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國內外講師推薦品牌

2023-2024 第十五年度
貝多芬 矯正精修班

時間：週二上午 09:00-12:00
地點：金牛頓教育中心（新竹市建中一路 25 號 2 樓）

上課日期：

2023　4/18、5/16、6/13、7/11、8/15、9/12、10/3、11/7、12/19
2024　1/9、3/12

- ▶ 09:00～10:00　精選文獻分析
- ▶ 10:00～10:30　精緻完工案例
- ▶ 10:50～12:00　臨床技巧及常犯錯誤分享

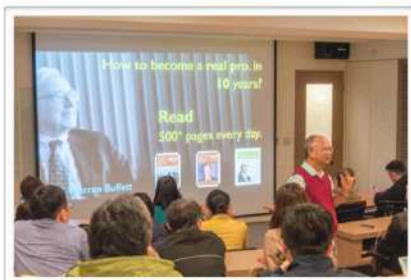全新的第十五年度 2023-24 貝多芬精修班，是由國際知名講師張慧男醫師主持，並偕同貝多芬牙醫團隊住院醫師群共同主講。

每月一次的課程之中，包含了：

1. 精選矯正權威期刊 AJODO 的文章做文獻分析與評讀。
2. 精緻完工 ABO 案例報告，其中因應數位矯正的世界趨勢，Insignia 與 Invisalign 病例為課程探討的主要內容之一。
3. 分享臨床上常犯的錯誤以及解決方法。

2023-24 貝多芬精修班內容豐富精彩，讓您經由每個月一次的課程，在面對各式的臨床案例時，更能游刃有餘、得心應手。

學習目的：

研讀最新趨勢文章可以窺知世界文獻公認的治療方式，而藉由評論文章的優缺點不僅能夠訓練判斷與思考能力，更可以清楚比較作法上的不同，達到完整理解治療方向、內容與穩定性的目標。

報名專線：03-5735676 #218 陳小姐

Finding the Happy Medium: Buccal Shelf Screws as a Minimally Invasive Approach to Treat Severe Skeletal Class III Malocclusions

Abstract

History: An 18-year-old male presented with chief complaints of an underbite and difficulty chewing.

Diagnosis: The skeletal Class III malocclusion (SNA, 83°; SNB, 88.5°; ANB, -5.5°) was associated with proclined upper incisors (U1 to SN, 113.5°) and retroclined lower incisors (L1 to MP, 81.5°). The Discrepancy Index (DI) was 65.

Treatment: Early light short Class III elastics were used to correct the malocclusion. Low torque brackets were selected for the upper incisors, and high torque brackets for the lower incisors to provide better root torque control. Two miniscrews were inserted in the buccal shelves (BS) to retract the lower arch.

Outcome: After 29 months of active treatment, this severe, challenging skeletal Class III was corrected to an acceptable result. The occlusion was stable and the patient was pleased with his facial profile. The Cast-Radiograph Evaluation (CRE) was 29, and the dental esthetic (Pink & White) score was 3.

Conclusions: It is good to bear in mind that "nothing is perfect; find the happy medium". It is important for the clinician to understand when to stop the treatment and to reach an outcome that is acceptable to both the clinician and the patient. (J Digital Orthod 2023;69:54-70)

Key words:
Skeletal Class III, buccal shelf miniscrews, passive self-ligating brackets, Class III intermaxillary elastics, anterior root torque spring.

The dental nomenclature for this paper is a modified Palmer notation with four oral quadrants: upper right (UR), upper left (UL), lower right (LR), and lower left (LL). From the midline, permanent teeth are numbered 1-8, and deciduous teeth are delineated a-e.

Introduction

An 18-year-old male with a chief complaint of a protruded mandible presented for orthodontic consultation (Figs. 1 and 2). Radiographic documentation of the original malocclusion is a lateral cephalometric film (Fig. 3) and panoramic radiograph (Fig. 4). From the intraoral view, the distance between the mesiobuccal cusp of the upper first permanent molar and the mesiobuccal groove of the lower first molar was bilaterally 11 mm (Fig. 5). In the anterior region there was a negative overjet from canine to canine. The cephalometric analysis showed that it was skeletal Class III (SNA, 83°; SNB, 88.5°; ANB, -5.5°). Normally orthognathic surgery would be the recommended treatment option for this kind of patient; however, both the patient and his parents refused surgery. Since the profile of the patient in centric relation (C_R) was acceptable, a non-surgical approach was decided upon (Fig. 6).

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Diagnosis

Skeletal:

- Skeletal Class III: *SNA, 83°; SNB, 88.5°; ANB, -5.5°*

- Mandibular Plane Angle: *SN-MP, 28.5°; FMA, 21.5°*

Dental:

- Overjet: *-5mm*

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

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

Fig. 3: Pre-treatment lateral cephalometric radiograph

Fig. 4: Pre-treatment panoramic radiograph

Fig. 5:
The distance between the mesiobuccal cusp of the upper first permanent molar and the mesiobuccal groove of the lower first molar was 11mm.

- Anterior crossbite: *Canine to canine*

- Upper incisors: *Tipped anteriorly (U1-NA, 6mm; U1-SN, 113.5°)*

- Lower incisors: *Tipped posteriorly (L1-NB, 4mm; L1-MP, 81.5°)*

- Facial: *Retrusive upper lip (-4mm to the E-line)*

The American Board of Orthodontics (ABO) Discrepancy Index (DI) was 65 points as shown in the subsequent Worksheet 1.

Treatment Objectives

After a discussion of the different options with the patient, the following treatment objectives were accepted:

1. Retract the whole lower arch.

2. Correct the negative overjet.

3. Improve lip profile.

Treatment Alternatives

After a thorough diagnosis, three treatment options were proposed to the patient:

Option 1: Orthognathic surgery

Due to the large 11mm Class III molar relationship associated with a severe skeletal discrepancy (ANB, -5.5°), orthognathic surgery was suggested to set back the mandible using intraoral vertical ramus osteotomy. However, according to Lin's Three-Ring Diagnosis system, if the facial profile is acceptable in central relation (C_R), the patient is a good candidate for conservative dentoalveolar treatment.[1,2] Furthermore, both the patient and his parents refused surgery.

Option 2: Extraction

Extract UR5, UL5, LR4, and LL4 to improve the Class III molar relationship and achieve camouflage treatment outcomes by closing the extraction spaces. However, due to the patient's straight profile, by the time the spaces are closed, the retroclined lower anterior teeth would be even more lingually positioned, resulting in an unpleasant concave profile.

Option 3: Non-extraction

Chang's decision-making table for extraction was consulted.[3] The profile of the patient in C_R was straight (Fig. 6), and there was no dental crowding, so non-extraction treatment along with lower arch retraction was a suitable option. However for this patient, it was necessary to extract LR8 in order to retract the lower arch. This approach can be very challenging because absolute anchorage is essential when retracting the whole arch. With the help of OrthoBoneScrew® (OBS) (iNewton Inc., Hsinchu City, Taiwan) as anchorage, the third treatment option was considered the most suitable approach for both the clinician and the patient.

Treatment Plan

Orthodontic camouflage treatments for Class III malocclusion may result in an increased axial inclination of the upper incisors and decreased axial inclination of the lower incisors, particularly if there is an underlying Class III skeletal discrepancy.[4] Thus, in order to correct the Class III malocclusion, there were 3 key points:[5]
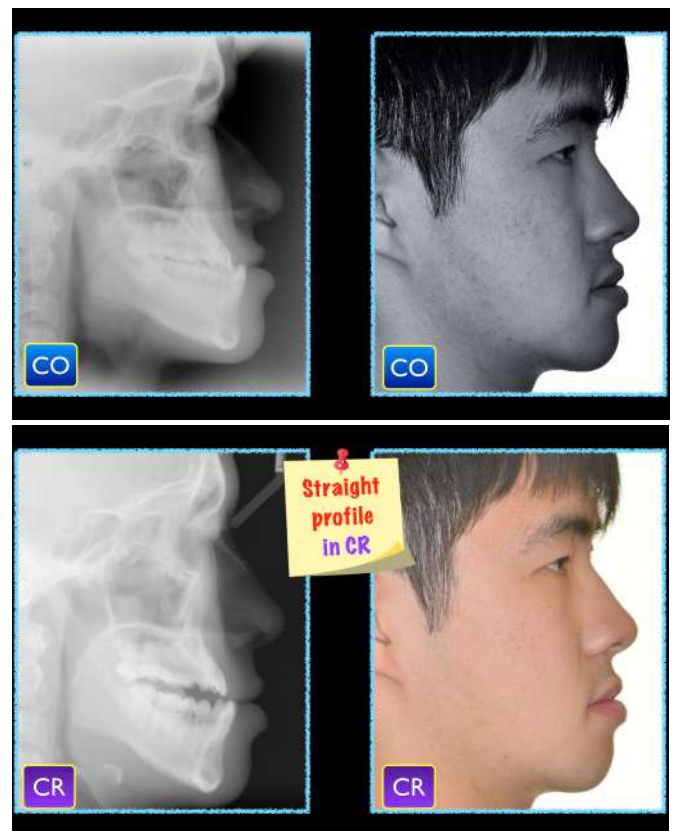
■ *Fig. 6:*
   Patient's profile in centric occlusion (C_O) and centric relation (C_R)
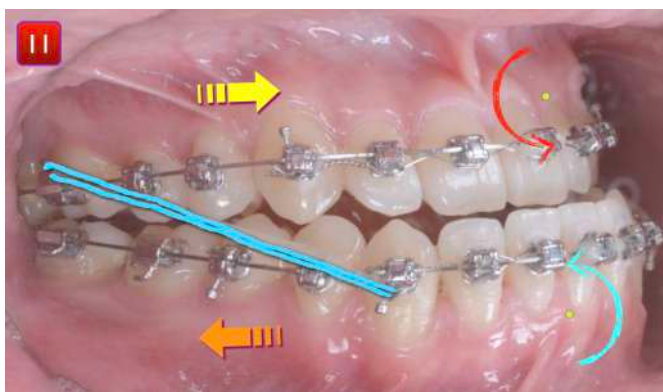
1. Early light short elastics (ELSE)

Early light short Class III elastics were chosen to protract the upper arch and retract the lower arch, in order to improve the molar Class III relationship. However, Class III elastics may proline upper incisors and distally tip lower incisors (Fig. 7).

2. Torque selection

Low-torque brackets were chosen for the upper anterior teeth and high-torque brackets for the lower anterior teeth to compensate for the mechanics of Class III elastics. Since there are no high-torque brackets available for lower teeth, upside-down low-torque brackets were substituted as high-torque brackets.

3. Buccal shelf screws

As the patient preferred a non-surgical approach, buccal shelf (BS) screws were used as a minimally invasive approach. Temporary skeletal anchorage devices (TSADs) in the mandibular buccal shelves are suitable anchorage for retracting the entire lower arch to conservatively correct Class III malocclusions.

When power chains are hooked on the miniscrews, the line of force is occlusal to the center of resistance of the mandible, thus producing a moment that rotates the occlusal plane and retracts the whole dentition (Fig. 8).[6]

Treatment Progress

Two months following the prescribed extractions, a 0.022-in slot Damon Q® passive self-ligating (PSL) appliance (Ormco, Glendora, CA) was bonded on the lower teeth in the first month of active treatment, and the upper teeth were engaged in the following month with a 0.014-in CuNiTi archwire. From the 6th month of treatment, the patient wore bilateral Class III elastics from U6s to L3s that were engaged on a 0.014x0.025 CuNiTi archwire. In order to retract the whole lower arch

Fig. 7:
Class III elastics (blue lines) can protract the upper arch (yellow arrow) and retract the lower arch (orange arrow). However, while using Class III elastics, the side effects of upper arch proclination and lower arch retroclination are apparent (red and blue curved arrows, respectively).

Fig. 8:
Buccal shelf screws were used to retract the whole arch (WA) (green arrow). At the same time, the occlusal plane (OP) was rotated counterclockwise (blue arrow).

effectively, two miniscrews were inserted in the buccal shelves in the 11th month when the a 0.016x0.025 SS archwire was engaged. Since there is a higher play factor with a 0.016x0.025 SS archwire, the whole arch can be readily retracted easily, but there is a higher chance of torque loss. Conversely, a 0.019x0.025 SS archwire minimizes torque loss. However, as the archwire is more rigid, sliding mechanics is more difficult and it may be more uncomfortable for the patient.[7] From the 26th month until the end of the treatment,

detailed adjustments were applied such as bracket repositioning, midline correction, inter-proximal reduction (IPR), and anterior root torque (ART). All treatment and sequencing details are shown in Table 1 and illustrated in Figs. 9 and 10.
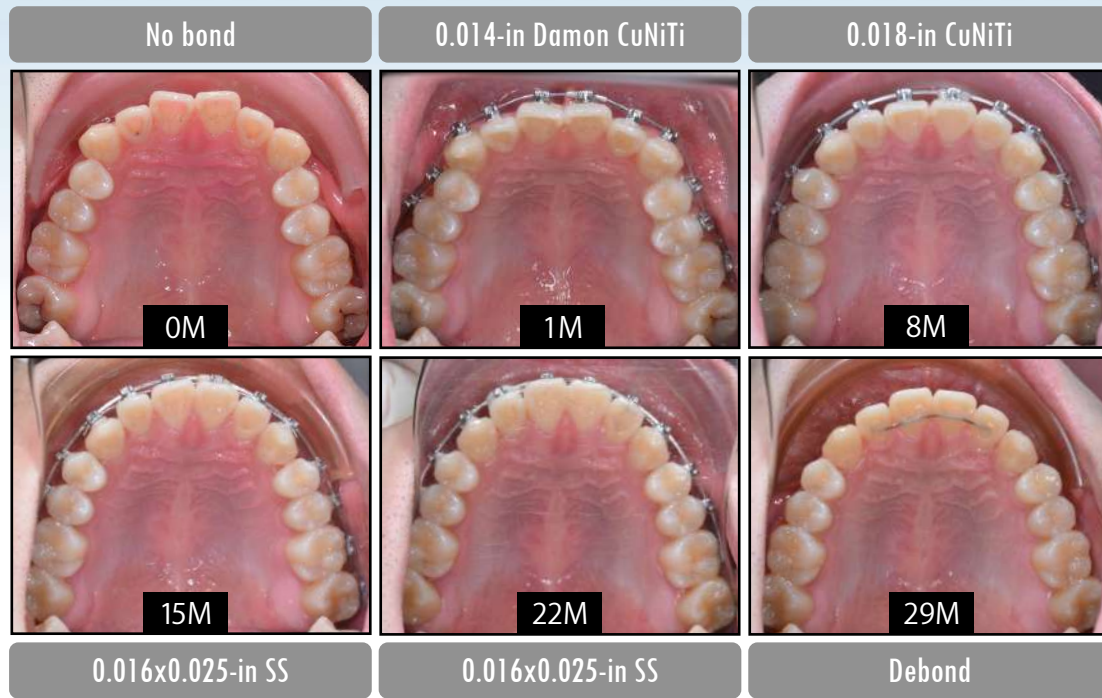
Treatment Results

After 29 months of active treatment, both the patient and the clinician were satisfied with the outcome (Figs. 11-13).
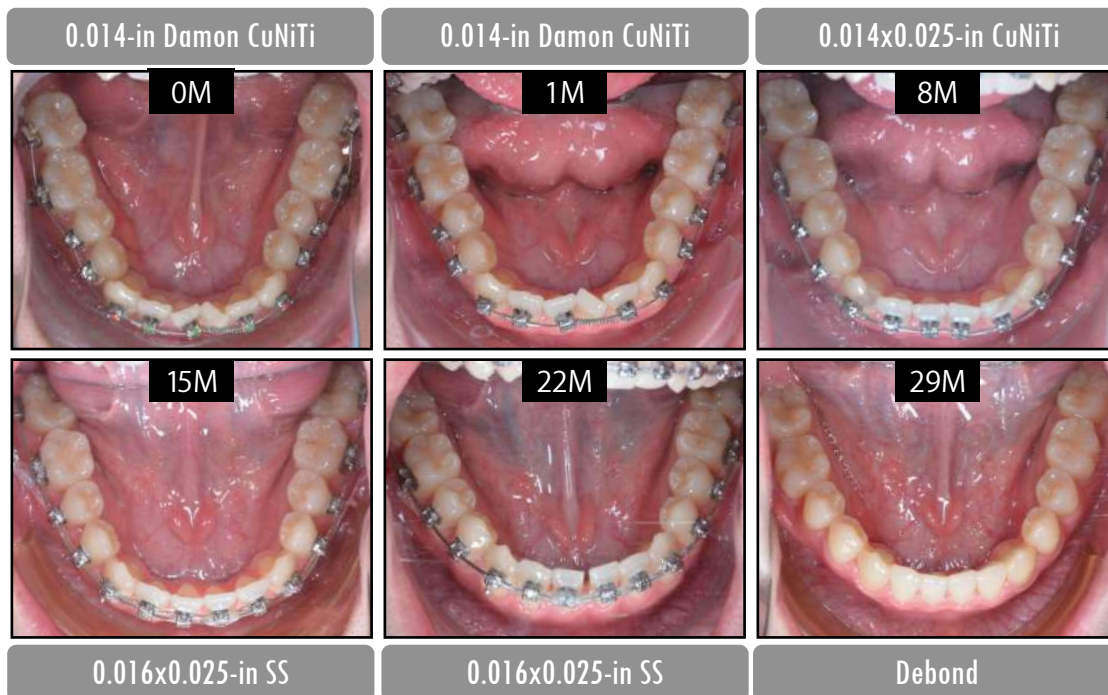
Months	Archwire	Notes
0	L: 0.014 CuNiTi	Damon® appliance bonded on the mandibular arch from LR7-LL7
1	U/L: 0.014 CuNiTi	Damon® appliance bonded on the maxillary arch from UR7-UL7
4	U: 0.018 CuNiTi L: 0.014 CuNiTi	
6	U: 0.014x0.025 CuNiTi L: 0.018 CuNiTi	Apply Quail elastics (3/16-in, 2-oz) from U6 to L5 (bilateral). Drop-in hooks and power chain (PC) inserted
9	U: 0.016x0.025 SS L: 0.017x0.025 TMA	Apply Kangaroo elastics (3/16-in, 4.5-oz) from U6 to L5 (bilateral). PC
11	U/L: 0.016x0.025 SS	Apply Kangaroo elastics (3/16-in, 4.5-oz) from U6 to L5 (bilateral). Buccal shelf screws at L6 (bilateral) Expand the upper archwire.
16	U: 0.016x0.025 SS L: 0.017x0.025 TMA	Apply Fox elastics (1/4-in, 3.5-oz) from U6 to L3 (right side).
19	U/L: 0.016x0.025 SS	Apply Fox elastics (1/4-in, 3.5-oz) from U6 to L3 (bilateral). Inter-proximal reduction (IPR) performed on mandibular incisors PC + power tube (PT)
22		Remove miniscrews (BS screws). IPR on lower right quadrant between lateral incisor and canine
24		Apply Fox (1/4-in, 3.5-oz) from U3 to L6 (bilateral).
26		Apply Parrot (5/16-in, 2-oz) from U6 to L3 (bilateral). Anterior root torque (ART) from UR3-UL3
26-29		Detailing adjustments

■ *Table 1:* *Treatment sequence*

No bond	0.014-in Damon CuNiTi	0.018-in CuNiTi
0M	1M	8M
15M	22M	29M
0.016x0.025-in SS	0.016x0.025-in SS	Debond

Fig. 9:
Treatment progress of the upper arch and the wire sequence are shown in months from the beginning (0M) to the end (29M) of treatment.

0.014-in Damon CuNiTi	0.014-in Damon CuNiTi	0.014x0.025-in CuNiTi
0M	1M	8M
15M	22M	29M
0.016x0.025-in SS	0.016x0.025-in SS	Debond

Fig. 10:
Treatment progress of the lower arch and the wire sequence are shown in months from the beginning (0M) to the end (29M) of treatment.

The ABO Cast-Radiograph Evaluation (CRE) score was 29 as shown in the subsequent Worksheet 2, which is considered an acceptable result for a severe Class III malocclusion with a DI score of 65. The major residual discrepancies scored for the CRE included marginal ridges (3 points), occlusal contacts (7 points), and occlusal relationship (19 points).

Although the occlusal contacts were compromised at the end of the treatment, at the 1-year follow-up, the occlusal contacts had settled in naturally via occlusal function (Fig. 15).[8,9]

The occlusal relationship was disappointing but it must be taken into account that this was a severe 11mm Class III discrepancy that was treated with a non-surgical, non-extraction, and minimally invasive approach. The Class III molar relationship was greatly improved from 11mm to 2mm, which is almost a Class I molar relationship.
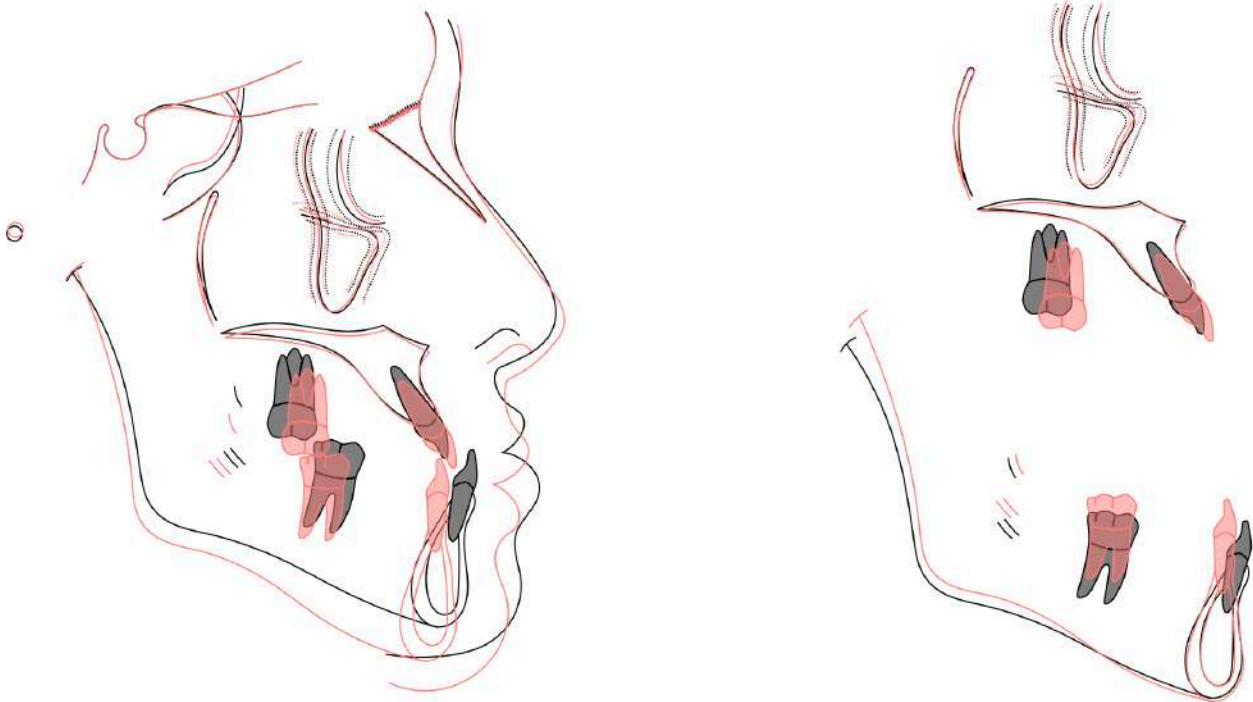

■ *Fig. 11:* *Post-treatment facial and intraoral photographs*

■ *Fig. 12:* Posttreatment lateral cephalometric radiograph.
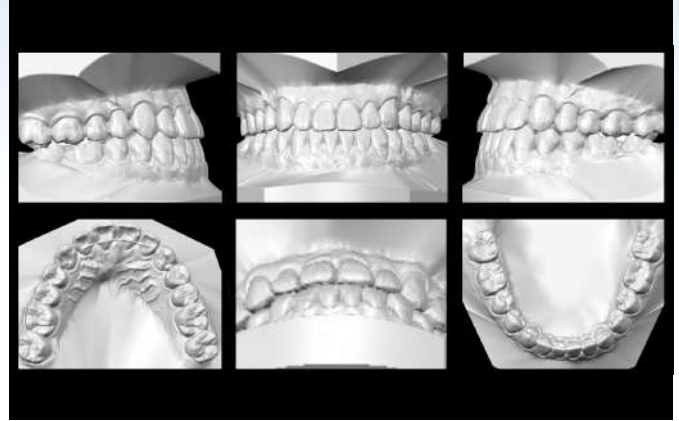
■ *Fig. 13:* Posttreatment dental models (digital model casts).

■ *Fig. 14:*
Superimposed cephalometric tracings show dentofacial changes over 29 months of treatment (red) compared to the pre-treatment position (black). The lower incisors were in a more upright position, and the Class III occlusion was corrected to Class I.

The cephalometric analysis showed an ANB improvement from -5.5˚ to -4˚. Although it is still considered a skeletal Class III, there was a major improvement in lip profile, and both upper and lower lips are within the E-line (Fig. 16).

Retention

An anterior fixed retainer was bonded on the lingual surfaces of the upper dentition from lateral incisor to lateral incisor and on the lingual surfaces of the lower dentition from canine to canine. Removable clear overlay retainers were delivered for both arches, and the patient was instructed to wear them full time for the first 6 months and nights only thereafter. Instructions were provided for home hygiene, as well as for maintenance of the retainers.

Discussion

Two major Class III mechanisms: Class III elastics and miniscrews, are frequently used in order to correct negative overjets. However, there are some common side effects that regularly appear when using Class III mechanics. In the present case, there were two major side effects:

■ *Fig. 15:*
The occlusal contact was not a perfect result at the end of the treatment (29 months). However, at the 1-year follow-up, the occlusal contacts were naturally settled by occlusal function.

■ *Fig. 16:*
After 29 months of treatment, there was a huge improvement in lip profile without any orthographic surgery.

1. Flaring upper incisors

In order to correct a 5mm negative overjet, Class III ELSE were used to retract the mandibular arch. As Newton's third law of motion states, for every action, there is an equal and opposite reaction. Therefore, using Class III elastics to retract the lower arch will result in the upper incisors flaring out. It can be clearly seen from the lateral cephalometric radiograph that the U1-SN angle increased from 113° in the 14th month of treatment to 120° in the 26th month (Fig. 18).[10]

When the upper incisor flaring was noticed in the 25th month, the first instinct was to use Class II elastics, but later it was apparent that this was not the most efficient approach (Fig. 19).

A better solution would have been to use an anterior root torque to produce labial root torque in conjunction with infrazygomatic crest (IZC) screws to stabilize the upper incisors (Fig. 20). Another reasonable solution would have been to wear an elastic from the upper canines to the lower buccal shelf miniscrews from the 19th month onwards until

CEPHALOMETRIC SUMMARY			
	PRE-TX	POST-TX	DIFF.
SKELETAL ANALYSIS			
SNA° (82°)	83°	83°	0°
SNB° (80°)	88.5°	87°	0.5°
ANB° (2°)	-5.5°	-4°	1.5°
SN-MP° (32°)	28.5°	32.5°	4°
FMA° (25°)	21.5°	25.5°	4°
DENTAL ANALYSIS			
U1 TO NA mm (4mm)	6	8	2
U1 TO SN° (110°)	113.5°	115°	1.5°
L1 TO NB mm (4mm)	4	-1	5
L1 TO MP° (90°)	81.5°	67.5°	14°
FACIAL ANALYSIS			
E-LINE UL (-1mm)	-4	-2	2
E-LINE LL (0mm)	1	-2	3
%FH: Na-ANS-Gn (53%)	52%	58.5%	6.5%
Convexity: G-Sn-Pg' (13°)	0°	8°	8°

■ *Table 2: Cephalometric summary*

the miniscrews were removed. Miniscrews provide better anchorage to hold the upper dentition and therefore reduce the side effect of flaring upper incisors (Fig. 21).

2. Marginal ridges discrepancy

When retracting the whole arch, bodily movement is not easy to achieve because the orthodontic force is applied on the crowns. Since the force does not pass through the center of resistance of the tooth, it generates a moment that produces the unwanted effect of crowns tipping distally, which is clinically evident as marginal ridge discrepancies (Fig. 22).[11-14]

Marginal ridges discrepancy is a common side effect when retracting the whole arch. It is hard to prevent especially when a large negative overjet is corrected. One way to correct a marginal ridge discrepancy is to reposition the molar brackets near the end of the treatment with the mesial aspect more occlusal to move the root apex further back in order to decrease the marginal ridge discrepancy.

■ *Fig. 17: Posttreatment panoramic radiograph*

■ **Fig. 18:**
The SN-U1 angle formed by SN (orange lines) and maxillary incisors (blue line) increased from 113° (14th month) to 120° (26th month) due to the side effect (flaring upper incisors) of wearing Class III elastics.
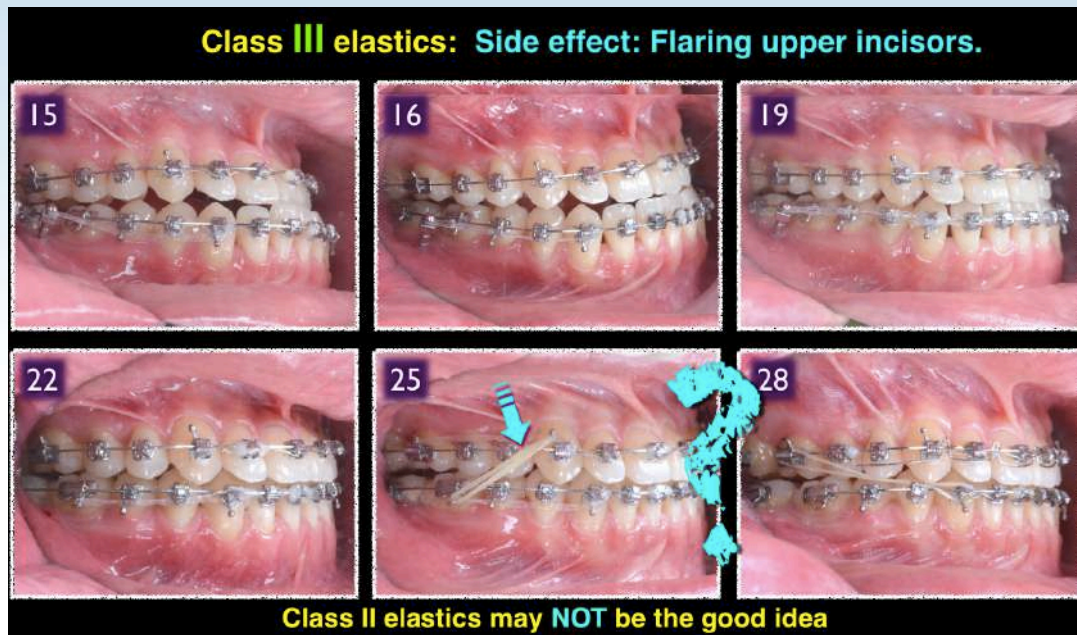
■ Fig. 19:
In the 25th month, Class II elastics were used in order to correct the flaring upper incisors. However, wearing Class II elastics may not have been the right choice.

■ Fig. 20:
A more effective and reasonable way to correct flaring upper incisors would have been to use anterior root torque (ART) to create labial root torque together with IZC screws to stabilize the upper incisors.

■ Fig. 21:
Another reasonable solution would have been to wear Class II elastics from U3 to BS screws (blue line) from the 19th month. This could simultaneously reduce the side effect of flaring upper incisors (light blue circle) while retracting the lower arch.

Conclusions

Sometimes, pursuing a "perfect" outcome can be tiring for both the patient and the clinician. It is good to bear in mind that "nothing is perfect; find the happy medium." It is important for the clinician to understand when to stop the treatment and to reach an outcome which is acceptable to both the clinician and the patient.

In the present case, the patient with a severe 11mm Class III molar relationship refused surgery and wanted a minimally invasive approach. It must also be taken into account that since side effects are
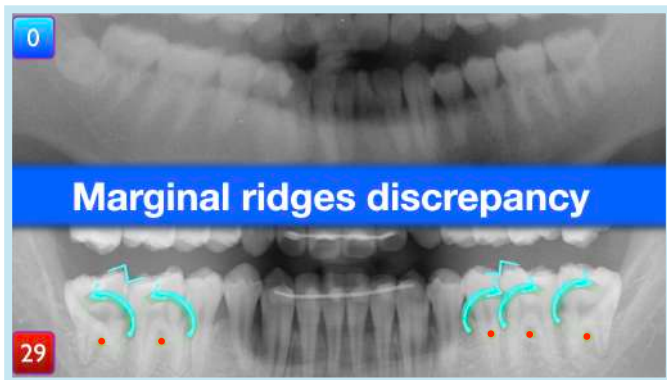
inevitable when using Class III mechanics, it would be nearly impossible to reach a perfect result for this case. However, by finding the happy medium, the treatment resulted in a harmonized outcome that pleased both the clinician and the patient.

Acknowledgments

References

1. Lin JJ. Mandibular growth and Class III treatment. Int J Orthod Implantol 2013;32:4-13.

■ *Fig. 22:*

Comparison of the pre- (upper) and posttreatment (lower) panoramic radiographs. The marginal ridge discrepancies (blue step) could be clearly evaluated at the end of the treatment (29th month). It is a common side effect when retracting the whole arch because the orthodontic force is applied on the crown, not the center of resistance (red dots). Thus, the force generates a moment (blue arrow) and therefore produces an unwanted crown tip-back effect.

2. Lin SL, Chang CH, Roberts WE. Early treatment of a Class III malocclusion, severe crowding and deep bite. J Digital Orthod 2018;51:44-58.

3. Chang CH. Advanced course No.1: Extraction decision-making tree. Beethoven Podcast Encyclopedia in Orthodontics 2011, Newton's A Ltd., Taiwan.

4. Lin JJ. Creative orthodontics blending the Damon system & TADs to manage difficult malocclusion. 2nd ed. Taipei, Taiwan: Yong Chieh; 2010. p. 263-71.

5. Huang C, Su C, Chang CH, Roberts WE. Mutilated pseudo-Class III malocclusion with anterior crossbite, knife-edge ridges and periodontal compromise: Alignment, sinus lift, bone graft, and implant-supported crowns. J Digital Orthod 2018;49:26–49.

6. Roberts WE, Viecilli RF, Chang CH, Katona TR, Paydar NH. Biology of biomechanics: finite element analysis of a statically determinate system to rotate the occlusal plane for correction of skeletal Class III malocclusion. Am J Orthod Dentofacial Orthop 2015;148:943-955.

7. Yen HY, Chang CH, Roberts WE. Improved archwire sequence for Insignia™. Int J Orthod Implantol 2019;53:76-78.

8. Varga S, Spalij S, Anic Milosevic S, Lapter Varga M, Mestrovic S, Trinajstic Zrinski M, Slaj M. Changes of bite force and occlusal contacts in the retention phase of orthodontic treatment: A controlled clinical trial. Am J Orthod Dentofacial Orthop 2017;152(6);767-777.

9. Morton S, Pancherz H. Changes in functional occlusion during the postorthodontic retention period: a prospective longitudinal clinical study. Am J Orthod Dentofacial Orthop 2009;135:310–315.

10. Burstone CJ, Choy K. The biomechanical foundation of clinical orthodontics. Quintessence Publishing Co, Inc 2015;12-13.

11. Smith RJ, Burstone CJ. Mechanics of tooth movement. Am J Orthod 1984;85:294–307.

12. Burstone CJ, Pryputniewicz RJ. Holographic determination of centers of rotation produced by orthodontic forces. Am J Orthod 1980;77:396–409.

13. Papadopoulos MA, Christou PK. Center of resistance of the maxillary complex: Theoretical models and practical

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applications in orthodontics. Hellenic Orthodontic Review 2000;3(1);35-51.

14. Nanda R, Ghosh J. Biomechanical considerations in sliding mechanics. In: Nanda R, ed. Biomechanics in Clinical Orthodontics. Philadelphia, Pa: WB Saunders; 1997. p. 188–217.

Discrepancy Index Worksheet

TOTAL D.I. SCORE   **65**

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   =   **20**

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   =   **0**

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. _____ pts. additional

Total   =   **22**

LINGUAL POSTERIOR X-BITE

1 pt. per tooth   Total   =   **3**

BUCCAL POSTERIOR X-BITE

2 pts. Per tooth   Total   =   **0**

CEPHALOMETRICS   (See Instructions)

ANB $\geq 6°$ or $\leq -2°$ = (4 pts.)

   Each degree < -2° __3__ x 1 pt.   = __3__

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

SN-MP

  $\geq 38°$ = 2 pts.

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

  $\leq 26°$ = 1 pt.

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

1 to MP $\geq 99°$ = 1 pt.

  Each degree > 99° _____ x 1 pt.   = _____

Total   =   **7**

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 ($\geq$ 3mm)	@ 2 pts.	=__2__
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 $\geq$2mm)	@ 2 pts.	=_____
Tooth transposition	_____ x 2 pts.	=_____
Skeletal asymmetry (nonsurgical tx)	@ 3 pts.	=_____
Addl. treatment complexities __5__	x 2 pts.	=__10__

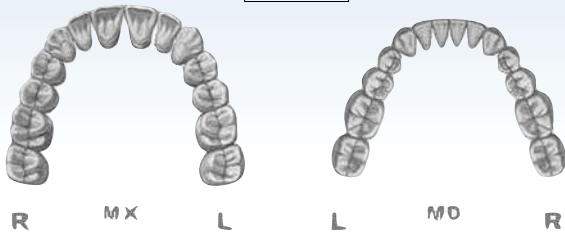Identify: This was supposed to be an OGS case, but the patient prefers non-surgery treatment.

Total   =   **12**

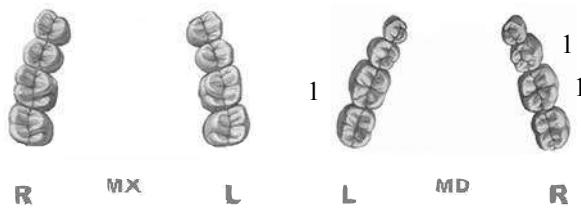## Cast-Radiograph Evaluation

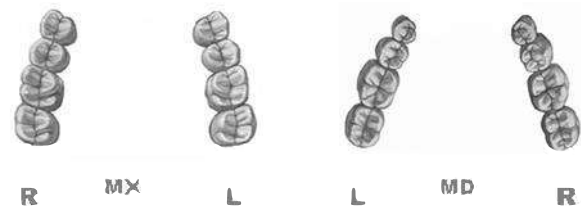**Total Score:** 29

Alignment/Rotations

0

Occlusal Contacts

7

R   L

Buccal Surface

2   1   2   2

L   R

Lingual Surface

Marginal Ridges

3

1
1
1   1

R   MX   L   L   MD   R

19

R   L

R   L
2 2 2 2 2   2 2 1 2 2

Buccolingual Inclination

0

R   MX   L   L   MD   R
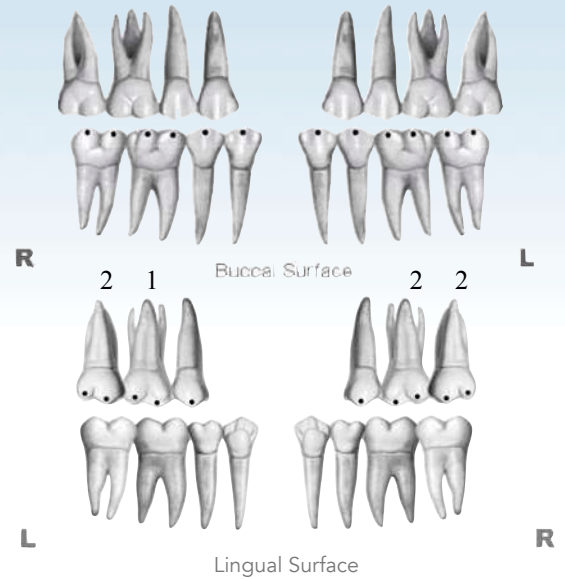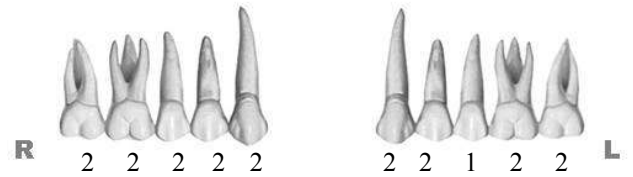
Interproximal Contacts

0

R   L

Overjet

0

R   MX   L

Root Angulation

0

R   L
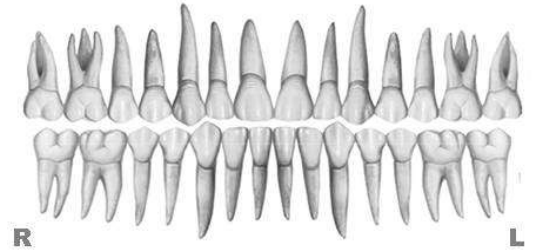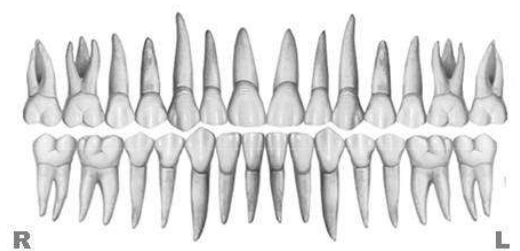
INSTRUCTIONS: Place score beside each deficient tooth in the white box. Mark extracted teeth with "X". Second molars should be in occlusion.

IBOI Pink & White Esthetic Score

Total Score = `3`

1. Pink Esthetic Score

Total = `1`

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

2023 Beethoven
Clinical Education

Beethoven Clinical Education 主要針對修習過 Damon Master Program、並想要繼續獲取更進階臨床與學術訓練的醫師所專門設計的課程。此訓練課程除了新增**學術文章寫作與演講的訓練**，也加入了**骨釘與 VISTA 術式**等操作課程，醫師不僅可以就近學習張慧男醫師的技術與經驗，亦同時培養醫師**期刊寫作**的能力與**高效簡報**的技巧。

修習完 Damon Master Program 與本課程，並完成**兩篇案例報告文章**後，即可取得赴**德國碩士班進修資格證書**。此系列課程能讓醫師在進入德國碩士班之前，做好最充分的準備。

Dr. Chris Chang

Dr. Joshua Lin

Dr. Eric Hsu

ABO Writing Training

Medical Writing Training-1   5/18
Medical Writing Training-2   6/1

Medical writing skills are crucial for clinicians, educators and researchers. This training contains academic medical writing on case reports. Participants will have a chance to publish articles for journals like Journal of Digital Orthodontics (JDO).

Presentation Workshop   6/15

The presentation workshop designed to help participants utilize the most frequently used presentation tools in Keynote to manage patient clinical records and create simple but effective patient communication presentation.

VISTA & 4 other Minor Surgeries for Orthodontic Practice

VISTA Hands-on Workshop   7/6

The VISTA (vertical incision subperiosteal tunnel access) surgical techniques for impacted cuspids will discuss the following topics:
1. VISTA with screw placement
2. VISTA with connective tissue graft
3. Suture technique

TADs & Surgeries Hands-on Workshop

The workshop covers bonding on a typodont, TAD placement, and 4 minor surgeries for orthodontic practice.

No bone covers the impaction crown

33

時間：週四全天（9 am - 5 pm）
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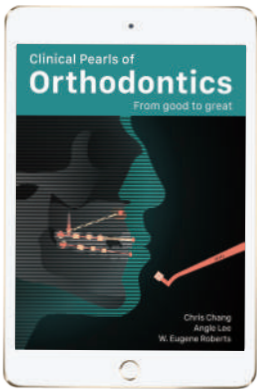
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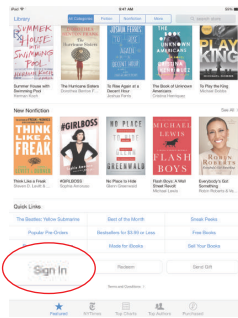
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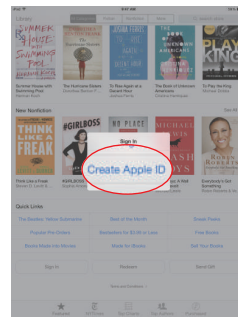
Step-by-step Instructions
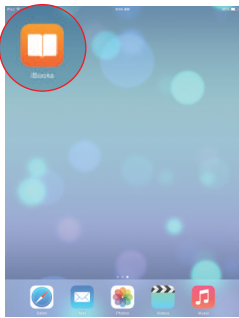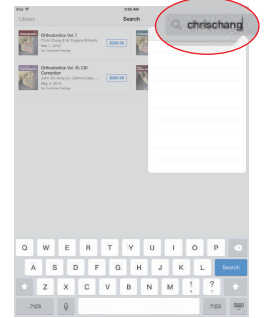
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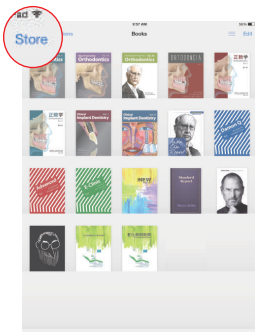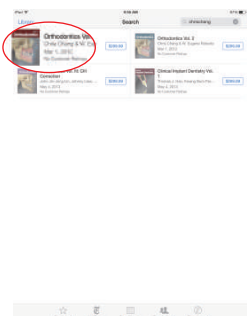
2. Click "Store."
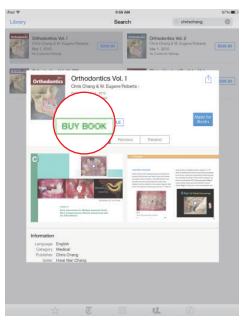
3. "Sign in" with your Apple ID.

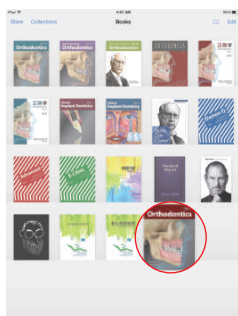4. "Create Apple ID" if you don't have one.

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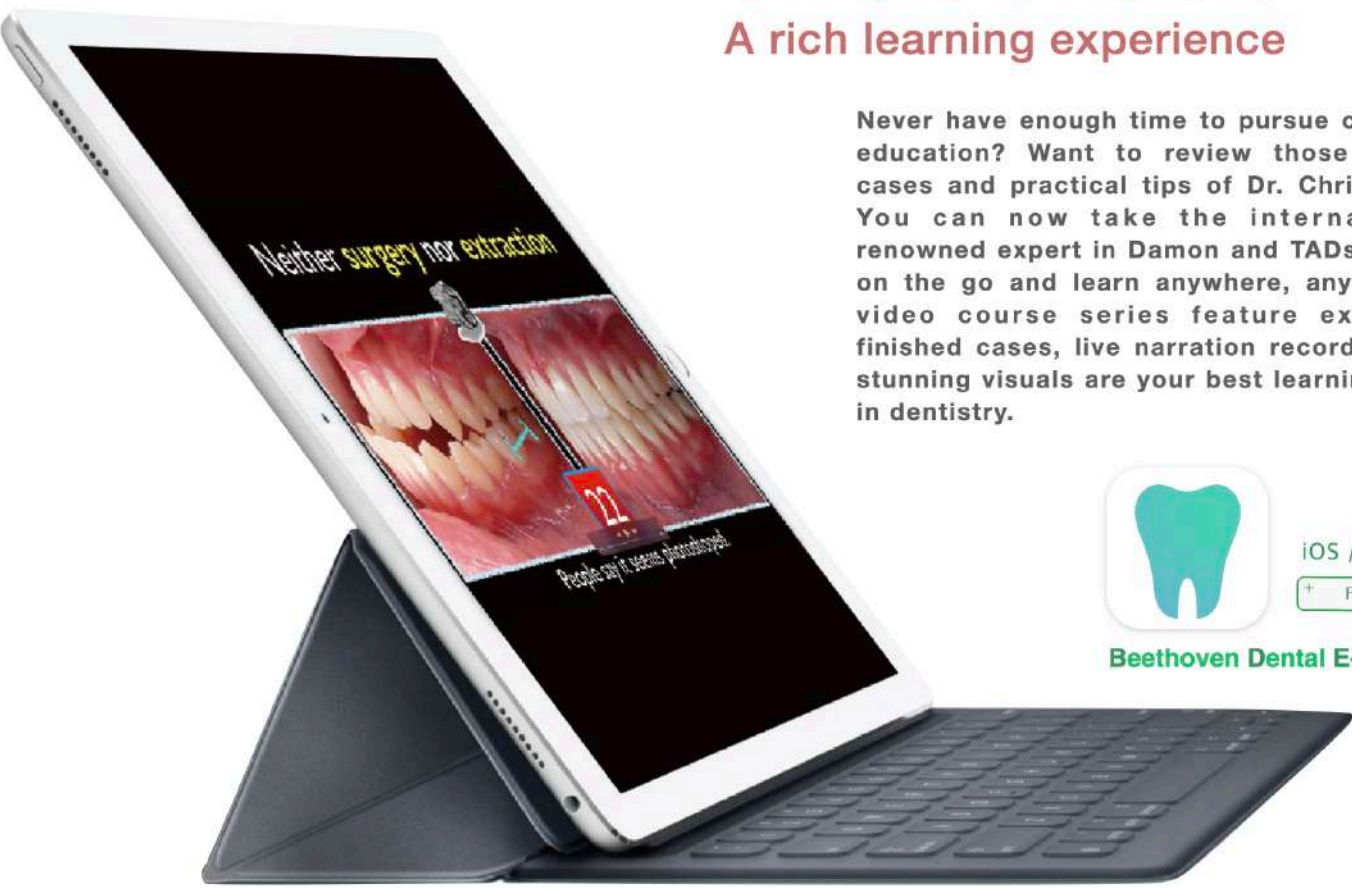
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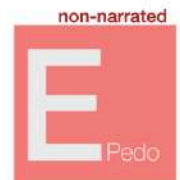| non-narrated	non-narrated	non-narrated	non-narrated
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Note:
1. Most video courses are available in both English and Chinese and are sold separately.
2. Damon Master and OBS (TAD) are renewed annually and each renewal is to be purchased separately with a 50% discount.

貝多芬視訊課程心得
Feedback on Beethoven's e-Courses

通過潘老師（潘超醫師）知道了張老師的課程，購買了 2019 年正畸大師的課程和支抗釘（bone screw）課程，2019 年正畸大師課，我做了 40 頁的筆記，內容真的非常豐富，聽了第一節課就感覺到值了，還和朋友分享。

想分享的感受實在太多了，之前研究生學的修復，畢業後做了矯正，零基礎進入這個專業，現在工作 1 年半了。先聽了張老師支抗釘的課試試水，半年後又忍不住買了正畸大師，用1個月聽完，做筆記，反思自己手上的患者，疫情在家裡封閉4個月反覆回味，4個月後再來看手上的患者，發現原來看不懂的患者可以看懂了，診斷的速度變得更快了，放棄了原來很多複雜的方法，患者輕鬆，自己也輕鬆。並且聽完張老師的課後，對自己提出了一些小要求：

1. 學習拍照，建立檔案；
2. 患者來之前就把思路想好，避免患者在椅子上躺超過1個小時的時間，很累，自己彎腰也很累；
3. 對手上的一些步驟盡量標準化，形成 routine，節省自己的時間；
4. 遇到什麼問題先自己想想，不向老師打伸手牌，這樣做之後收穫反而比直接請教老師還多；
5. 練習基本功。

現在每天晚上回家來，對著患者的檔案分析，一坐一個小時，感覺很有滋味，從反思檔案中也學到很多。本來就很喜歡矯正這個專業，覺得它可以為患者帶去快樂與美，患者在我這裡看到自己的變化經常笑眯眯的來和走，張老師的課讓我更加覺得學習矯正很值得。這個課的價值超過了買下的價格。張老師除了教矯正之外，還傳遞了一些其他的人生智慧，讓剛剛組建家庭，手忙腳亂的我，又重新思考自己的人生方向，比如：

- 理財：
1. 有簡單的生活方式，不養成花錢的習慣，這樣負擔就不會很重；
2. 有了錢先投資給診所，因為診所是賺錢的工具，住家可以住就行了。

- 如何生活：
1. 診所需要有窗戶，這樣抬頭時候心情才會好；
2. 不只讀書，需要鍛鍊身體，身體很重要，他每天都打高爾夫。

- 關於工作：
1. 最好的開業年紀：35-40歲，一開始先在公家單位磨練，因為醫療有一定危險性；
2. 器械再貴，都沒有醫生的時間貴，也沒有心情貴，末切鉗子買好一些；
3. 正畸是一種藝術，高爾夫、繪畫、小提琴、吉他中得到的練習和思維方式，帶回到正畸當中去；
4. 3 分鐘沒有想出這個患者的治療方案，就會讓助理打印出來治療方案，放在自己家裡的牆上，看到了就想一想。現在也在學習這種辦法，把知識點貼在廁所牆上看，還需要繼續實踐。

另外，在公立醫院工作，除了做矯正之外，還需要承擔給學生教學的任務，聽了張老師的教學之後，發現張老師的語言很接地氣，可以用幾句簡單的句子把一個複雜的理論說清楚，並且張老師有效的教具，讓我對自己的教學方式產生了反思：往往用一張有用的幻燈片，幾個 actions ，一張圖表就可以說清楚的問題，何必和同學們講半個小時，還聽不明白呢？

當然也動心想購買 iPad，學習 keynote，剛出來工作，現在還需要存點錢。聽課做的筆記，其中的精華就很多了，值得去反覆的思考也值得反覆去看，每看一遍都有新的收穫。

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第一附屬醫院