

# SMILES in the SPOTLIGHT

**LEADERS IN NORTH TEXAS DENTISTRY  
CREATING UNFORGETTABLE SMILES**

## **Orthodontic Patient with Crowded Dentition and Steep Mandibular Plane Angle Treated With The Aid of 3D Digital Technology and Robotically Bent Custom Arch Wires**

**by Deji V. Fashemo, DDS, MPH**

Healthy adolescent female patient (age 13 years, 9 months old at presentation) with a budding modeling career came in for orthodontic consultation regarding her crowded teeth; she desired straight teeth for a more pleasing smile. She is interested in a treatment plan that keeps her in braces for the shortest possible time so she may resume her modeling engagements. This patient was previously treated with limited Phase I maxillary orthopedic and orthodontic appliances at another office.

On facial examination, the patient was noted to have mild to moderate dolichocephalic head type. Her facial soft tissue profile was straight, and the naso-labial angle obtuse; the lips were competent at rest and displayed no muscle strain.

Intra-orally, the patient had present all permanent teeth up to the 2<sup>nd</sup> molars. The buccally-displaced (and blocked out) maxillary right canine was very striking; the left canine was crowded too, but to a lesser extent. In addition, the lower anterior teeth showed moderate crowding and overlap. Molar Classification was Angle Class I on both left and right sides; overjet and overbite were minimal. The maxillary dental midline was deviated to the patient's right side by approximately 3mm. Oral hygiene was excellent.

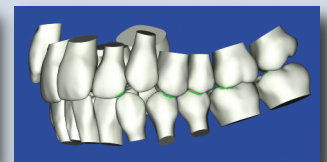
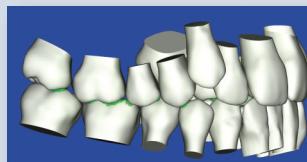
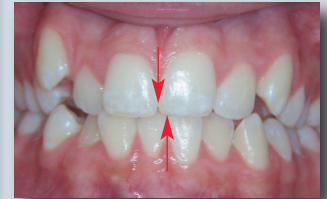
On radiographic examination, the panoramic X-ray showed all bone and teeth structures within normal limits. The un-erupted 3<sup>rd</sup> molars were present in all four quadrants. Cephalometric evaluation corroborated the straight skeletal profile, a steep mandibular plane angle, and the reduced upper and lower lip prominence.

## **\*Treatment Plan**

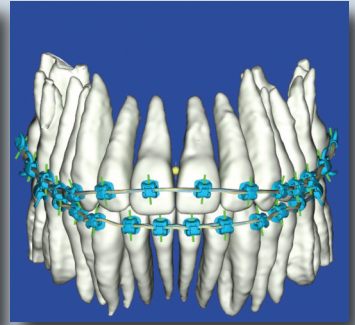
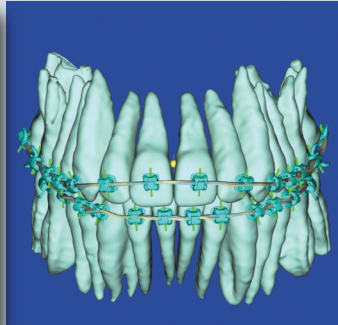
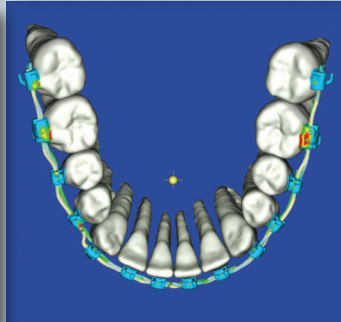
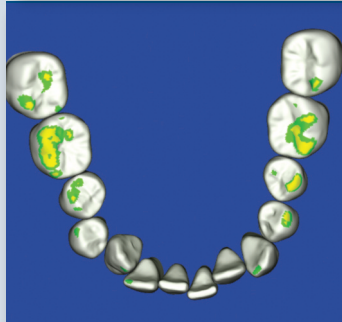
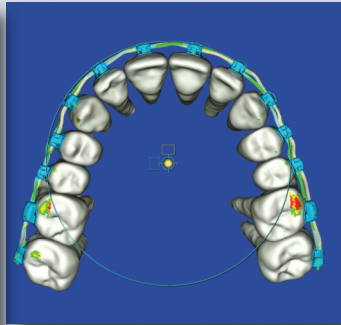
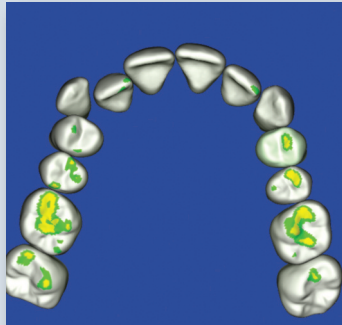
Due to the thin lips and the obtuse naso-labial angle in profile, a non-extraction option for teeth alignment was chosen; extraction of teeth will significantly increase the risk of incisor over-retraction, and further reduction of lip support. Orthopedic palatal expansion was ruled out due to the patient's prior experience and general reluctance. The option for self-ligating orthodontic braces (Damon variety; .022 slot, Roth Rx) was chosen. It was decided that interproximal reduction may be required if dental arch expansion with the orthodontic appliances was inadequate.

The off-centered maxillary dental midline will be corrected by strategic orthodontic alignment & space management.

To reduce the risks of anterior bite opening during orthodontic alignment, early introduction of inter-arch elastics was planned. In addition, treatment efficiency and accuracy was greatly enhanced using digital, 3D treatment planning and robotically-designed orthodontic wires via SureSmile Technology (Orametrix, Inc., Richardson, TX).







**\*Results:** After orthodontic bonding, the upper and lower arches were levelled and aligned over approximately 8 months. Following that, the patient was re-evaluated, and progress digital records taken to generate models for SureSmile planning. Once the rectangular custom wires were installed, the final root torque correction lasted another 8 months. After an active treatment time of approximately 1 year 4 months, the orthodontic appliances were removed. The patient maintains her Class I molar relationships, and ideal over-jet and overbite. All our pre-treatment objectives were met and the results were very pleasing to all parties. Orthodontic retention was established with a mandibular fixed lingual retainer bonded from left to right canine, and a maxillary removable Essix-type retainer. **\*Follow-up:** The patient resumed modeling activities, with reported increase in casting calls after braces were removed.

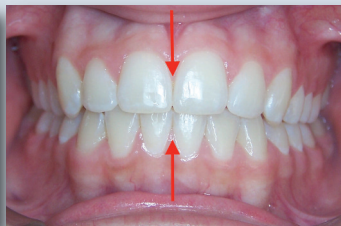


Photo by Judy Nordseth Photography



**Dr. Deji V. Fashemo** received his dental degree from the School of Dentistry at the University of Ibadan, Nigeria and a Certificate of Advanced Education in General Dentistry from the University of Rochester Eastman Dental Center. He was subsequently admitted into the orthodontics and dentofacial orthopedics program at the same institution. While in Rochester, Dr. Fashemo also received advanced training in Public Health and Clinical Research, culminating in the award of the degree of Master of Public Health in Clinical Investigation

and Research. Dr. Fashemo proceeded to Indiana University School of Dentistry / Riley Children's Hospital in Indianapolis for fellowship training in cranio-facial-cleft and surgical orthodontics. He was recruited to pioneer the establishment of South Texas' first hospital based surgical and craniofacial orthodontics practice at Driscoll Children's Hospital in Corpus Christi. He later was appointed medical director, a role he fulfilled in addition to his very active clinical orthodontic practice.

In 2009, Dr. Fashemo continued his professional career in the Dallas area and established Fourth Dimension Orthodontics & Craniofacial Orthopedics to support the craniofacial anomalies program based at Medical City Dallas Hospital while also serving as the Medical Director of Craniofacial Orthodontics at the same hospital. In 2016, the practice opened a second location in Allen, Texas.

When not fixing teeth, jaws and faces with braces, or spending time with his wife and daughters, Dr. Fashemo enjoys playing soccer.

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