, as it allows for precise emergence profile design without disturbing the gingiva.

The veneering, whether made of ceramic or composite, opens up new prosthetic possibilities. In the near future, there will be new generations of hybrid materials that leave nothing to be desired. The potential of 3D printing to enable this was already presented as a preview by BEGO at the user meeting in Bremen. It was astonishing how quickly the gingiva recovered after the surgery and embraced the manually high-polished zirconia, without stain or glaze, even though this situation was not ideal for the implants' placement.

The success (▶70 to ▶72) became evident after 18 months, showing the positive impact of the new zirconia oxide materials in implantology. I extend my gratitude to Klaus Pettinger for his professional support and assistance, without which this article would not have been possible. I also thank the patient, who patiently endured the photographic procedure.

In memoriam

Univ.-Professor Dr. Gerwin Arnetzl, just like myself, was an advocate of hybrid materials such as Enamic by Vita. Unfortunately, he passed away on March 12, 2018, and so we can no longer discuss the advantages and disadvantages of various materials. He was a great friend, skiing colleague, competent teacher, and a unique individual. The long evenings and the valuable exchange of thoughts that lasted until the early morning hours will always remain in my memory.

I will not forget you, dear Gerwin.