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Case Report

Angel Aligner PRO :
Correction of a class II div 1 malocclusion

Dr. Dalia Latkauskiene
Orthodontist

No need to hide your smile
Angel Aligner is here


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Introduction

Angel Aligner Pro is an innovative clear aligner system utilizing masterForce technology, designed for efficient and predictable orthodontic treatment. It employs a dual-modality system, using two aligner materials—masterControlS and masterControl—in a "7+3" wear cycle per stage, improving efficiency and reducing overall treatment time.

Challenges in Clear Aligner Treatment

Historically, aligner therapy has faced limitations in complex movements such as:

- Deep bite correction
- Torque control
- Mesialization and root control
- Bodily movement on Mesio-angular tipping of molar
- Occlusal plane levelling

These limitations arise due to the flexible nature of aligners, leading to poor root control, loss of anchorage, and tipping effects.

Aligners generate forces that move teeth by attempting to return to their original shape. However, a single-material aligner struggles to balance force application, leading to unwanted movement patterns.

The Dual Modality Advantage

Angel Aligner Pro combines flexible and stiff materials, drawing inspiration from fixed orthodontics:

- Flexible materials (masterControlS): Provide elasticity, comfort, and ease of insertion but have poor spring-back, leading to tipping effects.
- Stiff materials (masterControl): Offer better root control, torque control, and structural recovery, but may be less forgiving for off-track teeth.

The "7+3" wear cycle balances and optimises these material properties:

- 7 days of masterControlS for initial tipping and movement
- 3 days of masterControl for root control and torque expression

Clinical Advantages of Angel Aligner Pro

- Better comfort & control: Dual materials ensure precise and predictable movements.
- Increased treatment efficiency: Reduces treatment time by optimizing tooth movement predictability.
- Enhanced complex movement capabilities: Supports bodily movement, root torque control, and occlusal levelling.
- Durable & stain-resistant materials: Engineered for long-term performance.

Conclusion

Angel Aligner Pro enhances the efficacy of clear aligner therapy by integrating dual-modality material science with real-world orthodontic principles. This approach improves treatment predictability, efficiency, and patient experience, making it a superior option for complex orthodontic cases.

Section	**Class II division 1 malocclusion**
Product	**Pro**
Malocclusion	**Class II on both sides due to mesial rotation of 16 26** **Light mandibular asymmetry to the right with both midline deviation.** **Severe attrition of posterior teeth, night bruxism. Open bite tendency.**
Protocols and features	**IPR**

BIO Dr. Dalia Latkauskiene

Dr Dalia Latkauskienė received her dental degree in from Kaunas University of Medicine. Since 2002 she has been in full-time private practice. She defended her Phd thesis „Herbst- effects on jaws and dental arches in growing Class II patients“ in 2013.

Dalia Latkauskienė has presented lectures, seminars and continuing education courses on crowned Herbst appliance, mixed dentition treatment, aligner treatment, adult orthodontics, multidisciplinary treatment and combined orhodontic-orthognatic treatment (together with maxillo facial surgon S. Grybauskas DDS, MD, Phd) to dental and orthodontic organizations as well as conferences worldwide.

Current interests focus on orthodontic-orthognatic, non-compliant orthodontic treatment, temporary anchorage devices, adult orthodontics and aligner treatment.

Patient introduction

Age	**25**
Gender	**Female**
Patient initials	**AA**
Treatment time	**12 months**
Number of aligners	**40**

Chief complaint

The patient expressed dissatisfaction with the aesthetics of the smile, seeking improvement in alignment and overall appearance. Additionally,the patient reported concerns regarding sensitive teeth, which caused discomfort during daily activities such as eating and drinking. These issues were the primary motivators for pursuing treatment with angel aligner.

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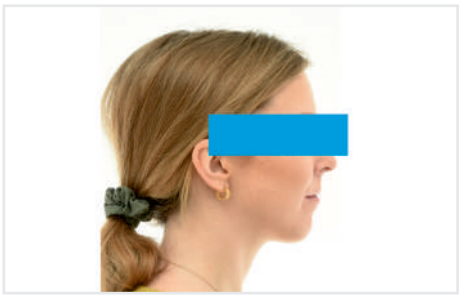
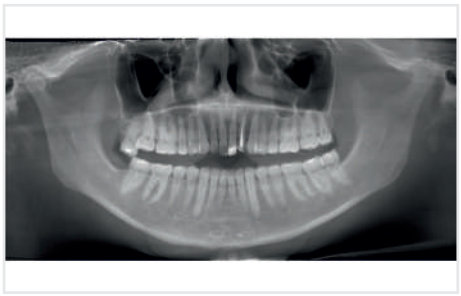
Initial Photos and datas

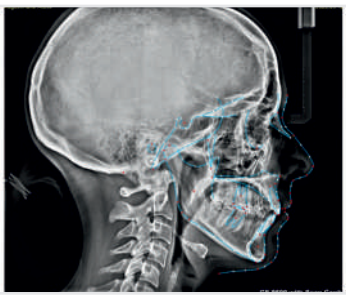













Measurement	Normal	Value
FMIA(L1-FH)	54.9±6.1	55.35
FMA(FH-MP)	31.3±5.0	30.54
IMPA(L1-MP)	93.9±6.2	94.11
SNA	82.8±4.0	80.02
SNB	80.1±3.9	77.02
ANB	2.7±2.0	3.0
AO-BO(Witsmm)	-1.0±2.8	0.25
OP Angle(OP-FH)	10.0±2.0	8.13
Z Angle	75.0±5.0	76.39
AFH(mm)	64.0±0.0	67.96
PFH(mm)	47.0±0.0	45.18
PFH/AFH(%)	70.0±5.0	66.48

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Clinical examination and diagnosis

Angle Class II 2mm on the right, Angle Class II 2mm on the left, light mandibular asymmetry to the right, lower central line 1mm to the right, upper central line 1,5mm to the left, 1mm overjet and overbite. Sagittal asymmetry of upper dental arch. Light crowding upper and lower frontal segments, severe attrition of posterior teeth, night bruxism. Normal sagittal position of both jaws, high angle case, steep mandibular ramus,excessive lower facial height, open bite tendency.

Function is normal
Patient Motivation good
Soft Tissue Analysis: convex profile, lower third of the face increased, slightly retrusive upper and lower lips, lip strain on closure.

Treatment plan

Restore severely damaged teeth via composite restorations
Alignement and expansion 2mm per quadrant.
Distalization in segment 1 to Class I and derotation of 16, move upper central line to fit lower central line.
Derotation 26. IZC anchorage.
Settling the bite in Class I.
IPR of the lower anterior segment was performed to address Bolton discrepancy.
The case initially presented as a moderate Class II on the right and a Class II tendency on the left, with tapered dental arches and an anterior open bite extending to tooth 26 in segment II.

In segment I, the open bite reached up to the first premolar.

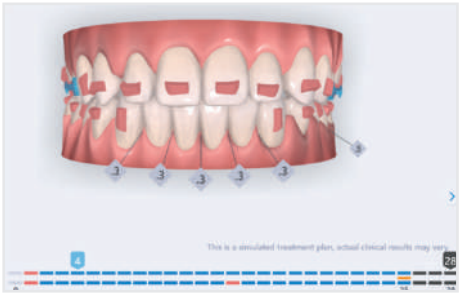
A 1.5 mm deviation of the upper dental midline to the patient's left was noted, along with a slight mandibular midline shift to the right, likely due to asymmetrical mandibular growth observed in the facial structure.
Severe mesial rotations of teeth 16 and 26 were evident in the initial records. As derotation of 16, 26, 17, and 27 progressed up to aligner 16, the premolars in segments I and II moved distally, resulting in a bilateral Class I relationship, as intended in the initial treatment plan.

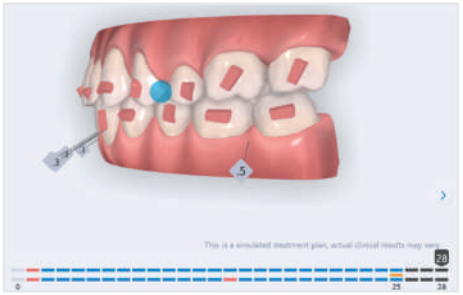
Treatment details

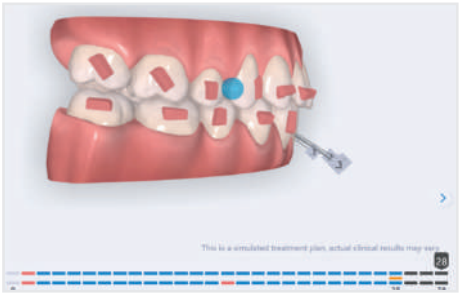
Derotation of 16 26 allowed Class II correction.
Vertical vector of elastic traction on buttons and IZC helped with the open bite correction.
No sequential distalization for Class II tendency correction was performed due to skeletal anchorage.
Lingual attachments were used to improve aligner grip and control tooth movement, as small, angulated lower incisors are difficult to move due to limited anatomy.

An infrazygomatic crest (IZC) screw with force applied between the upper premolars produces a clockwise rotation of the maxillary occlusal plane. This movement aids in closing the anterior open bite and improves upper incisor display. IZC screws with elastics also enable planned intrusion of the upper molars by 1 mm. Because mandibular derotation after upper posterior correction is difficult to predict, anterior distalization and midline correction were performed in the later stages of treatment.

Treatment setup







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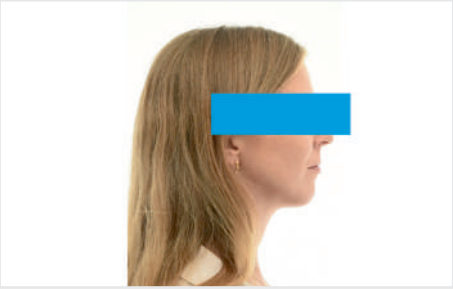
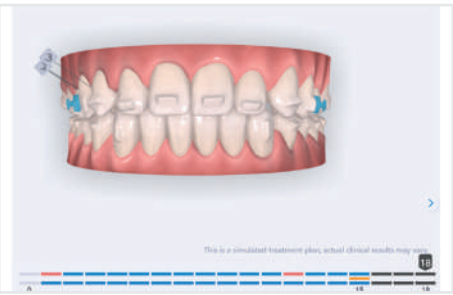
Treatment progress







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Treatment results

Before treatment

After treatment

Before treatment

After treatment

Before treatment

After treatment

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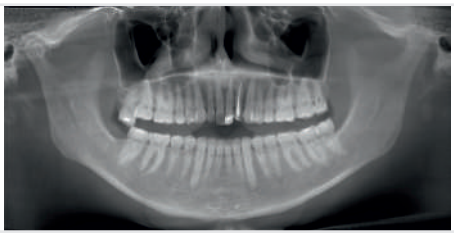
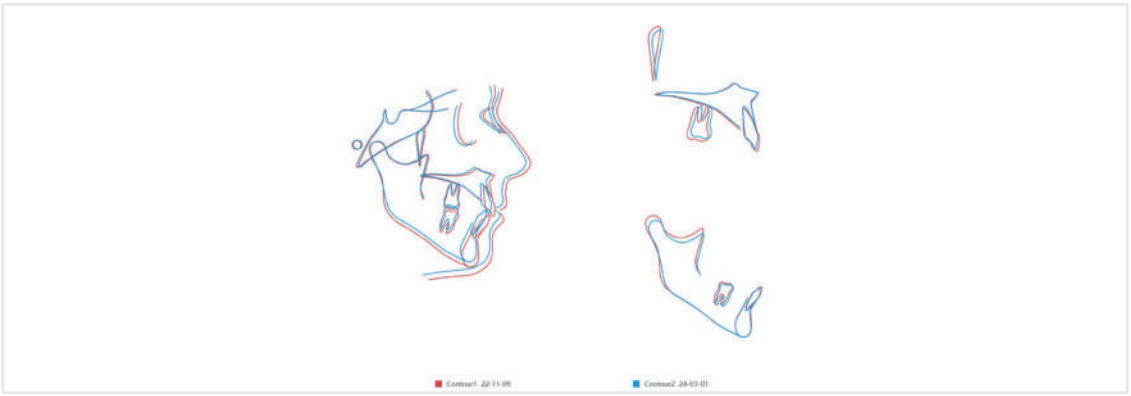
Treatment results

Before treatment



After treatment



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PFH/AFH(%)	70.0±5.0	66.48

Measurement	Normal	Value
FMIA(L1-FH)	54.9±6.1	56.24
FMA(FH-MP)	31.3±5.0	29.88
IMPA(L1-MP)	93.9±6.2	93.88
SNA	82.8±4.0	81.6
SNB	80.1±3.9	77.59
ANB	2.7±2.0	4.01
AO-BO(Witsmm)	-1.0±2.8	2.02 ↑
OP Angle(OP-FH)	10.0±2.0	6.58 ↓
Z-Angle	75.0±5.0	76.36
AFH(mm)	64.0±0.0	68.31 ↑
PFH(mm)	47.0±0.0	45.76 ↓
PFH/AFH(%)	70.0±5.0	66.99

Treatment experience

The overall treatment experience was very positive. The patient was highly compliant, which contributed to smooth progress and consistent aligner wear. The treatment duration was relatively short, aligning well with the initial plan. From the clinician's perspective, the case was straightforward to manage, with minimal refinements needed and predictable tooth movements. Communication with the lab was efficient, and the appliance design supported excellent clinical control throughout the treatment.

Note

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