Products

Dental Products Essential Kit

Double Retractors 2.0 Autoclavable!

Double Retractors x2, Black Board x2

While keeping the same lip & cheek two-way design, the new Double Retractors 2.0 is upgraded to medical grade PPSU. This new material is more durable, resilient and most importantly, autoclavable. Its smooth edges and translucent quality make it the best aid to perfect intra-oral photography.

Stainless Steel Mirror 2.0 Autoclavable!

Strong, durable stainless steel, autoclave-proof, the specially designed size, shape and thickness ensure maximum intra-oral view without sacrificing patient comfort.

Bite Turbo 3.0 Autoclavable!

Handle x1, BT molds x6, BT extended molds x6, Button molds x6

A simple and powerful tool to correct severe deep bite and cross efficiently. The handle of Bite Turbo 3.0 is now autoclavable with non-slip design. The bite turbos and lingual button molds, made with silicon and filled with flowable resin, can be reused and adjusted depending on treatment progress. The longer one allows you to solve all kinds of deep bite and large horizontal overjet.

2026 一年一度 Damon Master Program


全新改版的 2026 年貝多芬高效 Damon 矯正大師系列課程，是由國際知名講師張慧男醫師親自規劃及授課，課程特色強調由臨床病例帶動診斷、分析、治療計畫擬定與執行技巧，本年度亦特別加入最新的**數位矯正與隱形牙套**的內容，並邀請了貝多芬牙科集團各院院長演講特別矯正專題。

此外，透過數位影片反覆觀看，結合矯正與電腦教學，課堂助教協助操作，讓學員在短時間能快速上手，感染「熱愛矯正學，熱愛學矯正」的熱情。

名額有限，一年僅有一次機會在台完整體驗 Damon 矯正大師課程，錯過只能等明年囉！

Module 1 - 3/26 (9:20-18:00)

1. Selecting your ideal first case
2. Bonding position
3. Bonding + BT + ceph tracing
4. TADs + space closing + hook + spring
5. Finishing bending & fixed retainer

Module 2 - 4/16

1. Four stages of efficient orthodontic treatment
2. Simple and effective anchorage system
3. Extraction vs. non-extraction analysis

Practice 1: Clinical photography（張譯文, 張瑜珍醫師）
Practice 2: Patient photo management（金牛頓工程師）

Module 3 - 4/23

1. Soft & hard tissue diagnostic analysis
2. Big overjet correction
3. Damon diagnosis & fine-tuning

Practice: Ceph tracing（金牛頓工程師）

Module 4 - 5/14

1. Excellent finishing
2. Retention & relapse

Practice: Ceph superimposition & measurement（金牛頓工程師）

Module 5 - 6/25

1. Simplify your system
2. Extraction vs. non-extraction

Practice: Case report demo（陳俊宏醫師）

▲ **Computer training (Mac): 1:30-3:00 pm**

Module 6 - 7/2

1. Class III correction
2. Class II correction

Topic: Early orthodontic treatment（曾淑萍醫師）

Module 7 - 7/23

1. Upper impaction
2. Lower impaction
3. Gummy smile correction

Topic: Modified VISTA（蘇筌瑋醫師）

Module 8 - 8/13

1. ABO DI, CRE workshop (林彥君醫師)
2. Open bite

Topic: Ortho-viewed interdisciplinary treatment（徐重興醫師）

Module 9 - 8/27

1. Implant-ortho combined treatment
2. Asymmetry

Topic: Impacted cuspid treatment（張譯文, 張瑜珍醫師）

Module 10 - 9/17

1. Minor surgeries in orthodontics
2. Digital orthodontics

Topic: Modified 2X4 appliance in ortho treatment（徐玉玲醫師）

Module 11 - 10/1

1. Aligner design
2. Comprehensive aligner treatment
3. Aligner & its challenges

Topic: Pre-aligner treatment（林詩詠醫師）

▲ **Special lecture: 1:30-3:00 pm**

時間：週四全天（Module 1: 9:20-18:00, Module 2-11: 9:20-17:00）
地點：新竹市建中一路25號2樓（交大華廈）
費用含課程視訊*、課程電子書與材料。
*贈送之課程視訊提供兩年時間串流觀看。

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北區 邵美珍	中區 張馨云	南區 王慧靜
02-27788315 #120	04-23058915	07-2260030

LINE@ 官方帳號

Facebook 官方帳號

A Two-Phase Clear Aligner Therapy for Bimaxillary Protrusion with Severe Rotation of Lower Left Second Molar

Abstract

History: *A 24yr-1mo-old male presented with a chief complaint (CC) of crooked teeth.*

Diagnosis: *The patient was diagnosed with bimaxillary protrusion combined with severe mesial-out rotation of LL7, and lingual crossbite of UL7. The Discrepancy Index (DI) was 9.*

Treatment: *Segmental fixed appliance combined with a ramus screw were installed to correct the severely rotated LL7 during the 6-month pre-aligner treatment. After the therapy, the rotation was successfully corrected. However, the side effect was extrusion of LL7, which resulted in poor occlusal contact that evolved into a posterior open bite during aligner treatment. Three stages of aligners (43, 18, and 15 sets respectively) were used to correct the bimaxillary protrusion, posterior open bite, and lingual crossbite of UL7.*

Results*: After 31 months of active treatment, this malocclusion, with a Discrepancy Index of 9 points, was treated to a Cast-Radiograph Evaluation (CRE) score of 6 points and a Pink and White esthetic score of 2 points. The patient was pleased with the treatment outcome.*

Conclusions*: Hybrid mechanics combining the strengths of fixed appliances and clear aligner therapy are effective in correcting bimaxillary protrusion and severe rotation of molars. (J Digital Orthod 2026;78:52-70; reprinted from J Digital Orthod 2021;64:4-22)*

Key words:

Clear aligner therapy (CAT), segmental braces, clear aligner, ramus screws, bimaxillary protrusion, non-extraction, temporary skeletal anchorage devices (TSADs)

Introduction

Bimaxillary protrusion is a condition characterized by protrusive and proclined upper and lower incisors in addition to an increased procumbency of the lips. This type of malocclusion can occur in almost every ethnic group, although it is more prevalent in African American[1-4] and Asian[5-7] populations.[8]

The treatment of bimaxillary protrusion can be satisfactorily corrected by orthodontic or surgical treatment, or a combination of both. Orthodontic treatment involves retraction of the anterior teeth by extraction of the first premolar and placement of infrazygomatic crest (*IZC*) screws if necessary.[9]

With regard to mild or moderate bimaxillary protrusion, the space required to retract incisors is less than the size of a premolar, and this can result in inefficient use of the extraction space. Clinically, the space distal to the second molars can be used to retract the entire dentition with the aid of skeletal anchorage. The infrazygomatic crest in the maxilla and the buccal shelf area in the mandible are recommended sites for placing temporary skeletal anchorage devices (*TSADs*).[10]

The Invisalign® system, introduced by Align Technology Inc. (*Santa Clara, Calif*) in 1999, involves moving teeth in increments with a series of removable clear polyurethane trays (*aligners*).[11] The

Joy Cheng,
Lecturer, Beethoven Orthodontic Center (Left)
Chris H. Chang,
Founder, Beethoven Orthodontic Center
Publisher, Journal of Digital Orthodontics (Center)
W. Eugene Roberts,
Editor-in-Chief, Journal of Digital Orthodontics (Right)

manufacturer claims that Invisalign can effectively perform the following orthodontic movements: alignment after interproximal reduction, dental expansion, flaring, and distalization.[12-14] Therefore, for mild protrusion, clear aligners can perform anterior retraction without miniscrews or extraction.

On the other hand, the weakness of tooth movement with clear aligners includes rotation and extrusion, especially in the posterior teeth; fixed appliances and auxiliary miniscrews are an effective adjunct for clear aligner therapy.

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

This case report documents treatment for a 24-year-old male with a Class I skeletal pattern, moderate bimaxillary protrusion, severe rotation of LL7, and lingual crossbite of UL7. This malocclusion was successfully corrected by combining fixed appliances, a ramus screw, and clear aligner therapy.

The dental nomenclature for this report is a modified Palmer notation. Upper (*U*) and lower (*L*) arches, as well as the right (*R*) and left (*L*) sides, define four oral quadrants: UR, UL, LR and LL. Teeth are numbered 1-8 from the midline in each quadrant, e.g., a lower right first molar is LR6.

Diagnosis and Etiology

A 24-year-old male sought consultation for orthodontic treatment with a chief complaint of crooked teeth. The pre-treatment intraoral photographs, dental models, and radiographs are shown in Figs. 1-4. Clinical examinations showed a 3mm overjet and 2mm overbite. Bilateral canine and molar Class I relationships were also noted. Furthermore, there was minor crowding in anterior areas bimaxillarily.

Most importantly, a 60˚ mesial-out rotation of LL7 and lingual crossbite of UL7 were noted (*Fig. 5*). A panoramic radiograph revealed that there was a mesial-tilting, impacted LR8 (*Fig. 4*). Pre- and post-treatment lateral cephalometric measurements are presented in Table 1.

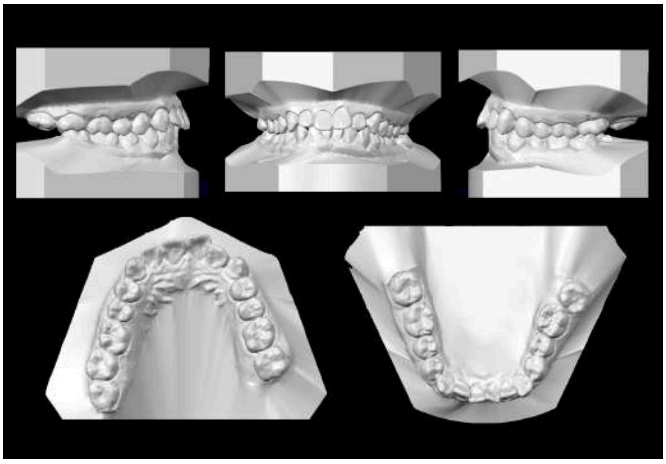

Fig. 2: *Pre-treatment study models (casts)*

Fig. 3: *Pre-treatment panoramic radiograph*

Fig.4: *Pre-treatment cephalometric radiograph*

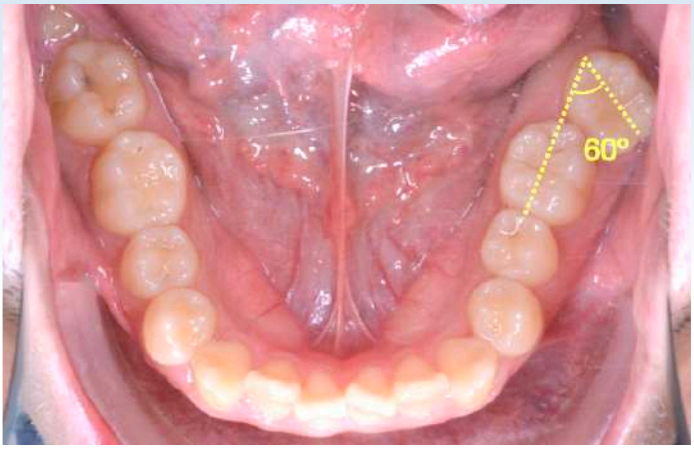

Fig. 5: *A 60˚ mesial-out rotation of LL7 and lingual cross bite of UL7 were shown in the occlusal and buccal views.*

The pre-treatment data indicated a facial pattern of the skeletal Class I jaw relationship (*SNA 90˚, SNB 86˚, ANB 4˚*), a low mandibular plane angle (*26˚*), and mildly protrusive upper and lower lips (*2mm and 3mm to the E-Line*). The bimaxillary incisors increased axial inclination (*U1-to-SN 120˚ and L1-to-MP 100˚*). The American Board of Orthodontics (*ABO*) Discrepancy Index (*DI*) was 9 as shown in the subsequent worksheet.

Treatment Objectives

The treatment objectives were to improve the patient's facial and dental esthetics, obtain an optimal inclination of his anterior teeth, obtain normal overjet and overbite, and maintain Class I molar and canine relationships.

Treatment alternatives

Based on facial and dental analysis, proclined and crowded incisors combined with mild facial protrusion were diagnosed. The patient was more concerned about dental than facial esthetics. Thus, a

CEPHALOMETRIC SUMMARY			
SKELETAL ANALYSIS			
	PRE-TX	POST-TX	DIFF.
SNA˚ (82˚)	90˚	90˚	0˚
SNB˚ (80˚)	86˚	86˚	0˚
ANB˚ (2˚)	4˚	4˚	0˚
SN-MP˚ (32˚)	26˚	26˚	0˚
FMA˚ (27˚)	19˚	19˚	0˚
DENTAL ANALYSIS			
U1 TO NA mm (4mm)	7	5	2
U1 TO SN˚ (104˚)	120˚	108˚	12˚
L1 TO NB mm (4mm)	8	6	2
L1 TO MP˚ (90˚)	100˚	95˚	5˚
FACIAL ANALYSIS			
E-LINE UL (-1mm)	2	1	1
E-LINE LL (0 mm)	3	2	1
%FH: Na-ANS-Gn (56%)	55%	56%	1%
Convexity: G-Sn-Pg (13˚)	5˚	4˚	1˚

Table 1: *Cephalometric Summary*

non-extraction treatment approach was considered optimal. The orthodontic treatment indicated was a two-phase approach. In the first phase, a segmental fixed appliance would be bonded from LL4 to LL7 and a 2x14-mm OrthoBoneScrew® (*OBS, iNewton, Inc., Hsinchu City, Taiwan*) would be placed in the left ramus to correct severely rotated LL7. In the second phase, clear aligners (*Invisalign®, Align Technology, Inc., San Jose, CA, USA*) would be used to correct the remaining dental problems.

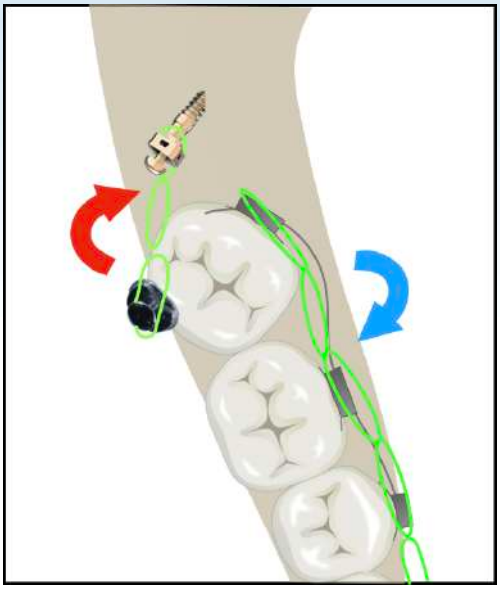

Fig. 6: *The red arrow shows the power chain force retracted from the button on the lingual surface of LL7 to the ramus screw, which distalized the LL7. The blue arrow shows the power chain force, retracted from LL4 to LL7, which provided protraction. The red and blue forces resulted in clockwise rotation of LL7.*

Treatment Progress

Phase 1: Fixed appliance

After UR8 and LR8 were removed, LL4 to LL7 were bonded with conventional ligation brackets and a 0.014-in copper-nickel-titanium archwire was placed. A 2x14-mm OBS was inserted in the left ramus. One

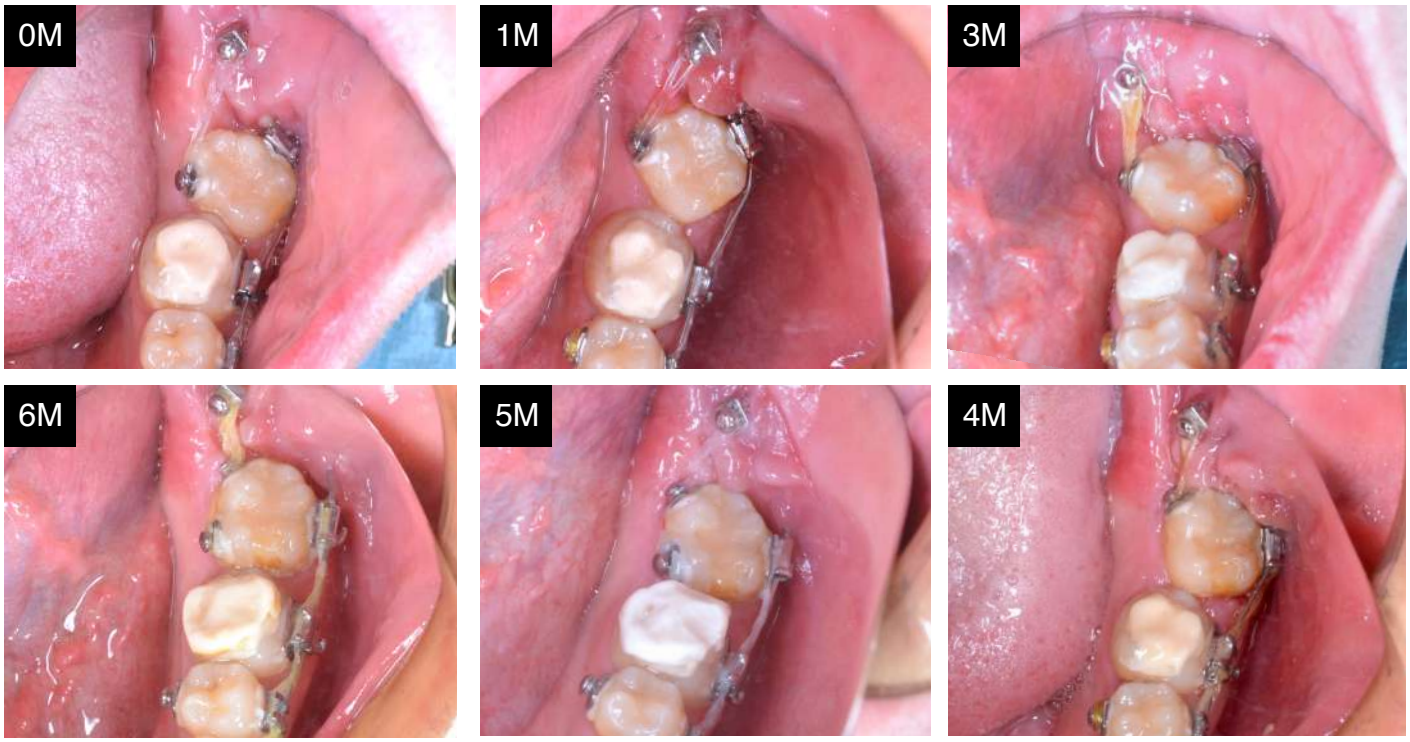

Fig.7: *Treatment progress in months (M) showing in six occlusal views arranged in clockwise order*

Fig. 8: Intraoral photos after phase 1 treatment

button was bonded on the lingual side of LL7. The rotation mechanics are shown in Fig. 6. The treatment progress is shown in Fig. 7. After 6 months of active treatment, the rotated LL7 was successfully corrected, but it resulted in extrusion and tipping that resulted in an occlusal prematurity of the lingual cusp of LL7. Therefore, a posterior open contact was noted (*Fig. 8*).

Phase 2: Clear aligner stage

Protocols of clear aligner

iTero Element® intraoral scans (*Align Technology, Inc., San Jose, CA, USA*) provided a 3D dataset. The ClinCheck® system (*Align Technology, Inc., San Jose, CA, USA*) was used to plan the treatment and project the outcome. A complete treatment simulation is described below.[12] All posterior teeth were moved 1mm distally in sequential retraction (*Fig. 9*), and arch expansion was set at 0.3mm. During stage 18, Inter-

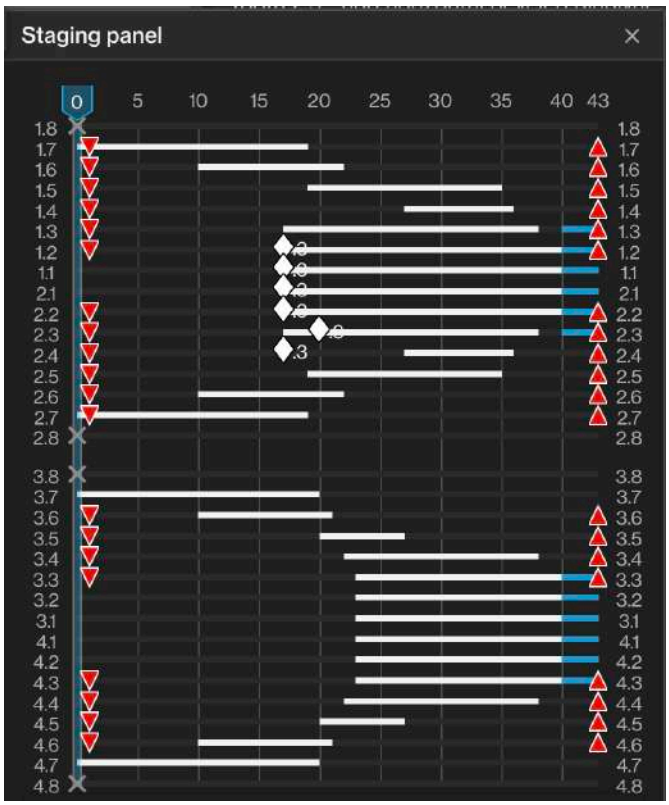

Fig. 9: Staging panel showing increments of aligner activation

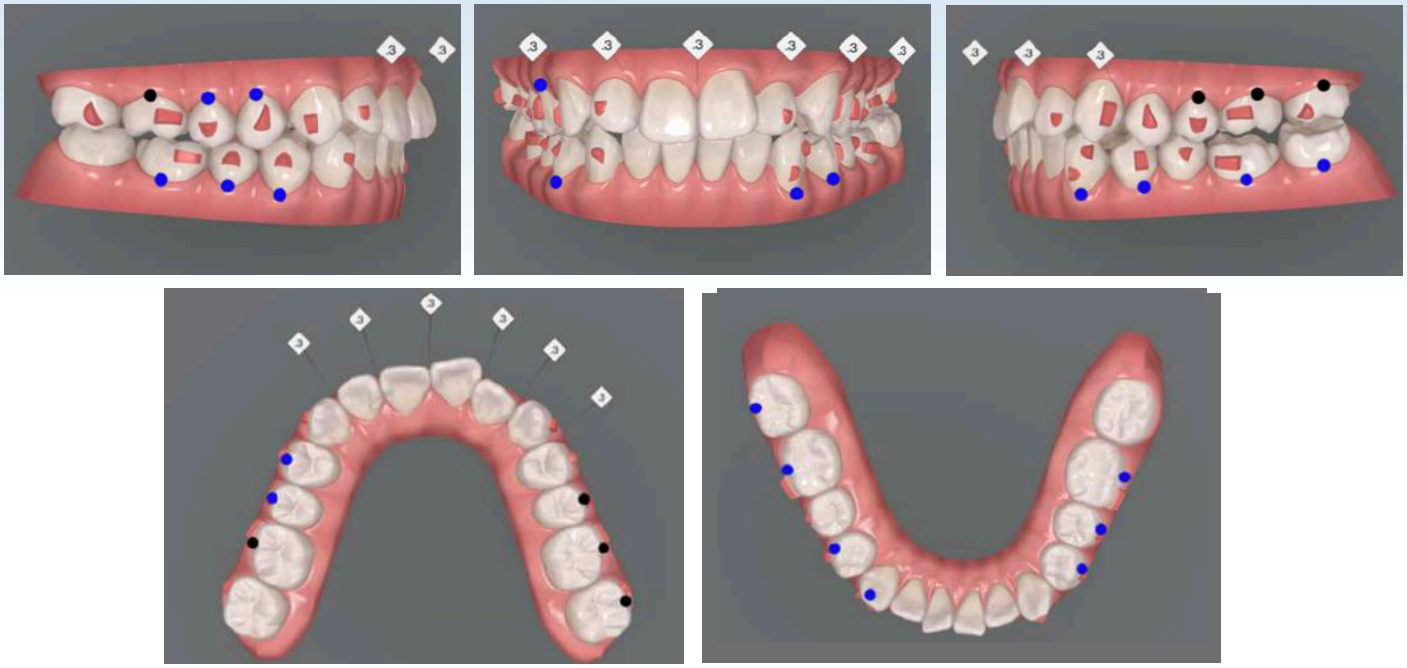

Fig. 10:
Prescribed optimized attachments, conventional attachments, and IPR are shown in five views of the arches. Blue dots indicate variably predictable tooth movements, and black dots indicate less predictable tooth movements. See text for details.

proximal reduction (*IPR*) was performed on all the upper anterior teeth to create space for anterior retraction. Both prescribed optimized attachments and conventional attachments were applied in sequential staging, and the predictable difficulty of tooth movement is shown in Fig. 10. Blue dots indicate variably predictable tooth movement and black dots indicate less predictable tooth movement. UR6 and UL5-UL7 were extrusions of more than 1mm. UR4, UR5, LL4, LL6, and LR4-LR6 were extrusions between 0.5 to 1mm. LL7 was an intrusion between 0.5 to 1mm. LL3 was root movement between 4 to 6mm.

Treatment Progress of Clear Aligner

In the aligner stage, sequential distalization, arch expansion, and IPR were performed to resolve the crowding and bimaxillary proclination. 0.3mm IPR was carried out in stage 18. After 15 months and 43 sets of aligners, the first stage was completed and the arch was well expanded. However, the UL1 was not rotated perfectly, and there was still posterior open contact from LL3 to LL7. Therefore, additional aligner therapy was required (*Fig. 11*).

In the second stage, which lasted 4 months and involved 18 sets of aligners, the UL1 was rotated correctly and the arch was slightly expanded. 0.1mm IPR was performed between LL1 and LL2, and from LR1 to LR3. At the 15th set of aligners during the second stage, posterior open contact was still noted on the left side (*Fig. 12*). In order to fix this problem, buttons were bonded on the buccal surfaces of UL4-UL6, LL5, and LL6. Short elastics (*Chipmunk 1/8-in, 3.5-oz*) were retracted from UL4 to LL5, UL5 to LL6,

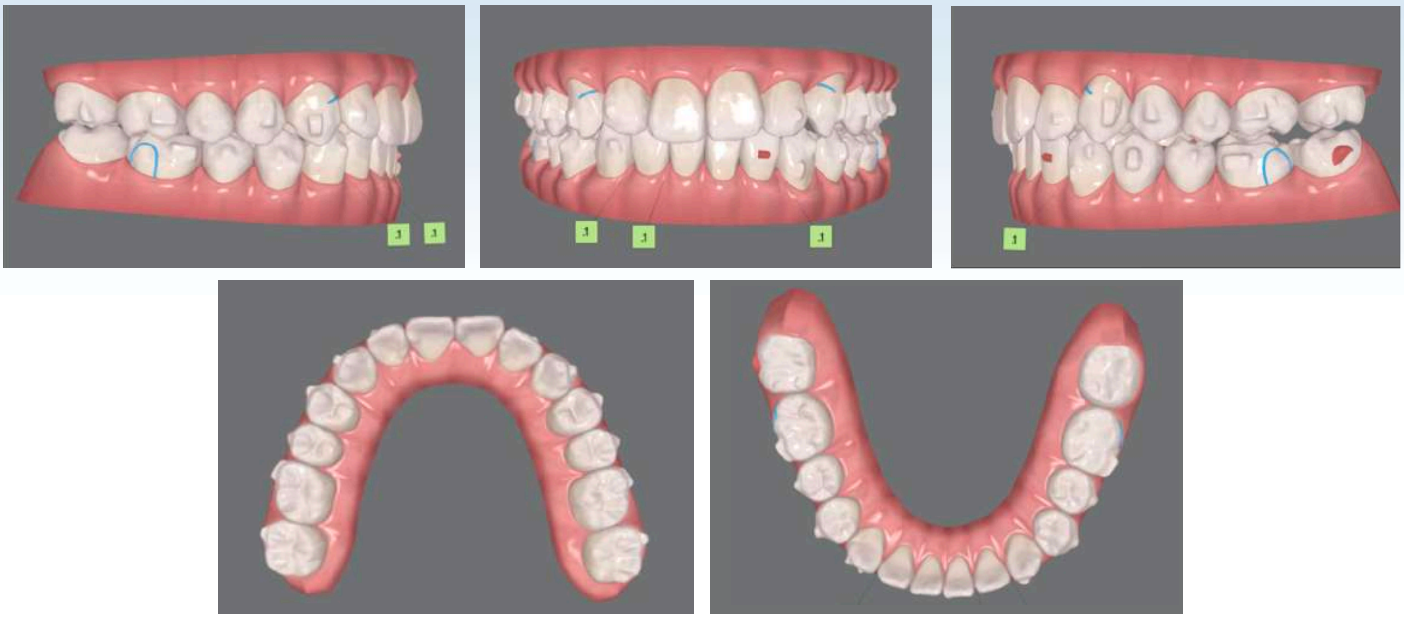

Fig. 11: *The first aligner of the second stage*

Fig. 12: *The 15th aligner of the second stage*

and UL6 to LL6. After 2 weeks, the open contact of UL4 and UL5 was improved. The remaining problems were posterior open contact on LR7, LL6, and LL7. Hence, additional therapy was necessary (*Fig. 13*).

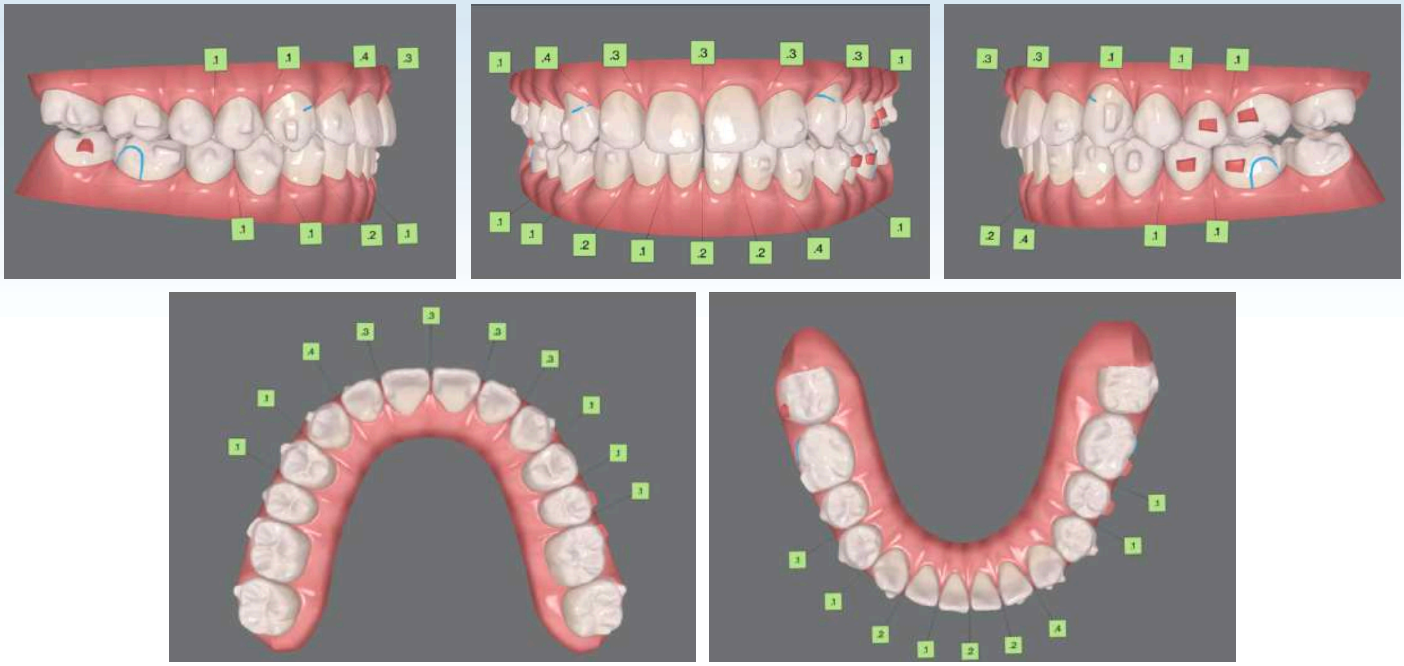

Fig. 13: *The first aligner of the third stage*

In the third stage, 15 sets of aligners were used in 3 months. 0.1-0.3mm IPR was performed to resolve bilateral canine Class II relationship and occlusal fittings. Details are displayed in Fig. 13.

The patient went through 3 stages and used 76 (*43+18+15*) sets of aligners in 23 months. After 29 months of treatment, all attachments and auxiliaries were removed. Essix retainers *(Densply Sirona, Charlotte, NC, USA)* were delivered for both arches. The patient was instructed to wear them full time for the first month, and only while sleeping thereafter.

Treatment Results

The treatment results for this patient were excellent. All teeth were aligned in their proper positions (*Figs. 14 and 15*). Bilateral occlusions are Class I with a normal overjet and overbite. All treatment objectives were achieved. A panoramic radiograph revealed good root parallelism (*Fig. 16*). The cephalometric measurements (*Table 1*) and the cephalometric superimposition (*Figs. 17 and 18*) showed the maxillary incisors were retroclined by 12 degrees, and the mandibular incisors were retroclined by 5 degrees. The maxillary and mandibular molars were slightly uprighted. The CRE score was 6 points as shown in the subsequent Worksheet 2. Most points were for the compromised occlusal contact of LL6, LL7, and LR7. The Pink and White esthetic score was 2 points, as documented in Worksheet 3 at the end of this report. The patient was satisfied with his teeth and profile.

Fig. 14: *Post-treatment facial and intraoral photographs*

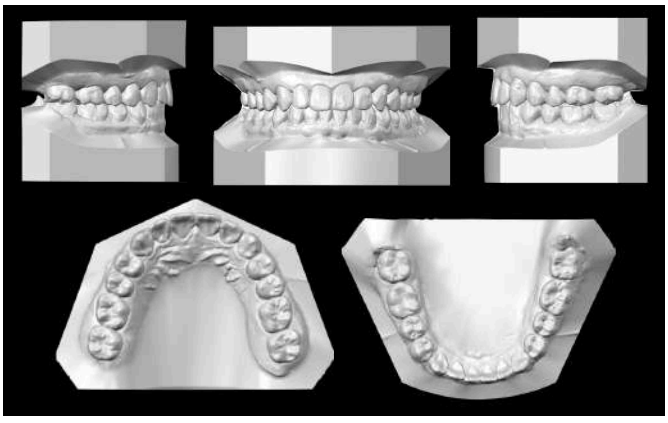

Fig. 15: *Post-treatment study models (casts)*

Fig. 16: *Post-treatment panoramic radiograph*

Fig. 17: *Post-treatment cephalometric radiograph*

Discussion

Mild Bimaxillary Protrusion Protocol: Using Clear Aligner Therapy

Patients with bimaxillary protrusion generally have Class I molar and canine relationships, which generally result in good oral function. Careful and complete skeletal, dental, and soft tissue evaluations are necessary before treatment planning. The treatment methods should be selected according to patient's chief complaint(*s*) and clinical diagnosis.[10] For the current patient, the upper and lower lips were beyond the E-line 2mm and 3mm respectively. His profile was classified as mild to moderate bimaxillary protrusion, so a non-extraction orthodontic treatment was feasible. The molars

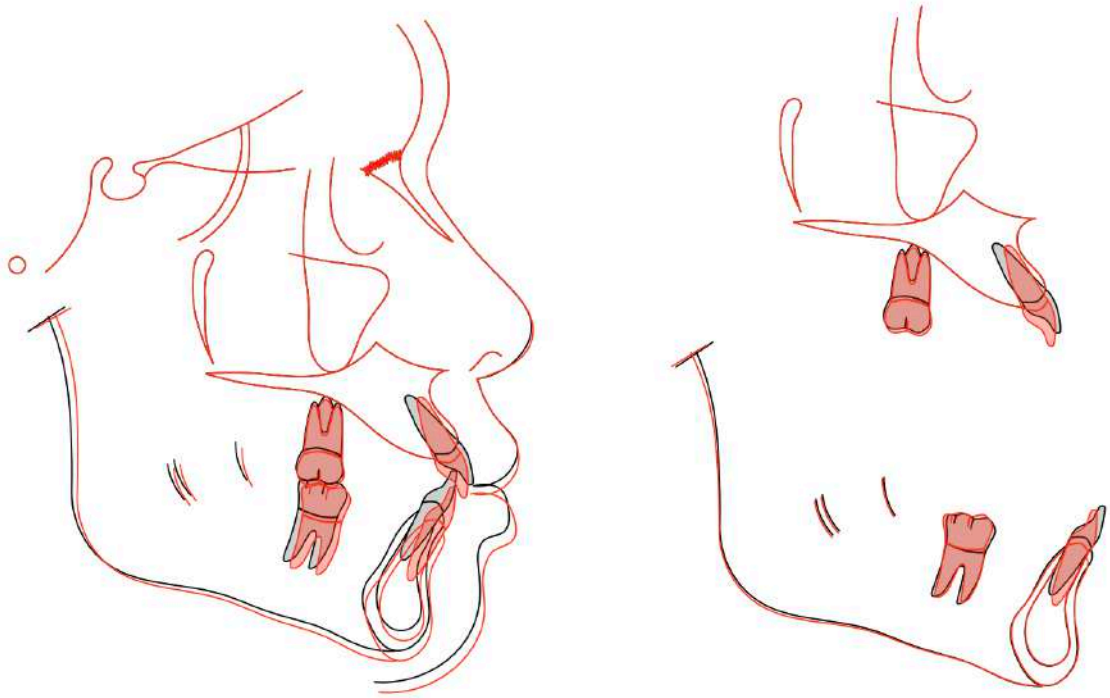

Fig. 18: *Superimposition of pre-treatment (black) and post-treatment (red) cephalometric tracings*

could be retracted using skeletal anchorage to gain the extra space required to perform anterior tooth retraction and resolve both the anterior crowding as well as proclination.[10]

With the development of clear aligners, molar retraction, arch transverse expansion, and IPR were all successful in gaining space for incisal retraction and relieving crowding. In this present case, 1mm of retraction, 2-3mm of arch expansion, and multiple IPR adjustments were set in all four quadrants during the three stages of aligner therapy. As a result, bimaxillary incisors were retroclined and retrusive. There are studies which compared the ratios of dental movement to soft tissue movement - most commonly the amount of upper incisor retraction to upper lip retraction - in an attempt to establish guidelines for clinical management. A 2.2:1 upper lip-to-upper incisor ratio (*5.2mm of upper incisor retraction to 2.4mm of upper lip retraction*) was reported in these studies.[1,15,16]

The amount of incisor retraction in this case was only 2mm, and it resulted in 1mm of lip retraction. The clear aligner therapy improved the inclination of the anterior incisors and aligned the dentition successfully, but change in the profile was not significant. Since the patient cared more about dental than facial esthetics, he was still satisfied with the treatment outcome.

	Green	Blue	Black
Surgery	No	No	Yes
Extraction	No	Incisor extraction	Premolar extraction
Distalization	< 2 mm	2-4 mm	> 4 mm
Mesialization	No	< 2 mm	> 2 mm
Crowding	< 6 mm	6-8 mm	> 8 mm
Spacing	< 4 mm	4-8 mm	> 8 mm
Expansion per quadrant	< 2 mm	2-4 mm	> 4 mm
Anterior Crossbite	Involving 1 tooth	Involving 2 bilateral teeth	Involving multiple teeth
Anterior Intrusion	< 2.5 mm	2.5-3 mm	> 3 mm
Posterior Intrusion	No	< 1 mm	> 1 mm
Anterior Extrusion	< 2.5 mm	2.5-3 mm	> 3 mm
Posterior Extrusion	No	< 1 mm	> 1 mm

Table 2: *Complexity evaluation chart for clear aligner therapy from Invisalign®.[17] See text for details.*

Limitation of Clear Aligners

Table 2 from the Invisalign® website[17] is a useful tool to evaluate the degree of complexity in treating a specific patient with clear aligner therapy.

1. If all items are in the Green column, then a Green protocol should be followed, indicating a simple and/or more predictable treatment approach.

2. If at least one item is in in the Blue column and none in the Black column, then a Blue protocol should be followed, indicating a moderate and/or variably predictable treatment approach.

3. If at least one item is in the Black column, then a Black protocol should be followed, which means the treatment will be more complex and/or less predictable.

In addition, Invisalign® asserts that, without the use of additional techniques, aligners can resolve rotations of 40˚ in the upper and lower central incisors, 45˚ in canines and premolars, 30˚ in lateral incisors, and 20˚ in molars. Radicular movements of 4mm and 2mm can be achieved in the anterior and posterior teeth respectively.[18]

Although the SmartTrack features automatically-placed optimized attachments for rotational movements greater than 5 degrees, rounded teeth are not gripped well by the aligners. Despite the relatively low accuracy of rotation, the progress of the maxillary incisors and canines was encouraging.[19]

According to Haouili,[19] the least accurate tooth movement was rotation (*46%*), and this movement was particularly challenging for canines, premolars, and molars. Due to poor aligner grip around the shorter clinical crown and the decreased forces on the terminal tooth within the aligner, the second molars are difficult to rotate. Similar findings were observed by Simon et al.[20] and Charalampakis.[21]

In the present case, rotation of 60˚ for LL7 was noted. It is almost impossible to correct severe rotation like this with clear aligner therapy, without an extremely long treatment period. Utilizing TSADs and traditional fixed appliances, the severe LL7 rotation was corrected in 6 months.

Extrusion of Posterior Teeth: Can Clear Aligner Therapy Fix It?

According to the findings from Haouili,[19] maxillary incisor extrusion (*55%*) has the highest accuracy, whereas extrusion of the maxillary and mandibular molars (*40%*) has the lowest accuracy. The higher accuracy of incisor extrusion and molar intrusion, as well as the low accuracy of incisor intrusion and molar extrusion, would suggest that Invisalign® is more effective in bite closure, rather than bite opening.

Although the rotation of LL7 was resolved by a fixed appliance and a ramus screw, the extrusion and tipping side effects on the LL7 resulted in open contacts in the whole arch.

As can be seen in Table 2, extrusions and intrusions of more than 1mm are less predictable in the posterior teeth. According to ClinCheck®, UR6 and UL5-UL7 were difficult extrusion (*>1mm*), UR4, UR5, LL4, LL6, LL7 as well as LR4-LR6 were moderate extrusion (*0.5-1mm*), and LL7 was moderate intrusion (*0.5-1mm*) in the first stage.

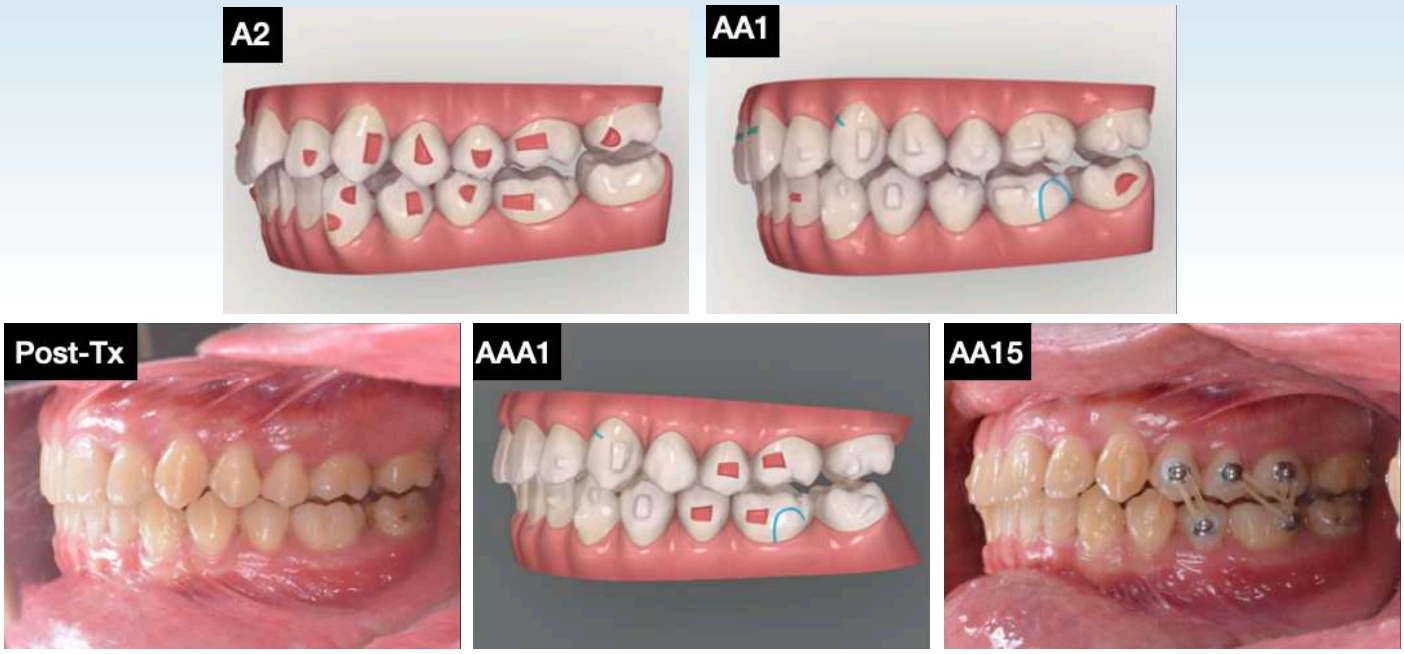

Fig. 19:
The treatment progress to correct left posterior second molar occlusal contact is shown in clockwise order. ***A2:*** *the second aligner of the first stage.* ***AA1:*** *the first aligner of the second stage.* ***AA15:*** *the 15th aligner of the second stage.* ***AAA1:*** *the first aligner of the third stage.*

After the first stage of clear aligner therapy, LL7 was difficult extrusion (*>1mm*), and UL4-UL7 as well as LL4-LL7 were moderate extrusion (*0.5-1mm*) as detected in ClinCheck® of the second stage.

After completing the second stage, left side posterior open contact was still noted. To resolve this posterior open contact, buttons were bonded on UL4-UL6, LL5, and LL6. Short elastics (*Chipmunk 1/8-in, 3.5-oz*) were applied for two weeks as shown (*Fig. 19*). UL6, UL7 and LL7 were detected as moderate extrusion (*0.5-1mm*) in the third stage ClinCheck®.

After a 2-phase orthodontic treatment, slight posterior open bite was still found on LL6, LL7, and LR7. The treatment progress for the correction of this left posterior open contact is shown in Fig. 19. According to the above information, the open contact was improved progressively but slowly. Although Invisalign admits that significant extrusion is hard to achieve, it is still possible even though aligners are more helpful for retraction. If this case were re-treated, elastics for occlusal fitting could be indicated after the first stage to perform extrusion. The second stage of clear aligner therapy should be delayed until the posterior open bite is reduced to less than 0.5mm space.

Conclusions

1. The use of clear aligners is an innovative orthodontic modality. Molar retraction, arch expansion, and IPR can solve moderate crowding

and protrusion without the assistance of extraction or TSADs.

2. However, clear aligner therapy has its limitations. For this patient, LL7 was rotated severely by 60 degrees. Clear aligner therapy is unlikely to resolve this challenging problem in a reasonable period of time. TSADs and elastic retraction are indicated to prepare the dentition for aligner resolution of the malocclusion.

3. Hence, traditional fixed appliances and innovative clear aligner therapy are combined to resolve severe malocclusion. These two treatment approaches cannot replace each other, so a hybrid treatment method is indicated to achieve desired outcomes more efficiently and effectively.[17]

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Discrepancy Index Worksheet

TOTAL D.I. SCORE: 9

OVREJET

0 mm. (edge-to-edge)	=	
1 - 3 mm.	=	0 pts.
3.1 - 5 mm.	=	2 pts.
5.1 - 7 mm.	=	3 pts.
7.1 - 9 mm.	=	4 pts.
> 9 mm.	=	5 pts.

Negative OJ (x-bite) 1 pt. per mm. Per tooth =

Total = 2

OVERBITE

0 - 3 mm.	=	0 pts.
3.1 - 5 mm.	=	2 pts.
5.1 - 7 mm.	=	3 pts.
Impinging (100%)	=	5 pts.

Total = 0

ANTERIOR OPEN BITE

0 mm. (Edge-to-edge), 1 pt. per tooth
Then 1 pt. per additional full mm. Per tooth

Total = 0

LATERAL OPEN BITE

2 pts. per mm. Per tooth

Total = 0

CROWDING (only one arch)

1 - 3 mm.	=	1 pt.
3.1 - 5 mm.	=	2 pts.
5.1 - 7 mm.	=	4 pts.
> 7 mm.	=	7 pts.

Total = 1

OCCLUSION

Class I to end on	=	0 pts.
End on Class II or III	=	2 pts. per side _____ pts.
Full Class II or III	=	4 pts. per side _____ pts.
Beyond Class II or III	=	1 pt. per mm. additional _____ pts.

Total = 0

LINGUAL POSTERIOR X-BITE

1 pt. per tooth Total = 1

BUCCAL POSTERIOR X-BITE

2 pts. Per tooth Total = 0

CEPHALOMETRICS (See Instructions)

ANB ≥ 6° or ≤ -2° = 4 pts.

Each degree < -2° _____ x 1 pt. = _____

Each degree > 6° _____ x 1 pt. = _____

SN-MP

≥ 38° = 2 pts.

Each degree > 38° _____ x 2 pts. = _____

≤ 26° = 1 pt.

Each degree < 26° _____ x 1 pt. = _____

1 to MP ≥ 99° = 1 pt.

Each degree > 99° 1 x 1 pt. = 1

Total = 3

OTHER (See Instructions)

Supernumerary teeth	_____ x 1 pt.	= _____
Ankylosis of perm. Teeth	_____ x 2 pts.	= _____
Anomalous morphology	_____ x 2 pts.	= _____
Impaction (except 3rd molars)	_____ x 2 pts.	= _____
Midline discrepancy (≥ 3mm)	@ 2 pts.	= _____
Missing teeth (except 3rd molars)	_____ x 1 pt.	= _____
Missing teeth, congenital	_____ x 2 pts.	= _____
Spacing (4 or more, per arch)	_____ x 2 pts.	= _____
Spacing (Mx cent. diastema ≥2mm)	@ 2 pts.	= _____
Tooth transposition	_____ x 2 pts.	= _____
Skeletal asymmetry (nonsurgical tx)	@ 3 pts.	= _____
Addl. treatment complexities	1 x 2 pts.	= 2

Identify: Severe rotation of LL7

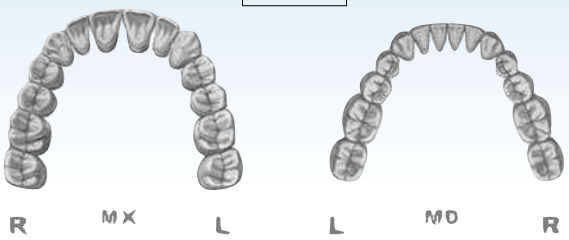
Total = 2

Cast-Radiograph Evaluation

Total Score: 6

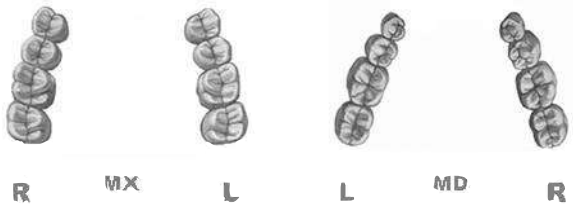
Alignment/Rotations

0



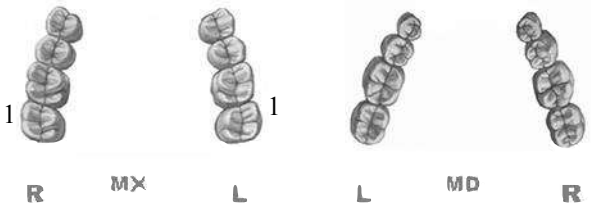
Marginal Ridges

0



Buccolingual Inclination

2

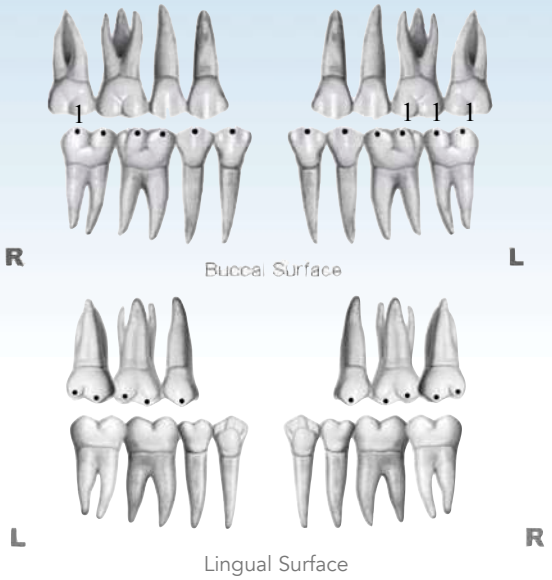


Overjet

0

Occlusal Contacts

4

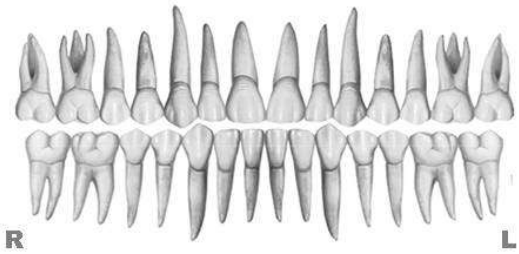


Occlusal Relationships

0

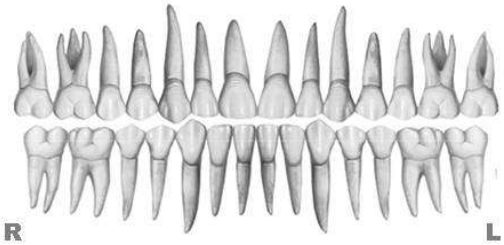
Interproximal Contacts

0



Root Angulation

0



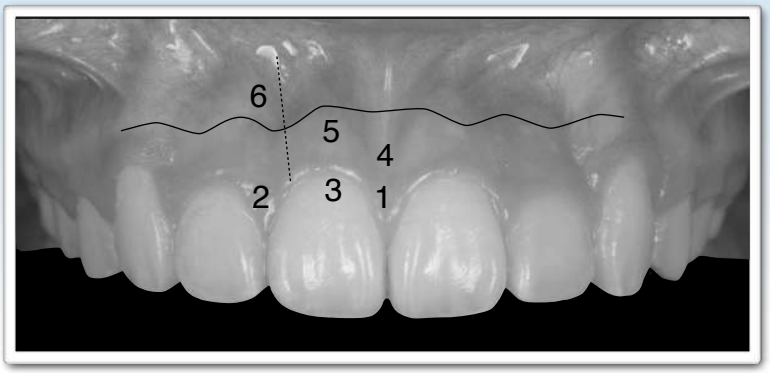
INSTRUCTIONS: Place score beside each deficient tooth and enter total score for each parameter in the white box. Mark extracted teeth with "X". Second molars should be in occlusion.

IBOI Pink & White Esthetic Score

Total Score = 2

1. Pink Esthetic Score

Total = 0

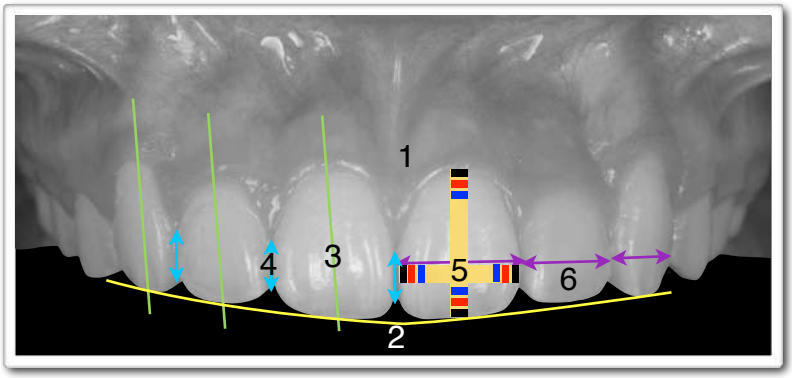


1. M & D Papillae	0	1	2
2. Keratinized Gingiva	0	1	2
3. Curvature of Gingival Margin	0	1	2
4. Level of Gingival Margin	0	1	2
5. Root Convexity (Torque)	0	1	2
6. Scar Formation	0	1	2

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

2. White Esthetic Score (for Micro-esthetic)

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	0	1	2
6. Tooth to Tooth Proportion	0	1	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	(0)	1	2
6. Tooth to Tooth Proportion	0	(1)	2

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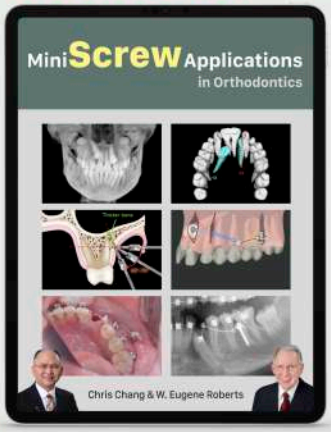

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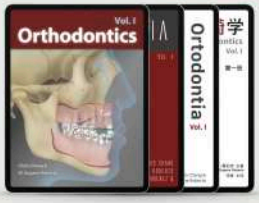

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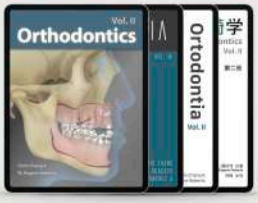

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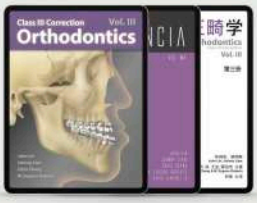

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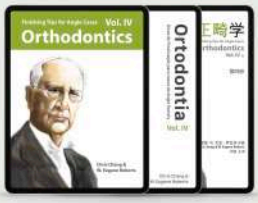

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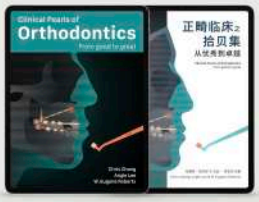

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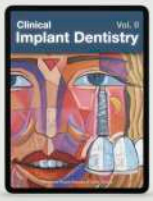

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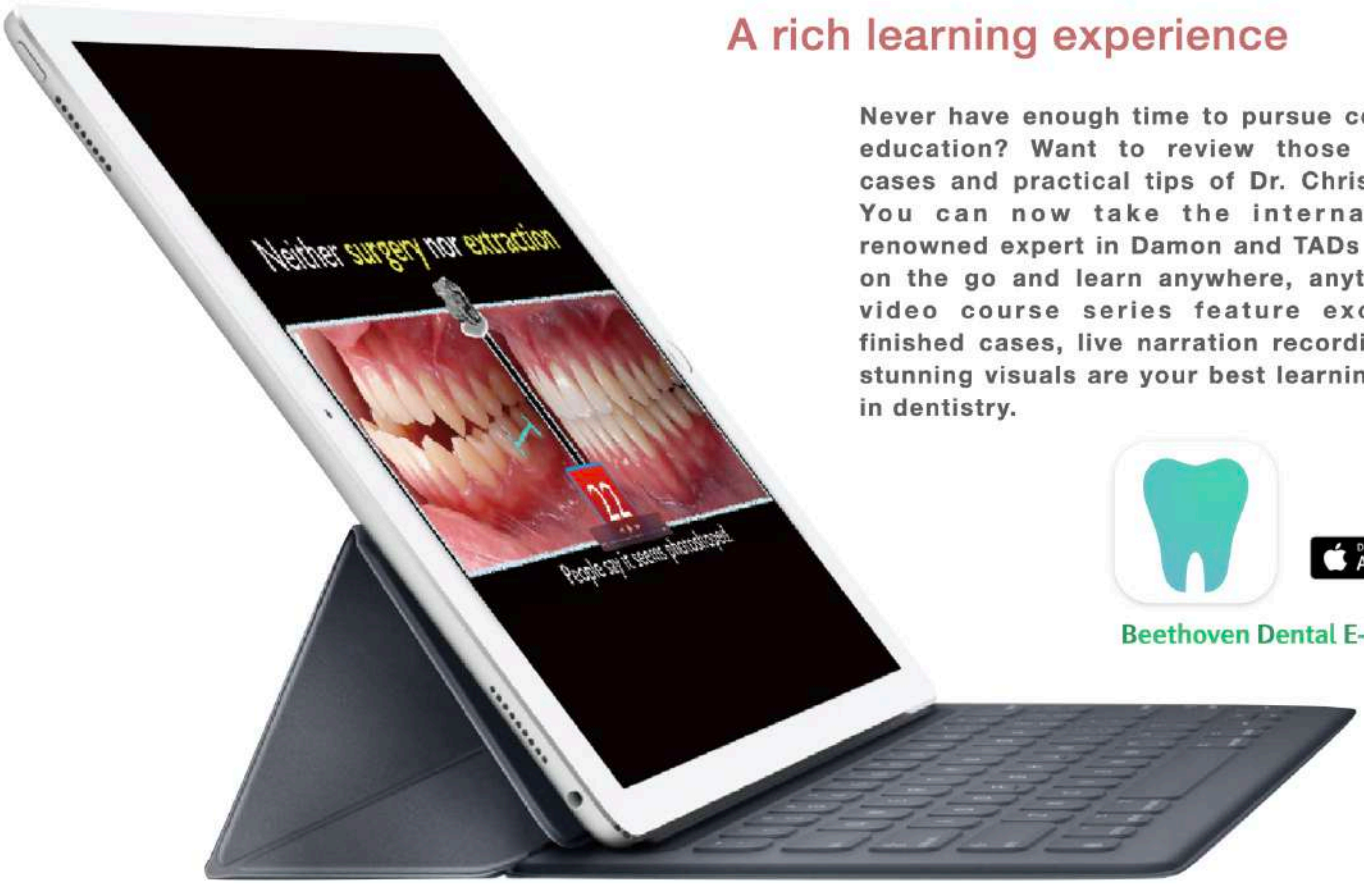

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