

# Czar FZ - Monolithic Zirconia: An introduction and a case report

DR. MUKESH KATARA AND DR. LANKA MAHESH

## INTRODUCTION

Czar FZ is a new generation fully milled monolithic solid zirconia crown or bridge restoration with no veneering ceramic.

### The principle qualities of Czar FZ are:

Czar FZ is designed and milled using CAD/CAM technology based on the use of the Dental Wings scanner for scanning of models and DWOS software designing the full contour restorations. Czar FZ crowns and bridges are sintered for 8 hours at 1,500 degrees Celsius. The final solid zirconia crown or bridge has compressive strength of over 1200 Mpa. There is no danger of delamination of traditional porcelain veneer layer as with some porcelain fused to zirconia crowns. It has acceptable aesthetics when inserted in lieu of metal occlusal PFM and full-cast metal restorations in the posterior segment and is virtually chip-proof. Conservative preparations similar to full cast crowns are acceptable and can restore with a preparation of as little as 0.75mm occlusal reduction. Czar FZ Solid Zirconia is indicated for crowns, bridges, screw-retained implant crowns and onlays. It is an esthetic alternative to PFM metal occlusal/lingual or full-cast restorations. The durability of Czar FZ restorations is ideal for bruxers who have broken their natural teeth or previous PFM restorations.

## DENTAL WINGS SCANNER

The Scanner is a non-contact optical 3D



FIG 1



FIG 2



FIG 3

scanning device. The system combines proven laser triangulation to five axis of freedom, is very versatile and provides accurate measurements even on a very large scanning volume (140mm x 140mm x 100mm). It is capable of scanning from

single unit to full arch as well as scanning occlusion check-bites.

## DWOS SOFTWARE

The DWOS is very user friendly and versatile software allowing us great freedom in design.

- Pre-scanning allows a quick, low-resolution visualization of the entire model in order to determine and select workable area for precise scanning.
- Scanning of the individual dies is performed for a more precise scan of the abutments and margins.
- Automatic bridge connectors with a standard requirement of 9 sq mm are adapted to the bridge, which can be modified

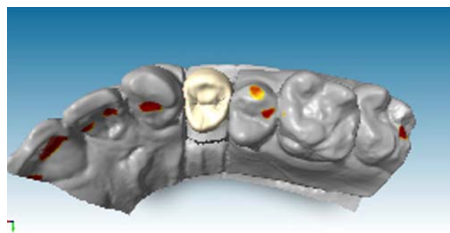


FIG 4

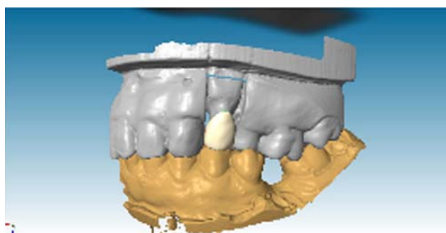


FIG 5

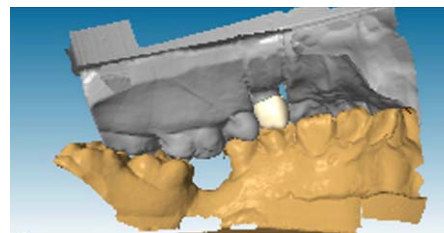


FIG 6

depending on the case in order to avoid breakage.

- A scan of the antagonist arch for occlusal function (virtual articulation) can be done in order to obtain an anatomical coping with high point reduction.
- A complete anatomical framework is then displayed with a uniform 1.5 mm space all around required for the right amount of porcelain application, this helps DWOS to prevent porcelain chipping.

### CASE REPORT

A 26 yr old male patient reported to the office with a complaint of unaesthetic crown (the patient had undergone implant therapy and prosthesis at an out-station dental office) in the upper left region. On examination (**Figures 1 and 2**), a poorly fabricated prosthesis was visible with poor marginal integrity and a black triangle visible in the mesial embrasure.

On history taking the patient elicited that he had opted for a zirconia crown as the dentist treating him felt so.

It was decided to remove the crown and fabricate a new zirconia (Czar FZ) crown. On removal of the crown very poor inter occlusal space was noted and therefore the abutment too was changed to an esthetic abutment (**Figure 3**).

Following a closed tray impression in Affinis Putty. (Coltene Whaledent), the laboratory processed a Czar FZ crown. The scans of the same show a perfect marginal fit (**Figures 4, 5 and 6**).

The various views of the prosthesis on the cast (buccal, palatal, occlusal and of the fitting surface of the crown) clearly demonstrate the margins which the clinician strives for (**Figures 7, 8, 9 and 10**).

The crown was luted using Rely X U 100 cement. The final restoration clearly shows correct margins and a relatively better shade match (**Figure 11**). The patient was satisfied with the end result.

### CONCLUSION

Though Czar FZ is primarily indicated for the molars in patients with less occlusal clearance, or bruxers and especially where metal crowns are not desired by the patient, the present case report illustrates the versatility of the performance of this product.

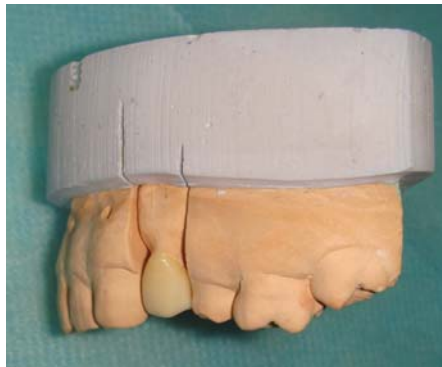


FIG 7



FIG 8



FIG 9



FIG 10



FIG 11

## About the AUTHORS



**Dr. Lanka Mahesh** is an implantologist practicing in New Delhi. He is a Fellow and Diplomate of International College of Oral Implantologists (USA) and the Indian Society of Oral Implantologists. He has undergone advanced surgical training at USA and Spain. He has also authored "Practical Guide to Implant Dentistry" published by Quintessence. He has lectured extensively in India and abroad and has numerous publications on implant related topics.

**Dr. Mukesh Katara** has an MDS from Government Dental College, Mumbai. He is running dental laboratories in India since 1985 by the name of Dentech Lab in Mumbai and Katara Dental in Pune, Bangalore and New Delhi. He has Implant prosthetic experience since 1990 and he has attended CE courses and workshops on DLT and Implants Prosthesis in India and abroad. He is on the Editorial Board of Dental Technician journal.