

Adult treatment with Aevo System™ and Clear Aligners

Class III, cross bite, moderate crowding, non-surgical



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Dr. Tarek El-Bialy is a registered orthodontist and a professor at the University of Alberta. He graduated from the University of Illinois with a US certificate of specialty in Orthodontics, Master's Degree in Oral Sciences and PhD in Bioengineering. He is the author of more than 115 scientific papers and has been a speaker on orthodontics around the world.

Patient:

Age: 39 years

Chief concern: Correct under bite without surgery.

Diagnosis:

- Missing teeth: wisdom teeth
- Left canine is Class I (normal bite)
- Right canine is Class I (normal bite)
- Left molar is Class I (normal bite)
- Right molar is Class III (lower teeth ahead of upper teeth)
- Moderate crowding in upper and lower teeth
- Overbite: anterior crossbite (vertical overlap of anterior teeth)
- Crossbite: upper right canine to upper left lateral incisor (biting inside lower teeth)
- Lower jaw is constricted, and midline is shifted 3mm right
- Upper jaw is constricted

Initial Records:

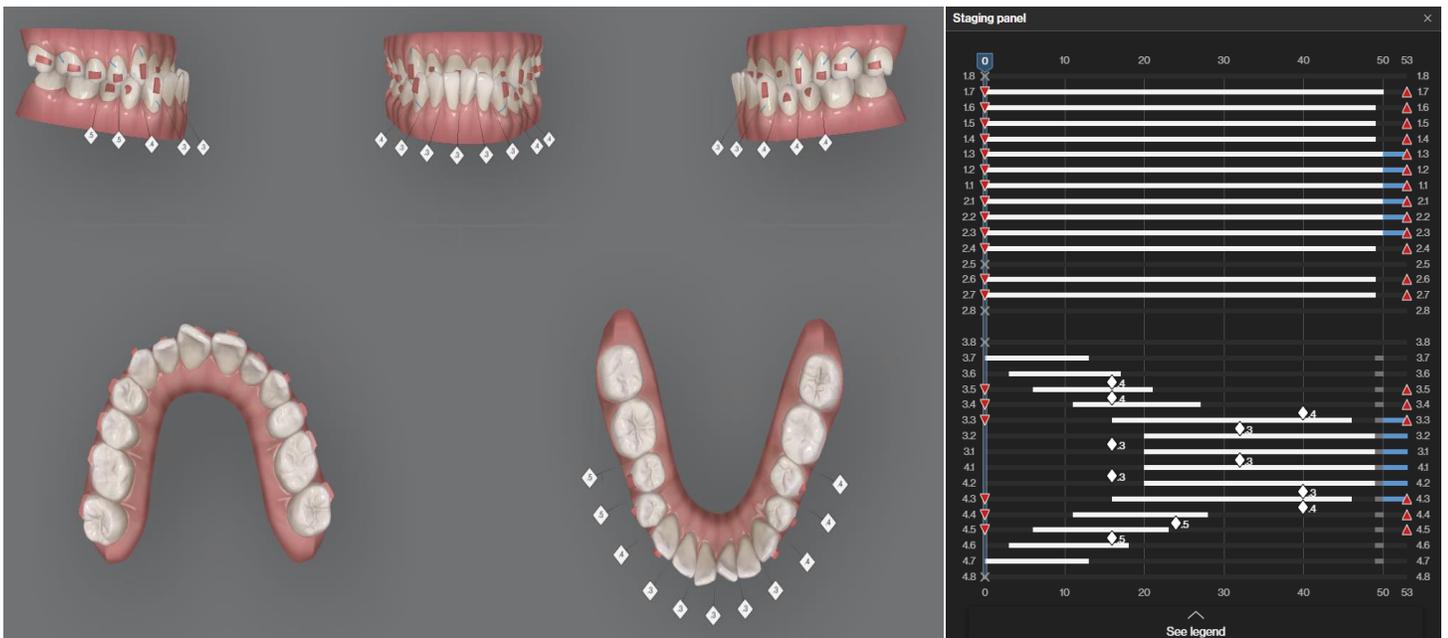


Treatment Plan:

Non-surgical aligner treatment.

- Expand upper arch and move upper incisors labially to correct upper incisor retroclination to correct upper midline shift and to accommodate class III correction.
- Lower arch distalization and IPR in the lower arch to help resolve crowding and to level exaggerated lower Curve of Spee.
- Move lower incisors lingually to correct anterior cross bite.
- Class III elastics were also prescribed for the patient to use full time to help with class III correction.
- Aevo System was recommended to the patient to utilize the low intensity pulsed ultrasound (LIPUS) to enhance tooth movement and minimize possible orthodontically induced tooth root resorption that would be expected in moving teeth beyond skeletal bases anatomical limits.

Clincheck set up and staging:



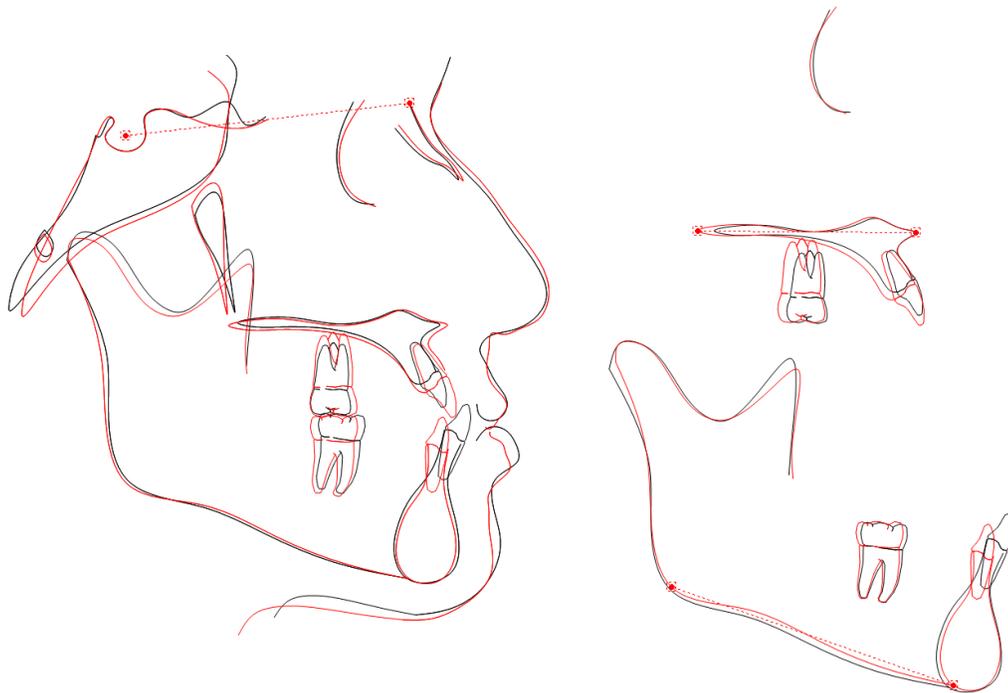
Treatment results:

- 19 months from initial records to retention, 53 + 32 + 21 + 19 upper and lower aligners.
- Estimated treatment time was 30 months, without using the Aevo System.
- Actual active treatment time was 17 months with the Aevo System™ and Invisalign®.
- Patient changed aligners at 3–5 day intervals with the addition of the Aevo System™.



Cephalometric superimposition:

Before (black tracing) and after (red tracing)



Clinical discussion:

Class III treatment in adult can be treated either by skeletal changes that might require surgical correction together with orthodontic treatment or camouflage orthodontic treatment. In this particular case, camouflage orthodontic treatment was chosen by the patient, and it was successfully completed in a relatively short treatment time (17 months) with acceptable skeletal and profile outcome. LIPUS (low intensity pulsed ultrasound) was utilized by the patient using Aevo System™ that allowed her to change aligners faster than one week per aligner.

This helped bone remodeling and prevented root resorption especially when excessive tooth movement was planned to camouflage the skeletal imbalance as in Class III apical base relationship. Class III elastics were utilized to help class III dentoalveolar correction that was assisted by lower arch IPR (Interproximal reduction) and lower incisor intrusion.

This case shows that utilization of LIPUS can enhance tooth movement in adults beyond traditional surgical correction for similar patients. Patient compliance was good, and teeth were tracked very well.