

CASE STUDY

Smile Rehabilitation From Effects of Bruxing and Sleep Apnea



DENTIST

Reena Patel, DDS
Charlotte, NC USA

Dr. Reena Patel brings more than 18 years of expertise as co-owner and general dentist at Chichetti and Patel Dental Wellness in Charlotte, NC. A graduate of Virginia Commonwealth University School of Dentistry, she completed an advanced two-year General Practice Residency at Wake Forest University School of Medicine, where she currently serves as an associate faculty member.

Her practice combines digital dentistry innovations with personalized treatment planning to create exceptional patient experiences. Dr. Patel's expertise spans restorative dentistry, prosthodontics, esthetics, airway management, myofunctional therapy, aligner therapy, and endodontics, supported by advanced training through the Spear Continuum and CDOCS programs.

Images and Dentistry
by Dr. Reena Patel

Case Formatted
by Andrew Goodman

PATIENT INFORMATION

Reena Patel, DDS, of Chichetti and Patel Dental Wellness in Charlotte, NC recently saw a 58-year-old male patient who presented for a new patient exam with a chief complaint of pain in the upper right. The patient had a history of crowns completed on most of his back teeth due to wear from grinding and root canals.

Dr. Patel completed a comprehensive examination on him with a full-mouth series, including intraoral and extraoral photos and an intraoral scan. His exam revealed fractures and erosion on the front teeth as well as a fractured root with infection on the upper right. The patient reported snoring, reflux, and waking up throughout the night. He had never had a sleep study and no history of wearing an occlusal guard.

After a discussion with the patient about her findings, Dr. Patel determined the patient exhibited signs of sleep apnea or sleep-disturbed breathing. A referral was made to a local sleep physician to complete a sleep study and obtain a diagnosis.

Regarding the pain he was having on the upper right, he was diagnosed with a fractured root there as well as inadequate root canal therapy on another tooth. A referral was made to an endodontist and surgeon where the fractured tooth was removed and the inadequate obturation was retreated with root-canal therapy.

PRODUCT USED



KATANA™ Zirconia ONE is a pre-sintered zirconia block, consisting of 4 gradated shade layers, which is designed for CEREC milling systems.
14 shade variations: A1, A2, A3,A3.5, A4, B1, B2, B3, C1, C2, C3, D2, D3, NW)
2 sizes: CROWN and BRIDGE

TREATMENT PLAN

A treatment plan presentation was conducted with the patient in which he was notified that the remaining back teeth were stable, but teeth Nos. 8 to 10 and 22 to 27 were breaking down due to erosion, cavities, and wear. He was informed that if left untreated, there would be a high risk of fracture or potential tooth loss.

Based on Dr. Patel's findings, and in an effort to be conservative while preserving as much of his previous work as possible, she presented the option to crown teeth Nos. 8 to 10 on top and 22 to 27 on the lower. The existing crown on No. 27 was perforated from grinding. The other teeth had areas of decay, wear, and erosion that would benefit from full-coverage restorations to restore function, health, and esthetics. The patient owns multiple businesses and is public facing, so improving his smile was important to him. The patient agreed to this and was ready to pursue treatment.

Once the treatment was agreed upon, Dr. Patel worked with Weston Hatcher Design on creating a digital design for the patient. The patient approved of the design and he elected to sequence treatment, addressing the lower teeth first and taking them to completion before executing the upper teeth.



Figure 1.
Preoperative smile.



Figure 2.
Preoperative teeth in
maximal intercuspation.



Figure 3.
Preoperative teeth with
mouth open to visualize
extent of wear.



Figure 4.
Smile with maxillary prototype.



Figure 5.
Maxillary prototype of teeth
Nos. 8, 9, and 10.



Figure 6.
Finals of lower crowns.

PREPARATION, MILLING AND RESTORATION PLACEMENT

On treatment day, Dr. Patel prepared teeth Nos. 22 to 27 for full-coverage crowns. She temporized him on the day of prep and he was happy with his occlusion and the esthetics. There were no extensive changes to the design and Dr. Patel milled lower crowns for teeth Nos. 22 to 27 out of KATANA™ Zirconia ONE in shade A3 to blend well with his existing surrounding crowns. The restorations were seated the following week.

The team then initiated treatment on the upper teeth the subsequent week. Dr. Patel prepped teeth Nos. 8 to 10 and temporized. The patient was pleased with the prototype and consented to fabrication of the finals with this design. Dr. Patel fabricated KATANA™ Zirconia ONE shade A3 for teeth Nos. 8 to 10. The patient returned to the clinic one week later for seating of final restorations.

PATIENT RESULTS

The patient was happy with the results and how it looked with the other restorations in his mouth.

And that's the beauty of KATANA™ Zirconia ONE blocks—they blend naturally with their surroundings.



Figure 7.
Digital diagnostic wax-up of
Nos. 22 to 27.

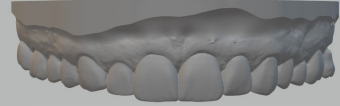


Figure 8.
Digital diagnostic wax-up of
Nos. 8, 9, and 10.



Figure 9.
Digital diagnostic wax-up of
Nos. 8, 9, and 10.



Figure 10.
Finals of lower crowns.



FINAL CONCLUSION

Based on the fact that the block already has a gradient built in, it does the heavy lifting. It features a chameleon effect, so it takes on the look of the tooth underneath it, as well as the look of the teeth surrounding it. That's why KATANA™ Zirconia ONE blocks were the optimal choice for this case.

In the time since the work was completed, the patient has initiated CPAP therapy to treat his diagnosed sleep apnea condition. He has also altered the way he takes care of his teeth and states he feels much better than he used to. Now, he's smiling bigger and feels much more confident.

Reflecting on the case, Dr. Patel attributes many of the patient's issues to sleep apnea. After finishing her work, it was abundantly clear to her how much the products from Kuraray America, Inc. enabled her to produce the best possible results. She said her job was made easier because the materials and shades work so well in patients' mouths and make treatment predictable, efficient, and enjoyable.

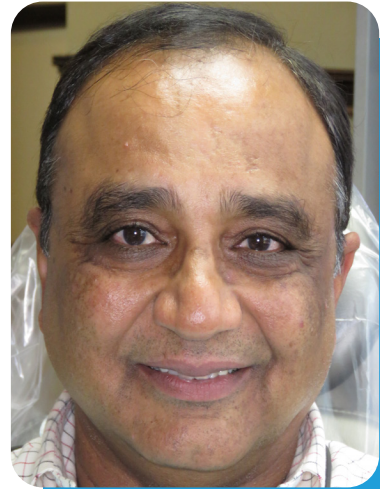


Figure 12.
Full-face preoperative smile.



Figure 13.
Final full-face smile.

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