

Mandibular Incisor Extraction and Interproximal Reduction Facilitates Clear Aligner Treatment to Correct UR2 Crossbite with Moderate Crowding

Abstract

Introduction: A 25 yr 6 mo male presented with a chief complaint of poor dental esthetics.

Diagnosis: Facial assessment revealed reduced facial convexity (6°) with a protrusive maxilla (SNA 84°) and mandible (82°). All other facial and skeletal measurements were within normal limits (WNL). The Class I malocclusion had an anterior crossbite (UR2), upper dental midline deviated 3 mm to the right, and 6 mm of crowding in the lower anterior dentition. The Discrepancy Index (DI) was 13.

Etiology: The severe anterior crowding indicated limited development of arch width probably due to inadequate functional loading during the juvenile years. The UR2 crossbite is consistent with ectopic eruption.

Treatment: Clincheck® software and clear aligners (Align Technology Inc., San Jose, CA) were used for treatment planning and correction of the moderate crowding and UR2 crossbite. The lower left central incisor (LL1) was extracted. The virtual set-up of the final alignment documented the need for extensive interproximal reduction (IPR) and maxillary arch expansion. Vertical rectangular attachments were bonded on lower incisors adjacent to the extraction site to close space and align roots. Simultaneous aligner-mediated tooth movement, IPR, and interproximal elastics were used to achieve a pleasing interproximal alignment. During active treatment, the aligners went off-track on UR2, so additional IPR was performed and auxiliaries were added for additional retention. After treatment with the 1st set of aligners was complete, the dental alignment was inadequate so the dentition was scanned and resubmitted to prepare a new set of finishing aligners to achieve expansion of the upper arch, torque correction, angulation control, and detailing.

Results: All the teeth were moved the minimum distance to achieve an optimal result according to the virtual treatment plan, designed in the Clincheck® software. This moderate malocclusion with a DI of 13, was treated in 24 months to an excellent outcome: Cast-Radiography Evaluation (CRE) score of 6, and Pink & White dental esthetic score of 4. Both arches were well-aligned in a Class I relationship with the lower midline centered on the middle incisor (LR1). Small black triangles in the lower anterior region required restoration rather than IPR and space closure.

Conclusion: Class I crowded malocclusion with anterior crossbite can be effectively treated with aligners, extraction of a lower incisor, and IPR. This method avoids braces, multiple extractions and miniscrews, but it did require extensive IPR. However, the outcome featured a comprised dental midline with lower anterior black triangles. (*J Digital Orthod* 2019;55:4-22)

Key words:

Invisalign, clear aligner treatment, severe crowding, anterior crossbite, occlusal canting, mandibular incisor extraction, end-on Class III

History and Etiology

A 25 yr 6 mo male presented with chief complaint (CC) of poor dental esthetics. Clinical examination revealed a straight lateral profile, upward occlusal plane cant on the right side, lower midline deviation 3mm to the right, intermaxillary crowding, and an upper right lateral incisor (UR2) in crossbite. The patient requested aligner treatment rather than fixed appliances.

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There was no contributing medical or dental history. The etiology was deemed insufficient intermaxillary loading to achieve adequate arch width, and ectopic eruption of the UR2. Developmental tipping of the maxillary incisors to the right resulted in the superior occlusal cant on the right side (Figs. 1 and 2). Pretreatment panoramic and cephalometric radiographs are shown in Figs. 3 and 4. The cephalometric measurements are presented in Table 1.



■ Fig. 1: Pre-treatment facial and intraoral photographs

Diagnosis

Facial:

- Facial Height: Na-ANS-Gn was increased (54%) with a tapered facial form (Table 1)
- Lip Protrusion: Relatively retrusive lips (-2mm upper and -1mm lower) to the E-Line (Table 1)
- Symmetry: Upper dental midline 3mm to the right, canted occlusal plane to the right (Fig. 1)
- Smile Line: Upper lip curtain has an asymmetrical elevation on the right side consistent with the occlusal cant (3mm inferior on the patient's left side)

| CEPHALOMETRIC SUMMARY | | | |
|---------------------------|--------|---------|-------|
| SKELETAL ANALYSIS | | | |
| | PRE-Tx | POST-Tx | DIFF. |
| SNA° (82°) | 84° | 84° | 0° |
| SNB° (80°) | 82° | 82° | 0° |
| ANB° (2°) | 2° | 2° | 0° |
| SN-MP° (32°) | 31° | 31° | 0° |
| FMA° (25°) | 23° | 23° | 0° |
| DENTAL ANALYSIS | | | |
| U1 To NA mm (4 mm) | 4 mm | 3 mm | 1 mm |
| U1 To SN° (104°) | 108.5° | 105.5° | 3° |
| L1 To NB mm (4 mm) | 5 mm | 4 mm | 1 mm |
| L1 To MP° (90°) | 88° | 84° | 4° |
| FACIAL ANALYSIS | | | |
| E-LINE UL (-1 mm) | -2 mm | -5 mm | 3 mm |
| E-LINE LL (0 mm) | -1 mm | -2 mm | 1 mm |
| %FH: Na-ANS-Gn (53%) | 54% | 54% | 0% |
| Convexity: G-Sn-Pg' (13°) | 5° | 4.5° | 0.5° |

■ Table 1: Cephalometric summary

Skeletal:

- Intermaxillary Relationship: Protrusive maxilla (SNA 84°) and mandible (SNB 82°) (Table 1)
- Mandibular Plane: Decreased (SN-MP 31°, FMA 23°) (Fig. 4) (Table 1)
- Vertical Dimension of Occlusion (VDO): Excessive Na-ANS-Gn (59%) (Table 1)
- Symmetry: Within normal limits (Figs. 3 and 4)

Dental:

- Classification: Class I bilaterally
- Overbite: 3mm
- Overjet: 2mm
- Missing/Unerupted Teeth: None
- Symmetry: Upper midline deviated 3mm right with an occlusal cant (Figs. 1 and 5)

The ABO Discrepancy Index (DI) was 13 as documented in to the subsequent worksheet.¹



■ Fig. 2: Pre-treatment dental models (casts)



■ Fig. 3: Pre-treatment panoramic radiograph



■ Fig. 4: Pre-treatment cephalometric radiograph

Specific Objectives of Treatment

The treatment objectives were to correct: 1. UR2 crossbite, 2. asymmetrical maxillary arch, 3. canted occlusal plane, 4. crowded dentition, and 5. upper dental midline to the facial midline.

Maxilla (all three planes):

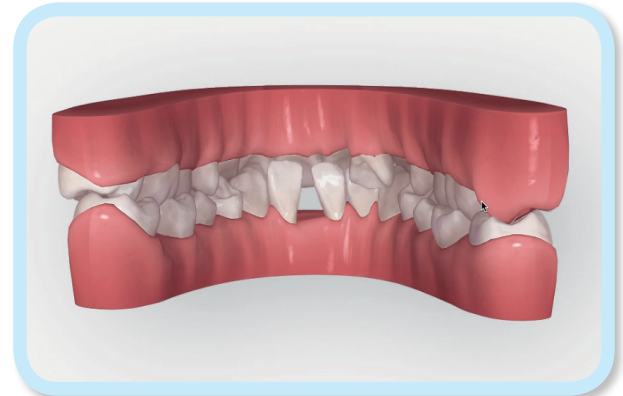
- A - P: *Maintain*
- Vertical: *Maintain*
- Transverse: *Maintain*

Mandible (all three planes):

- A - P: *Maintain*
- Vertical: *Maintain*
- Transverse: *Maintain*

Maxillary Dentition:

- A - P: *Slightly retract incisors*
- Vertical: *Slightly intrude incisors*
- Inter-molar / Inter-canine Width: *Maintain/Expand*



■ Fig. 5:

Left: A frontal intraoral photographs show the occlusal cant and the label position of the LL1. Right: The lingual view of the virtual set-up after extraction of the LL1 shows the deepbite and mesially tipped lower incisors adjacent to the extraction site.

Mandibular Dentition:

- A - P: *Retract incisors*
- Vertical: *Extrude incisors*
- Inter-molar / Inter-canine Width: *Maintain*

Facial Esthetics:

- Retract the upper lip

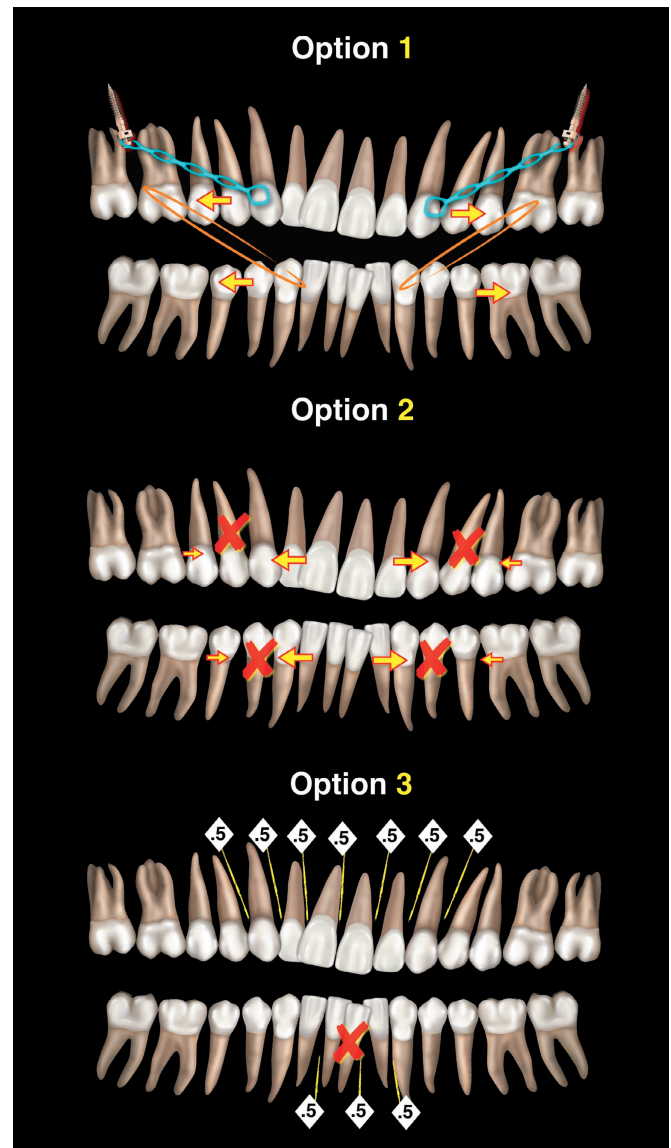
Treatment Alternatives

The extraction decision chart proposed by Dr. Chris Chang¹ was reviewed. The recommendation was that a malocclusion with moderately crowded dentition, single tooth crossbite, and an occlusal relationship of or near Class I, is not optimally treated with extractions.² However, the facial profile, mandibular plane angle, overbite and incisor inclination are important co-factors in the treatment planning process. As illustrated in Fig. 6, three options were proposed.^{3,4}

- Option 1:** Relieve the crowding with arch expansion, proclination of incisors, and interproximal reduction (IPR).
- Option 2:** Extract 4 bicuspidids to relieve the crowding and close the residual space.
- Option 3:** Extract the LL1 and use IPR to provide space for intermaxillary alignment.

Rationale: When treating a patient with aligners, assessment of overall tooth movement is very important for determining the final outcome. Translating teeth long distances requires more time, anchorage and patient compliance. Off-

tracking can occur when teeth are markedly displaced, aligners are changed too frequently, and/or patient cooperation is inadequate. Option 1 is non-extraction treatment that maintains the entire dentition, and corrects the midlines. However, extensive IPR is required to avoid excessive flaring of the incisors, and thin enamel may compromise small teeth like lower incisors. In addition, up to four mini-



■ Fig. 6: Diagrams of the three treatment options. See text for details.

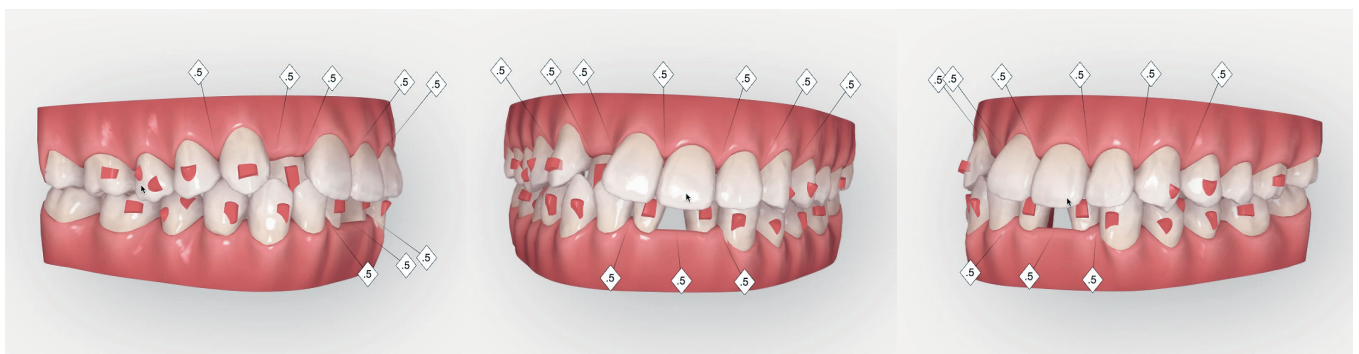
screws may be needed to supplement posterior anchorage. Option 2 utilizes 4-bicuspid-extraction to provide space for correcting crowding. However, the width of four premolars is much greater than the space needed. Closure of the residual space would decrease lip protrusion and compromise facial esthetics. Option 3 is a compromise proposing extraction of only the labially displaced incisor (LL1). Aligners with tooth attachments will close space and align the roots of lower incisors. The circumference of the upper anterior dentition is reduced with IPR. The latter option (3) requires the least amount of tooth movement and arch expansion. The patient selected Option 3 because it was the most conservative approach and would probably require fewer aligners to achieve a predictable and stable outcome.

Treatment Progress

A dedicated treatment planning system (*Invisalign®* by Align Technology, Inc, San Jose, CA, USA) was used to plan the treatment (Fig. 7). In the initial alignment phase, long rectangular attachments were used for the UR2 facial movement, as well as to close the

lower extraction space. Fig. 8 is a series of intraoral photographs documenting the initial 18 mo of progress. Optimized attachments were used for the correction of rotation, intrusion, and extrusion. Horizontal attachments were used to help maintain the torque and angulation while the dental arch was being expanded and the Curve of Spee was leveled. IPR was performed before the start of the aligner treatment. Simultaneous movement and IPR were programmed for the initial treatment sequence. The interval for changing aligners was every 10 days. After 3 months of active treatment, there was a gap between the UR3 and the aligner (*off-track*). The patient's compliance was evaluated and reinforced, in addition to increasing the interval between aligners to 14 days. One month later, a resin button and short elastics (*Chipmunk 1/8-in, 3.5-oz*) were applied to optimize the fit between the UR3 and aligners (Fig. 9).

After 8 months of treatment, the LL5 showed incomplete rotation, and lower incisors adjacent to the extraction site were tipped together (Fig. 10). The attachment on the LL5 was removed to prevent intrusion. The tipping and interproximal gap



■ Fig. 7: The initial setup with the prescribed attachments shows the interproximal areas requiring IPR and the amount required.

between LL2 and LR1 was evaluated. The dentition was scanned and additional aligners were constructed. In the upper arch, the right incisors and canine were off-track during the arch expansion and UR2 crossbite correction (Fig. 11). Off-tracking was corrected by performing more IPR than was originally planned. Additional buttons and short elastics (*Chipmunk 1/8-in, 3.5-oz*) were used to extrude the affected teeth to correct the off-tracking (Figs. 12 and 13).

After completion of treatment with the first set of aligners, an iTero Element® intraoral scan (*Align Tech, Inc, San Jose, CA, USA*) was performed to provide a current 3D dataset to design the detailing aligners.⁵ The



■ Fig. 8:

The first 18 mo of progress is shown in a progressive series of frontal (upper) and right buccal intraoral photographs (lower). See text for details.



■ Fig. 9: Steps are shown with multiple pliers for creating notches in the aligners to accommodate intermaxillary and/or vertical elastics.



Fig. 10:
Checking the activation of an aligner is facilitated by drawing a black line around each attachment. See text for details.



Fig. 11:
Off-tracking is evidenced by gaps between the aligner and the incisal edges of the UR3, UR2, and UR1. See text for details.



Fig. 12: One of the steps for correcting off-tracking is additional IPR. See text for details.

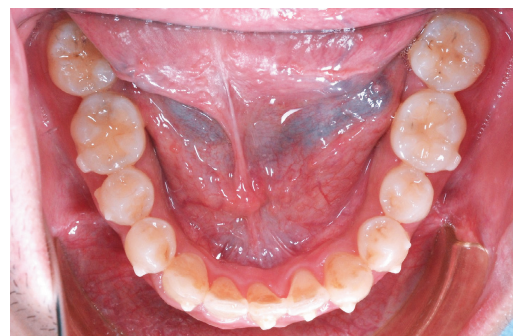


Fig. 13: A series of intraoral photographs document progress 10 mo into treatment.

final correction focused on the inclinations for UR3, UR2, UR1, UL1, LL2, and LR1. The LL5 rotation was corrected with the optimized attachments. Up and down elastics were applied for seating the posterior occlusion.⁶ When the problems had been resolved and teeth were aligned in the proper position, an upper frenectomy and gingivoplasty were performed using a diode laser (Fig. 14). After 24 months of treatment, all attachments and auxiliaries were removed and operative dentistry procedures were performed for LL2 and LR1.

Results Achieved

This moderate malocclusion (DI 17) was corrected to a relatively symmetric result with a near ideal Class I outcome (CRE 6) with 24 months of clear aligner treatment as documented in worksheet 2 at the end of this report. One lower incisor (LL1) was extracted and extensive IPR was performed as needed. The cephalometric analysis (Table 1) shows a slightly decreased facial profile (0.5°), but no skeletal



Fig. 14:
A selective gingivectomy and frenectomy are performed to improve esthetics. See text for details.

changes. The incisors were slightly retracted (~1mm) and uprighted (3-4°) which resulted in decreased lip protrusion (lower 1mm, upper 3mm). Overall the facial changes were modest and the patient was pleased with the dental esthetics (Figs. 15-17). As shown (Figs. 18 and 19) and tabulated (Table 1), the specific achievements were:

Maxilla (all three planes):

- A - P: *Maintained*
- Vertical: *Maintained*
- Transverse: *Maintained*

Mandible (all three planes):

- A - P: *Maintained*
- Vertical: *Maintained*
- Transverse: *Maintained*

Maxillary Dentition

- A - P: *Slightly retracted incisors*
- Vertical: *Slightly intruded incisors*
- Inter-molar / Inter-canine Width: *Maintained / Increased*

Mandibular Dentition

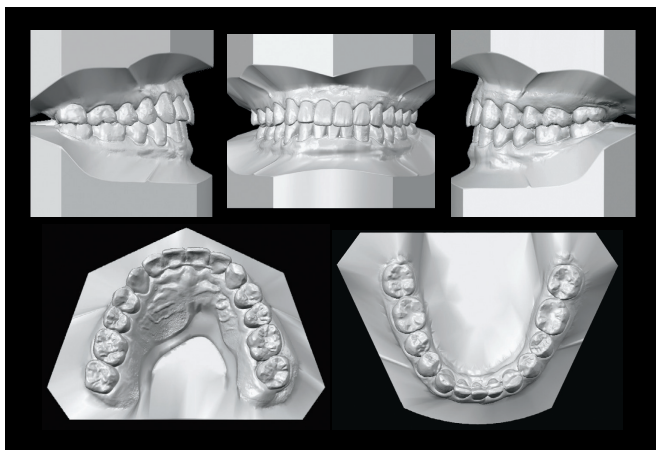
- A - P: *Incisors were retracted.*
- Vertical: *Slight extrusion of lower incisors*
- Inter-molar / Inter-canine Width: *Maintained*

Facial Esthetics:

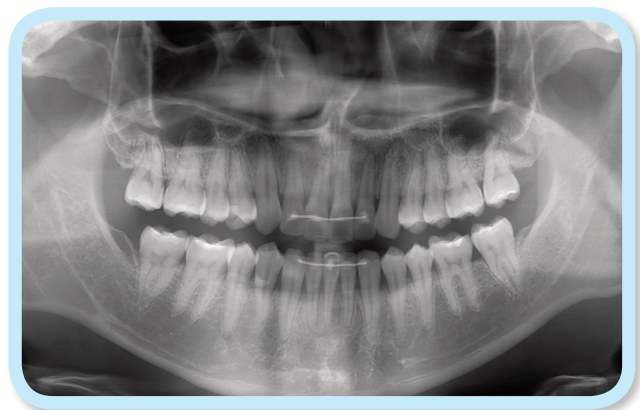
- Protrusive maxillary lip was corrected (Fig. 15)



■ Fig. 15: Post-treatment facial and intraoral photographs



■ Fig. 16: Post-treatment dental model (casts)



■ Fig. 17: Post-treatment panoramic radiograph



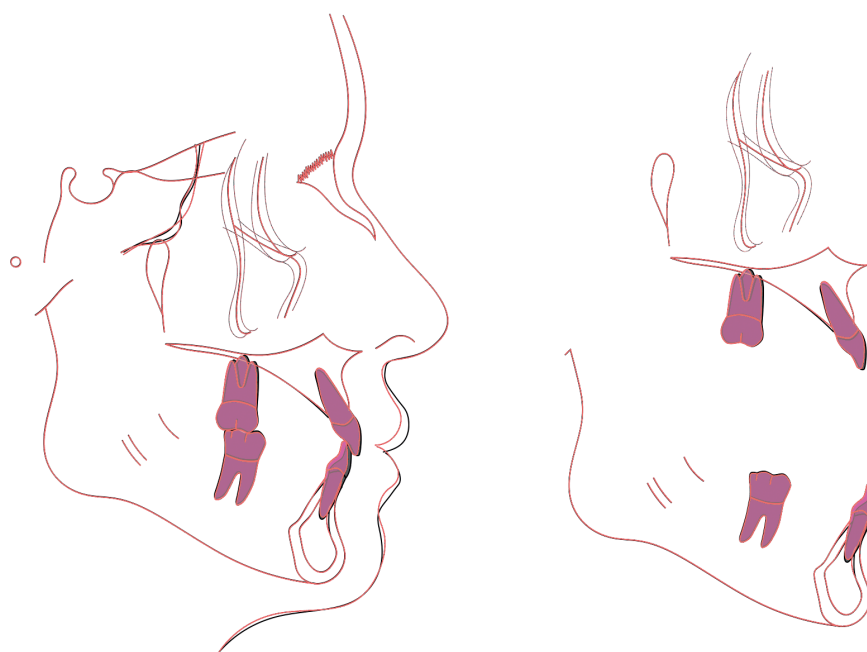
■ Fig. 18: Post-treatment cephalometric radiograph

Retention

To maintain the width of both arches, fixed retainers were placed on all maxillary incisors and from canine to canine in the lower arch. Two ESSIX® (Dentsply Sirona, Harrisburg PA) overlay retainers were provided to retain the leveling and alignment of the dentition. The patient was instructed to use the removable retainers full time for the first month and then only while sleeping.

Final Evaluation of Treatment

A Class I occlusion with ideal overbite and overjet was achieved. The maxillary midline was in the center of the three lower incisors. The ABO Cast-Radiography Evaluation (CRE) was 6 points. The only deficiencies were occlusal contacts (4 points) and



■ Fig. 19: Cephalometric tracings before (black) and after (red) treatment document the dentofacial changes associated with aligner treatment. Superimposition are cranial base (left), maxilla (upper right), and mandible (lower right).

marginal ridge alignment (2 points) (Figs. 17 and 18). The pink and white dental esthetic score was 3. See Worksheet 3 at the end of this report.⁷

Discussion

Since the patient was symmetric in the buccal segments (Class I), and increased lip protrusion was undesirable, the major diagnostic decision was which tooth or teeth to extract. Extracting a premolar in each segment is a common approach for managing Class I crowded malocclusion. However, the arch length for four premolars approaches 30mm and the crowding was <6mm in each arch. Closing the space would retract the incisors and flatten the lips. The alternate option was to extract a lower incisor and close the space, but that approach creates excessive arch length in the upper anterior segment. The latter is best managed with IPR in the maxillary anterior and/or restorative build-up of one or more of the lower incisors. Before extracting any teeth it is wise to simulate the result to decide if the outcome is acceptable. Invisalign® treatment planning and Clincheck® software are ideal for this process.

Invisalign® clear aligners utilize three 'smart' innovations: SmartTrack®, SmartForce®, and SmartStage®. With a collective experience of 6 million patients globally, the software accurately predicts the tooth movement required to resolve a malocclusion. Clincheck® software produces a virtual plan that assesses and compensates for Bolton discrepancies, tooth movement parameters, changes in axial inclination, and the numbers of aligners

required to optimally manage the malocclusion. This digital information is quantified and analyzed to choose the most efficient and predictable plan to achieve the desired outcome.^{8,9} Other considerations were that the LL1 had an abraded incisal edge, and was labially displaced which may be a predisposition to gingival recession (Fig. 5).^{10,11} Clincheck® alignment of the intact dentition showed that LL1 would be unesthetic in addition to having fragile labial gingiva. When the LL1 was removed the set-up of the dentition was more harmonious, but it was necessary to align the maxillary midline in the center of the middle lower incisor. Although aligned midlines is an important diagnostic consideration, it is not an important outcome criteria. It is not even a consideration in the ABO CRE score. Furthermore, an upper midline can deviate 2-4mm to the facial midline and still be acceptable outcome.^{12,13} For the present patient, the ideal maxillary midline alignment was in the center the middle lower incisors, which is about a 3mm deviation from either interproximal surface of the 5.5mm LR2. The patient was shown the preposed outcomes for both LL1 or four premolar extraction,¹⁴ and chose LL1 as the most conservative option.

When anterior crowding is corrected with orthodontic treatment in adults, interproximal areas often appear as black triangles due to the normal gingival recession of aging. These problems are usually managed with IPR and space closure to decrease or eliminate the black triangles. The IPR procedure is also advantageous for correcting crowding, as well as for controlling excessive canine expansion and/or axial inclination of the incisors.

A tooth movement response involves bone modeling along PDL and subperiosteal surfaces, as well as bone remodeling (*turnover*) within the supporting alveolar process.^{15,16} Because of the limitation in the linear rate of osteoclastic resorption ($\sim 40\mu\text{m/day}$), teeth move slower through dense bone, because there are fewer surfaces for removing bone to relieve necrotic areas of the PDL.¹⁵ Tooth movement requires a continuous load of sufficient magnitude to displace the root within the PDL to create areas of compressed and widened PDL to induce bone resorption and formation, respectively. Aligners are a progressive series of appliances that “nudge targeted teeth” ~ 0.2 mm with each new aligner along a path of tooth movement. The load is renewed when each new aligner is introduced, usually at 10-14d intervals.

When orthodontic force is applied to a tooth, there is friction between the aligner and the crown of a tooth that facilitates tipping-type movements. If an applied moment is required such as to rotate or translate a tooth, the aligner must engage the tooth at two or more points to generate a couple, i.e. two parallel forces that are equal in magnitude, opposite in sense and do not share a line of action (*Wikipedia*). Attachments bonded on tooth surfaces are designed to provide the required moment to force ratio (M:F) to achieve the desired tooth movement in three dimensions (3D). If an iteration in the path of tooth movement that specifies a specific aligner is an excessive activation and/or the patient fails to adequately cooperate, the aligner can disengage from a tooth or teeth: “off-tracking.” This is a lack of adequate aligner contact with the surface of a tooth

or teeth. Off-tracking interrupts the specific force system designed to perpetuate the path of tooth movement. Furthermore, the unplanned fit of the aligner may cause undesirable tooth movement. Examining the fit, retention, and the patient’s sense of pressure when the aligner is seated are critical clinical evaluations at each visit. If off-racking is detected, the patient is instructed to bite on cotton rolls in the areas where the aligner is visually separated from the teeth, and/or wear vertical elastics if indicated until the off-tracking is corrected. Once the fit of the problem aligner is maintained in a passive state, and there is no longer a sense of pressure when the aligner is seated, the patient can progress with subsequent aligners as planned.

Root movement to align the lower incisors adjacent to the extraction site is challenging with aligners. Long vertical rectangular attachments on both incisors are essential to generated an adequate couple on the labial surfaces.^{17,18} Aligners to achieve root movement must deliver a load with a high M:F. Mesial force to hold the crowns together is combined with another pair of mesial forces at the gingival aspect of the attachments. A couple (*moment*) is generated to move both roots mesially (*together*) until the desired root positions (*paralleling*) are achieved. By applying a nontoxic black substance such as graphite from a pencil around the attachment, it is easier to visualized the proper activation as the aligner as it is seated (*Fig. 10*).

After the completion of treatment with the first set of aligners, upper arch expansion and labial movement of the UR2 were under-corrected (*Figs. 20 and 21*).

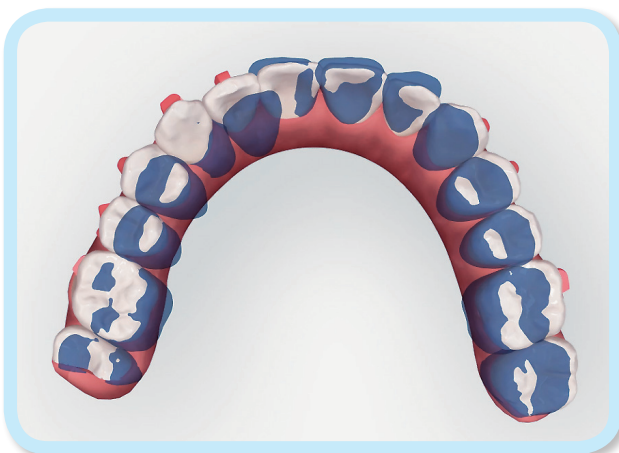


■ Fig. 20:

Images of the maxillary dentition show the original malocclusion with the planned attachments (upper), virtual outcome projection (middle), and actual outcome after the initial aligner series. See text for details.

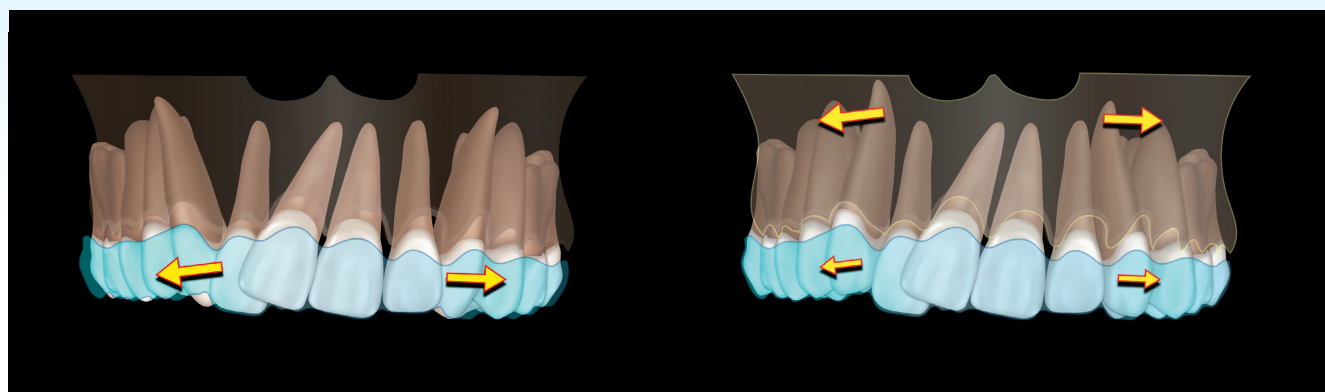
Arch expansion is readily achieved if the buccal segments are tipped palatally prior to treatment (Fig. 22).^{19,20} If maxillary buccal segments must be translated, the mechanics are more complex, require a higher M:F, and are less predictable. Actual clinical expansion with aligner treatment is usually less than the predicted (*virtual*) results produced by the Clincheck® software.²¹ To achieve the desired correction it is necessary to submit new progress scans of the dentition and design an overcorrection of the deficiencies. Then a new set of aligners is constructed to complete the treatment.²¹⁻²³

To decrease the risk of off-tracking, when resolving moderate crowding without an extraction space, it is essential to perspective perform adequate IPR to create enough space to stage the correction of rotations and align the dentition. If IPR is inadequate to accomplish a given stage of treatment, off-tracking and a delay in treatment is probable. For substantial lower anterior crowding, particularly



■ Fig. 21:

Left: The actual outcome (blue) is superimposed on the projected result (white). Right: Irregularities are noted in the maxillary arch, especially near the UR2, that was originally in crossbite.



■ Fig. 22:

Left: Expansion of upper canines (arrows) is part of the original treatment plan. Right: To avoid excessive buccal tipping of the posterior segments, buccal root movement (upper arrows) is required in the maxillary poster segments. See text for details.

when an incisor is displaced labially or lingually, extraction is a highly predictable treatment option, which minimizes arch expansion and the distances teeth must be moved. However, alignment of the adjacent teeth may require extensive root movement (Figs. 7 and 8).

Leveling the Curve of Spee is similar to the deepbite resolution when using Invisalign G5®. The lower premolars are extruded with gingival bevel attachments, which also serve as anchorage to intrude the incisors. Optimized attachments for anchorage and bite ramps are also recommended when correcting a severe deep bite.²⁴⁻²⁶

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Cast-Radiograph Evaluation

Case #

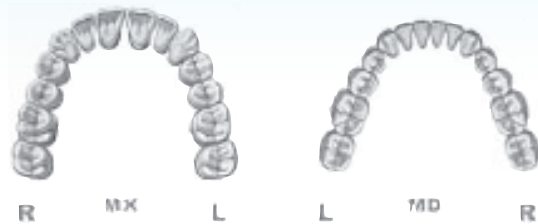
Patient

Total Score:

6

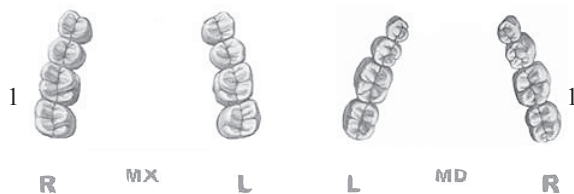
Alignment/Rotations

0



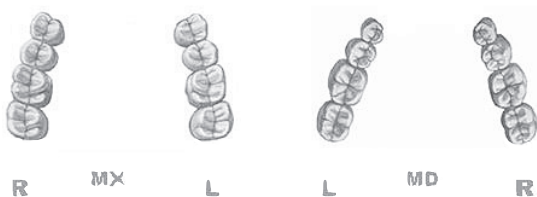
Marginal Ridges

2



Buccolingual Inclination

0



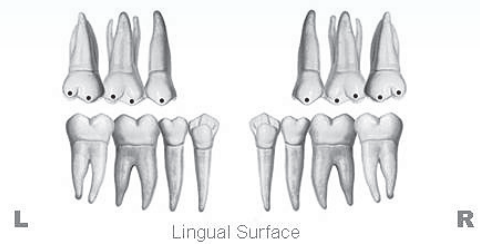
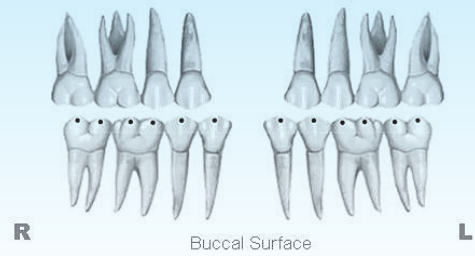
Overjet

0



Occlusal Contacts

0



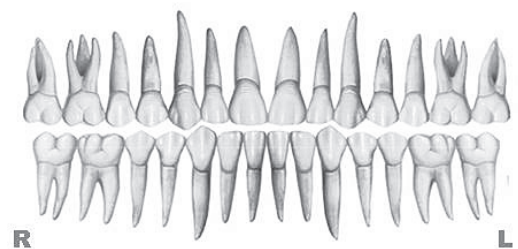
Occlusal Relationships

4



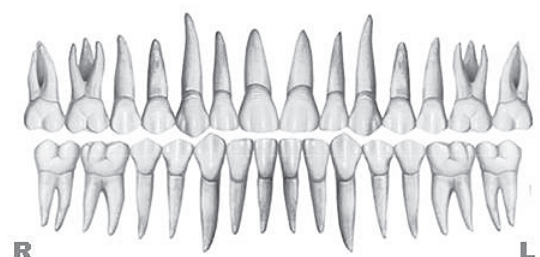
Interproximal Contacts

0



Root Angulation

0

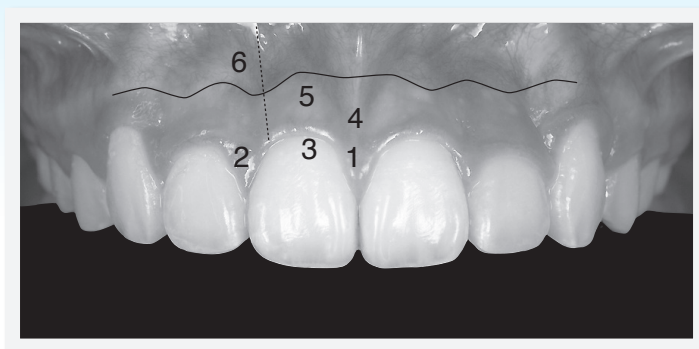


INSTRUCTIONS: Place score beside each deficient tooth and enter total score for each parameter in the white box. Mark extracted teeth with "X". Second molars should be in occlusion.

IBOI Pink & White Esthetic Score (Before Surgical Crown Lengthening)

Total Score: = **3**

1. Pink Esthetic Score

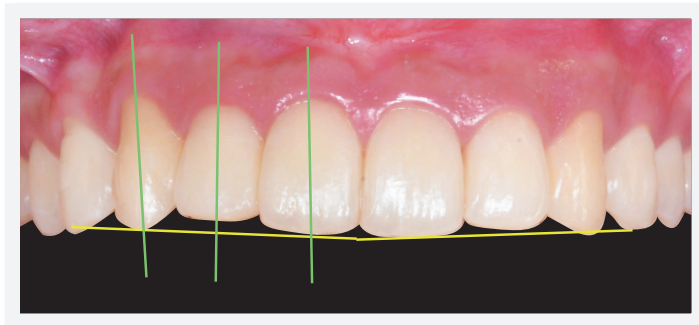
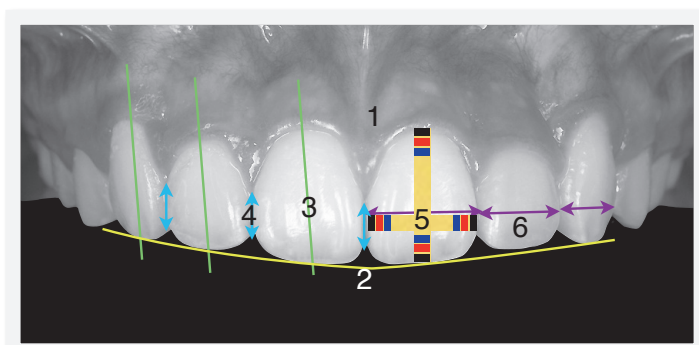


| | | | |
|---------------------------------|---|---|---|
| 1. M & D Papillae | 0 | 1 | 2 |
| 2. Keratinized Gingiva | 0 | 1 | 2 |
| 3. Curvature of Gingival Margin | 0 | 1 | 2 |
| 4. Level of Gingival Margin | 0 | 1 | 2 |
| 5. Root Convexity (Torque) | 0 | 1 | 2 |
| 6. Scar Formation | 0 | 1 | 2 |

Total = **1**

| | | | |
|---------------------------------|---|---|---|
| 1. M & D Papilla | 0 | 1 | 2 |
| 2. Keratinized Gingiva | 0 | 1 | 2 |
| 3. Curvature of Gingival Margin | 0 | 1 | 2 |
| 4. Level of Gingival Margin | 0 | 1 | 2 |
| 5. Root Convexity (Torque) | 0 | 1 | 2 |
| 6. Scar Formation | 0 | 1 | 2 |

2. White Esthetic Score (for Micro-esthetics)



| | | | |
|------------------------------------|---|---|---|
| 1. Midline | 0 | 1 | 2 |
| 2. Incisor Curve | 0 | 1 | 2 |
| 3. Axial Inclination (5°, 8°, 10°) | 0 | 1 | 2 |
| 4. Contact Area (50%, 40%, 30%) | 0 | 1 | 2 |
| 5. Tooth Proportion (1:0.8) | 0 | 1 | 2 |
| 6. Tooth to Tooth Proportion | 0 | 1 | 2 |

Total = **2**

| | | | |
|------------------------------------|---|---|---|
| 1. Midline | 0 | 1 | 2 |
| 2. Incisor Curve | 0 | 1 | 2 |
| 3. Axial Inclination (5°, 8°, 10°) | 0 | 1 | 2 |
| 4. Contact Area (50%, 40%, 30%) | 0 | 1 | 2 |
| 5. Tooth Proportion (1:0.8) | 0 | 1 | 2 |
| 6. Tooth to Tooth Proportion | 0 | 1 | 2 |