could save the patient’s chairside waiting time; the biocopy technique can simplify the design process; milling the restoration with a 0.3 mm original thickness and polishing after milling will decrease the risk of milling defect.

The exact process can be concluded as:
1. Obtain a precise pre-operation impression, and make the model. Use a CEREC scan to obtain information about the abutment teeth (Figs. 11 & 12).

2. Depending on the DSD result, make a wax-up on the pre-op model. The thickness of wax up should be from 0.3 mm to 0.5 mm. Get the biocopy scan of the wax-up model, and match accurately with the pre-op model (Figs. 13-15).

3. Setting the margin of the abutment teeth, the marginal edge line is not fixed because of the no preparation technique. The direction of insertion should be defined first, which can cover most areas of the labial surface, incisor edge and adjacent surfaces. The border of the covered area should be the margin of the restoration (Fig. 16).

4. Shape formation of the restoration. Copy the target shape of the biocopy model, the restoration should be calculated automatically. If there is any defect, it can be adjusted and corrected by the tool. If there are any areas not thick enough for 0.3 mm, it should be added to 0.5 mm to avoid fractures during the milling process (Figs. 17 & 18).

5. Modification and polishing of the initial restoration to 0.3 mm thick after milling. And fine polishing of the final restoration (Figs. 19 & 20).

6. Intraradial try-in, fine adjustment and cementation (Figs. 21-24).

7. Four-year follow-up and recheck. The restorations are as excellent as before and the margins are tightly sealed, the colour is stable, there is no margin coloured or whole colour changing. The patient is very satisfied with the aesthetic performance and function. A charming smile appearance has given her more confidence and vigour (Figs. 25-29).

Conclusions
The no preparation veneer is a kind of restoration with high precision requirement and manufactured difficulty. It is usually finished in laboratory. Getting benefit from chairside CAD/CAM techniques, immediate restorations in one appointment can be achieved, dentists can invite the patients to observe the process of restorative design and manufacture, and even get involved into the design. Patients may feel that they are participating in the treatment, establishing an emotional connection with the restoration, which may also make them more easily accept and love their restoration. The value of increasing the satisfaction should not be ignored.

Biocopy design is the combination of traditional aesthetic design and digital virtual design. It is also the most convenient and fast technique. Nowadays, 3D virtual technique is becoming more and more established. Using 3D techniques directly to make a virtual design may also get wonderful restoration performance; it can be predicted that this pattern will become the mainstream of digital aesthetic design in future.
Most importantly, the patient said she no longer experienced discomfort in her temporomandibular joint and that her bite had never felt better. Since no adjustment or modification of the temporary was needed, the dental laboratory was instructed to replicate the White Wax-Up when fabricating the definitive restorations.

Laboratory considerations: The White Wax-Ups, colour photographs, impressions and bite relations were forwarded to the dental laboratory (Arrowhead Dental Laboratory). A scan of the White Wax-Ups was used to select an appropriate arch form, tooth size and occlusion from the library of teeth available in the 3shape software (Fig. 7).

After the impressions had been completed, a bite relation jig fabricated on the White Wax-Up models was tried in the mouth. Medium-body impression material (Panasil, Kettenbach) was selected for shade. After the patient had been fit, form and shade of the final restorations would aid in determining the best provisionalisation of the temporary was needed, the dental laboratory was instructed to replicate the White Wax-Up when fabricating the definitive restorations.

Provisionalisation
Provisional restorations, which would aid in determining the best size, shape, colour and position for the definitive restorations, were made from Sil-Tech (Ivoclar Vivadent) impressions of the White Wax-Ups provided by the dental laboratory.

Using the 3Shape Communicate, images from scanning speed improvements to custom sound options, see what’s new at carestreamdental.com/CS3600.
riva luting plus (SDI), a resin-modified, self-curing glass ionomer luting cement, was used for the cementation of these zirconia restorations because it can be used without special preparation using cleaning agents, nor does it require any bonding agent (Fig. 9).

According to the manufacturer, riva luting plus utilises SDI’s proprietary ionglass filler. Ionglass is a radio-opaque, high-ion-releasing reactive glass used in SDI’s range of dental cements. riva luting plus releases substantially higher levels of fluoride to assist with remineralisation of the natural dentition. This higher level of fluoride has a proven antimicrobial activity against three cariogenic bacteria: Streptococcus mutans, Streptococcus sobrinus and Lactobacillus. In addition, riva luting plus has low solubility in the oral environment, increasing the material’s ability to resist degradation and wear at the margins caused by oral acidity.

The preparations were washed and dried to the extent that they were still slightly moist. At this time, the cement capsules were depressed consecutively to activate and placed in the ultramat 2 (SDI) amalgamator for only ten seconds for trituration.

Using the applicator dispenser (SDI), the cement was loaded into the restorations (Fig. 8), starting from the midline and working distally. With a very low film thickness and creamy consistency, riva luting plus cement was dispensed into the restorations with easy insertion and seating.

Removal of excess cement was cleaned up in about two minutes at the gel phase. After the cement was fully set at five minutes, the occlusion was verified and adjusted. The overall health and structure of the soft tissue and restorations were very good. The patient was extremely satisfied with the definitive results (Figs. 10–12).

The occlusion was checked and verified with T-Scan (Tekscan) to make sure that all of the proper points of contact were in their ideal positions to ensure longevity of the reconstruction. The patient no longer experienced pain and was very pleased with her new enhanced smile (Fig. 10).

Conclusion

In conclusion, having a systematic method for treatment planning, material selection, tooth preparation and cementation, the dental provider will be able to address the needs of the patient more effectively and efficiently. Because of this and more, the final outcome will be much more predictable aesthetically and functionally.

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Editorial note:

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