Treatment of Full-Cusp Skeletal Class III Malocclusion with Facial Asymmetry without Surgery, Extraoral Anchorage or TADs
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Class II with a Trans-Alveolar Impaction of a Maxillary Canine
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Drs. Che Wen Liu, Chris H. N. Chang & W. Eugene Roberts

IJOI

International Journal of Orthodontics & Implantology

Vol. 25 Jan. 1, 2012

Drs. Yoo Kyung-Ho, Choi Jae-Heung, Lee Sang-Taek (front row) together with Chris Chang, Kwang Bum Park (back row) in front of a collection of antique orthodontic rare books in the study room of Dr. Chang's. On the desk lay Angle's busts made of bronze and colored glaze.

International Journal of Orthodontics and Implantology is an experience sharing magazine for worldwide orthodontists and Implantologists. Download it at *http://iaoi.pro*

2012 熱愛學矯正

張慧男 博士

新竹貝多芬齒顎矯正中心負責人
中華民國齒顎矯正專科醫師
美國齒顎矯正專科醫師學院院士（ABO）
美國印地安那普渡大學齒顎矯正研究所博士

學會開始做矯正需多久?

39小時讓您入門矯正。本課程採高效學習法及高效矯正簡報法 - Keynote，在舒適、輕鬆的環境下，學會簡單有效的矯正方法，教室與診間結合，讓您現學現用，立即熟悉各種習得的技巧，而不需太多課後複習。全程以 In-Office Training 方式，用病例帶動分析、診斷，治療計畫與療程技巧，每一步驟皆以圖片及影片教學，讓您很難錯失任何環節，更沒有聽不清楚或無法理解的可能。為提高課後自我學習及臨床印證之效率，另備有教學電子檔，供學員家中研習。我們的終極目標是：用最短時間、最輕鬆的方式，讓每位學員 - *熱愛矯正學、熱愛學矯正*。

Damon + .014 Cu NiTi

Damon Clear

Damon矯正課程

【課程】9:00 - 12:00
【實習】另外安排

使用最新一代矯正器 Damon Q 進行課程，歡迎舊生報名參加。

	台中 (二)	高雄 (四)	台北 (二)	LECTURE	LAB
1	6/5	6/7	10/2	理想入門病例+Damon Q黏著	Bonding (Damon Q) + BT
2	6/26	6/21	10/9	快速矯正療程四部曲	Ceph + Photo
3	7/3	6/28	10/23	簡捷有效的錨定系統	Damon + OrthoBoneScrew I
4	7/17	7/12	11/6	不拔牙與拔牙分析	Damon + OrthoBoneScrew II
5	7/24	7/19	11/27	Damon 診斷流程及微調	Finish Bending
6	7/31	8/2	12/4	完工檢測及報告示範	Fixed Retainer (FR)
7	8/7	8/9	12/11	維持及復發：病例示範	Presentation Demo
8	8/21	8/23	1/8/13'	矯正力學及診斷分析 (1)	DDX + Case Reports I
9	8/28	8/30	3/5	軟硬組織及診斷分析 (2)	DDX + Case Reports II
10	9/4	9/6	3/26	兒童矯正及診斷分析 (3)	DDX + Case Reports III
11	9/11	9/13	4/9	成人矯正及診斷分析 (4)	DDX + Case Reports IV

矯正植體課程

【課程】9:00 - 12:00
【實習】13:30 - 20:00

矯正植體的操作時機、植法與實習、個案討論、臨床跟診及實作示範。

新竹(五) 9/21 (含午、晚餐)

International workshop

Keynote & managment
OrthoBoneScrew & Damon

A班 6/12-14
B班 11/13-15

矯正進階課程

【新竹】9:00 - 12:00
【高雄】14:00 - 17:00

以病例討論為主軸，培養學員如何正確診斷及快速排除臨床疑點，課程中亦訓練每位學員善用 Keynote。

	新竹 (四)	高雄 (四)	Paper Reviews	Topics & Case Demo
1	7/5	10/4	Bracket Placement	Crowding: Ext. vs. Non-ext.
2	7/26	10/11	Impacted Canines	Upper Impacted Teeth
3	9/27	11/8	Canine Substitution	Lower Impacted Teeth
4	11/1	11/22	Missing 2nd Premolar	Missing: Ant. vs. Post.
5	11/29	12/6	DI Workshop	Crossbite: Ant. vs. Post.
6	12/20	12/27	CRE Workshop	Open Bite High Angle
7	1/3/13'	1/10/13'	Excellence in Finishing (occlusion)	Deep Bite Low Angle
8	2/21	3/7	Excellence in Finishing (esthetics & perio)	Gummy Smile & Canting
9	3/21	3/28	Ortho-Perio-Restore Connection	Esthetic Finishing (Transposition)
10	4/25	4/11	Adjunct to Perio	Implant-Ortho
11	5/2	4/18	Unhappy Patient	IDT - Adult Complex

助理訓練課程

【課程】10:00 - 14:30
【實習】15:00 - 20:00

每梯次共兩堂課程與技術操作，內含照相技術、Morph 與公關衛教之電腦資料處理；另安排一次診所見習。

新竹(五) 10/5、12 (含午、晚餐)

矯正精修課程

【課程】9:00 - 12:00

協助每位學員了解由古典到現代之文獻，進而應用於實際病例；並藉由DI及CRE讓精緻完工（Excellent Finishing）變成易達到的目標。

新竹 (二) 精修IV 5/22 6/19 7/10 8/14 9/18 10/16 11/20 12/18
1/15/13' 3/19 4/16

課程資訊

上課地點

【台北】
恒毅資訊中心 畢卡索廳
/ 台北市復興北路號99號12樓
(捷運南京東路站旁)

【新竹】
金牛頓藝術科技公司
/ 新竹市建中一路25號2樓

【台中】
中國文化大學台中教育中心
/ 台中市西屯區中港路二段128之2號3樓

【高雄】
國立科學工藝博物館-南館
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＊每次上課請依最新一期 IJOI 公告為主

Interactive iBook: The future of learning and teaching

As orthodontists we have long been searching for the most efficient way to learn orthodontics. Irregardless one's experience level we all agree case studies can provide rich and practical information for learning. There is probably no better way to learn about orthodontics than studying well documented cases based on theoretical foundation and scientific evidence.

When Apple made an interactive e-publishing software, iBooks Author, available early this year, I have found an engaging and effective tool for learning. One can use several pages, even chapters to describe proper bonding positions or various applications of bone screws. However, this new software can display graphics and videos in a dynamic and interactive fashion. All that is hard to express clearly in words, can be understood easily by high quality visual aids. Forget about conventional ways of reading. Use your magic fingers. The world of orthodontics is within a few touches away.

Every once in a while a revolutionary product/idea/way of life comes your way. I believe the era of interactive learning has arrived. This year we will publish a special collection of case reports previously published in our journal, and its former version, *News and Trends in Orthodontics*, and launch its e-version simultaneously. We are very excited about how this new application of technology will tremendously enhance our learning experience-making it fun and easier than ever. Be forewarned - if you pick up this book, your perception of reading and learning will never be the same again.

Chris H. N. Chang, DDS, PhD, Publisher


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Dr. Tom Pitts


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Treatment of Full-Cusp Skeletal Class III Malocclusion with Facial Asymmetry without Surgery, Extraoral Anchorage or TADs

History and Etiology

A 17-year-11-month-old female presented for orthodontic consultation with chief complaints of anterior cross bite and facial asymmetry. She was previously advised by several orthodontists that surgery was the only viable option for correcting her malocclusion and facial asymmetry (*Figures 1-3*).

There were no contributing medical, dental or family histories. The etiology of the malocclusion was unknown, but it is probably genetic based on the nature of the skeletal malocclusion.

The patient was treated to an optimal result as documented in Figures 4-6 without surgery, extraoral anchorage or temporary anchorage devices (*TADs*). The cephalometric and panoramic radiographs document the pre-treatment condition and the post-treatment results (*Figures 7, 8*). The cephalometric tracings before and after treatment are superimposed in Fig. 10.

Diagnosis

Skeletal:

- Skeletal Class III (*SNA 81°, SNB 85°, ANB -4°*)
- Average mandibular angle (*SN-MP 35°, FMA 27°*)
- Facial asymmetry: mandible deviation to right

Dental:

- Bilateral full cusp Class III molar relationship
- Bilateral Class III canine

Fig. 1: Pretreatment facial photographs

Fig. 2: Pretreatment intraoral photographs

Fig. 3: Pretreatment study models

Dr. Shu Ping Tseng, Lecturer, Beethoven Orthodontic Course (right)
Dr. John Jin-Jong Lin, MS, Marquette University Chief Consultant of IJOI
President of TAO (2000~2002) Author of *Creative Orthodontics* (middle)
Dr. W. Eugene Roberts, Consultant,
International Journal of Orthodontics & Implantology (left)

Functional shift from CO to CR was 1-2mm (*Fig. 9*)
In CO the OJ was -4 mm, and the OB was 2 mm
Maxillary right 1st molar (#3) was in lingual crossbite
5 mm space deficiency for upper arch
3 mm space deficiency for lower arch
All four 3rd molars are missing
ABO Discrepancy Index (*DI*) was 23, fitting the major malocclusion category (*DI >20*)

Facial:

Straight profile (*Fig. 9*)
Protrusive lower lip

Specific Objectives of Treatment

Maxilla (*all three planes*):

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

Mandible (*all three planes*):

- A - P: Retraction
- Vertical: Clockwise rotation to open the vertical dimension of occlusion (*VDO*)
- Transverse: Maintain

Maxillary Dentition:

- A - P: Slight flaring of incisors to achieve anterior cross bite correction
- Vertical: Extrude molars to open the VDO
- Inter-molar / Inter canine Width: Expansion to relieve crowding and #3 lingual cross-bite

Fig. 4: Posttreatment facial photographs

Fig. 5: Posttreatment intraoral photographs

Fig. 6: Posttreatment study models

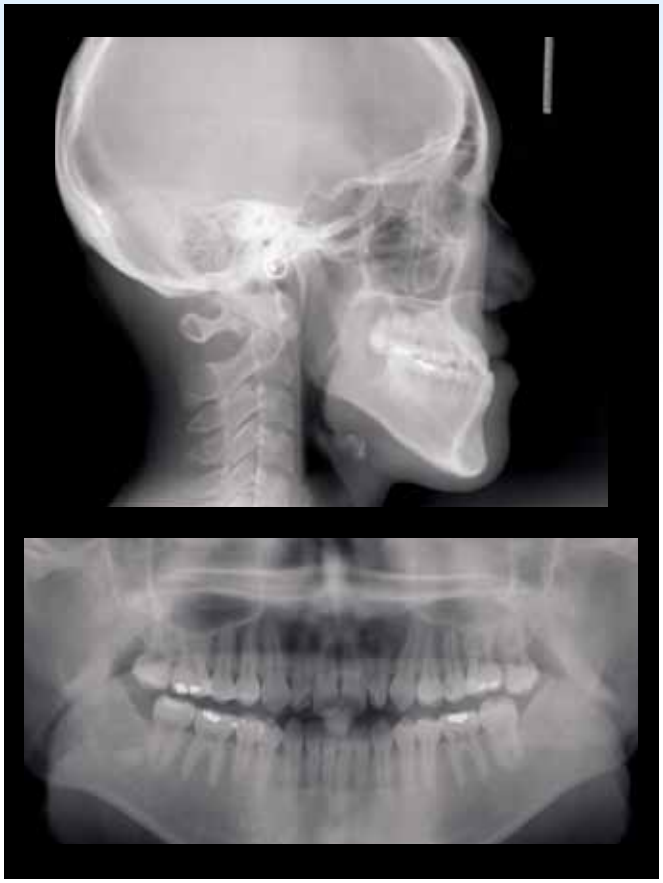


Fig. 7: Pretreatment pano and ceph radiographs

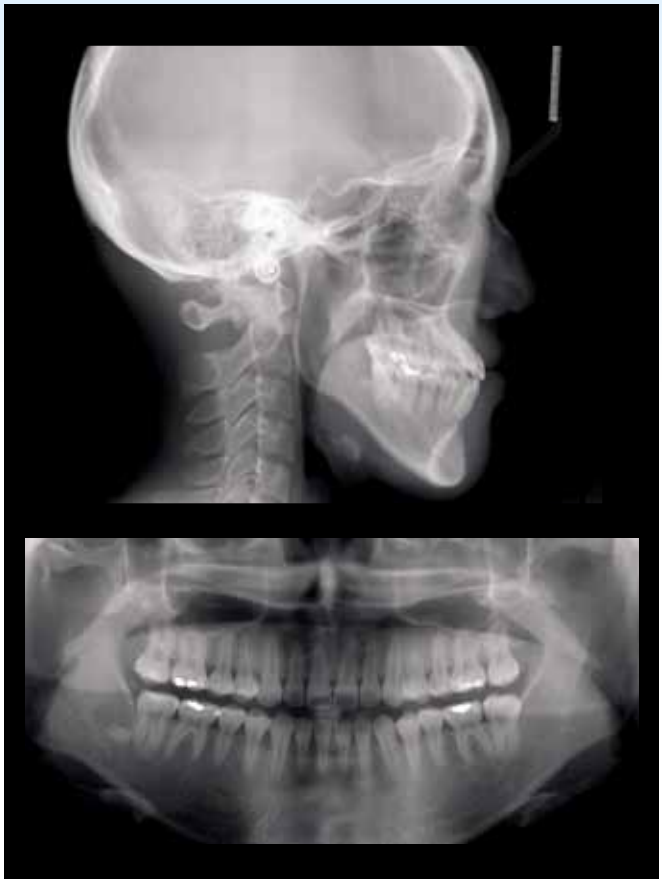


Fig. 8: Posttreatment pano and ceph radiographs

Fig. 9: Lateral view at CO and CR position

CEPHALOMETRIC			
SKELETAL ANALYSIS			
	PRE-Tx	POST-Tx	DIFF.
SNA°	81°	81°	0°
SNB°	85°	83°	-2°
ANB°	-4°	-2°	2°
SN-MP°	35°	37°	2°
FMA°	27°	28°	1°
DENTAL ANALYSIS			
U1 TO NA mm	8 mm	9 mm	1 mm
U1 TO SN°	70°	69°	-1°
L1 TO NB mm	6 mm	6 mm	0 mm
L1 TO MP°	82°	74°	-8°
FACIAL ANALYSIS			
E-LINE (*U*)	-12 mm	-9 mm	3 mm
E-LINE (*L*)	-2.4 mm	-3 mm	0.6 mm

Table. Cephalometric summary

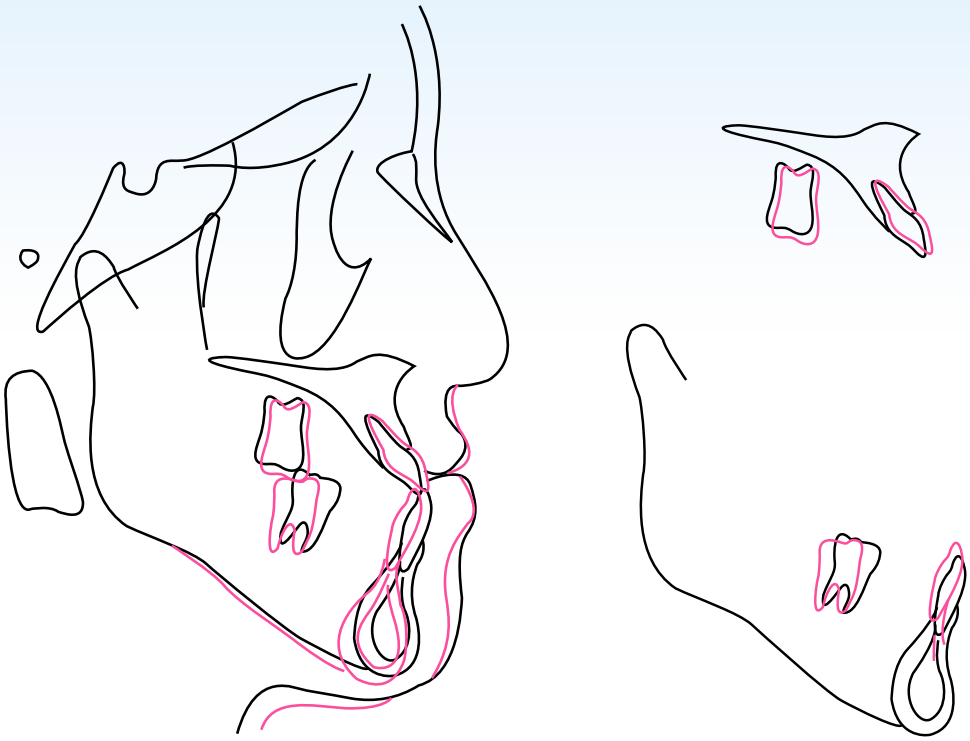


Fig. 10: Superimposed tracings

Mandibular Dentition:

- A - P: Anterior teeth retraction and posterior teeth tip-back
- Vertical: Lower incisors extrusion
- Inter-molar / Inter-canine Width: Maintain

Facial Esthetics:

- Protrude upper lip
- Retract lower lip

Treatment Plan

Non-extraction treatment with passive self-ligating bracket system (*Damon Q*) was indicated. Lingual buttons and cross elastics were used to correct the cross bite of molars and canines in the beginning of the treatment. Class III elastics were used to correct A-P discrepancy by flattening the plane of occlusion and opening the VDO (*nonsurgical camouflage treatment*). To enhance the camouflage effect, Class III elastics were initiated early in treatment (*.014x.025 CuNiTi stage*) while final alignment of the dentition was achieved near the end of active treatment.

Appliances and Treatment Progress

.022" slot Damon Q low torque brackets (*U1= +2°, U2= -5°, U3= -9°*) were selected. For lower incisors, brackets were bonded upside-down to have high torque (*L1= L2= +11°*) expression (*Fig. 11*). Two lingual buttons were bonded on tooth #2 and #3 with cross elastics hooked to tooth #30 and #31 separately for posterior cross bite correction which were accelerated by using glass ionomer composite bite turbos on teeth #18 and #31 (*Fig. 12*) from the first day of bonding. The initial archwires were .013 CuNiTi.

In the 3rd month of treatment, the round wires was replaced with rectangular .014x.025 CuNiTi wires. Four crimpable hooks were installed for mid-line correction as showed in Fig. 13. Two months later, .018x.025 CuNiTi wires with two crimpeble hooks in the lower anterior area were applied, and Class III elastics (*Kangaroo 3/16, 4.5 oz*) were used to correct the A-P discrepancy (*Fig. 14*).

After nine months of treatment, .019x.025 SS wires with two hooks crimped in asymmetric position in the lower anterior area were applied. The Class III elastics were continued to correct the mid-line and A-P discrepancies (*Fig. 15*). At this stage, the upper wire was cut off distal to the first molar to reduce friction (*Fig. 16*). After 22 months of active treatment, without any surgical procedure or additional anchorage devices (*ex: bone screws, bite fixers, facial masks etc.*), the treatment was completed and all appliances were removed (*Figures 17, 18*).

Fig. 11:
Low torque brackets of lower incisors were bonded up-side-down to have high (L1=L2=+11°) torque expression.

Fig. 12:
Bite turbo made of GIC on lower secondary molars for bite opening to accelerate posterior X-bite correction.

Results Achieved

Maxilla (*all three planes*):

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

Mandible (*all three planes*):

- A - P: Retracted
- Vertical: Clockwise rotation to open the VDO
- Transverse: Maintained

Maxillary Dentition:

- A - P: Incisors slightly flaring
- Vertical: Extrusion of the posterior teeth
- Inter-molar / Inter-canine Width: Crowding and cross bite corrected with arch expansion

Mandibular Dentition

- A - P: Incisor retracted and molars were tipped distally
- Vertical: Incisors extruded
- Inter-molar / Inter-canine Width: Crowding released and cross bite corrected

Fig. 13:
4 crimpeble hooks on .014X.025 CuNiTi wire for mid-line correction.

Fig. 14:
2 crimpeble hooks on .018X.025 CuNiTi wire for Class III elastics.

Fig. 15:
2 asymmetric crimpeble hooks on .019X.025 SS wire for mid-line and A-P discrepancy correction.

Facial Esthetics:

- Upper lip slightly more protruded
- Lower lip was retruded slightly

Retention

Upper Hawley and lower spring retainers were delivered, and the patient was instructed to wear them full time for the first six months and nights only thereafter. In addition, the patient was instructed in proper home hygiene and maintenance of the retainers.

Fig. 16:
Upper wire cut distal to first molar to reduce friction.

Final Evaluation of Treatment

The CRE score was 25 points. The major discrepancies were uneven marginal ridges (*7 points*), buccolingual inclination of posterior teeth (*5 points*) and loss of some occlusal contacts (*6 points*), which resulted primarily from the tip-back of molars in the lower arch (*Fig. 19*). There was no appreciable change in facial asymmetry.

Fig. 17: Closed eruption surgery day and one week later.

Fig. 18: Closed eruption surgery day and one week later.

The OB was 2 mm, OJ was 2 mm, molar relationship were Class I bilaterally, and the profile was improved. Overall, the treatment results for this challenging case were pleasing for both the patient and the clinician.

Discussion

In treating Class III cases, correct diagnosis, appropriate timing for treatment and treatment mechanics have long been challenging for most clinicians due to unpredictable growth and development. However, the following indicators often suggest favorable prognosis: (*1*) orthognathic profile in the retruded centric relation position, (*2*) a functional shift, (*3*) low to average mandibular plane angle, (*4*) no open bite, and (*5*) no significant crowding.

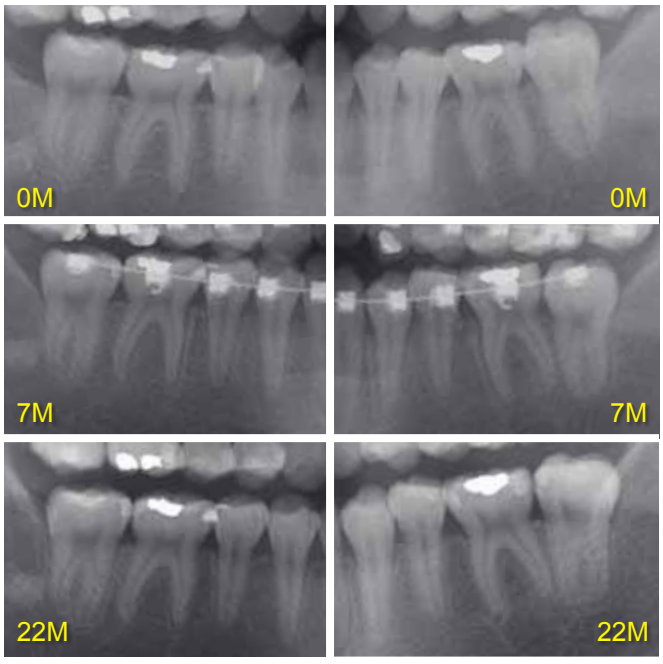


Fig. 19: Radiographs show the progress of tip-back.

Generally, treatment is delayed until the end of puberty for true skeletal Class III patients, especially for the mandibular deviation cases, as they tend to worsen with growth.[1] Although age 18 is often recommended as the minimal age for definitive treatment of skeletal Class III malocclusions for both males and females, it is important to inform patients and parents about the possibility of profile changes due to future growth. Thus extraction therapy, extraoral anchorage, TADs or even orthognathic surgery are commonly suggested as treatment options for true skeletal Class III patients. According to the prediction indicators mentioned previously, the prognosis for the present patient was favorable. Hence, a relatively simple treatment plan was indicated using passive self-ligating brackets and Class III elastics.

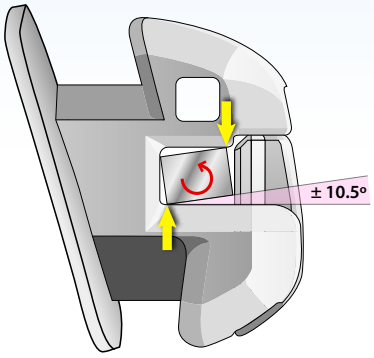


Fig. 20: "Play" between .019x.025 SSW in .022X.028 slot

In the past, Kim's MEAW technique was commonly used to treat open bites, severe Class II, Class III, and asymmetric malocclusions. Presently the 10.5° of play between .019x.025 SS wire and a .022 slot Damon Bracket (*Fig. 20*) can also create a MEAW-like effect. The multiloop MEAW archwire is replaced by a passive self-ligating bracket, so both patients and clinicians can benefit from decreased treatment time and better oral hygiene.

Conservative treatment of Class III skeletal malocclusions with intermaxillary elastics usually results in distal tipping of the mandibular molars. Thus, unerupted mandibular 3rd molars should be extracted before the start of treatment to prevent them from being impacted.[3]

Side effects of Class III elastics include labial tipping of upper incisors, extrusion of upper molars and tip-back of lower molars.[4] Since these effects are favorable for the present patient, Class III elastics were used rather than inserting bone screws in the buccal shelf of the mandible[5] to provide skeletal anchorage to retract the lower dentition.

Class III elastics are frequently used for A-P discrepancy correction, but torque selection for anterior teeth is crucial. Low torque brackets for upper incisors and high torque brackets for lower incisors are recommended to compensate for the side effects of the elastics. Additionally, bonding a low torque bracket upside down

on lower incisors is a viable alternative if high torque bracket are unavailable. For Class III elastics application, crimpleble hooks are preferable to K-hooks or dropping hooks for preventing single teeth from rotation. At the .019x.025 SS stage, the upper wire distal to the first molar was cut to reduce friction.[6]

Patient cooperation is essential for treatment with intermaxillary elastics. In this case, the patient was informed about the benefits and risks of wearing elastics, compared to surgical correction. She made a decision to cooperate before treatment commenced. Good patient cooperation contributed substantially to the success of this treatment.

Conclusion

This case report demonstrates that patients with a skeletal Class III, full cusp Class III molar relationship bilaterally, and a mild prognathic profile in the centric relation position are good candidates for conservative treatment with Damon self-ligating brackets and Class III elastics.

The patient was pleased to achieve a good result without any extractions, surgery, extraoral anchorage, TADs or complex, multiloop archwires. Moreover, successful management of such difficult cases with relatively simple mechanics increases the patient's confidence and trust in the clinician.

Acknowledgment

Thanks to Ms. Tzu Han Huang, Dr. Chris Chang, Dr. John Jin-Jong Lin and Dr. Roberts for proofreading this article.

References

1. Lin JJ. Creative orthodontics blending the Damon system & TADs to manage difficult malocclusions second edition. Yon-Chien Ltd. 2010:298
2. Kim YH. Anterior open bite and its treatment with multiloop edgewise archwire. Angle Orhtod. 1987:57:290-321
3. Lin JJ. Creative orthodontics blending the Damon system & TADs to manage difficult malocclusions second edition. Yon-Chien Ltd. 2010:397
4. Huang S. Non-extraction management of skeletal Class III malocclusion with facial asymmetry. News & Trends in Orthodontics. 20101: vol. 20 Oct. 1:22-31
5. Lin JJ. Treatment of severe class III with buccal shelf mini-screws. News & Trends in Orthodontics 2010: vol. 18 Apr 1:4-15
6. Huang S. Tom Pitts' secrets of excellent finishing. News & Trends in Orthodontics. 2009: vol. 14 Apr. 1:6-23

DISCREPANCY INDEX WORKSHEET

CASE # 1 **PATIENT** Shi-Yen Chen

TOTAL D.I. SCORE 23

EXAM YEAR	2011
ABO ID#	9999

OVERJET

0 mm. (edge-to-edge)	=	1 pt.
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 = 6

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 = 4

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	8 pts.
Beyond Class II or III	=	1 pt. per mm. additional	1 pts.

Total = 9

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° _____ x 1 pt. = _____

Total = 0

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 pts. =	_____
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. =	3
Addl. treatment complexities	_____ x 2 pts. =	_____

Identify:

Total = 3

Exam Year	2011
ABO ID#	9999

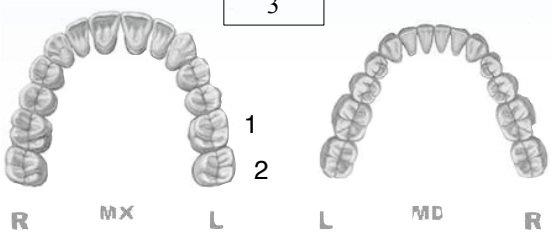
Examiners will verify measurements in each parameter.

Case # 1 **Patient** Shi-Yen Chen

Total Score: 25

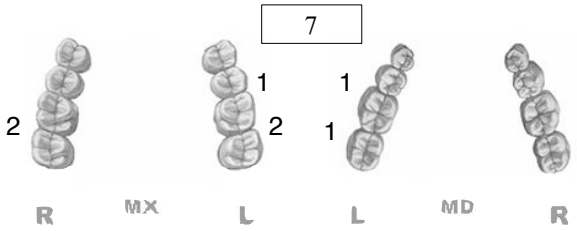
Alignment / Rotations

3



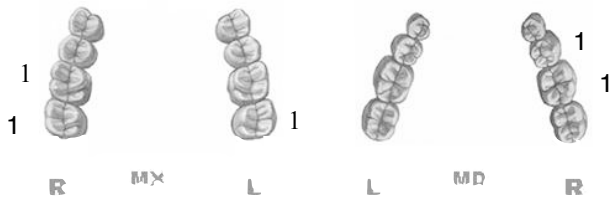
Marginal ridges

7



Buccolingual Inclination

5

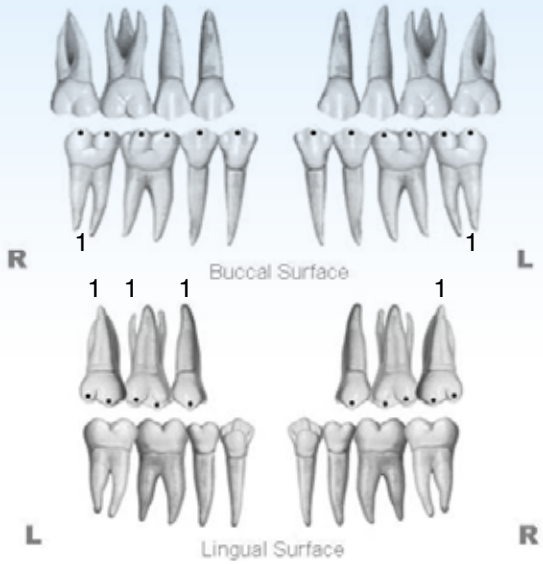


Overjet

0

Occlusal Contacts

6

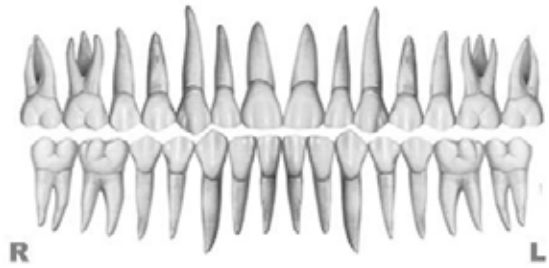


Occlusal Relationships

1

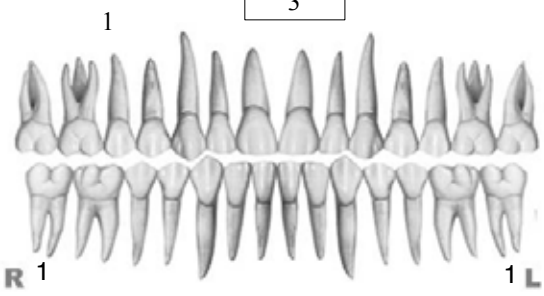
Interproximal Contacts

0



Root Angulation

3



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.



2012 Beethoven International Damon & OBS Workshop

OrthoBoneScrew and Damon workshop includes two half-day lectures, two half-day chair-side observation sessions, one model practice and one case discussion session.

The costs also covers local transportation, two days of food and two nights of shared accommodation(double occupancy). Airport pick up is available upon request with additional charges.

Cost: USD 1,400;

For May session, register before 4/12 discount $200 off; before 5/12 discount $100 off

Keynote Presentation workshop includes a total of 6.5-hours of lecture and hands-on practice, focusing on improving your professional communication skills. The workshop will use Macintosh computers and its presentation software, Keynote 09. The costs also covers one day of food and one night of shared accommodation (double occupancy).

Cost: USD 350

For May session, register before 4/12 discount $100 off; before 5/12 discount $ 50 off

Registration:

A 50% deposit is required to confirm registration. To make a payment by wire, please contact Ms. Rita Yeh by email,

rita@newtonsa.com.tw

or call +886-3-5735676

LECTURER: Dr. John Lin

President of the Jin-Jong Lin Orthodontic Clinic. Dr. Lin received his MS. from Marquette University and is an internationally renowned lecturer. He's also the author of ***Creative Orthodontics*** and chief consultant to ***International Journal of Orthodontics & Implantology***.

Dear Chris:

I must say what I learnt these few days is possibly much more than what I learn in the past few years. You obviously had surpassed my expectation.

I learn how one could create a kingdom out of a little town; how one could manage an efficient patient flow in a shortest possible time frame with the biggest possible number; I further learn that how one should delegate the works effectively, empower the staff systematically and inspire them spontaneously to be contributory to the growth of the organization.

I also reckon that effective presentation does not depend on how flowery the language we use but on how we connect to the audience and engage their attention to our flow of thoughts. An effective presentation needs an effective tool to support the deed.

Dr. How Kim Chuan, Malaysia (middle)
President of the Malaysian Dental Association



2012 Workshop Dates: 6/12-14, 11/13-15

LECTURER: Dr. Chris Chang

President of the Beethoven Orthodontic Center. He received his PhD in bone physiology and Certificate in Orthodontics from Indiana University in 1996. As publisher of International Journal of Orthodontics & Implantology, he has been actively involved in the design and application of bone screws.

Day 1

13:00—14:00 Welcome Lunch
14:00—14:40 Orientation
14:40—15:00 Introduction of Beethoven and Anderson Clinic
15:00—18:30 Chair-side observation

Day 2

9:00—10:30 Optimized Orthodontic Treatment I
Dr. Chris Chang
10:30—11:00 Break
11:00—12:30 Optimized Orthodontic Treatment II
Dr. Chris Chang
12:30—13:50 Lunch
14:00—15:00 Model Practice
15:00—18:30 Chair-side observation

Day 3

09:00—10:00 6 Essentials of the new Damon Q
10:00—10:10 Break
10:10—12:30 Damon + Screw Dr. John Lin
12:30—13:30 Lunch

Day 3

14:00—15:30 Introduction of Keynote: Organize your patient files for presentation
15:30—15:45 Break
15:45—17:00 Key Presentation Principles I

Day 4

09:00—10:00 Key Presentation Principles II
10:00—10:10 Break
10:10—11:30 Make it Visual
11:30—13:30 Lunch

Class II with a Trans-Alveolar Impaction of a Maxillary Canine

History and Etiology

A 13-year-10-month-old boy was referred by his dentist for orthodontic consultation (*Fig. 1*). His chief concern was a maxillary dental midline discrepancy (*Figures 2, 3*). There was no contributory medical or dental history. Clinical exam indicated that the permanent maxillary left canine was impacted (*Fig. 2*). A specific plan for surgical exposure and orthodontic traction was proposed to guide the impacted canine to an appropriate location in the dental arch. The patient was treated to an acceptable result as documented in Figures 4-9. The details for diagnosis and treatment will be discussed below.

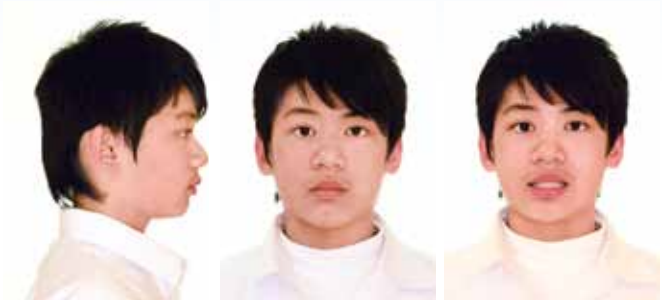


Fig. 1: Pretreatment facial photographs

Fig. 2: Pre-treatment intraoral photographs

Fig. 3: Pretreatment study models

Diagnosis

Cephalometric and panoramic radiographs (*Fig. 7*) document the complexity of the malocclusion. Pretreatment cone beam computed tomography (*CBCT*) scan confirmed that the canine was palatally impacted between the upper left lateral incisor and first premolar. The cusp tip of the impacted canine was oriented toward the palate and the root was toward the labial (*Fig. 10*).

Skeletal:

Skeletal Class II (*SNA 80°, SNB 75°, ANB 5°*)

Mandibular plane angle (*SN-MP 35°, FMA 25°*)

Dental:

Bilateral Class II malocclusion The overbite and overjet were both 6 mm.

Dr. Hsin Yin Yeh, Lecturer, Beethoven Orthodontic Course (right)
Dr. Chris H. N. Chang, Director, Beethoven Orthodontic Center (middle)
Dr. W. Eugene Roberts, Consultant,
International Journal of Orthodontics & Implantology (left)

Severe crowding about 8 mm in upper arch due to left impacted canine, and moderate crowding of about 3mm in the lower arch.

Maxillary dental midline 5 mm left of the facial midline Facial:

Moderately convex profile with acceptable lip position.

The ABO Discrepancy Index (*DI*) was 31 as shown in the subsequent worksheet.

Fig. 4: Posttreatment facial photographs

Fig. 5: Posttreatment intraoral photographs

Fig. 6: Posttreatment study models

Specific Objectives of Treatment

Maxilla (*all three planes*):

- A - P: Maintain
- Vertical: Allow for normal expression of growth
- Transverse: Maintain

Mandible (*all three planes*):

- A - P: Allow for normal expression of growth
- Vertical: Allow for normal expression of growth
- Transverse: Maintain

Maxillary Dentition:

- A - P: Retract maxillary buccal segments
- Vertical: Maintain
- Inter-molar Width: Maintain

Mandibular Dentition:

- A - P: Maintain
- Vertical: Maintain
- Inter-molar / Inter-canine Width: Maintain

Facial Esthetics: Maintain

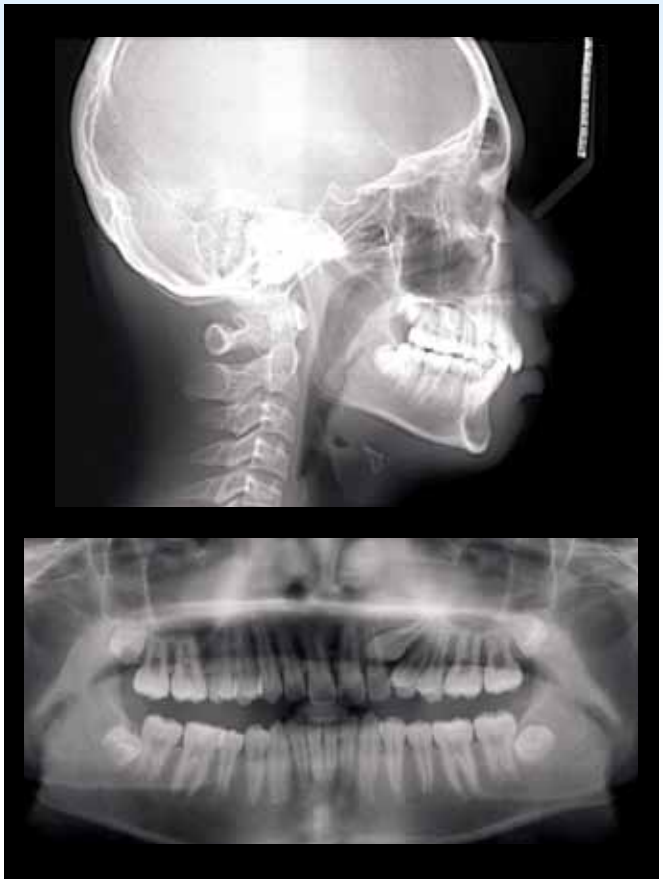


Fig. 7: Pretreatment pano and ceph radiographs

Fig. 8: Posttreatment pano and ceph radiographs

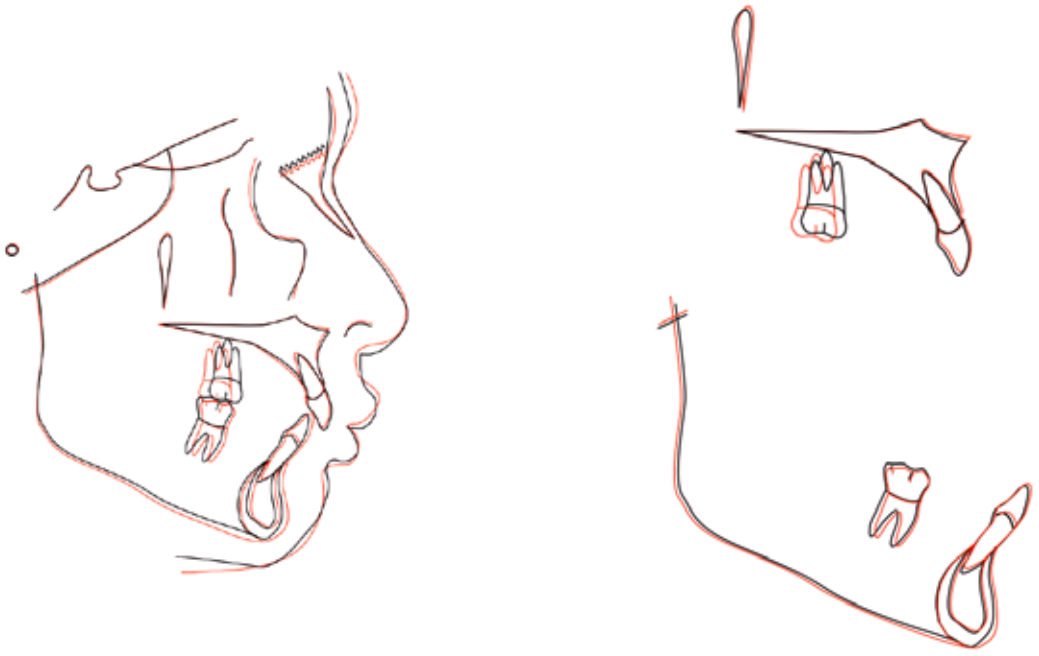


Fig. 9: Superimposed tracings

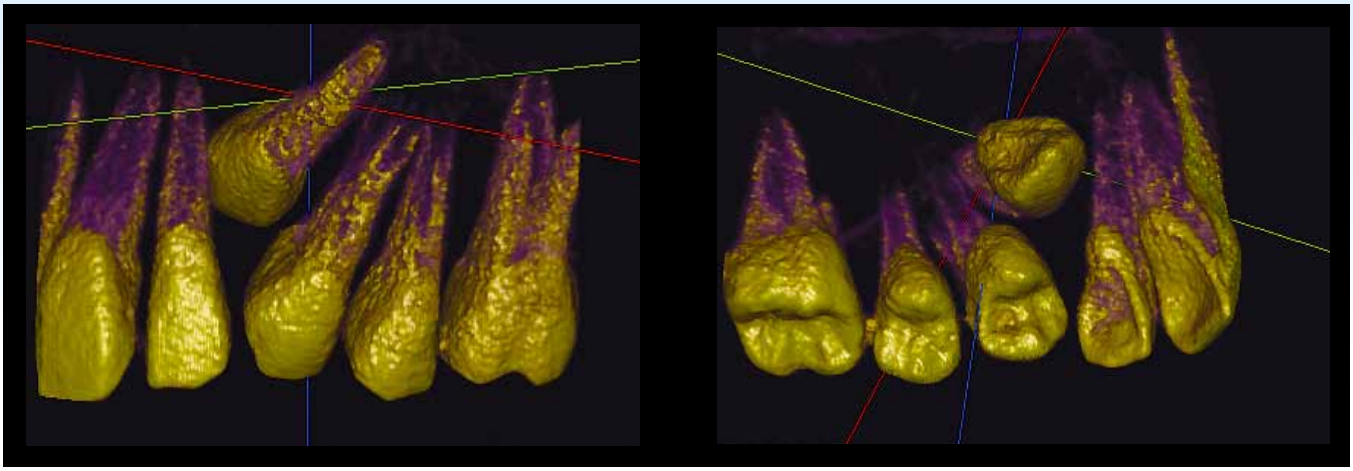


Fig. 10:

An impacted canine located between upper left lateral incisor and first premolar with the cusp tip oriented toward palatal side and the root toward labial side.

Treatment Plan

Non-extraction treatment with a full fixed orthodontic appliance was indicated to align and level the dentition. In the initial stage of treatment, space was created between upper left lateral incisor and first premolar for the impacted canine (*Fig. 11*). An open window surgery was applied to the palatally impacted canine. To tract the first premolar for opening the space of the impacted canine, an extra-alveolar miniscrew (*2x12 mm OrthoBoneScrew, Newton's A inc.*) was inserted in the infrazygomatic crest as a traction anchorage. As the impaction extruded, there was sufficient crown length to permit bonding of an eyelet with an elastometric chain attached. The maxillary arch was the anchorage to extrude and align the impacted canine.

Anterior bite turbos assisted in overbite and overjet correction. Class II elastics were used to resolve the sagittal occlusal discrepancy, and detailing bends produced the final occlusion. The fixed appliances were removed and the corrected dentition was retained with fixed anterior retainers in both arches: Mx 2-2, Md 3-3.

Fig. 11:

Upper arch was bonded and an open coil spring was placed between left lateral incisor and first premolar.

Fig. 12:

Removed the covering soft tissue over the impacted canine.

Appliances and Treatment Progress

A .022" slot Damon D3MX bracket system (*Ormco*) was used. The maxillary arch was bonded with low torque brackets on anteriors, and an open coil spring was placed between left lateral incisor and first premolar to open a pathway for the extrusion of the impacted canine. After five weeks of initial alignment and leveling, surgical exposure of the impacted canine was performed. The covering soft tissue and bone over the impaction was removed (*Fig. 12*) and the wound was covered with surgical dressing. After the surgical exposure, a miniscrew was inserted into the left infrazygomatic crest to serve as anchorage to retract the left maxillary buccal segment (*Fig. 3*).

Six months after the initiation of active treatment, an eyelet was bonded on the buccal surface of the impacted canine and a ligature wire was inserted and tied to the .014x.025 NiTi main arch wire. At the same appointment, the bracket on the left first premolar was debonded and an open coil spring was placed between left lateral incisor and second premolar (*Fig. 14*). In the 11th month of active treatment, a Diode laser was used to remove excessive buccal gingiva of the impacted canine (*Fig. 15*). One month later, the impaction was almost aligned. Light round wire .016 NiTi was engaged into the eyelet (*Fig. 16*). In the 14th month, brackets were placed on the impacted canine (*low torque*) and lower arch (*standard torque on lower anteriors*) (*Fig. 17*). Anterior bite turbos were placed on palatal side of upper central incisors with Class II elastics to correct the A-P discrepancy and deep overbite (*Fig. 18*).

In the 16th month of the treatment, a miniscrew (*2x12 mm OrthoBoneScrew, Newton's A inc.*) was inserted into the right infrazygomatic crest. An elastometric

Fig. 13:
Surgical dressing was covered the wound. A miniscrew was inserted into the IEC.

Fig. 14:
The impacted canine was bonded with an eyelet with ligature wire inserted.The bracket of left first premolar was debonded.

Fig. 15:
Excessive buccal gingiva over the impacted canine was removed by using Diode laser.

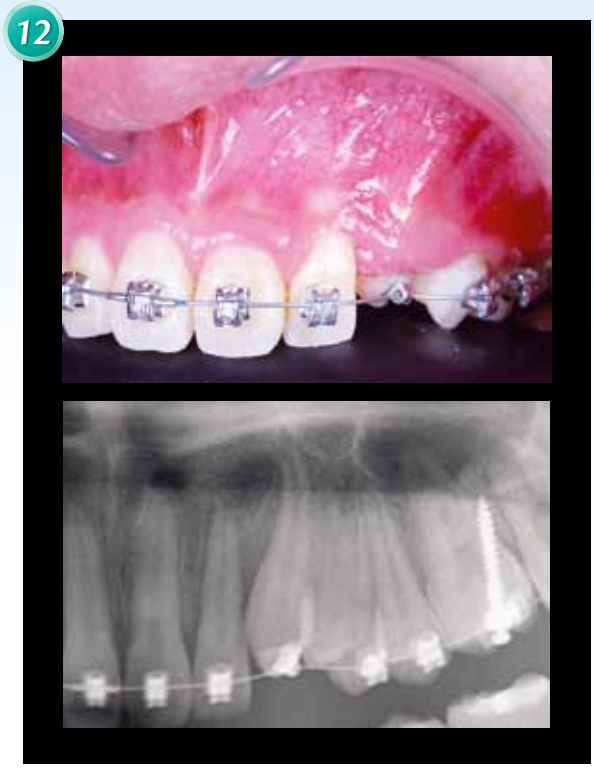


Fig. 16:
Buccal view and pano film of active treatment for 12 months. The impacted canine was almost aligned.

chain was attached from upper right canine to the screw and a Class II elastic from lower right first molar to upper right first premolar was used to correct midline discrepancy.

When the impacted canine was aligned in the arch, a panoramic radiograph was exposed to evaluate bracket positions relative to the axial inclinations of all teeth. A torquing spring was placed on the impacted canine to move the root palatally, as the maxillary arch was leveled (*Fig. 19*).

Two weeks prior to the completion of active treatment, the upper archwire was sectioned distal to cuspids. Light up-and-down elastics (*2 oz*) were used posteriorly for final detailing of the buccal segments (*Fig. 20*). The wire sequence was: .014 NiTi, .014x25 NiTi, .017x25 TMA, and .019x25 SS. After

Fig. 17:
The impacted canine was bonded (high torque).

Fig. 18.:
Anterior bite turbos were placed on the palatal side of upper central incisors.

Fig. 19:
Use a torquing spring to increase lingual root torque.

Fig. 20:
Light up and down elastics (2 oz) were used posteriorly for final detailing of buccal segments.

Fig. 21: Post-treatment intra-oral frontal photo.

30 months of active treatment, all appliances were removed. Upper clear overlay and fixed anterior (*Mx 2-2, Md 3-3*) retainers were delivered for both arches.

Results Achieved

Maxilla (*all three planes*):

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

Mandible (*all three planes*):

- A - P: Favorable growth
- Vertical: Favorable growth
- Transverse: Maintained

Maxillary Dentition:

- A - P: Slightly flared incisors ~ 2 degrees
- Vertical: Extruded, impacted canine recovered and optimally aligned
- Inter-molar / Inter-canine Width: Retracted Mx molars

Mandibular Dentition:

- A - P: Slightly flared incisors ~2 degrees
- Vertical: Maintained
- Inter-molar / Inter-canine Width: Maintained

Facial Esthetics: Maintained

Retention

The fixed retainer was bonded on all maxillary incisors and from canine to canine in the mandibular arch. An upper clear overlay was delivered. The patient was instructed to wear it full time for the first 6 months and nights only thereafter. The patient was instructed in the home care and maintenance of the retainers.

Final Evaluation of Treatment

The ABO Cast-Radiograph Evaluation score was 29 points. The major discrepancies were in the right occlusal relationships, alignment/rotation, and marginal ridges. Upper dental midline shift was decreased to 1.5 mm to the left of facial midline. The impacted canine was well aligned, and the gingiva texture was healthy (*Fig. 21*).

Collectively, flaring of the maxillary and mandibular incisors resulted in regaining of space and the overjet was corrected. The use of Class II elastics to anteriorly position the mandibular dentition was necessary, because there was insufficient anterior growth of the mandible. Overall, this difficult

impaction case was treated to an appropriate facial and dental result with no iatrogenic problems.

Discussion

The palatally impacted canine is a difficult clinical problem for orthodontists. The first step in resolving the problem is to locate the impacted tooth and evaluate root resorption of the adjacent teeth. Cone beam computed tomography (*CBCT*) is particularly advantageous for evaluating impactions and their adjacent teeth. The low distortion, three-dimensional data provided by a CBCT allows for the precise location of the impaction relative to the adjacent teeth. A pretreatment CBCT scan offers more detailed information on the impaction than conventional radiography. For the present case, the CBCT imaging showed that the impacted canine was located between the left lateral incisor and first premolar with its cusp tip oriented toward palatal side and the root toward the labial side. The upper left first premolar was in the position of the impacted canine and the upper dental midline was left of the facial midline. After a thorough diagnosis, three treatment modalities are considered:

1. **Surgical exposure, spontaneous eruption and orthodontic alignment of the impacted canine.** The advantage of this approach is visualization of the crown and better control of the direction of tooth movement to avoid roots resorption of adjacent teeth.
2. **Closed eruption with an auxiliary attachment and orthodontic alignment.** Immediate orthodontic traction can be applied to the impaction but this approach is more likely to result in root resorption of adjacent teeth.
3. **Extraction of the impacted canine usually requires first premolar replacement or restoration of the space with a prosthesis or implant.** The disadvantages of this approach are compromised occlusion, as well as bony defects and damage to adjacent teeth subsequent to extraction of the impacted canine.

The first treatment plan was selected for the present case. Schmidt and Kokich[6] reported that the open surgical exposure of impacted maxillary canines had minimal effects on the periodontium, and had better overall consequences than the closed exposure and early traction technique. Zasciurinskiene et al[7] found that the surgical exposure and orthodontic extrusion of palatally impacted, maxillary canines usually resulted in clinically acceptable periodontal condition, but the result depended on the initial vertical and horizontal position of the impaction. The extraction of impacted canines is seldom considered, but may be a viable option for some problems: (*1*) ankylosed and cannot be transplanted; (*2*) external or internal root resorption; (*3*) severely dilacerated root; (*4*) unfavorable impaction where orthodontic movement will jeopardize the adjacent teeth; (*5*) acceptable occlusion with the first premolar in the position of the canine; (*6*) pathological complications; and/or (*7*) the patient does not desire orthodontic treatment. For the present case, the first premolar was in the position of canine but the molar relation was a full Class II malocclusion; thus, the open exposure surgery and orthodontic alignment with retraction of the left buccal segment was optimal.

According to Samir E. Bishara,[8] the traction of impacted canines is recommended under the following conditions: (*1*) sufficient space is available in the arch or can be created for the impaction to maintain; (*2*) use of light forces (*no more than 2 oz (60 g)* to move the impaction; (*3*) the arch wire should provide sufficient stiffness to resist deformation by

the forces applied to extrude the impaction; and (*4*) the direction of the applied force should move the impaction away from the roots of neighboring teeth.

To achieve an optimal result for the present patient, the initial step was alignment of upper teeth and creation of space for the impacted canine. One month after the upper arch was bonded, open surgical exposure of the impacted canine was achieved. After five months of natural eruption, a ligature wire was used to apply light traction with minimal deflection of the maxillary arch wire. To minimize root resorption during traction of the impacted canine, the bracket of the first premolar was removed. After sixteen months of active treatment, the impacted canine was aligned into the arch and a torquing root spring was used. Root angulation and torque control, of transalveolar impacted canines, present significant challenges. Placing the loop of the torquing spring gingivally creates a couple that delivers lingual root torque. Conversely, incisal positioning of the loop results in labial root torque.

A thorough evaluation of the recovery and alignment of an impacted canine requires an assessment of gingival esthetic change after impaction-related surgery and orthodontic traction. (*see the IBOI Pink & White Esthetic Score*). For the present case, the papillae of the impacted canine fill the embrasure. The curvature and level of the gingival margin were also acceptable. With regard to the upper esthetic zone, the maxillary dental midline was 1.5 mm left of the facial midline and the axial inclination of right lateral incisor was too distal. The Pink & White esthetic score worksheet below provides a broad array of clinical parameters for evaluation of patients with impacted teeth and esthetics.

The ABO CRE score was 29, with most of the points reflecting problems in left occlusal relationships. If retraction of the left maxillary buccal segment, with extra-alveolar miniscrew anchorage, was used earlier in the treatment sequence to retract the upper dentition, it would have facilitated a more complete correction of the Class II relationship.

Conclusion

Impacted maxillary canine is a common finding in dental treatment. The treatment of these cases is important because upper canines play an important role in esthetics and function. The first step is assessing the position of the impacted canine. Cone-beam computed tomography can provide precise information to dentists so that they can use proper surgical and orthodontic techniques to recover impacted canine. In this case, we chose the open exposure technique and allowed the impaction to

CEPHALOMETRIC			
SKELETAL ANALYSIS			
	PRE-Tx	POST-Tx	DIFF.
SNA°	79°	80°	1°
SNB°	74°	76°	2°
ANB°	5°	4°	-1°
SN-MP°	35°	34°	-1°
FMA°	25°	27°	2°
DENTAL ANALYSIS			
U1 TO NA mm	2 mm	3 mm	1 mm
U1 TO SN°	98°	100°	2°
L1 TO NB mm	5 mm	6 mm	1 mm
L1 TO MP°	99°	101°	2°
FACIAL ANALYSIS			
E-LINE UL	1 mm	2 mm	1 mm
E-LINE LL	2 mm	2 mm	0 mm

■ Table. Cephalometric summary

auto-erupt. Remove the bracket on the adjacent tooth during traction of the impaction to avoid root resorption, followed by the use of a torquing auxiliary during the finishing phase. The impaction was well aligned with a healthy periodontium.

This very difficult malocclusion (*DI = 31*) was treated to an acceptable result (*CRE = 29*). The occlusal relationship could have been improved by placing the maxillary miniscrews earlier in the treatment sequence. The bilateral full cusp Class II malocclusion could have been completely corrected with about 3 months of continuous retraction of the maxillary buccal segments.

Acknowledgment

Thanks to Ms. Tzu Han Huang for proofreading this article.

References

1. Kokich VG. Surgical and orthodontic management of impacted maxillary canine. Am J Orthod Dentofacial Orthop 2004;126:278-83.
2. Bedoya MM, Park JH. A review of the diagnosis and management of impacted maxillary canines. JADA2009;140(12); 1485-1493
3. Kokich VG. Preorthodontic Uncovering and Autonomous Eruption of Palatally Impacted Maxillary Canines. Semin Orthod2010;16:205-211
4. Tseng SP, Chang C, Roberts WE. High maxillary canine impaction with mesial and labial displacement. News & Trends in Orthodontics 2010;18:36-44
5. Chang C. Advanced Damon Course No. 9: Impacted and transposed teeth, Beethoven Podcast Encyclopedia in Orthodontics 2011, Newton's A Ltd, Taiwan
6. Schmidt AD, Kokich VG. Periodontal response to early uncovering, autonomous eruption, and orthodontic alignment of palatally impacted maxillary canines. Am J Ortho Dentofacial Orthop 2007;131:449-55.
7. Zasciurinskiene E, Bjerklin K, Smailiene D, Sidlauskas A, Puisys A. Initial vertical and horizontal position of palatally impacted maxillary canine and effect on periodontal status following surgical-orthodontic treatment. Angle Orthod 2008;78(2):275-280.
8. Bishara SE. Clinical management of impacted maxillary canines. Semin Orthod 1998 Jun;4(2):87-98.
9. Chang C. Advanced Damon Course No. 4,5: DI & CRE Workshop (1)(2)., Podcast Encyclopedia in Orthodontics 2011, Newton's A Ltd, Taiwan.
10. Su B, Chang C, Roberts WE. Highly positioned and transalveolar impacted maxillary canine. International Journal of Orthodontics and Implantology 2011: vol 23 November 1: 32-46.

IBOI Discrepancy Index Worksheet

TOTAL D.I. SCORE 31

OVERJET

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 = 3

OVERBITE

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

Total = 3

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 = 7

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	8 pts.
Beyond Class II or III	=	1 pt. per mm. additional	____ pts.

Total = 8

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° _____ x 1 pt. = _____

Total = 1

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. =	2
Midline discrepancy (≥3mm)		@ 2 pts. =	2
Missing teeth (except 3rd molars)	_____	x 1 pts. =	_____
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	2	x 2 pts. =	4

Identify: Trans-alveolar impaction

Total = 8

IMPLANT SITE

Lip line : Low (0 pt), Medium (1 pt), High (2 pts) =_____

Gingival biotype : Low-scalloped, thick (0 pt), Medium-scalloped, medium-thick (1 pt), High-scalloped, thin (2 pts) =_____

Shape of tooth crowns : Rectangular (0 pt), Triangular (2 pts) =_____

Bone level at adjacent teeth : ≤ 5 mm to contact point (0 pt), 5.5 to 6.5 mm to contact point (1 pt), ≥ 7mm to contact point (2 pts) =_____

Bone anatomy of alveolar crest : H&V sufficient (0 pt), Deficient H, allow simultaneous augment (1 pt), Deficient H, require prior grafting (2 pts), Deficient V or Both H&V (3 pts) =_____

Soft tissue anatomy : Intact (0 pt), Defective (2 pts) =_____

Infection at implant site : None (0 pt), Chronic (1 pt), Acute(2 pts) =_____

Total = 0

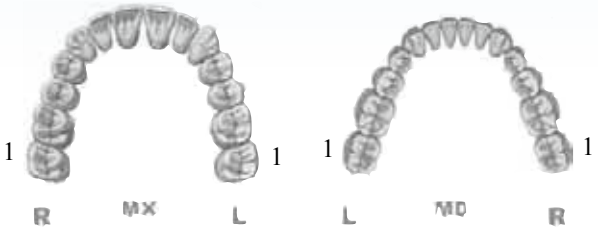
IBOI Cast-Radiograph Evaluation

Case # 1 **Patient**

Total Score: 29

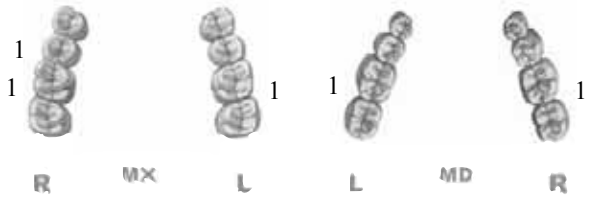
Alignment/Rotations

4



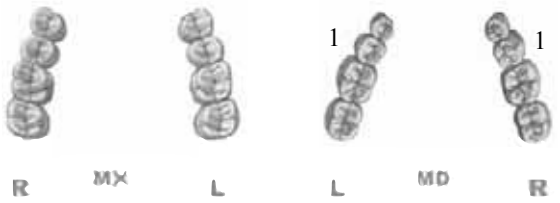
Marginal Ridges

5



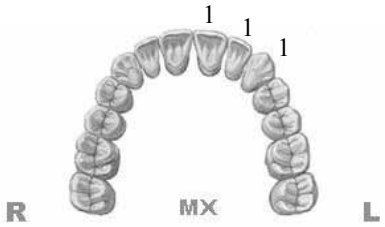
Buccolingual Inclination

2



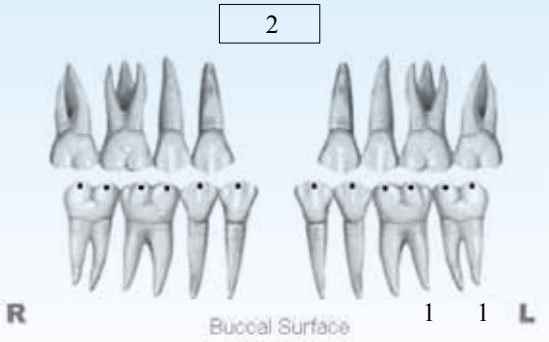
Overjet

3



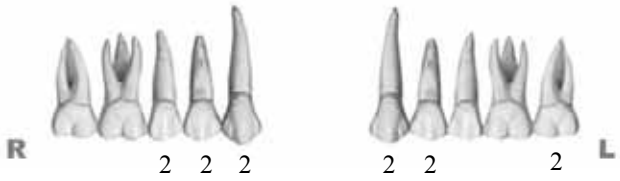
Occlusal Contacts

2



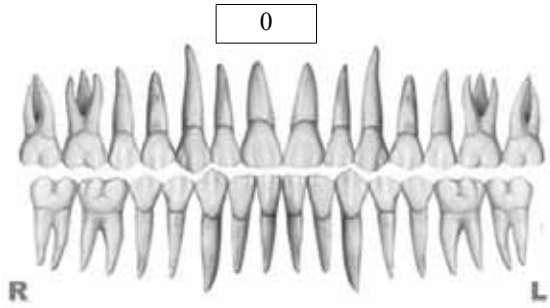
Occlusal Relationships

12



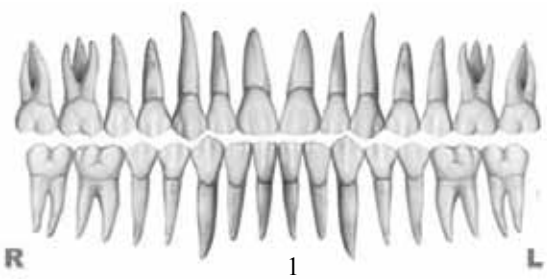
Interproximal Contacts

0



Root Angulation

1



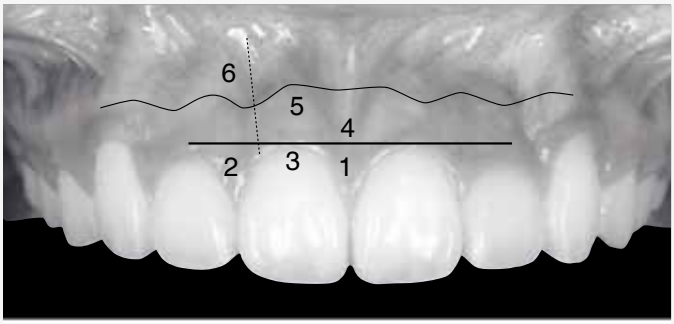
INSTRUCTIONS: Place score beside each deficient tooth and enter total score for each parameter in the white box. Mark extracted teeth with "X". Second molars should be in occlusion.

IBOI Pink & White Esthetic Score

Total Score: = 2

1. Pink Esthetic Score

Total = 0

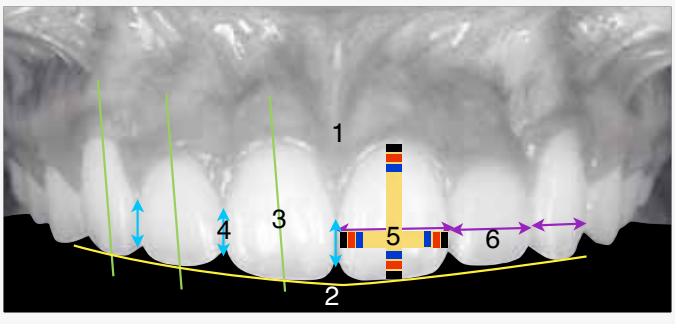


1. Mesial Papilla	0	1	2
2. Distal Papilla	0	1	2
3. Curvature of Gingival Margin	0	1	2
4. Level of Gingival Margin	0	1	2
5. Root Convexity (Torque)	0	1	2
6. Scar Formation	0	1	2

1. M & D 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)*

Total = 2



1. Tooth Form	0	1	2
2. Mesial & Distal Outline	0	1	2
3. Crown Margin	0	1	2
4. Translucency (Incisal thrid)	0	1	2
5. Hue & Value (Middle third)	0	1	2
6. 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 (1: 0.8)	(0)	1	2
6. Tooth to Tooth Proportion	(0)	1	2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Class II Deep Bite Malocclusion with Posteriorly-Inclined Upper Incisors

History and Etiology

A 21-year-5-month-old girl was accompanied by her parents for evaluation of dental crowding (*Figures 1-3*). Oral soft tissues, frena, and gingival health were all within normal limit. There was no history of dental trauma, aberrant oral habits or significant signs and symptoms of temporomandibular dysfunction. There was no contributory medical or dental history. The patient was unaware of the peg lateral (*#10*) and a deep bite. The patient and her parents desired comprehensive orthodontic treatment to achieve an ideal alignment of the entire dentition (*Figures 4-6*).

The initial clinical examination revealed a Class II molar relationship bilaterally. The overjet was 4 mm and overbite was 10mm (*>100%*) with gingival impingement. The maxillary dental midline was 1 mm to the left of the facial and mandibular midlines. A peg lateral incisor was noted on the upper left side (*Fig. 9*). The pretreatment panoramic radiograph (*Fig. 7*) revealed a deep bite occlusion and low mandibular plane angle. The post-treatment panoramic radiograph shows normal overjet and overbite (*Fig. 8*). Fig. 10 documents the cephalometric history of the treatment rendered.

Diagnosis

Skeletal:

Skeletal Class II (*SNA 82°, SNB 76.5°, ANB 5.5°*)

Low angle (*SN-MP 24°, FMA 19°*)

Fig. 1: Pretreatment facial photographs

Fig. 2: Pretreatment intraoral photographs

Fig. 3: Pretreatment study models

Dr. Che Wen Liu, Lecturer, Beethoven Orthodontic course (right)
Dr. Chris H. N. Chang, Director, Beethoven Orthodontic Center (middle)
Dr. W. Eugene Roberts, Consultant,
International Journal of Orthodontics & Implantology (left)

Dental:

Right full cusp Class II molar relationship Left end-on Class II molar relationship OJ 4 mm; OB 10 mm (>*100%*) with gingival impingement

The maxillary dental midline was 1 mm to the right of the facial and maxillary midlines.

Peg lateral of #10 LR central incisor attrition

Facial:

Straight profile with acceptable lip position.

Fig. 4: Posttreatment facial photographs

Fig. 5: Posttreatment intraoral photographs

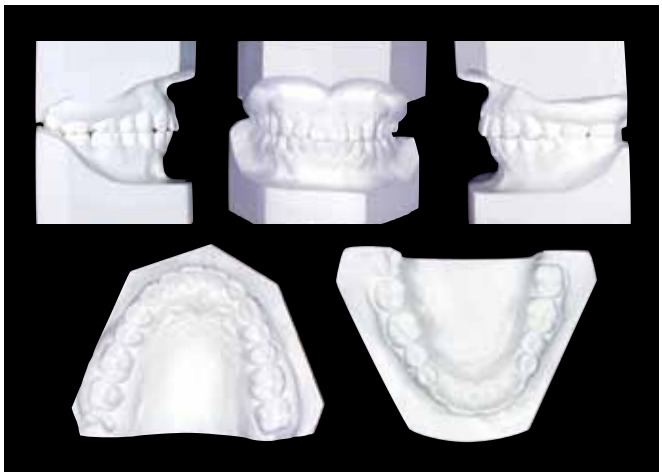


Fig. 6: Pretreatment study models

Specific Objectives of Treatment

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: Retract to correct Class II buccal segments and excessive overjet. Flare incisors to correct U1-SN angle
- Vertical: Intrude incisors
- Inter-molar Width: Maintain

Mandibular Dentition:

- A - P: Increase the axial inclination of the incisors to correct excessive overjet

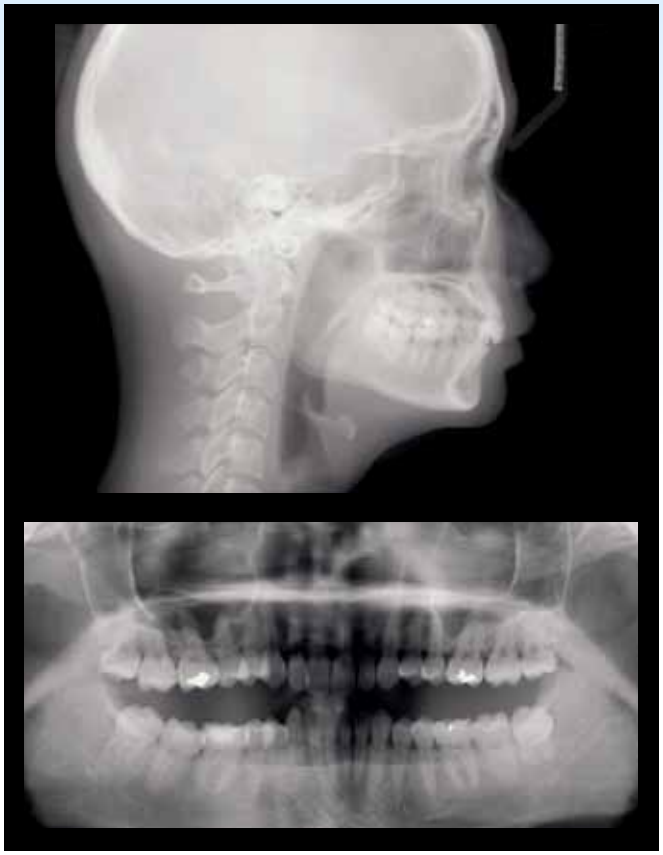


Fig. 7:

Pretreatment pano and ceph radiographs show the low mandibular plane angle and deep bite.

Fig. 8:

Posttreatment pano and ceph radiographs show a balancing lip profile.

Fig. 9: A peg lateral incisor was noted on the upper left side.

CEPHALOMETRIC			
SKELETAL ANALYSIS			
	PRE-Tx	POST-Tx	DIFF.
SNA°	82°	80°	2°
SNB°	76.5°	76.5°	0°
ANB°	5.5°	3.5°	2°
SN-MP°	24°	27°	3°
FMA°	19°	21°	2°
DENTAL ANALYSIS			
U1 TO NA mm	-2 mm	3 mm	5 mm
U1 TO SN°	88°	110.5°	22.5°
L1 TO NB mm	0 mm	6 mm	6 mm
L1 TO MP°	88°	115°	27°
FACIAL ANALYSIS			
E-LINE (*U*)	+2 mm	+1 mm	1 mm
E-LINE (*L*)	+1 mm	0 mm	1 mm

Table. Cephalometric summary

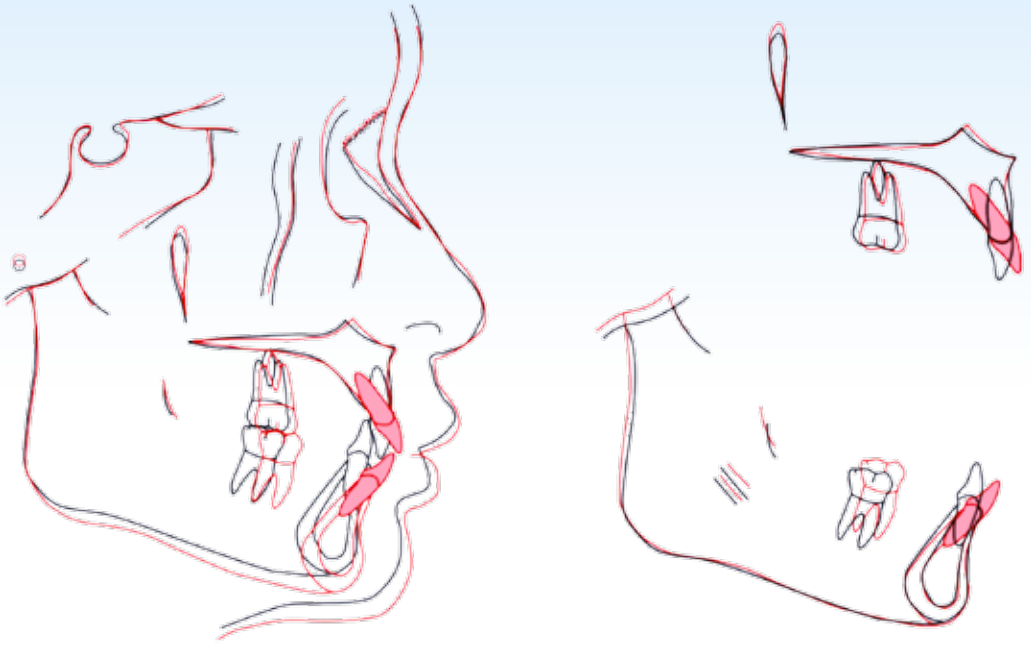


Fig. 10: Superimposed tracings show the change of incisor inclination & extrusion of mandibular molars.

- Vertical: Intrude incisors, extrude molar to correct short face and over bite
- Inter-molar / Inter-canine Width: Maintain

Facial Esthetics: Maintain

Treatment Plan

Non-extraction treatment, with a full fixed orthodontics appliance, was indicated to correct the crowding, level the curve of Spee, and coordinate the arches. Standard Damon MX3 brackets were used. Anterior bite turbos and Cl II elastics were indicated to intrude lower incisors, as well as to resolve the Cl II occlusion and the sagittal discrepancy. The size discrepancy between the upper lateral incisors would be corrected by interproximal augmentation of the upper left lateral incisor. Detailing bends with seating elastics were planned to produce the final occlusion. At the debonding visit, upper clear overlay retainer and upper 2-2 & lower 3-3 fixed retainers were planned.

Appliances and Treatment Progress

.022" Damon MX3 standard torque brackets (*Ormco*) were selected. The archwire sequence for upper arch was .014 CuNiTi, .014x25 CuNiTi, .016x25 pretorqued CuNiTi and .017x25 TMA. The lower archwire sequence was .014 CuNiTi, .014x25 CuNiTi, and .017x25 TMA. Anterior bite turbos were then bonded to the maxillary central incisors to accelerate the Cl II correction at the subsequent bonding visit (*Figures 11-13*). After 12 months, open coil springs were applied bilaterally to the UR lateral incisor to create space for a composite build-up one month later (*Fig. 14*). In the 10th month of the treatment, CII occlusion was achieved. Bracket repositions were performed as indicated by sequential panoramic films.

Fig. 11:

Anterior bite turbos were then bonded to the maxillary central incisors to accelerate the Cl II correction

Fig. 12:

Frontal view after anterior bite turbos applied

Fig. 13:

2nd month, anterior bite turbos and early light short elastics were applied to retract the anterior segment and level the curve of spee.

Fig. 14:

12th month, two sections of open coil spring were applied around UR lateral incisor to create spaces for restoration.

One month prior to the completion of active treatment, the upper archwire was sectioned distal to the first molar bilaterally. After the 2nd molars were seated in occlusion, fixed appliances were removed and retainers were delivered. Total treatment time was 16 months. One week after fixed appliance removal, a gingivectomy of the maxillary incisors was performed with a diode laser to improve the incisal exposure (*Fig. 15*). Post-treatment panoramic and cephalometric radiographs (*Fig. 8*), and superimpositions of cephalometric tracings (*Fig. 10*) document the final result.

Results Achieved

Maxilla (*all three planes*):

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

Mandible (*all three planes*):

- A - P: Maintained
- Vertical: Increased
- Transverse: Maintained

Maxillary Dentition:

- A - P: Upper incisors slightly flared
- Vertical: Maintained
- Inter-molar / Inter-canine Width: Maintained

Mandibular Dentition:

- A - P: Lower incisors axial incliantion increased
- Vertical: Extruded molars
- Inter-molar / Inter-canine Width: Left first molar uprighted

Facial Esthetics: Optimal achieved

Retention

The upper fixed retainer 2-2 and the lower fixed retainer 3-3 were bonded on every tooth. An upper clear overlay retainer was delivered. The patient was instructed to wear it full time for the first 6 months and nights only thereafter. The patient was instructed to home care and maintenance of the retainers.

Final Evaluation of Treatment

The IBOI Cast-Radiograph Evaluation was scored at 21 points. The major discrepancies were alignment and rotation problems (*4 points*) and unevenly marginal ridges (*9 points*) (*Fig. 16*).

Fig. 15: Gingivectomy to improve the incisal exposure.

Fig. 16: Unevenly marginal ridge on upper left side

Retraction, intrusion, alignment of upper incisors and restorative recontouring of upper left lateral incisor helped resolve the patient's chief complaint. The excessive overjet and overbite was reduced. Wearing elastics as instructed was essential for correction of the Class II occlusion. Mandibular anterior flaring is a challenge for stability, so the patient was informed that permanent retention is necessary and she will be on long-term recall indefinitely.

The mandible moved in a clockwise direction. This was due to extruding of lower molars by using bite turbos and class II elastics. The posterior intercuspation was excellent and the panoramic radiograph (*Fig. 8*) showed good root position. Posttreatment facial photographs are shown in Fig. 4. Overall, there was significant improvement in both dental esthetics and occlusion.

Discussion

Agenesis of the maxillary lateral incisor is linked with anomalies and syndromes such as agenesis of other permanent teeth, microdontia of maxillary lateral incisors (*peg laterals*), palatally displaced canines and distal angulations of mandibular second premolars.[1-4] Since agenesis of teeth has been shown to have a genetic link, often parents or siblings of patients experiencing agenesis have had similar clinical situations, which may influence treatment decisions. Arte et al.[3] also found strong genetic relationships between hypodontia and tooth anomalies such as ectopic maxillary canines.

The type of restoration for the upper lateral incisor could be resin, veneer, or a crown. The decision of which type of restoration to choose is based upon several factors. These include the amount of ferrule remaining on the tooth, the amount of porcelain necessary to restore esthetics and function, the type of tissue surrounding the crown, the vitality of the tooth to be restored, the age of the patient, and economic consideration. For the present patient, the tooth was restored with a resin build-up.

Severe Class II deep-bite correction had been a challenge. Currently bite turbos are bonded on the upper incisors and light short elastics are used from the initial bracket bonding appointment to close occlusal space as soon as possible.[5] With this method the problem can be easily solved.

Posteriorly-inclined upper incisors is another issue that should be addressed when using bite turbos. We should take in consideration the center of rotation of upper incisors. In severe retroinclined cases, correcton of this problem first is the key point. When using bite turbos, only upper incisors contact with lower arch and are impacted by occlusal force. In this case, it is preferable to bond upper brackets first and wait 2 month to bond lower arch.

Lip profile change is not always obvious after treatment. Although the esthetic line is preserved and improved by the lip curl, the lip profile appears a little protrusive. L1 to MP° (*table*) change is excessive in this case. The orverjet before treatment was only 4 mm. But if the upper incisors were in ideal position, there would be almost 9mm overjet discrepency. Considering this large discrepancy, using miniscrews or stripping upper and lower anteriors, along with low torque brackets in lower arch may be preferable to only Class II elastics for achieving optical outcomes relative to lip profile.[6]

Proclination of the lower anterior teeth was expected in this case due to bony discrepancy and nonextraction treatment plan. According to Mills[7] the average amount of "*stable*" proclination of lower incisors is only about 1 to 2 mm, and even that modest protrusion usually requires fixed retention. For the present patient, the proclination of the lower incisors was 4 mm beyond the normal range, so a lower anterior fixed retainer was essential for long-term stability.

The major deduction of scores in the IBOI Cast-Radiograph Evaluation of this patient was for the unevenly marginal ridges of the posterior teeth. The best way to avoid is to take a diagnostic model before appliance removal. In brief, pre-torqued self ligated brackets and anterior bite turbos in conjunction with Cl II elastics are effective mechanics for nonextraction correction of class II low angle in an adult. A satisfactory result was achieved with 16 months of active treatment. Long-term stability of the present camouflage approach requires careful adherence to the retention protocol.

Conclusion

To treat class II deep bite case, we can bond bite turbos on upper incisors and use light short elastics in the begining of brackets bonding appointment to close occlusal space as soon as possible. And the problem can be easily solved. If upper anteriors are retroinclined, the timing of bite turbos and miniscrew should be taken into consideration.

Numerous methods are available to correct class II deep bite patients: class II elastics, miniscrews, head gear, bracket torque selection and bite turbos. In this case we only used class II elastics and bite turbos. In the future miniscrews in the upper bilateral zygomatic processes would be effective for retracting the entire maxillary arch. The lower incisor angulation can be controlled by bracket angulation and interproximal stripping of enamel.

ACKNOWLEDGEMENT

Thanks to Ms. Tzu Han Huang to proofread this article.

References

1. Garib DG, Alencar BM, Lauris JR, Baccetti T. Agenesis of maxillary lateral incisors and associated dental anomalies. Am J Orthod Dentofacial Orthop 2010;137:732. e1-732.e6.
2. Pirinen S, Arte S, Apajalahti S. Palatal displacement of canine is genetic and related to congenital absence of teeth. J Dent Res 1996;75 (10):1742-1746.
3. Arte S et al. Characteristics of incisor-premolar hypodontia in families. J Dent Res. 2001; 80 (5):1445-1450.
4. Peck S, Peck L, Kataja M. Concomitant occurrence of canine malposition and tooth agenesis: evidence of orofacial genetic fields. Am J Orthod Dentofacial Orthop 2002;122:657-60.
5. Chang C. Basic Damon Course No. 3: Damon + OrthoBoneScrew I., Podcast Encyclopedia in Orthodontics 2011, Newton's A Ltd, Taiwan.
6. Chang C. Basic Damon Course No. 5: Finish Bending, Podcast Encyclopedia in Orthodontics 2011, Newton's A Ltd, Taiwan.
7. Mills JR. The stability of the lower labial segment: a cephalometric survey. Dent Pract Dent Rec 1968;18:293-306.

IBOI Discrepancy Index Worksheet

TOTAL D.I. SCORE 21

OVERJET

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 = 5

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	2 pts.
Full Class II or III	=	4 pts. per side	4 pts.
Beyond Class II or III	=	1 pt. per mm. additional	____ pts.

Total = 6

LINGUAL POSTERIOR X-BITE

1 pt. per tooth Total = 0

BUCCAL POSTERIOR X-BITE

2 pts. per tooth Total = 0

CEPHALOMETRICS (See Instructions)

ANB ≥ 6° or ≤ -2° = 0 pts.

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

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

SN-MP

≥ 38° = 0 pts.

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

≤ 26° = 1 pt.

Each degree < 26° 4 x 1 pt. = 4

1 to MP ≥ 99° = 0 pt.

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

Total = 5

OTHER (See Instructions)

Supernumerary teeth	_____	x 1 pt. =	_____
Ankylosis of perm. teeth	_____	x 2 pts. =	_____
Anomalous morphology	1	x 2 pts. =	2
Impaction (except 3rd molars)	_____	x 2 pts. =	_____
Midline discrepancy (≥3mm)		@ 2 pts. =	_____
Missing teeth (except 3rd molars)	_____	x 1 pts. =	_____
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	_____	x 2 pts. =	_____

Identify:

Total = 2

IMPLANT SITE

Lip line : Low (0 pt), Medium (1 pt), High (2 pts) = _____

Gingival biotype : Low-scalloped, thick (0 pt), Medium-scalloped, medium-thick (1 pt), High-scalloped, thin (2 pts) = _____

Shape of tooth crowns : Rectangular (0 pt), Triangular (2 pts) = _____

Bone level at adjacent teeth : ≤ 5 mm to contact point (0 pt), 5.5 to 6.5 mm to contact point (1 pt), ≥ 7mm to contact point (2 pts) = _____

Bone anatomy of alveolar crest : H&V sufficient (0 pt), Deficient H, allow simultaneous augment (1 pt), Deficient H, require prior grafting (2 pts), Deficient V or Both H&V (3 pts) = _____

Soft tissue anatomy : Intact (0 pt), Defective (2 pts) = _____

Infection at implant site : None (0 pt), Chronic (1 pt), Acute(2 pts) = _____

Total = _____

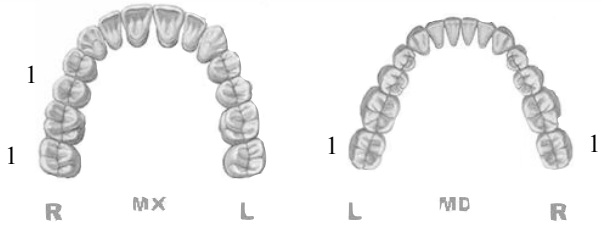
IBOI Cast-Radiograph Evaluation

Case # 1 **Patient**

Total Score: 21

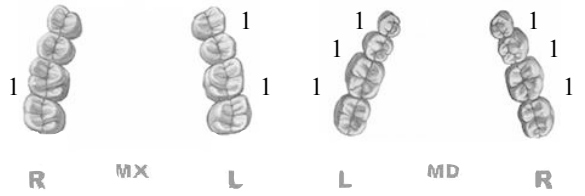
Alignment/Rotations

4



Marginal Ridges

9



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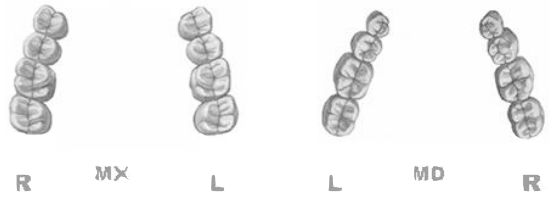
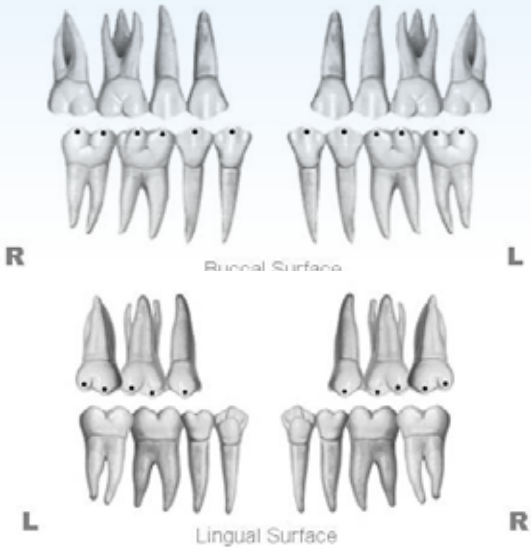


Overjet

1

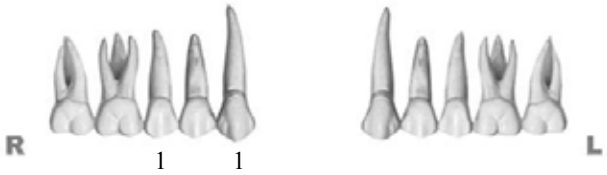
Occlusal Contacts

0



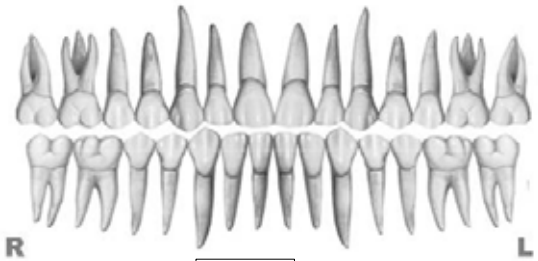
Occlusal Relationships

2

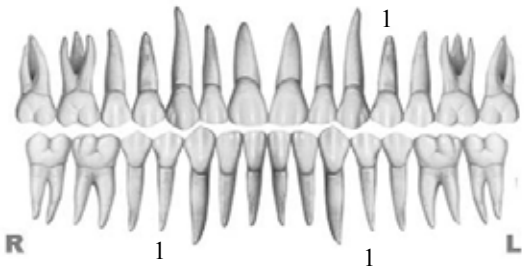


Interproximal Contacts

1



3



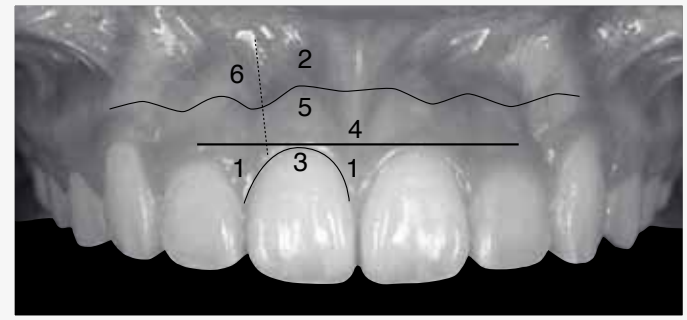
INSTRUCTIONS: Place score beside each deficient tooth and enter total score for each parameter in the white box. Mark extracted teeth with "X". Second molars should be in occlusion.

IBOI Pink & White Esthetic Score

Total Score: = 2

1. Pink Esthetic Score

Total = 2

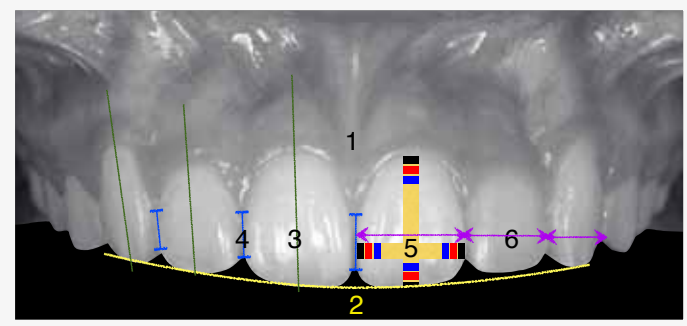


1. M & D Papilla	0	1	2
2. Keratinized Gingiva	0	1	2
3. Curvature of Gingival Margin	0	1	2
4. Level of Gingival Margin	0	1	2
5. Root Convexity (Torque)	0	1	2
6. Scar Formation	0	1	2

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

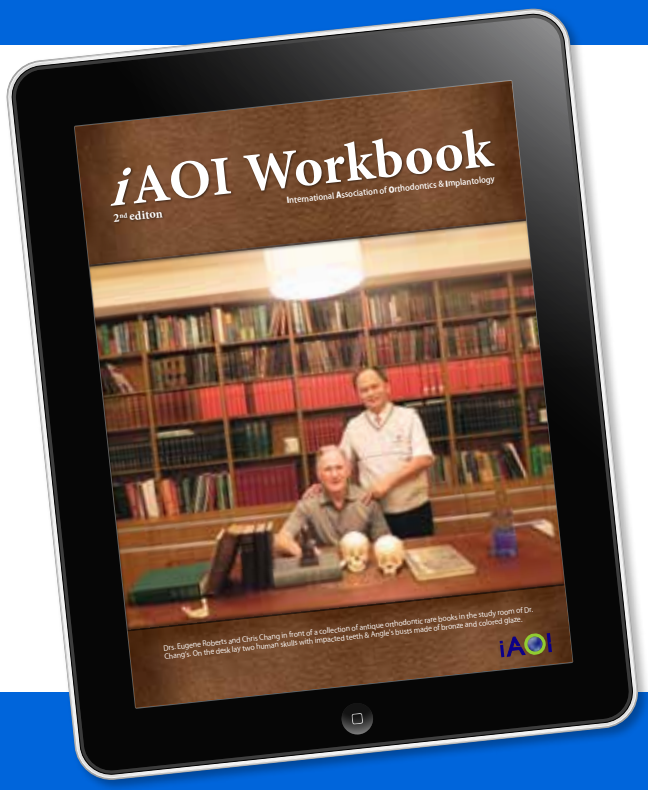
2. White Esthetic Score *(for Micro-esthetics)*

Total = 1



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

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



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2012.4.22

Dr. Badawi

課程時間表 Schedule

9:00 ~ 10:30	Understand the significance, limitations of the OSIM (orthodontic simulator)
10:30 ~ 11:00	**Coffee break**
11:00 ~ 12:30	Understand the biomechanical difference between high friction mechanics and low friction mechanics, and understand how to apply this new knowledge to clinical practice to produce efficient mechanics
12:30 - 13:30	**Lunch**
13:30 - 15:00	Clinical examples of efficient self-ligating mechanics
15:00 - 15:30	**Coffee break**
15:30 - 17:00	Tips and pearls from a modern orthodontic practice

課程資訊 Lecture Information

Organizer 中華民國齒顎矯正學會

Co-Organizer 湧傑企業股份有限公司

Time 2012.4/22 週日 9:00am~5:00pm

Venue 台灣金融研訓院 菁業堂　台北市羅斯福路三段62號2樓

Speaker Dr. Hisham Badawi

Fee 4/6 前 會員2000元，非會員3000元，學生會員1000元
4/7 後 會員3000元，非會員4000元，學生會員1500元

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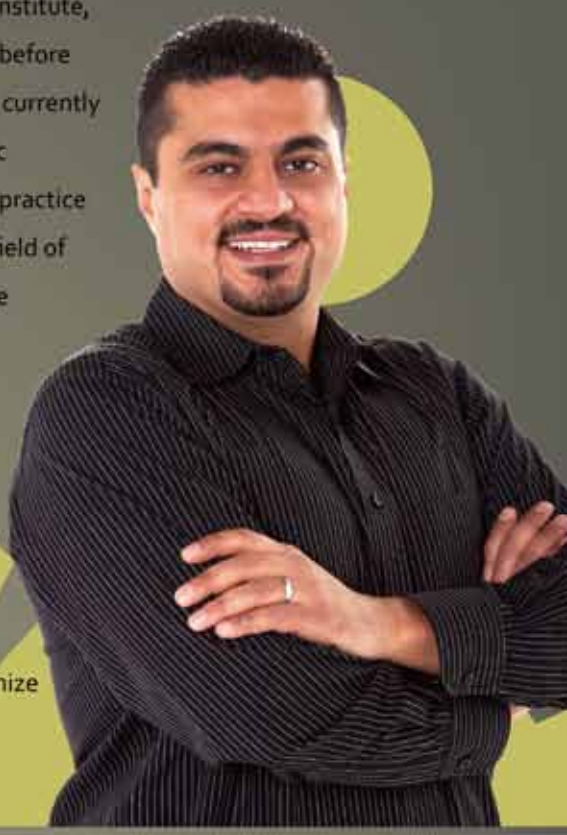
Certification 本會授予專科醫師認證 7 學分；非專科醫師依「衛生署醫事人員繼續教育積分管理辦法」登錄 7 學分；公務人員登錄「公務人員終身學習時數」7小時。

Speaker Introduction
講師介紹

Hisham Badawi DDS, MSc, PhD, Morth RCSEd, FRCDC

Dr. Badawi completed his DDS at Jordan University, then his MSc at the Eastman dental institute, University College London. He acquired the fellowship of the Royal College of Edinburgh before moving on to start his PhD at the University of Alberta in Edmonton Canada. Dr. Badawi currently maintains a busy private practice in Calgary Alberta and is actively involved in orthodontic biomechanics research. He maintains a very busy schedule between his full-time private practice and his research interests at the University of Alberta. He is considered a pioneer in the field of three dimensional orthodontic biomechanics research, as he and the research team at the University of Alberta contribute to some of the most ground breaking research in the field of orthodontic biomechanics which will ultimately change the way orthodontics is perceived and practiced. In an attempt to study orthodontic force systems of fixed appliances, Dr. Badawi with a research team at the University of Alberta in Edmonton Canada, built the Orthodontic Simulator. This Apparatus (for the first time in the history of orthodontics) measures the forces applied on all the teeth in the dental arch simultaneously in 3D, creating a new frontier in orthodontic biomechanics research. Dr. Badawi uses this new insight into 3D orthodontic fixed appliance mechanics to customize his force delivery systems providing the most efficient orthodontic force systems.



Great Recommendation
強力推薦

在近幾年於世界各地之 Damon Forum 中，Badawi 永遠是最重要講師之一。Badawi 所設計並主導之 OSIM (Orthodontic Simulator)，不同於傳統矯正力學研究，只在實驗室以三點作矯正線力學研究，OSIM以高科技作出模擬口內所有矯正中之牙齒，可模擬口腔中牙齒實際移動之實際情況，為目前最完整之 3D Orthodontic Biomechanics 之研究。此研究為 Damon Passive Self-ligating System 之所以能產生相當理想之牙齒移動，作了非常棒之生物機械理論說明。

於去年四月在韓國首爾的第四屆 Asia Damon Forum 中非常驚艷地發現，他不但是一位傑出研究學者，而且能將所研究之結果應用在實際臨床上，雖然他在 Damon Forum 中秀了很多精彩病例，可惜限於時間不夠，只能快速瀏覽一遍。

很高興這次他受邀來台的一天演講中，國內矯正界同仁可看到 Badawi 以 OSIM 來說明 Damon System 之神奇作用背後之 Biomechanics 基礎根據，更可深入地了解如何以此基礎 Biomechanics 觀念，將 Damon System 之優勢充份應用於臨床病例上，以便使用 Damon system 之病患能得到最佳治療效果來造福病患。

林錦榮齒顎矯正中心負責人
林錦榮

矯正力學是所有臨床矯正醫師必修、必知的一門學問。50年前年輕的 Dr. Burstone 為解開力學之謎，而發展出另一套矯正法（Segmental Arch），因當時無法測量 Continuous Arch 之力量及力矩，Segmental Arch 滿足學者對力量的好奇心！

然而，Segmental Arch 在臨床上操作不易，故大部份的醫師還是使用無法測知力量系統的 Continuous Arch。10年前年輕的 Dr. Badawi 終於使用先進的電腦，設計出測量 Continuous Arch 的力量系統，並導出其在臨床運用祕訣，即使高齡80歲的 Dr. Burstone，都前往加拿大深入了解此系統。如果您也跟 Dr. Burstone 一樣好奇且希望精進自己放入患者口內的力量系統，您一定不會錯失這次的精彩演說，它將使您由學理到臨床一次到位。

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Simplified Open-Window Technique for Palatally Impacted Cuspids

Chris H.N. Chang, DDS, Ph.D.
Director,
Beethoven Orthodontic Center

Introduction

Open window technique is a commonly used surgical option to treat palatally impacted cuspids. This article aims to provide step-by-step illustrations on the surgical procedures so doctors can use them as a checklist before approaching this type of cases.

Case Study

A 12-year-6-month-old female came for consultation. The panorex film showed two upper impacted canines on both sides and two deciduous canines remaining (*Fig. 1*). CT scan indicates that the impacted cuspids were on the palatal side of the right second premolar and the left first premolar (*Fig. 2*). This information was used for selecting an appropriate surgical technique. The drawing of the impacted cuspids marks the approximate position (*Fig. 3*). Detailed surgical procedures of this surgery are discussed at below.

Fig. 1: Pretreatment pano radiograph & intraoral photographs.

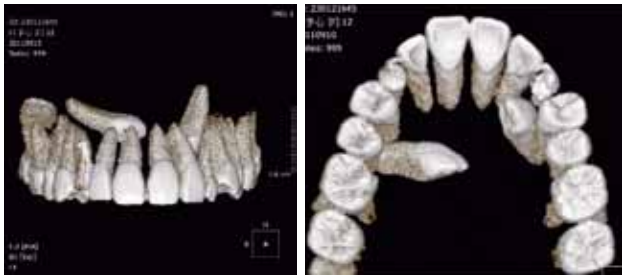

Fig. 2:

Pretreatment CT image. Frontal view and occlusal view reveal that the the crown of impacted cuspids.

Dr. Jack Cheng, Lecturer,
Beethoven Orthodontic Course

Fig. 3:
The drawing of the impacted cuspids marks the approximate position.

Fig. 4:
After applying local anesthesia, use an explorer to mark the crown.

Fig. 5:
Use a dental electric knife to remove the soft tissue covering the impaction's crown.

Surgical Process

First, local anesthesia was applied in the surgical site and an explorer was used to mark the location of the crown (*Fig. 4*). When an explorer touches teeth or bones, the sensation is like contacting a smooth or rough surface respectively.

Second, use a dental electric knife to remove the soft tissue covering the impacted cuspids (*Fig. 5*). By this method, there will be good vision to the surgical field to prevent blood oozing around the soft tissue.

Third, an explorer in an up-down motion is used to measure the covering bone depth and margin (*Fig. 6*). CT image can provide much diagnostic information on the precise location of the impacted cuspid, but an explorer detection is more effective to sound the depth and margin of the covering bone.

Fig. 6:
Use an explorer in an up-down motion to detect the depth and margin of the covering bone.

Fourth, use a high speed handpiece and carbide round bur to remove the covering bone (*Fig. 7*).

Fifth, extract 53, 63 primary teeth (*Fig. 8*).

Sixth, by using high power suction and an electric knife, these tools facilitate blood coagulation (*Fig. 9*).

Seventh, use a high speed handpiece and a carbide round bur to removes more bone. The main purpose is to make impacted cuspid more exposure (*Fig. 10*).

Eighth, control bleeding with an electric knife and irrigation with normal saline (*Fig. 11*).

Fig. 7:
Remove the covering bone with a high speed handpiece and a carbide round bur.

Fig. 8:
Extract 53, 63 primary teeth.

Fig. 9:
By using high power suction and an electric knife, these tools facilitate blood coagulation.

Fig. 10:
The main purpose is to remove more bone down to CEJ to make impacted cuspid easily to erupt.

Ninth, spreading some vaseline on the gloves as a coating to make COE-PAK stick proof (*Fig. 12*). Then use it to cover the wound. Apply pressure on COE-PAK against the wound with wet gauzes while pressing blood out. COE-PAK packed into the interdental space will be caught between the undercut (*Fig. 13*).

COE-PAK can help stop bleeding and cover the wound for patient's comfort. It will delay soft tissue healing and avoid the soft tissue covering the impaction again. The epithelium averagely grows at the rate of 1 mm per day, much faster than autoeruption of the impaction. Remove COE-PAK three days after the surgery and monitor the emergence of the impaction after 3 weeks (*Fig. 14*).

Fig. 11:
Control bleeding with an electric knife.

Fig. 12:
Spread vaseline on the gloves as a coating to make them stick proof.

Fig. 13:
Cover the wound with COE-PAK and pack it into the interdental space so it will be caught between the undercut.

Fig. 14:
COE-PAK was removed 3 days later. Impacted cuspids start to erupt 3 weeks after the surgery.

Discussion

Open window technique was used in this case to facilitate auto-eruption of the impaction. When the labial surface of the impaction erupts 7mm, a miniscrew is placed palatally to bring the right impacted cuspid into arch with connecting power chains (*Fig. 15*). This force system can provide direct retraction, compared with a 3D lever arm (*Fig. 16*). However, the disadvantage is that screw insertion sites have to be changed in time to apply an appropriate force direction. Meanwhile, one has to pay attention to possible occlusion interferences. Frequent checks on occlusal contacts with articulation is advised.

Fig. 15:
Two months later, use a palatal miniscrew with power chains to retract right canine.

Fig. 16: 2x12 mm OBS with 3D lever arm

Conclusion

Clearing the soft and hard tissue on the traction route is a key step in the treatment of impactions because it can facilitate auto-eruption later on. Traditionally orthodontists would refer these surgeries to oral surgeons. In this article a simplified method is proposed so orthodontists can perform as chair side procedures without referring out to other specialists. As a result, one can have more consistent treatment procedures and results for future study.

References

1. Kokich VG. Surgical and orthodontic management of impacted maxillary canine. Am J Orthod Dentofacial Orthop 2004;126:278-83.
2. Hsu YL, Chang C, Roberts WE. OrthoBoneScrew. The dream screw for next generation's orthodontists. News & Trends in Orthodontics. 2011;23:34-49
3. Huizing EH, Groot JAM. Functional Reconstructive Nasal Surgery. 2003;25
4. Su B, Hsu YL, Chang C, Roberts WE. Soft Tissue Considerations for the Management of Impactions. International Journal of Orthodontics & Implantology. 2011;24:50-59
5. Chang C. Advanced Damon Course, Beethoven Podcast Encyclopedia in Orthodontics 2012, Newon's A Ltd, Taiwan
6. Yeh HY, Chang C, Roberts WE. Step-by-Step on the Open-Window Technique for Upper Palatal Impaction. International Journal of Orthodontics & Implantology. 2011;24:40-43

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09/16 - 09/17, 2012 ……（日、一｜演講與實作 workshop）
10/14, 2012 ……（日｜視訊教學）
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01/21-01/22, 2013 ……（一、二｜美國演講）
01/23, 2013 ……（三｜美國可選修的 cadaver workshop）
01/24, 2013 ……（四｜美國可選修的 cadaver workshop）
01/25-01/26, 2013 ……（五、六｜美國演講，畢業典禮）
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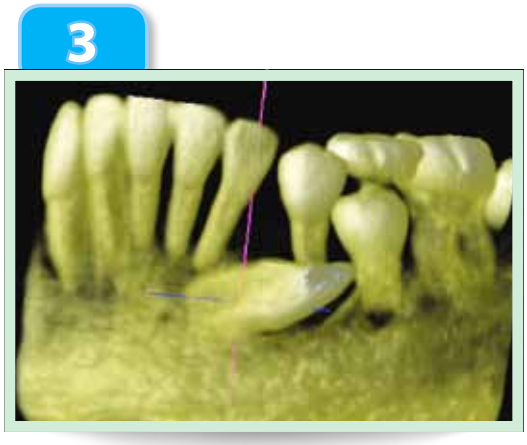
Yu-Lin Hsu, Chris H. N. Chang, W. Eugene Roberts

Tough Cases Made Easy by OBS



OrthoBoneScrew

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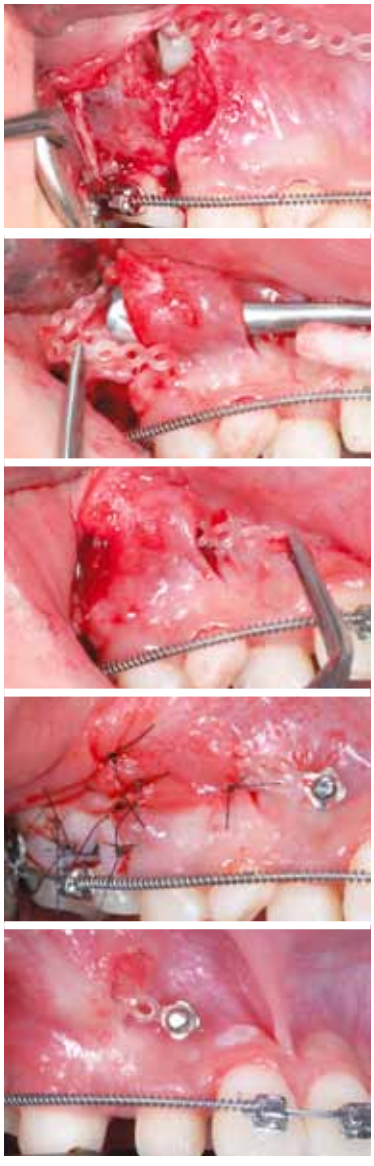
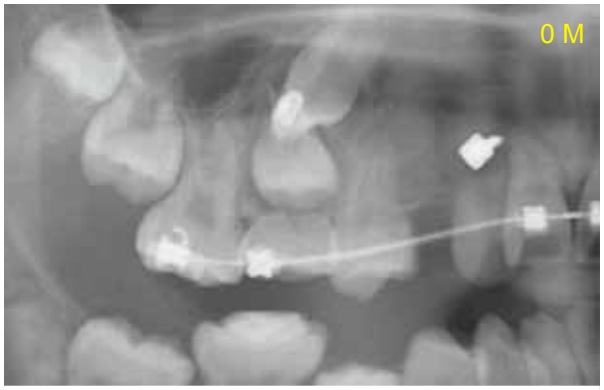
Upper labially impacted cuspid 1

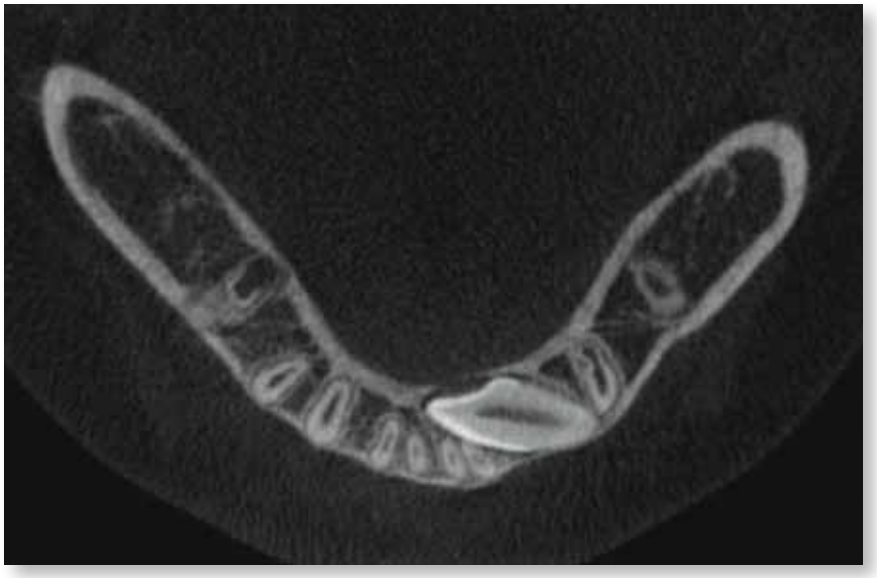
A closed eruption technique
Modified from Vertical Incision Subperiosteal Tunnel Access
VISTA (*Dr. Homa Zadeh, USC*)

In this case, closed eruption technique was chosen for primary wound healing which is more comfortable than APF. The combination of VISTA technique not only avoid the 2-stage placement of OrthoBoneScrew but also offer a good connection between the OBS and the covered transpositional cuspid. Meanwhile, one should keep OBS as high as possible to make the switch easier. After 2 month-long treatment, this transpositional cuspid has been pulled mesially for 3~4 mm.



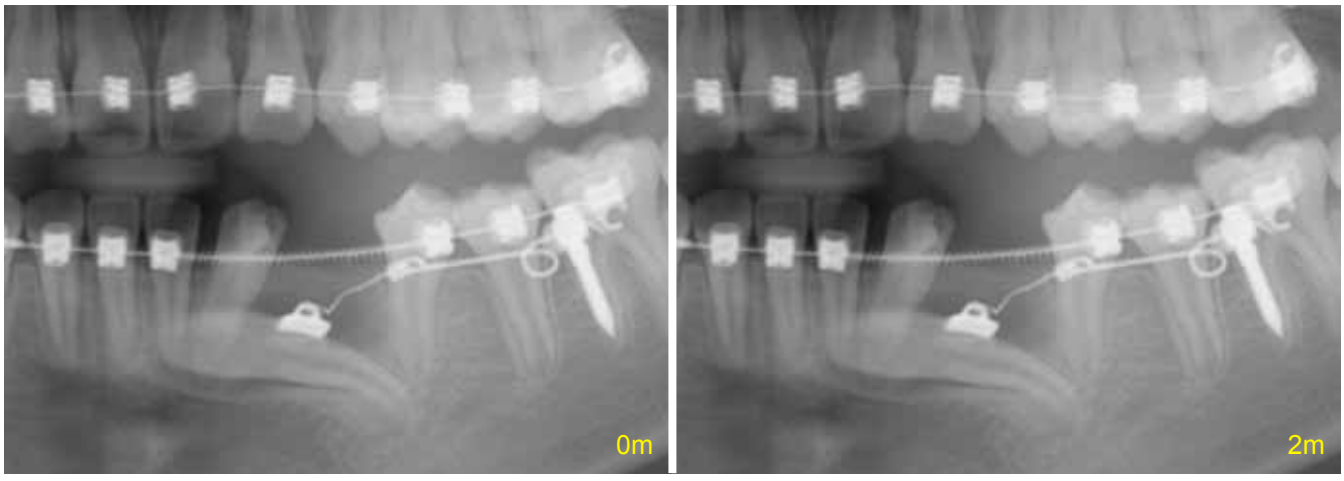


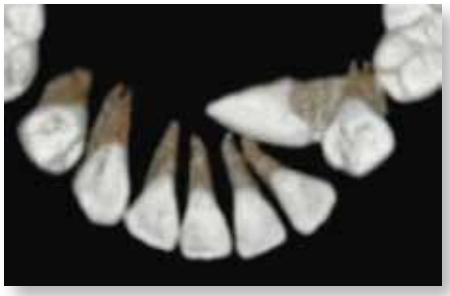
Lower sublingual trans-alveolar impacted cuspid 2



1st surgery

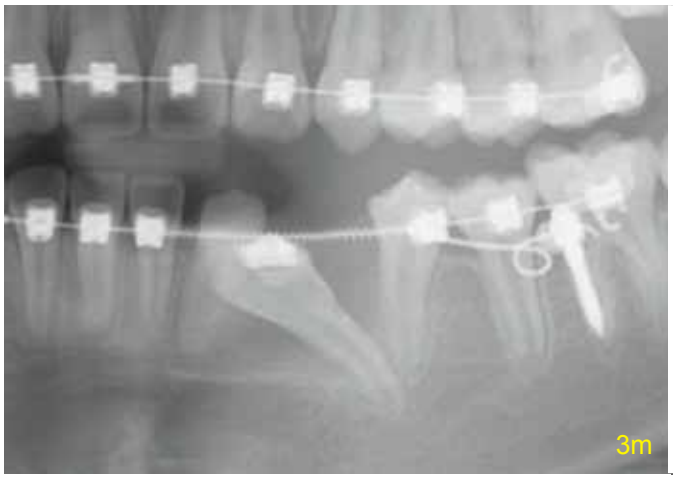
The force system was designed to deliver by a .019x.025" SS lever arm and the OBS which was located at buccal shelf. When this lever arm was inserted in the square hole in the OBS and activated, it could upright the trans-alveolar canine first, then moved buccally, and finally elevated to the reserved canine space. During the exposure surgery, it was important to keep the operation field as superficial as possible on both labial and lingual side to avoid cutting the mental nerve and sublingual





2nd surgery

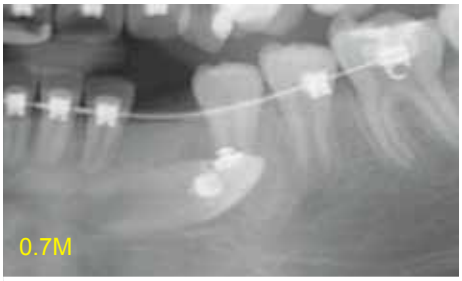
artery. This safety consideration led to a restricted bonding position of the eyelet on the surface of the root. After 2 months from operation, the horizontal impacted canine was upright successfully, and the 2nd exposure surgery was aimed to change the position of the eyelet to the crown. By adjusting the lever arm, the tip of the impacted canine was shown up in the oral cavity 2 months later.



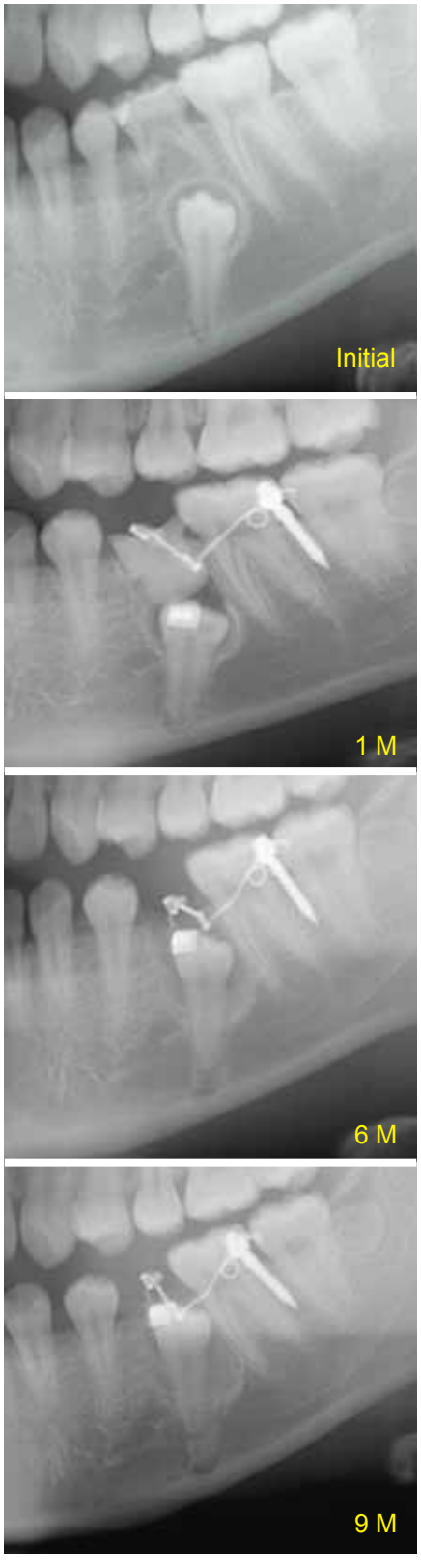
Lower horizontal impacted cuspid 3

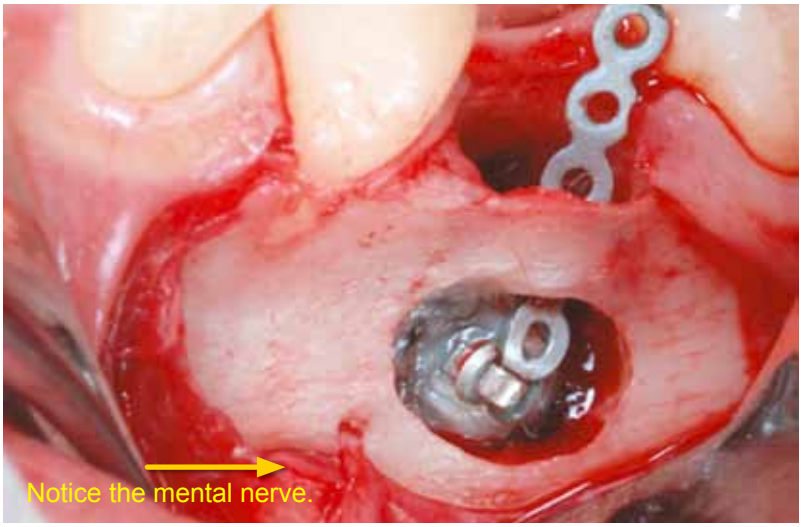
Mechanics design:

A .017x.025" TMA lever arm was consisted of a helical coil on one end and helical attachment on the other end. When this lever arm was inserted in the square hole in the OBS (*located at buccal shelf*) and activated, it could build a force system which protracted the tip of canine first, then moved buccally, and finally elevated to the reserved canine space. If the mechanics were designed to exert force directly from the main arch wire only, it would have been detrimental to the roots of first premolar. During the follow-up visits, the helix was adjusted without taking it out. After three months from operation, the impacted canine was successfully moved away from the previously impacted site and was ready for bracket bonding.



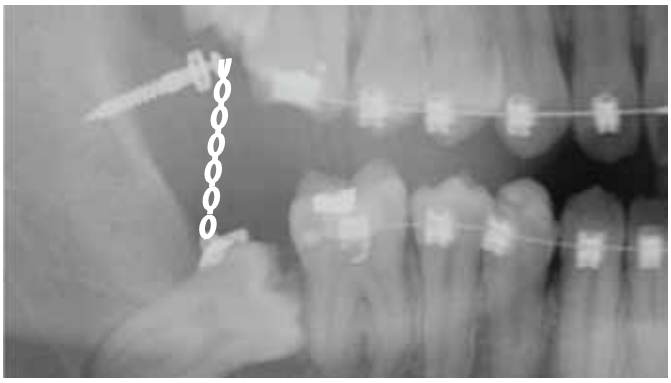
Lower impacted premolar 4





A 13-year old female had a lower impacted 2nd premolar, approximately 10 mm deep on the left side. The treatment plan was to extract the 2nd primary molar and pull out the 2nd premolar. During the treatment, the 2nd primary molar was first extracted, followed by bonding an eyelet bracket on the surgically exposed 2nd premolar. Meanwhile, the bone surrounding the crown of the second premolar was reduced until reaching CEJ and a lateral window was made for bracket bonding. An eyelet bracket was bonded on the buccal surface of the deeply impacted second premolar. The OBS was inserted on the left buccal shelf area. A power-chain was attached between a 3D lever arm and the eyelet bracket to extrude the second premolar. This .017x.025" TMA lever arm was consisted of 3 helical coils: one in the middle, two in both ends. When this lever arm was inserted in the square hole of the OBS and activated, it would form a force system which extruded the second premolar directly.

Lower impacted molar 5



A 19-year-and-10-month-old male had lower impacted second and third molars on the right side. The treatment plan was to extract the 3rd molar and upright the 2nd molar. During the treatment, the third molar was first extracted, followed by exposing the second molar surgically. Meanwhile, the bone surrounding the crown of the second molar was removed to CEJ and the second molar was surgically luxated by an elevator. A button was bonded on the distal surface of the second molar. The OBS was inserted on the right ramus of the mandible. An elastic chain was attached between the OBS and the button to upright the second molar. In 4 months, the second molar was uplifted successfully. Finally, a molar tube was bonded for advanced alignment and leveling. An open coil spring was inserted between 1st and 2nd molars to push and upright the 2nd molar.

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視訊課程三選一

Avoiding & Managing Complications Associated with Implant Therapy: Part 2

Dr. Baldwin Marchack

Dr. Baldwin W Marchack
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我們可以將植牙可能遇到到的併發症分為 surgical complications 及 restorative complications，兩者是互相影響的，今天將以補綴的觀點出發分析原因、結果及處理方式。

最常遇的併發症有：

1. Infection
2. Inflammation
3. Soft tissue prolapse
4. Gingival hyperplasia
5. Gingival recession
6. Porcelain fracture
7. Occlusal overload
8. Poor implant position

接續上期接下來由第五點開始介紹。

五、Gingival recession

造成 gingival recession (圖1) 的原因可以粗略分為 hard tissue defect 或 soft tissue defect 的產生，所以從 surgical view 我們會進行 bone graft 或 soft tissue graft 來修補。bone graft 分類的方式可依照欲填補的部位分為 inlay graft 或 onlay graft，按照成分的分類可分為 autograft，allograft，xenograft，synthetic graft 等。從補綴的角度，我們可以使用 pink porcelain (圖2) 或 pink composite (圖3、4) 來修補軟組織的缺損。

六、Porcelain fracture

常見porcelainfracture通常有下列幾種因素：transformation、ovencalibration、thermaldiffusivity、custom copping design、hoop stress failures (圖5)；在 NTO19 page 70～76 廖文堅醫師撰寫 Dr. Baldwin 的 fixed esthetic implant supported restorations 文章中有較詳細的介紹。Dr. Baldwin 思考出的解決方式，就是使用全氧化鋯牙冠：All-in-Z®Crown (圖6)，不會斷裂，貼合性佳，較金屬牙美觀，低磨耗率等都是優點，主要可用在第二大臼齒。

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■圖1：
軟組織萎縮造成植體金屬邊緣外顯。

■圖2：
在 Zr copping 燒上 pink porcelain。

■圖3：利用蠟型翻製鈦的 framework。

■圖4：
牙肉的部份使用 pink composite 結合在鈦framework上，支台齒的上面個別一顆顆製作牙套掩蓋植牙螺絲孔。

■圖5：porcelain fracture。功能性咬頭與主要受力咬點處產生陶瓷斷裂。

如果延伸到美觀區，Dr. Baldwin 針對此提出另外一項專利的設計：Modified All-in-Z® Crown (圖7)，在頰側非功能性區燒瓷以達到美觀的需求，其餘部分仍是氧化鋯為主體，可兼顧美觀及耐用。

圖 8 為下顎 #35x37 牙橋氧化鋯的 framework 設計，透明度：porcelain glass > zirconia glass，咬合硬力：zirconia > porcelain，在 second molar 沒有美觀問題，所以使用 all zirconia，second premo-ar and first molar 因有美觀的問題，所以 buccal side 以 porcelain 表現，咬合面以 zirconia 表現。

在植牙上的應用方面，Dr. Baldwin 利用一個上顎全口 screw retained All-in-Z® Bridge case 作解說：先製作出 resin pattern (圖9)，然後將 resin pattern 作 cut back (圖10)，預留將來美觀區燒瓷的空間，將 cut-back resin pattern 掃描進入 CAD / CAM 軟體 (圖11)，然後就可以 milling 成型製作出 All-in-Z®Bridge (圖12)，牙齒表面燒瓷，可以從咬合面的牙齒切端看到瓷與氧化鋯的交界，咬合面的部分全以氧化鋯製作 (圖13)，pontic 部分以 zirconia 處理能減少 plaque 的堆積數量，圖 14 為病人配戴的咬合與正面觀。

■圖6：All-in-Z®Crown (全氧化鋯牙冠，下顎第二大臼齒)。

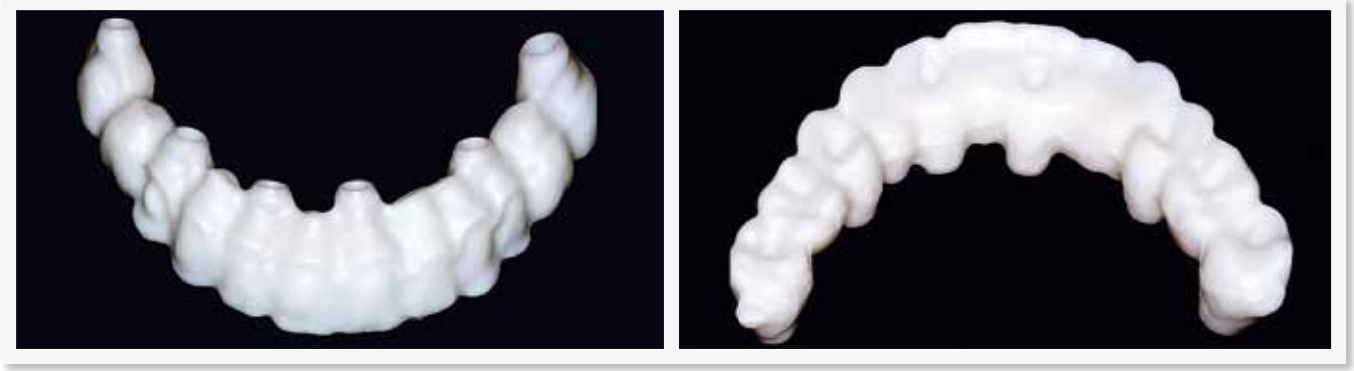
■圖7：
Dr. Marchacks Modified All-in-Z® Crown (修正型全氧化鋯全瓷冠，上顎第一大臼齒僅頰側非功能性側烤瓷)。

■圖8：#35x37、37為all-in-Z、35，36 頰側考瓷表現美觀。

■圖9：
resin pattern。

■圖10：
resin pattern cut back for zirconia framework。

■圖11：
cut-back resin pattern scanned。



■圖12：All-in-Z® Implant Bridge 氧化鋯支架頰側及咬合面觀。

■圖13：All-in-Z® Implant Bridge 氧化鋯支架頰側烤瓷及氧化鋯咬合面觀。

■圖14：All-in-Z® Implant Bridge 上顎咬合面與上下顎咬合觀。

如果遇到小片的 porcelain fracture，Dr. David Garber 會使用瓷片重新黏貼 (圖15)。Dr. Baldwin 建議可以將整個表面 preparation，製作 veneer 來增加黏著的面積。但這類的 case，Dr. Baldwin 建議我們盡量製作 screw retained prosthesis (圖16)，因為許多維修包括黏著的動作口外比口內操作容易而且精密得多。有時因為 implant 的角度，螺絲孔可能落在美觀區或是其他因素讓醫師無法製作 screw type 時，Dr. Baldwin 建議可以製作 framework (圖17)，將 screw hole 藏在支台齒內 (圖18)，然後一顆顆另外製作出牙冠後進行組裝黏合 (圖19、20)。這 case 從 framework 到每顆牙套都是 CAD / CAM 製作而成，牙肉的部份用 pink composite 成型 (圖21)，牙冠可部分在口外先進行黏著，螺絲孔外露部分的支台齒等 framework 鎖入口內後，在進行剩下部分牙冠的黏著 (圖22)。因為每個組件都有電腦的資料建檔，所以將來任何一個組件有壞損需要維修時，只需要將該顆牙冠拆卸，從電腦中叫出資料重新製作甚至可以加以修改，圖23、24 為完成後的口內觀。

歸納這部份，處理 porcelain fractures 可分為三種方法：

1. Repair: Bonded veneers or bonded bits。
2. Replace: For case, screw retain or replace individually cemented crowns。
3. Reduce: Instruct lab to make sure the substructure is properly designed (check occlusion, parafunctional habits), Use "All-in-Z" Concept。

■圖15：#12 切端的缺角利用貼面重新黏貼。

■圖16：screw-retained prosthesis，retrievability is the key to maintenance。

■圖17：
screw-retained prosthesis，framework design。

■圖18：
screw hole 位在支台齒中。

■圖19：try copping。

■圖20：try crown。

■圖21：
牙肉部分使用pink composite。

■圖22：
牙冠可部分在口外黏著，口內螺絲鎖上後，在黏著剩下的牙冠。

■圖23：完成後口內正面觀。

■圖24：完成後口內 舌側觀。

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12:00			Lunch table clinic
13:30	"Implant Soft Tissue Management" Lecture & Hand-on	Main Lecture	Main Lecture
17:00		會員大會暨選舉	
18:30		Gala dinner	

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Associate Professor, USC

Fernando Rojas-Vizcaya, DDS, MS
Associate Professor, USC

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王興 教授
中華口腔醫學會會長

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許榮仁 醫師
大龍、誠悅牙醫專科協同醫療中心主治醫師

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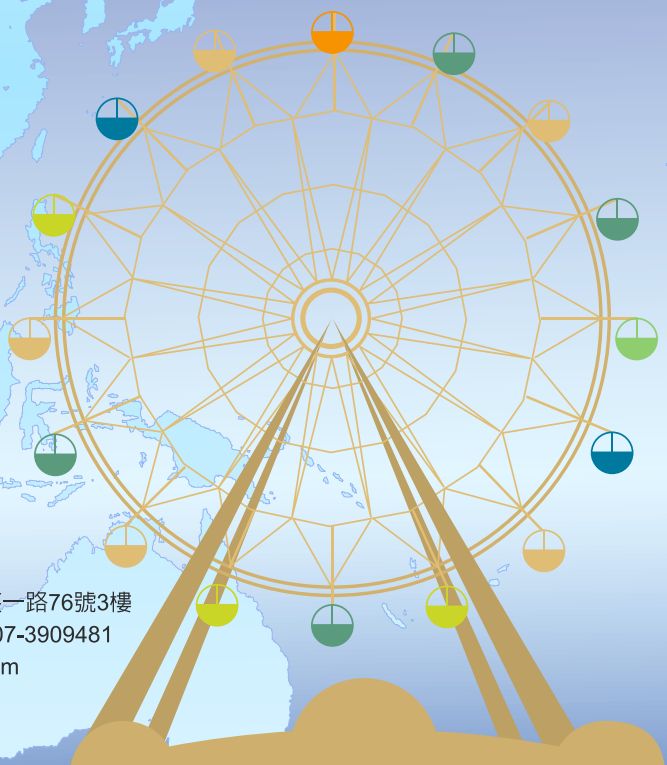

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Avoiding & Managing Complications Associated with Implant Therapy: Part 3

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七、Occlusal Overload (咬合過重)

咬合過重通常會造成以下幾點：

1. loose screws
2. broken screws
3. broken restorations
4. broken abutments
5. broken implants
6. bone loss / implant failure

1. loose screws

發生的機率 external connection 大於 internal connection，若是 screw retained prosthesis，只要將上面覆蓋的 composite material 拿掉，將 screw 重新轉緊即可，有時無法轉緊，可能是 screw 本身的螺紋已經消耗，在臨床上需要去分辨。如果是 cement retained，則往往需要將 crown 拿掉，有些醫師會嘗試往牙冠中心鑽孔，試圖尋找螺絲孔。但是需要注意 abutment 的 screw hole 不一定在正中間，會隨著 implant 的角度，或是使用 angled abutment 導致 screw hole 可能出現在偏頰側或舌側等，但是 X 光往往無法判斷得出來，需要有印模的模型甚至保留最初的手術模版來當做參考。

若是 screw 的開口朝向 crown buccal side，我們通常會以 cement retained 替代 screw retained，以免影響美觀表現。或是連續多顆牙的補綴物等，這類的 case 在假牙還未裝上去之前，可以利用 guided pin 來定位 screw hole 的位置，並製作 clear retainer 加以記錄 screw hole 所在，當發生 screw loose 的問題，我們可以很快地定位，並加以修復。

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前高雄醫學院附設醫院醫師

2. broken screws

根據 Dr. Baldwin 的經驗，broken screws 比較容易出現在下列幾種情況：

a. 早期的植體與補綴物比較容易發生 screw 斷裂。
More common with older design implants and restorations.

b. 就算按照廠商的指示上 torque，仍然可能發生。
Even through it was torqued originally, it's broken now.

c. 斷裂的部份可能在 implant fixture 中取不出來。
Shank should be loose in the implant.

d. 植體的鬆緊密合度取決於製造商。
Tight fit, loose fit, depends on manufacturer.

當 broken screws 發生時，Dr. Baldwin 也分享一些他處理的步驟：

a. 當軟組織覆蓋到 implant 上時，可以用 tissue punch 移除。
Do use a tissue punch if tissue has grown over the implant.

b. 看到 the top of screw 時，第一步不要試著去轉它。
Don't start drilling on the top of the screw as your first step!

c. 可以用 explorer probe curette ，去試著找出 broken screw 的粗糙支點。
Do take an explorer, curette or probe and try to engage a rough spot.

d. 最後用 thin tip 的超音波洗牙機頭，去逆時針反轉出來。
Do try to use an ultrasonic scaler with a thin tip to tease it.

e. 可以使用放大鏡，來協助觀察。
Do use magnification always - loops, microscope, etc.

f. 在操作時，要很清楚的看見 broken screw 的外圍與內圍。以上步驟，如果都無法取出，就要使用 hand piece 來處理。
Do look at the top of the broken screw shaft relative to the implant.

g. 使用全新鋒利的 round bur，使用大量清水沖洗，在 broken screw 的中心點外圍製造個 5mm 深度的小洞，才能製造出一個力臂，將它逆時針轉出。
Use lots of water, sharp new round bur, light tough, make a dimple 0.5mm deep, off-center. Try to engage with an instrument, rotate counterclockwise.

h. 再用 low speed contra-angle，使用 end cutting bur 將它插進 5mm 深度裡，再反轉出來。
Use slow speed contra-angle handpiece, end cutting bur, wedge into the dimple, slowly activate handpiece.

i. 也有些廠商，例如 Nobel Biocare 等，出些 broken screw removal kits ，有些用兩種器械逆時針轉出來，有些是在 screw center 創造個方形，使用 screwdriver 取出，有些是從 screw 的外圍下手。
Zimmer, Biomet 3i, Nobel Biocare have "broken-screw removal kits" . These are burs that cut in reverse. Run handpiece in reverse, bur engages the screw and it rotates out.

j. 最後一招 ! 使用 1/4 round bur，在 screw 的表面刻出條刻痕，再用 screwdriver，逆時針取出。
Use 1/4 round bur, cut slot across the top of the broken shaft, use slotted screwdriver to unscrew.

3. Broken restoration

處理的步驟與 porcelain fractures 相同：修復 (repair)、更換 (replace) 或磨掉 (reduce)。(第二部分，前篇文章)

4. Broken abutment

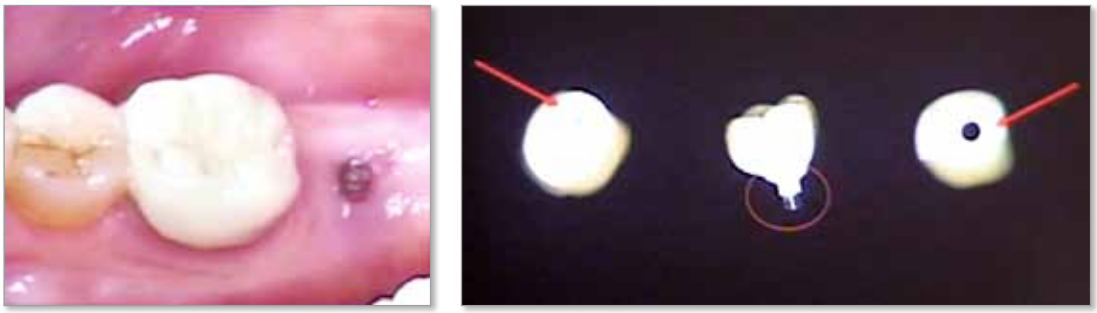
發生的原因可能有：a. bruxism、b. cross interference、c. unintentional cantilever。

Dr. Baldwin 分享一個案例，他使用 CAD/CAM 公司製作 #37 的 screw-retained single crown (圖 1)，一周後病人來電說牙冠鬆了，希望能黏回去。Dr. Baldwin 記得自己是做 screw type，可能不是牙冠鬆而是某個部分斷裂了。病人回診後，發現是 abutment fracture，斷裂處發生在 cervical 部位 Zr copping 與 female screw 鎖住的地方 (圖 2)。治療的步驟先用 tissue punch 取出多餘軟組織，再試著把 broken abutment 取出，重新印模，送出去做金屬 custom abutment，病人要求希望不要有咬合面螺絲孔，所以這次製作了 PFM crown (圖 3)。

5. Broken implant

發生的原因與 broken abutment 相同：a. bruxism. b. cross interference. c. unintentional cantilever。需要將 broken implant 的部份取出。有研究指出，調查了將近 5000 個植牙的案裡，將近有 0.8% 有 implant fractures，而其中 edentulous 只佔 0.2%，其原因如下：(a). edentulous - curvilinear：因為形狀圓弧，力量比較平均。(b). partially edentulous rectilinear：形狀不規則，咬合力量不均，比較容易斷裂。(圖 4) Eckert SE et al. Analysis of Incidence and Associated Factors with Fractured Implants: A Retrospective Study. JOMI 2000; 15: 562-7

■ 圖1：#47 screw-retained Zr copping single crown



■ 圖2：#47 abutment fracture, cervical Zr copping area

■ 圖3：
#47 abutment fracture, tissue punch, remove broken abutment, custom abutment delivery, PFM crown cementation.

6. Bone loss / Implant failure

發生的原因可能有：

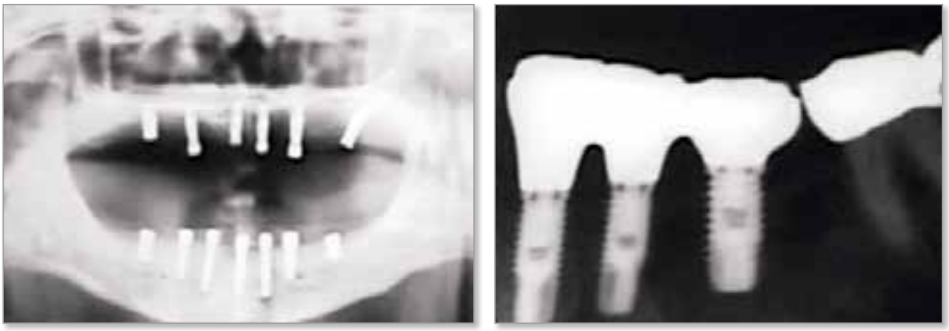
a. poor occlusal design: premature contact, working interference, balancing interference

b. bruxism:

c. cross interference: poor occlusal design premature contact, working interference, balancing interference

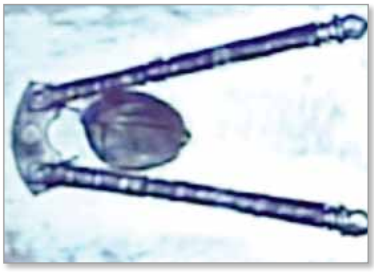
d. unintentional cantilever

咬合設計不良，是造成骨流失、植牙失敗的原因 (圖 5)。人類的咬合主要是第三類槓桿，因此越遠心端的牙齒承受的咬合力量越大，越容易造成傷害 (圖 6)。要如何設計適當的咬合，我們需要先了解 tooth biomechanics 中 chewing motion 的關係。牙齒的咬合運動，類似淚滴的形狀，當咬合力下來時，在接觸點的位置，會有垂直的分向量，以及水平的向量 (圖 7)。 以 (圖 8) 下顎小臼齒來分析咬力，center of rotation 在 root apex 1/3 處，cusp incline contact 為咬合力接觸點，當咬合力下來時，有個垂直咬合斜坡的分力 "resistant line of force（F)"，而 center of rotation 到咬合分力的垂直距離為力矩 "perpendicular distance (D)" 我們可藉由公式 Torque = F x D，得到牙齒所承受的 torque。

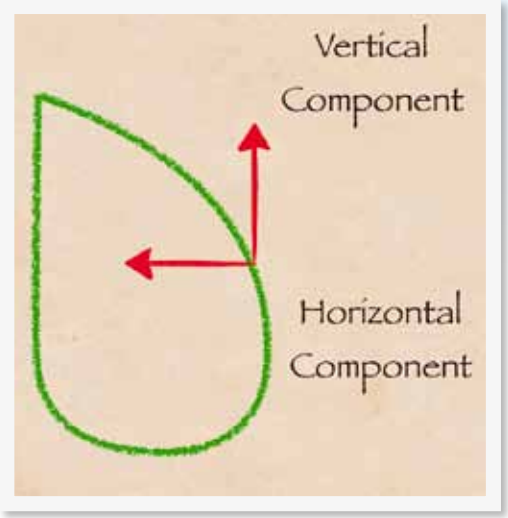


■ 圖4：Partially edentulous case - different levels of occlusal force distribution

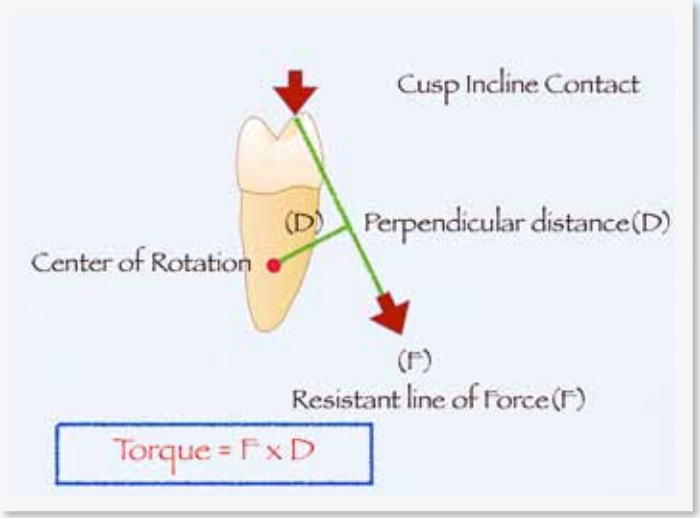
■ 圖5：咬點出現在 non-functional cusp，或是集中在近心側造成應力分布不均。



■ 圖6：第三類槓桿。



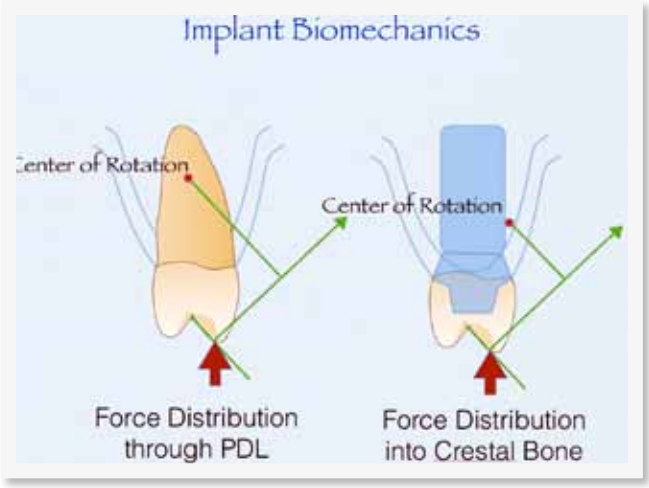
■ 圖7：chewing motion。



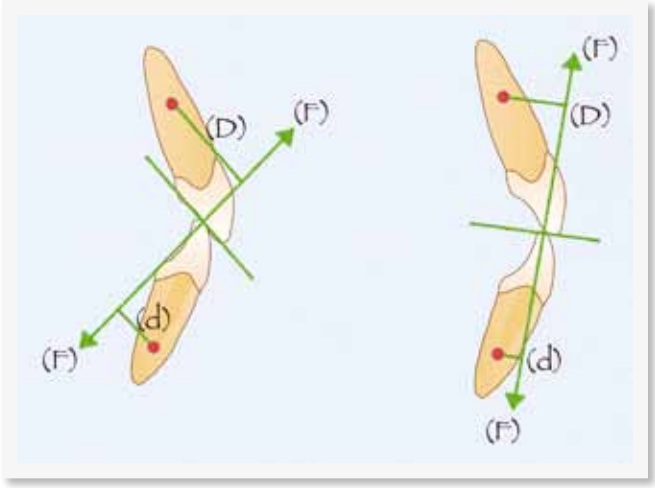
■ 圖8：Torque = FxD

我們用同樣的概念討論前牙的咬合關係，臨床上，我們無法控制患者的咬合力量大小，但是可以藉由控制 anterior guidance 來控制 torque 的大小。從圖9左邊，當接觸斜面越垂直，對上顎門牙而言，同樣的咬合力 F，但是 D 的距離較遠，所以 torque 也增加。當接觸斜面越水平（右圖），同樣的咬合力 F，相較左圖而言，D 的距離近得多，所以牙齒承受的 torque 較小。

後牙的部份，同樣的咬合力 F 作用在上顎小臼齒的時候，如果我們改變牙齒 cusp inclination，當斜度越大，D 值越大，torque 就越大，反之斜度越小，D 值越小，torque 也越小（圖 10）。



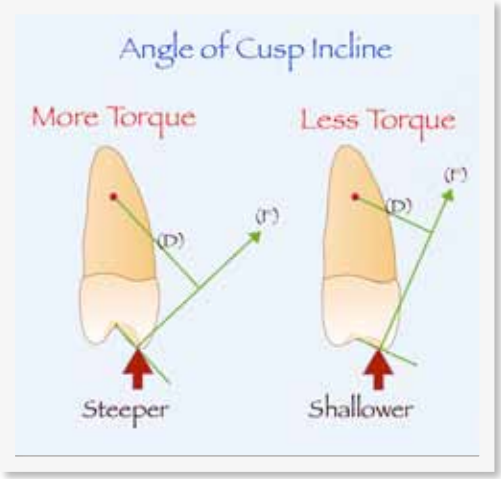
■ 圖9：
Torque = FxD，同樣的咬力 F，因為不同的接觸斜面讓上顎門牙產上不同的 D，因此產生的 torque 也不同。



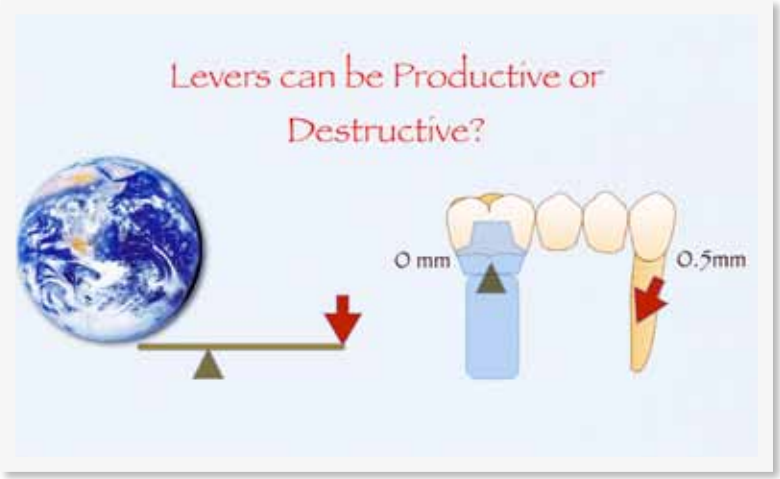
■ 圖10：
Torque = FxD，同樣的咬力F，因為不同的cusp inclination讓上顎小臼齒產上不同的D，因此產生的torque也不同。

延伸到植牙的部份。自然牙的 center of resistance 約在 root apex 1/3 處。植牙不同的是植體沒有 PDL，經過骨整合之後，center of resistance 的位置約在 crestal bone 下面 1mm 的地方，因為這區承受 torque 的力量最大，所以也間接說明 occlusal overload 會造成植體 crestal area 的骨吸收 (圖 11)。當自然牙與植體相連，自然牙本身有 PDL 接受緩衝，而且有些許的 mobility。更重要的，是自然牙與植體各自咬合承受力的作用方向位置不同，因此相連後受力的結果讓植體因為不動而成為支點，承受 torque 而產生傷害。因此，Dr. Baldwin 建議盡量自然牙與植體間還是儘量不要相連 (圖 12)。

還有另個可能造成 bone loss / implant failure 的原因：non-passive fit。這種情況是指連續多顆植體時，有時植體間相互不平行，或是印模有誤差，但是將假牙多顆 splinting 在一起，當試戴假牙時強行將假牙壓入後，應力會逐漸造成植體周圍的骨頭流失。Dr. Baldwin 建議可將牙套各別分開不 splinting 起 (圖 13)，或是採用 open tray impression 來增加印模位置的精密度 (圖 14)。Dr. Baldwin 提供另外一個方式 : 如果你製作的臨時牙橋很精確，也可以利用臨時假牙來當做 verification index 進行印模 (圖 15)。



■ 圖11：
植體的 center of rotation 位於 crestal 處約 1mm，因此 occlusal overload 產生的 torque 容易讓植體在頸部產生骨吸收的現象。



■ 圖12：
因為支點的存在，讓我們可以輕易的舉起重物，但當植體與自然牙相連時，自然牙承受咬力後能自然沉降。但植體不能，應力集中反而容易對植體造成周圍骨傷害。

■ 圖13：
連續相連的牙橋在安裝後，中間的植體逐漸骨流失，Dr. Baldwin 建議骨質狀況好的情形下，可以將牙套分開不 splinting。

■ 圖14：open tray impressi

■ 圖15：
利用病人的 provisional screw-retained prosthesis 當做 verification index，將 screw hole block out 後利用 open tray 印模，再將 provisional 連 tray 取下就可得到每顆植體的定位。

八、Poor Implant Position

Poor implant position 不是像 All-on-4 這種 intentionally inclined 的植體補綴物，而是指有時因為錯誤的計畫或執行，造成原本指的可以避免但是卻發生的情況，例如植體靠得太近，或是彼此間角度太大，高低落差太多等。我們尋求 ideal implant positon 的方法，就是 proper pre-surgical planning，利用 diagnostic models，radiograph 以及 CT scan，我們能夠預想患者將來補綴物的位置，利用補綴物的相關位置，我們能夠製作出 surgical guide 來當做我們手術時植體放置位置的依歸 (圖16)。

最後 Dr. Baldwin 引用 Murphy's Laws：“當你記得帶傘，那天定是晴天，當你忘記帶傘，那天定下大雨 ！”

植牙也有 Murphy's Laws，Dr. Baldwin 分享他的 Murphy's Laws of Implants 如下 :

1. Implants that are placed in the wrong position will always integrate.
2. Whenever implants fall to integrate, they are always the ones that are in the most important position for the prosthesis design.
3. Tissue will always grow and be abundant where you don’ t need it, and lacking where you do.
4. Soft tissue will always be perfectly esthetic in the posterior region where no one can see it, and problematic in the anterior region where everyone can see it. 5. Prostheses that are designed to be retrievable will never to be retrieved.
6. Porcelain will never chip in prostheses that are designed to be retrievable; if porcelain chips, it always in cemented, non-retrievable prostheses.
7. When you use temporary cement with a cement-retained crown, you will never be able to get the crown off, but the abutment screw will always become loose.
8. When you use permanent cement under a cement-retained crown, the crown will always fall off, usually on weekends and holidays, but the abutment screw will always be tight.

本篇最後結論，Dr. Baldwin 給我們的勉勵就是：Shit happens. Always be prepared.

■ 圖16：all kinds of surgical guides。

2012 Implant Forum

	日期 (W5)	09:00 ~ 11:00 矯正 / 植牙病例分享	11:00~ 12:00 ITP vol 2 case 文章導讀
1	2/17	張慧男 醫師	ITP vol 2 case 4
2	3/30	方鐘鼎 醫師	ITP vol 2 case 3
3	4/27	外賓特別演講 曾春祺 醫師	
4	5/18	ITP vol 2 case 5	IAOI case demo
5	6/22	邱上珍 醫師	ITP vol 2 case 16
6	7/27	外賓特別演講 彭玉秋 醫師	
7	8/31	ITP vol 2 case 8	IAOI case demo
8	9/28	ITP vol 2 case 12	IAOI case demo
9	10/19	外賓特別演講 許榮仁 醫師	
10	11/23	外賓特別演講 張燕清 醫師	
11	12/28	張慧男 醫師	ITP vol 2 case 15

南下高雄開業，迄今已逾十五年時間，邱醫師最感受用的，是她在三十五歲開業之初學會矯正，在四十六歲還沒得老花眼時學會了植牙。邱醫師坦言，在職進修必然造成壓力，它可能來自於時間、金錢與家庭，畢竟一天只有二十四小時，但終身學習所創造的成就感與報酬，卻讓她覺得當牙醫「真是好玩」，而且將持續下去，謹此與讀者分享。本文摘錄自2010最新一期《台大牙友》

邱丕霞醫師　邱丕霞牙醫診所負責人

時間：2012年每月底週五 早上9:00-12:00　地點：**金牛頓教育中心** 新竹市建中一路25號2樓　報名專線：03-573-5676

2012 TAO special lecture & workshop

Advanced Keynote Animation

Schedule

5/19 (Sat.)

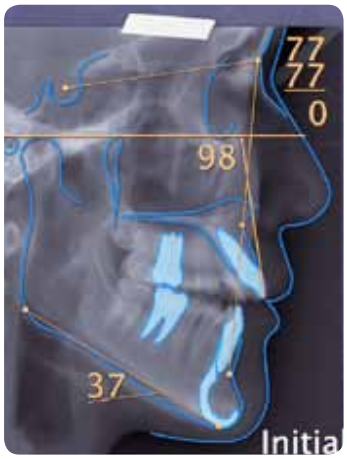
09:00~10:30	The Art of Presentation	Dr. **Rungsi**
11:00~12:30	Jobs' Secrets For Presentation	Dr. **張慧男**
13:30~17:00	Workshop	Dr. **Rungsi**

5/20 (Sun.)

09:00~12:30	Workshop	Dr. **Rungsi**
13:30~14:30	Jobs' Delivery Secrets	Dr. **張慧男**
16:30~17:00	Make Your Presentation Unique and Memorable	Dr. **Rungsi**

配備需求

Mac computer with OSX 10.7 or later
iWork 09'
Mouse



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日　　期 2012 / **5** / **19**（六）～ 2012 / **5** / **20**（日）

地　　點 台大醫院第8講堂（台北市中正區常德街1號）

費　　用 **Lecture：3月31日前**會員**1500** / 非會員**2000** / 學生會員**750**
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※workshop 不另優惠，限額72人，額滿為止。

學　　分 Lecture本會授予專科醫師認證3學分；非專科醫師依「衛生署醫事人員繼續教育積分管理辦法」登錄3學分；公務人員登錄「公務人員終身學習時數」3小時
Lecture & Workshop本會授予專科醫師認證14學分；非專科醫師依「衛生署醫事人員繼續教育積分管理辦法」登錄14學分；公務人員登錄「公務人員終身學習時數」12小時

報名方式 1. 郵局劃撥戶名：社團法人中華民國齒顎矯正學會 帳號：14969234
2. 線上刷卡：http://www.tao.org.tw/on-line-pay.jsp



真心推薦

相信各位醫師如果有機會聽過張慧男醫師的演講，一定會被張大師精采的“表演”所懾服，從頭到尾絕無冷場，即使是剛吃飽的下午場也保證瞌睡蟲上不了身！張醫師的報告裡常出現一些漂亮的插圖跟卡通動畫，清楚地描述了mechanics的作用及牙齒的移動，讓聽眾更容易了解演講的內容，也為整體簡報加分不少！這些精采的電腦繪圖出自於泰國醫師 Dr. Rungsi Thavarungkul 之手，矯正學會這次特別請來 Dr. Rungsi 為各位醫師開了一堂workshop，讓各位醫師也能輕鬆地製作出漂亮的繪圖，讓自己的簡報內容更上層樓！（各位醫師如果是由專門助理整理製作簡報，也歡迎助理一同報名上課）

當然，報告內容要精采，除了漂亮的slides之外，簡報的整體架構及演講的技巧更是重要！這次也特別邀請到張慧男醫師跟大家分享他演講技巧中的“眉角”，“如何讓自己成為 keynote speaker”“如何讓三個廳的聽眾都擠到你這一廳”“如何讓聽眾滿載而歸沒有浪費寶貴的金錢跟時間”想知道答案的話，就讓 Dr. Rungsi 及張慧男醫師告訴您！

中華民國齒顎矯正學會 學術主委 **廖炯琳**

推薦我的 Keynote 老師 *Dr. Rungsi*

筆者第一次認識Rungsi是2005年4月7日在曼谷的第一屆亞洲Damon Forum，該會議中Rungsi是唯一一位使用Mac系統的Keynote講員，他的演講讓大家耳目一新，我更是很仰慕地請他教我如何應用Keynote，說來慚愧，長期使用Mac的我，當時竟然只會使用PowerPoint，當然Keynote不可能一下就學會，Rungsi於慷慨分享之後，又熱心地將演講內容給我一份。

一回國，我即與一向熱衷演講表達且很有天份的張慧男醫師分享，經他認真研究分析之後，他就在我們矯正讀書會裡與大家分享，令大家驚艷不已。至今，慧男已在國內非常成功地推廣Keynote做為演講之基本工具，大大提昇國內牙醫界演講水準。

Rungsi不只是很會Mac之繪畫及Keynote，他更是一位非常認真的藝術家，凡是看過他的作品的非矯正醫師繪圖專家，莫不嘆為觀止地稱讚其作品。自2005年第一次在Damon Forum後，他不斷地用心聽筆者在印尼，美國、泰國等多處之演講，且做專訪，深入了解把筆者所想表達之矯正治療重要步驟圖像化，於是在筆者的三本Damon與骨釘的矯正新書中呈現，使這幾本書內容觀念可以非常快速地傳達到讀者腦海中。此三本矯正新書能成功地在世界上發行，要再度感謝Rungsi精準地畫出每一張圖解。

2011年8月1日於Rungsi給矯正讀書會一場精彩的專題演講之後，與會的醫師們均很欣賞且羨慕Rungsi講演所用之生動有趣的幻燈片，矯正學會學術主委廖炯琳醫師與讀書會會長陳彥朋醫師乃誠摯地邀請Rungsi為中華民國齒顎矯正學會給一次大型之Keynote教學演講，以便將他的寶貴Keynote presentation之製作心得與更多會員們分享，熱心教學的Rungsi欣然答應。

2011年10月30日~31日，慧男為了使Rungsi之大型Keynote課程能籌備更完善，乃於“Newton's A 金牛頓藝術科技”先辦一次小型只有三十人參加之課程，Rungsi非常用心地準備教材，參加的醫師們上課後均讚不絕口。

此次課程除workshop之外，廖主委且精心安排一場一般性之演講，使無法參加workshop者亦能大略聽到Keynote應用之精髓，若能把握此一難得聆聽presentation大師Rungsi之全部內容，將會為所有聽講醫師帶來更上一層樓，凡須做presentation者均應把握此一難得機會！

林錦榮 2012-1-3

Feedback from the USC Implant Training Program in Taiwan

植牙三年多的經驗，參加了無數次的課程，雖然獲益良多。但總是盼望著有一天張醫師也能夠去學植牙，然後把植牙這種東西，用教矯正的方式呈現出來，那就真是一套既完整風趣又深入的一套課程，終於在兩年前他開始舉辦植牙的課程，然後在一年前我參加了他舉辦的USC植牙進階課程，課程大部分都是由張慧男醫師親自翻譯，他把課程翻譯得非常有邏輯性，不用讓人太傷腦筋，就能把課程內容輕易理解，讓我很愉快的把USC植牙專家們的精髓，全部吸收。

邱仕豐 醫師 (上圖左)
安佳牙醫診所 / *Angel Dental Clinic*

2011年是一個豐收滿滿的一年，尤其是除夕夜全家還能跟台灣這些熱愛學習的醫師前往LA的USC，參加為期七天的結業訓練課程，俗話說，萬貫家財不如一技在身，感謝上天讓我成為牙醫師，有幸參加這麼紮實的海外訓驗課程，而且是在執業二十年後的現在，我一定會活到老學到老。

在回程機上看了「鋼鐵擂台」這部電影，大讚精采。

想想過去七天的USC植牙學習之旅，為何也是那麼精采呢？除了課程中常「恍然大悟」的樂趣外，應該是老師們對於演講的呈現方式，都帶個 Hollywood 精神吧！

謝謝老師、謝謝金牛頓。

邱丕霞 2012.02.07 / 邱丕霞牙醫診所負責人

Feedback from the Keynote Workshop

剛接觸蘋果電腦時，老實說時尚的外殼以及亮眼的螢幕讓我愛不釋手，但是我實在無法與它溝通。所幸在它被我摔爛之前，我參加了張醫師的 keynote workshop，才了解為何張醫師堅持要用 iMAC。

然而，好的工具還須善用正確的方法！

你可以指出精采的講者，到底表達好在哪裡嗎？上過課之後，對於使用PPT簡報的講者，我都好想邀請他們來參加張醫師的極致簡報課程。真的，沒上過的人，不要說你懂得什麼叫做完美的簡報！

蔡明晞 醫師 / 萬芳牙醫診所

從張慧男老師 keynote 課程的收穫

時間管理講師 張永錫

時間是下午三點半，我正在新竹金牛頓藝術科技參加張慧男老師的演講，我在台上講演矯正大師 Dr. R.G. “Wick” Alexander 的投影片，心中突然體會，張老師的課程，真是價值千金。為什麼呢？原因有三：

首先，我們接受的是世界級演講大師的薰陶，從 Steve Jobs、Dr. R. G. “Wick” Alexander 、DR. TOM MARCEL，每一次的演講架構都讓我受益良多。

其次，張老師教導我們 Keynote 的 eye candy 實戰技術，讓我們的投影片緊緊吸住了觀眾的視線，一秒鐘都捨不得離開。

最後，實地的演練，相互的交流，讓學員們快速學習及成長。

我相信，在張老師的用心教導下，我的演講能力會持續進步，讓更多的更容易學習到時間管理的能力，採取行動，找到幸福人生。

Good morning Chris, I never say that I wish I was younger, but I do wish that instead of practicing for 40 years, I had only practiced for 10. It would be so exciting to travel through my career with you as a protege.

The Jobsology was the brightest and most uplifting time of this last month. I watched it three times. Related to it in some respects, but thought you are like a "Jobs" to orthodontics. I will go back to it again after meditating on it during my run. Thanks

Your videos are very well done. My opinion doesn't matter for much but I liked the absence of dialogue.

It makes the viewer pay attention. Great gaphics! The music fits the procedure, brilliant!

Thank you again,
Your humble admirer, Gil

Gilbert J. Schmidtke D.D.S., M.S., S.C.
(Schmidtke Orthodontics, American Assoc. of Orthodontists)

Feedback from the iAOI Case Report Conference

參加 iAOI 病歷報告心得

林伯璣 醫師
名人牙科

植牙在台灣牙醫界，目前是最熱門的課題，愈來愈多的牙醫師投入植牙的領域。但植牙如果遇到咬合問題或空間分配問題，若不藉助矯正，就很難植得理想。

iAOI (International Association of Orthodontics & Implantology) 就是因此而誕生，結合矯正與植牙，期望能提升牙醫治療的品質，給患者提供更優良的治療效果。

12月18日我參加第一次 iAOI 臨床病例報告，有以下心得和大家分享：

1. iAOI 強調 no friendship，一切按規定，第一關筆試通過， 再參加第二關臨床案例報告，人人如此，沒有例外。
2. 報告矯正案例或植牙案例或兩者結合的案例均可，但最大特色是有一公平的評分標準，矯正是依美國ABO考試標準判定你的得失分；植牙則依 white esthetics 和 pink esthetics 來評分。
3. 第一次考試，矯正和植牙案例報告，仍涇渭分明，矯正和植牙問題的聯繫和探討都不夠深入，我想這需要一段時間的整合，才能將兩個領域結合得更完美，也才能討論的更淋漓盡致，期望大家都是整合的幕後功臣。

蘇筌瑋 醫師
金牛頓植牙中心

感謝張醫師給我這個機會，能在12/18 和韓國相當知名的植牙醫師們與台灣矯正界的學長姊一起，在 IAOI 做個案的報告與分享。在準備的過程中，張醫師告訴我們案例報告的準備方向可以參考美國矯正學會考選專科醫師的方式：

利用治療前的 case 難易度評估 (Discrepancy Index)，可以讓我們列出一個 case 需要被治療項目的清單，同時利用數據化評分，讓我們了解治療該項目的難易度，同時思索改善每個項目的治療計畫與方法；利用治療後的 case 完成度評估 (Cast Radiograph Evaluation)，在治療期間藉著檢閱這份清單，可以讓我們知道一個治療中的 case 有哪些尚需繼續完善之處，並將這些項目列出治療的前後順序，同時預測 case finish 之後的模樣與尚需時間是否如當初治療前所預期。感謝英文老師思涵的指導，更感謝 Dr. Park、林錦榮老師、張慧男醫師與歐亦焜老師對 case 的評論與提點，報告的過程筌瑋學習到很多很多，也期盼大家能共襄盛舉。

Feedback from Korean Delegates

When our institute planned to participate in an international symposium at the beginning of 2011, the main goal was merely to promote friendship between faculties. However, the aim was changed to each of us presenting a clinical case and taking IAOI exam in December. I felt a little stressed out. Can you imagine how foreign it is to take exams for someone at his 40s and hasn't taken an exam for more than 20 years?

Although I didn't visit Taipei besides the conference venue, it was a great experience to present a brilliant clinical case and learn from Taiwanese dentists. Most of all, I was so impressed by Dr. Chris Chang's manner and method of presenting his clinical case. On the way back to Korea, we decided to adopt his method for presenting in our monthly meeting. We believe it is a much focused and efficient way.

I deeply appreciate Dr. Chris Chang and Dr. Kwang Bum Park for giving me such a great experience.

Lee Sang-Taek

Suncheon MIR Dental Hospital

I traveled to Taiwan with my colleagues at the "*Vitgoeul dental institute*" on Dec. 17, 2011. The main purpose of my visit was to join IAOI. After having a tour of Dr. Chris Chang's magnificent clinics, I took the exam of IAOI to become a board eligible member. Right after, Dr. Chris Chang gave us a lecture titled "*How to present*". It was one of the most brilliant lectures I have ever had. I was most impressed by the diagnosis and treatment planning for anterior cross-bite with approximately 11mm of discrepancy on molar key. Of course, the result of treatment was incredibly amazing. That is why I and all my colleagues prepared the case presentation until midnight before our presentation the next day.

On the second day of our visit,11 Korean dentists and 6 Taiwanese dentists each gave a case presentation. The number of audience exceeded my expectation. It seems that Taiwanese are very interested in implantology and orthodontics. The difference between Korean dentists and Taiwanese dentists is that Koreans focus on implant treatment, while the Taiwanese mainly present on non-surgical orthodontic treatment.

I eagerly anticipate that there will be more exciting clinical case presentations combining treatment of Orthodontics and Implant therapy in the future of IAOI' s case conference.

Han Chang-Hun

EasyPlant Dental Clinic

Dr. Park & Korean delegates visiting Beethoven Orthodontic Center

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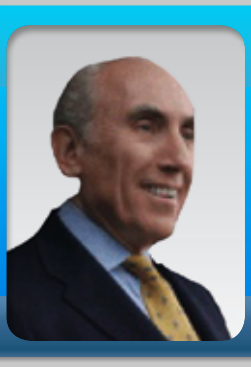
星期四 9-5 pm



K1 簡報聖經 8/16

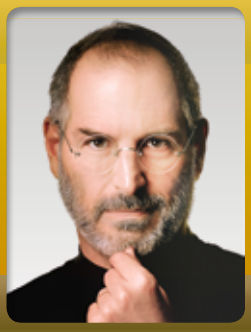
看過太多充滿複雜文字和圖表的幻燈片，聽過就忘了的演講嗎？ Keynote 系列一的演講要教你如何利用 Keynote，製作出令人目眩神迷、印象深刻的電腦簡報。透過小班教學，貼身指導，務必讓你在八小時裡輕鬆掌握 Keynote 的簡報技巧。

學習重點：1.Keynote 操作入門　2. 演講常見十大謬誤　3. 資料視覺化技巧

K2 Dr.Kokich 令人屏息的十大演講秘訣 9/20

Keynote 系列二位各位介紹世界牙醫界的天王講師 Dr.Kokich 的十大演講秘訣，讓您在進階的課程中更加掌握演講設計的關鍵原則，不但讓你知其然，更知其所然！

學習重點：1.Dr.Kokich 十大演講秘訣　2. 準備演講的九個步驟　3. 多媒體影片剪輯



K3 賈伯斯令人目眩神迷的五項演講技巧 10/18

總結我們 Keynote 系列的系列三，我們為大家逐步解析跨界演講大師 Steve Jobs 是如何說出打動人心、價值數十億美金的關鍵故事。透過逐步的分析拆解，要讓您也可以成為獨具魅力的演講人。

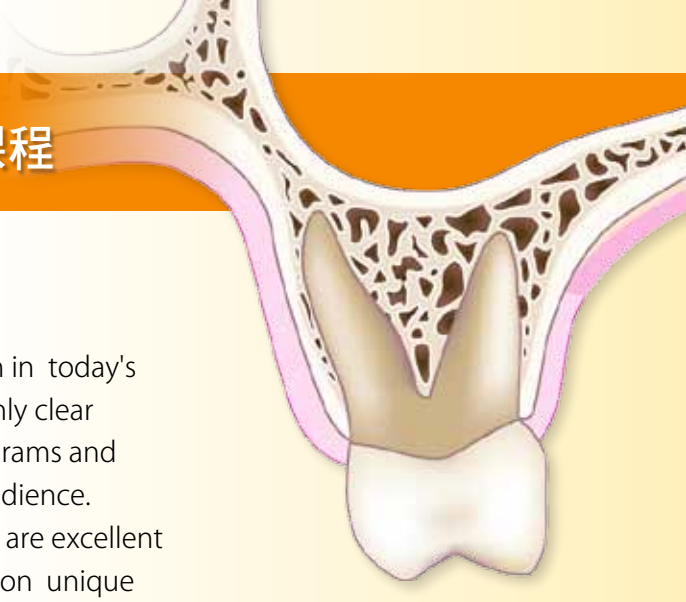
學習重點：1.Steve Jobs 的五項演講技巧　2. 幻燈片的設計概念　3. 幻燈片修改應用

好康

連續報名三堂課，學費再享 8 折優惠！

報名專線：03-5735676　Hours：2-9 pm　上課地點：新竹市建中一路 25 號 (交大華廈)2 樓

Keynote 高效簡報學習法系列課程



K4 / 5 / 6
簡報繪圖精修課程

2012
11/17-19
Sat-Mon

9am-5pm

預計招生：限額 25 名

Effective dental presentation in today's digital world requires not only clear clinical photos but also diagrams and animation to engage the audience. Moreover, these visual tools are excellent aids to make your presentation unique and memorable. In this workshop Dr. Rungsi will share his dental illustration experiences and demonstrate step by step how to create an illustration from an initial sketch to a finished piece. Active participation and completion of workshop assignments are required for workshop participants.

TOPICS :

Why will you learn?

- How to use a digital drawing board.
- Design illustration in your Keynote.
- Showcase your own drawing with stunning animation in Keynote.
- Create complicated diagrams using Adobe Illustrator and Photoshop.
- Animation Competition

Requirements :

- Mac computer with OSX 10.6 or later
- Digital drawing Tablet (**Wacom** recommended)
- iWork 09'
- Adobe Illustrator CS4 and Adobe Photoshop CS4 (or later version)

Dr. Rungsi Thavarungkul

Make Your Presentation
Unique & Memorable !

Newton's A

金牛頓藝術科技 地址：新竹市建中一路 25 號 2 樓 報名專線：03-5735676

中華民國牙醫師公會全國聯合會30週年慶暨第11屆第2次會員代表大會學術演講

Trouble-Shooting in Current Dentistry

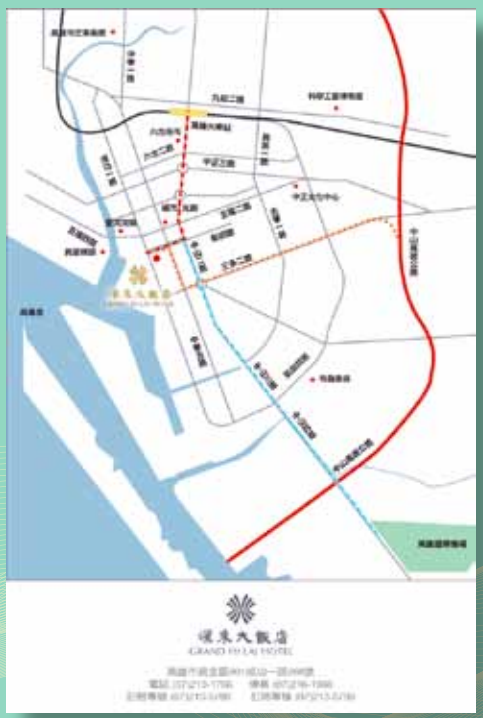
報名簡章

- **時　　間**：2012年5月5~6日（星期六~日）
- **地　　點**：高雄漢來大飯店9樓金龍廳（高雄市前金區成功一路266號）
- **報名費用**：新台幣4000元整（包括500元牙材券及5/5午餐券，僅限有簽到之學員，報名費不含積分證書工本費100元），報名後恕不退費，因場地受限，名額限500名，額滿為止。

	4 / 10（含）以前報名	4 / 11（含）— 5 / 4 報名		5 / 5 活動當天報名
報名費	報名日期：以郵政劃撥繳費日為準，務必於 **4/25**（含）前劃撥，**4/26**（含）之後，請於現場報名繳費。			**4000** 元 / 每人
	3600 元 / 每人	**4000** 元 / 每人	6人以上團體報名 **3600** 元 / 每人	

- **積分證書**：1. 本活動積分證書不另發送，學員可於本活動一星期後，可上網至衛生署網頁之「醫事人員繼續教育積分管理系統」查詢。
  2. 需要積分證書之學員請於當日會場登記與繳交證書工本費100元，本會將於活動結束後一星期且確認簽到及簽退資料後寄達診所。
- **活動專線**：（02）25000133分機215、261 周小姐、張小姐
- **課程學分**：共計27.6學分，全程1.5天參與者（簽到、簽退）方授與全部學分數

課程類別	學分數
醫學課程	**21.2** 學分
醫療品質	**6.4** 學分（含感控議題）
總學分數	**27.6** 學分



- **報名方式**：

1.即日起可郵政劃撥繳費，方完成報名手續，未劃撥者視同未報名。

2.本會郵政劃撥帳號 05354566，戶名：社團法人中華民國牙醫師公會全國聯合會。

3.請利用背面劃撥單，寄款人詳填牙醫師姓名、電話及地址，俾利繼續教育積分申請。

4. 本次活動採電腦刷卡報到，當天請本人親自攜帶「健保IC卡」辦理報到。本活動報到刷卡系統僅讀取健保IC卡身份證字號，敬請安心！

5.不接受各日單一課程報名

6.自行開車者可停至高雄漢來大飯店B4~B7（收費停車），請從「允文街」進入。

7.此次學術演講活動如遇颱風天災，依照中央氣象局與各縣市政府發布之命令，如高雄市及台北市政府發布停止上班上課之命令，則取消當次演講。

本會會址：104台北市中山區復興北路420號10F　TEL: (02) 2500-0133

第一天 5/5（六）

	主題	講師	學經歷
0830	報到（刷卡簽到）		
0900-1040	Trouble shooting in daily practice of endodontics	**林炳宏**醫師	中國醫藥大學牙醫學士 台大醫院牙髓病科特訓醫師 天主教聖保祿醫院牙科部主治醫師 台中康軒牙醫診所院長
1040-1050	休息		
1050-1230	保留牙齒還是放棄種植體？	Dr. **Qing Xian Luan**	Professor& Chair Department of Periodontology School of Stomatology Peking University
1230-1330	午餐 牙醫感染控制處理原則	**洪堅銘**醫師	高醫附設醫院口腔外科兼任主治醫師 中華民國口腔顎面外科學會專科醫師 前南臺灣牙醫植體醫學會理事長 高雄銘樺牙醫診所院長
1330-1510	Ortho-Implant: Pouring your soul into your work 矯正植牙雜症處理：將您的靈魂放入作品內 矯正植牙雜症處理-1	**張慧男**醫師 及其團隊醫師	美國印地安那普渡大學齒顎矯正研究所博士 美國齒顎矯正專科醫師學院院士（ABO） 中華民國齒顎矯正專科醫師 新竹貝多芬齒顎矯正中心負責人
1510-1520	休息		
1520-1620	矯正植牙雜症處理-2	**張慧男**醫師 及其團隊醫師	美國印地安那普渡大學齒顎矯正研究所博士 美國齒顎矯正專科醫師學院院士（ABO） 中華民國齒顎矯正專科醫師 新竹貝多芬齒顎矯正中心負責人
1620-1730	矯正植牙雜症處理-總結		
1730	賦歸（刷卡簽退）		

第二天 5/6（日）

	主題	講師	學經歷
0830	報到（刷卡簽到）		
0900-1040	Mysteries of Dental Implants -Past, Present and Future	Dr. **Seiichiro Kinjo**	Tomari Hills Dental Office Okinawa, JAPAN
1040-1050	休息		
1050-1230	從產業趨勢看牙科醫療風險管理	**蔡政峰**醫師	阮綜合醫院牙科部主任 台灣植體科技公司總經理 國立中山大學高階企管碩士 中華民國口腔顎面外科學會專科醫師
1230	賦歸（刷卡簽退）		

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Chris H.N. Chang, DDS, Ph.D. Founder, Beethoven Orthodontic Center

- Taiwan Orthodontic specialist
- Publisher, News & Trends in Orthodontics
- ABO-Certified Orthodontist
- Ph.D, Dept. Orthodontics, Indiana University-Purdue

The Beethoven Dental Group

A Learning Organization

Tzu Han Huang

Beethoven, a worldly renowned musician, is also the name of a famous dental clinic in Taiwan. If you google it, it ranks the 5th in the research results, with more than 6,000 findings. From this you get an impression of its popularity by the general public on the internet.

The Beethoven Dental Group

The Beethoven is a dynamic team, led by Dr. Chris Chang, with its origin in orthodontics but quickly extending to general practice, pedodontic center, as well as specialized care in periodontics and prosthodontics. The team is consisted of excellent specialists as well as dental assistants. In addition to dental clinics, the Beethoven group established a subsidiary, Newton's A, Inc, whose primary focuses include dental information technology, development of dental equipment and providing dental education. In order to provide more comprehensive dental care, we will open an implant clinic next year.

Beethoven Orthodontic Center-Environment

When you first enter the clinic, you will be immediately greeted by the beautiful and warm smile of our assistants. We have a very spacious waiting area and consultation space surrounded by lines of bookshelves with a wide selection of books and magazines to entertain you. What's even more precious is the open atmosphere created by French window and ample natural lighting.

Such a stress-free environment is appreciated by not only patients but also doctors who spend all day in the clinic. The greens from the outside is a soothing reminder of another beautiful day at work. The open design of the waiting area aims to create ample space for patients and facilitate communication between parents and doctors. This type of space design also allows a smooth and efficient workflow when patients arrive during peak hours.

The supply station is located at the rear side of the chairs, mainly for equipment and patient records. In addition, the technology structure is built on a Mac-based system, using Apple desktops, iMac, to store patient data, run the customized patient appointment system and its native presentation software, Keynote, to guide clinical consultation. All patients' records and photos are entered and saved before the end of a clinic session. The saved data is also shared between computers located in the internal network.

Orthodontic Center

Beethoven Orthodontic Center-Operating system

One of the most unique features of the Beethoven clinic is its operating system. The daily average number of patients that enter the clinic is very significant and the combination of residents and specialists change in different days of the week. However, patients can still expect to go through a standard treatment process, fully executed by the doctors and assistants. A key secret weapon is a simple, concise, image-based patient record. You can clearly identify a patient's background, extra-oral, intra-shots, chief complaints, source of referral, treatment plans, all in a piece of A4 size paper. All doctors can easily pick up a patient record and immediately follow the instructions left from the previous visit. Most of all, an ideal treatment outcome can still be obtained despite the changes in doctors. An effective and efficient system should be able to be replicated by different operators, in different location. The aim of the system in Beethoven is to create such a model so doctors can make treatment more easy and predictable.

Dr. Yang and Dr. Park visiting Beethoven（first 1, 2 on the left）

Continuing Education

Indonesian doctors practicing screw placement on a model.

One may wonder how doctors can continue to update their knowledge and skills in today's busy world. The answer for Beethoven's doctors is the standardized training process. All residents in Beethoven have to complete Beethoven's Comprehensive Damon Q course, the Advanced Damon Course and continue their pursuit of excellence in the Finishing course. Dr. Chang's teaching style is very interactive and engaging, filled with fresh cases. Students constantly find cases they just saw last week or yesterday at the clinic, demonstrated and analyzed in the class next day.

International Course

Beethoven's courses are not only designed for the local doctors; many doctors from overseas also attend the customized international workshop. The response from the participants were so overwhelmingly positive that several of them repeated the class. Besides providing international courses, Dr. Chang is frequently invited to give lectures around the world and brining the most up-to-date news and internationally renowned speakers back to Taiwan's audience.

International Journal of Orthodontics & Implantology

After over a decade of service to the people in Hsinchu, Dr. Chang has won the trust and support of his patients. In addition to providing orthodontic treatment, Dr. Chang dedicates most of his energy to providing continuing education and devoting himself to academic exchange locally and internationally. In order to provide a platform for dentists to share their clinical experiences, Dr. Chang also publishes a quarterly journal, News & Trends in Orthodontics, now renamed as International Journal of Orthodontics & Implantology. Famous doctors in Taiwan and abroad frequently share their clinical secrets or summaries of recent lectures in the journal. We hope through this channel we can spread the messages of knowledge sharing and pursuit of excellence to our readers.

The Beethoven Team

The Beethoven team is not only consisted of Dr. Chang himself. We have a team of doctors specializing in pedodontics, prosthetics, periodontics as well as implant therapy. So we can take care of patients from 1 year old to 99 years old. In addition to specialized care, we also have a general practice taking care of patients common dental issues. Through this comprehensive approach, we can provide total care to our patients.

Needless to say, dental assistants play an indispensable role in Beethoven's operating system. When every new patient enters the clinic, he or she will immediately be greeted by a professional assistant whose main function is to provide orthodontic consultation.The assistant will walk you through the consultation process, explain the data she will collect in this visit, including photos and X-rays, and the fees and stages of the treatment process. In terms of controlling the flow of patients during a clinic session, a senior assistant acts as the conductor in the clinic, assigning assistants to each chair and notifying doctors the order of patient sequence. Assistants are the crucial link between doctors and patients. If you think your assistants haven't met your expectations, you can consider signing up for Beethoven's assistant training for them.

The Beethoven team

Andersen Pedodontic Center

Guarding children's dental health

Andersen Pedodontic Center-Introduction

After serving the local community for over a decade, the local community leader approached Dr. Chang to express the community's needs for a doctor who understands children's dental health. At the time when children had toothache, parents have to travel to the crowded city center for treatment. In response to such wishes from his own community, and the repeated requests from parents of his orthodontic patients, he and Dr. Hsu together established "Andersen Pedodontic Center". "Our mission is to create an environment where parents can feel safe, children can experience joy and doctors can provide the best possible care to children", Dr. Hsu said.

Flower-decorated ceiling is what children see during treatment.

Newton's A

Dental education center

The constant dilema for successful dentists is the conflict between time and need for continuing education. It's almost a luxury to devote one's full attention to a full-day lecture or a new book. Newton's A understands doctors' needs for a more flexible and effective method of learning and has turned Beethoven's excellent teaching materials to videos. Combined with a mobile device, such as iPad or iPod touch, one can learn orthodontics anytime and anywhere. This latest utilization of technology has revolutionized the orthodontic world.

Newton's A-Mobile Learning: Orthodontic Podcast Encyclopedia + iPad

Dr. Chang is the first dentist to combine the three seemingly distinctive but closely related courses, Damon orthodontics, orthodontic bone screws and assistant training into easy viewing educational presentation videos. Using Mac's native presentation software, Keynote, he can instantly record live narration with his slides and turn his lecture into an engaging movie. Students can use these videos as electronic notes, carry them in their iPod or iPad wherever they are and review the content whenever they want. Whether you are past, current or prospective students of Beethoven, you can use these videos for course preview or review to enhance the learning experience. Since the content is digitalized and frequently updated, students won't have to worry about being outdated once they purchase the course videos.

Newton's A-Effective teaching tools: Mac + Keynote

In addition to produce professional dental educational podcast, Newton's A is also in charge of the design, execution and maintenance of Beethoven's technical environment. For example, recently the chairman of the premier teaching hospitals in Taiwan came to visit Beethoven with his son-in-law from the US. During the visit Dr. Chang performed an out-patient surgery. Some trained assistants provided clinical assistance to Dr. Chang while others took photos and videorecorded the procedures in small segments. Immediately after the surgery, assistants uploaded the patients' photos and videos and organized them in Beethoven's standardized patient record template, utilizing Mac's presentation software, Keynote. So Dr. Chang then used data from the previous visits as well as the procedures that just took place a moment ago to demonstrate to the patient the treatment progress and surgery process instantly. Followed by the presentation to the patient, Dr. Chang used the same file to continue a further in-depth discussion with the chairman.

BEETHOVEN

Andersen Pedodontic Center-Environment

The clinic is named after the famous children's book author, Hans Andersen. The image design of the clinic is inspired by Andersen's most famous fairy tales, the emperor's new clothes, the little match girl and thumbelina. Dr. Hsu hopes visiting the clinic can bring children not just the thought of stinky smell or feary drills but also beautiful stories. Besides the pleasant visual stimulants, the brushing station is designed at three levels to fit the varying heights of children of different development stages.

Andersen-Long-term dental growth data preservation

Andersen sees itself as the long-term guardian of children's dental health. In order to closely monitor patients' growth, we routinely take intra-oral, extra-oral photos and X-rays to make sure we won't miss the first sign of an emerging problem at a later stage. To achieve this goal, we use high quality digital cameras and wireless memory cards to ensure fast and secure data transmission. Mac's dual operating system allows us to take advantage of both windows and Mac's functions.

Andersen-Children's health education

Prevention is better than cure. This is particularly true for parents battling with young children's cavity. In view of this common challenge for parents, Andersen regularly collaborates with local kindergartens to administer supplemental fluoride. Parents can also play a strong advocate for children's dental health by helping children develop proper concepts and practices of dental hygiene.

A case report as described may take several interns a week to complete in other institutions. With the aid of proper technology, one can finish such tasks in less than 30 minutes.

This wonderful combination of Mac and Keynote makes preparing case reports, producing educational materials or presenting treatment progress to doctors, assistants, patients or parents so easy and effective. The built-in recording function allows presenters to record voiceover as the slides advance so the audience can better appreciate the content.

Newton's A- OrthoBoneScrew

Originated from Beethoven's clinical experiences, Dr. Chang is leading a team of experts from academia and engineering to develop an orthodontic mini anchorage device, OrthoBoneScrew. The research and development team include experts from University of Indiana-Purdue's professor of Emeritus, Dr. Eugene Roberts, Dr. John Lin and Dr. Lin Shan Jie from National Central University in Taiwan. Our products have improved over the last two years and received positive feedback from orthodontists in Taiwan and abroad. The combined use of bone screw and Damon can significantly reduce extraction rates in borderline surgical cases. Cases that traditionally require surgery can achieve satisfactory results with the use of orthodontic bone screws.

Implant Center

Ortho-Implant combined treatment

In recent years Beethoven have seen a growing number of adult patients seeking treatment for missing teeth. This indicates a stronger need for esthetic appearance for adult patients. However, this brings a new set of challenges for orthodontists because the problems are far more complex than creating ideal alignment. Patients often have periodontal problems, multiple missing teeth and the reconstruction of prosthetics or implant placement. Hence, Beethoven believes providing adult patients a comprehensive treatment is our new goal.

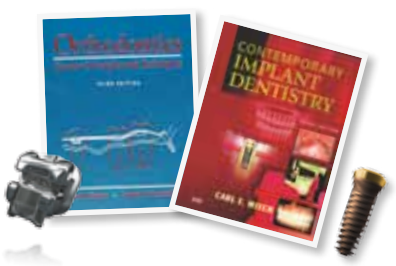
Traditionally adult dental treatment can be summarized in two words, periodontics and prosthetics. However, in the era of inter-disciplinary treatment, orthodontics and implantology have become the new two pillars in this treatment structure. Orthodontics can lay a solid foundation to suppor future implant placement. Therefore, the establishment of the new implant center is to provide a more comprehensive care to our patients in our dental network.

In October, 2011 Newton Implant Center is established to fulfill such needs that were not adequately met previous in the Beethoven. Dental Group. The new Center marks Beethoven's milestone in providing interdisciplinary treatment. Equipped with the latest 3D technology, Newton now has the capacity to provide diagnostic information on impaction for orthodontic treatment, and bone quality assessment for implant therapy. In addition, Newton also applies the latest cloud technology to manage clinical data as well as provide patient consultation and staff continuing education.

BEETHOVEN

"None of these can be possible without my two great mentors" , said Dr. Chris Chang. He contributed this recent shift of focus to the inspirations by Dr. Homayoun Zadeh from USC and Dr. Kwang Bum Park from UCLA. Dr. Homa is a strong advocate and dedicated educator on promoting evidence-based implant therapy. Since 2010 Beethoven and USC has collaborated to annually provide a six-month international certificate course to doctors in Taiwan. Armed with solid knowledge foundation, Dr. Park, faculty of UCLA, CEO of Megagene, one of the fastest growing implant cooperation and MIA, one of the largest dental hospitals in Korea, inspired Dr. Chang with his business management wisdom. After two years of immersing himself in the learning of implantology from an orthodontic perspective, Dr. Chang and many of the experts in these two fields, all agree that implant-ortho combined treatment is the future of dentistry. In order to promote the study and practice of implant-ortho combined treatment, Dr. Chang, together with world leaders in orthodontics and implantology, such as Drs. Eugene Roberts, John Lin (林錦榮醫師), Fernando Vizcaya, established International Association of Orthodontists & Implantologists(iAOI) in October, 2011. Beethoven's previous orthodontic journal, News and Trends in Orthodontics(NTO), is now changed to International Journal of Orthodontics & Implantology(iJOI). As member of iAOI, one can view the latest lectures of iAOI's consultants or read all 24 issues of its publications from the comfort of their home or when they are on the go. Learning can never be easier.

"All we doctors do is aimed to provide the best possible care to our patients", Dr. Chang stresses. Based on this philosophy, the core value of the Beethoven Dental Group is education. As medical technology and innovation evolve, doctors need to constantly renew their knowledge and skills through continuing education. We hope doctors sharing the same commitment to quality patient care and passion for learning can join iAOI, the future of dentistry!



Beethoven Orthodontic Podcast Encyclopedia

DQ. Damon Q. Comprehensive Orthodontics：

Session 1: *Ideal Case and Bracket Boding for beginners*	Session 7: *Retention and Relapse : Secrets of Constant Light Force*
Session 2: *4 stages of Orthodontics*	Session 8: *Case Demo and Analysis (1)*
Session 3: *Fast and Precise Anchorage*	Session 9: *Case Demo and Analysis (2)*
Session 4: *Extraction vs. Non-extraction analysis*	Session 10: *Case Demo and Analysis (3)*
Session 5: *Damon Diagnosis and Fine Adjustment*	Session 11: *Case Demo and Analysis (4)*
Session 6: *Biomechanics and Finish Examination*	

A. Damon Advanced Orthodontics：

Session 1: *Crowding: Ext. vs. Non-Ext.*	Session 7: *Low vs. High Angle & Gummy Smile*
Session 2: *(U) Impacted Teeth: Ant. vs. Post*	Session 8: *Root Resorption & Relapse*
Session 3: *(L) Impacted Teeth: Ant. vs. Post*	Session 9: *Ortho & Perio*
Session 4: *Missing: Ant. vs. Post.*	Session 10: *Implant - Ortho*
Session 5: *Crossbite: Ant. vs. Post*	Session 11: *IDT*
Session 6: *Deep Bite vs. Open Bite*	

OBS. OrthoBoneScrew：

Eng. C. Orthodontic Assistant Training：

Session 1: *Understanding Damon Instruments & Photography*	Session 4: *Impression; Retainer*
Session 2: *Initial Consultation; Treatment Intro; X-Rays*	Session 5: *Miniscrew; Damon Morph; Keynote OHI*
Session 3: *Bonding; Recognizing Damon wire;*	

F. Orthodontic Assistant Training：

Session 1: *Introduction of excellent finishing*	Session 7: *Impacted canine*
Session 2: *Concepts of growth & development*	Session 8: *ABO demo*
Session 3: *Early stage of development*	Session 9: *Orthodontic treatment planning*
Session 4: *Later stage of development*	Session 10: *Retrospect & prospect*
Session 5: *Etiology of orthodontic problems*	Session 11: *Class II low angle*
Session 6: *Orthodontic diagnosis*	

IF. Implant Forum：

Session 1: *Implant desgin*	Session 7: *Esthetic implant*
Session 2: *GBR*	Session 8: *Sinus Lift*
Session 3: *Immediate implantation*	Session 9: *STM*
Session 4: *Intrusion & forced eruption*	Session 10: *Save vs extraction*
Session 5: *VISTA*	Session 11: *Prosthesis and sinus lifting*
Session 6: *Ortho-Implant Posterior*	

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3. 進階矯正
4. Morph 矯正案例
5. 矯正衛教
6. 矯正利器
7. 診間 iPad 運用

植牙 Implant

1. 初診流程
2. 植牙評估流程
3. 植牙案例類型介紹
4. 植牙相關療程介紹
5. 微創手術 VISTA

兒牙 Pedo

1. 初診流程
2. 治療流程
3. 特殊裝置
4. 潔牙衛教
5. 兒牙常見問題

Orthodontics

1. Initial consultation
2. Common demo cases
3. Advanced demo cases
4. Morphing cases
5. Orthodontic health education
6. Orthodontic appliance application

Implantology

1. Initial consultation
2. Clinical evaluation
3. Common demo cases
4. Introduction of Implant services
5. Minimally invasive surgery : VISTA

Pedodontics

1. Initial consultation
2. Treatment process
3. Special appliances
4. Dental hygiene
5. Common Q & A

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類型	課程名稱	內容	開課日期	上課對象
專業簡報	Keynote 簡報法 series 1 簡報聖經	1. 常見簡報謬誤 2. Keynote 入門	*2012/8/16* （四） 09:00 ～ 17:00	科技人、醫師 教師、學生
專業簡報	Keynote 簡報法 series 2 Kokich 的 10 大演講秘訣	1. 多媒體影像處理 2. 簡報設計	*2012/9/20* （四） 09:00 ～ 17:00	科技人、醫師 教師、學生
專業簡報	Keynote 簡報法 series 3 How to Wow'em like Steve Jobs?	1. 賈伯斯演講秘訣 2. 簡報設計進階應用	*2012/10/18* （四） 09:00 ～ 17:00	科技人、醫師 教師、學生
專業簡報	Keynote 簡報法 4-6 繪圖精修課程	1. How to use a digital drawing board. 2. Design illustration in your Keynote. 3. Showcase your own drawing with stunning animation in Keynote. 4. Create complicated diagrams using Adobe Illustrator and Photoshop. 5. Animation Competition	*2012/11/17-19* （四） 09:00 ～ 17:00	科技人、醫師 教師、學生
International	Damon and OBS workshop	1. Damon System 2. OrthoBoneScrew	*2012/6/12-14* *11/13-15*	International Orthodontist

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Orthodontics Hard Copy & E-Book

Beethoven Dental Group, based in Hsinchu, Taiwan, has been serving our community since 2005. In additional to providing comprehensive, patient-centered care, Beethoven continues to transcend itself by delivering dental training courses, engaging in clinical research and regularly publishing world-class journal, *International Journal of Orthodontics and Implantology* (IJOI).

Over the years many complex and excellently finished cases are published in IJOI. By popular demands a special selection of this cases, ***Orthodontics***, is now available in hard copy and electronic (iBooks) edition. Besides well-documented treatment process and analysis, ***Orthodontics*** is also the world's first interactive orthodontic e-textbook. Once opening this book, your understanding of orthodontics will never be the same!

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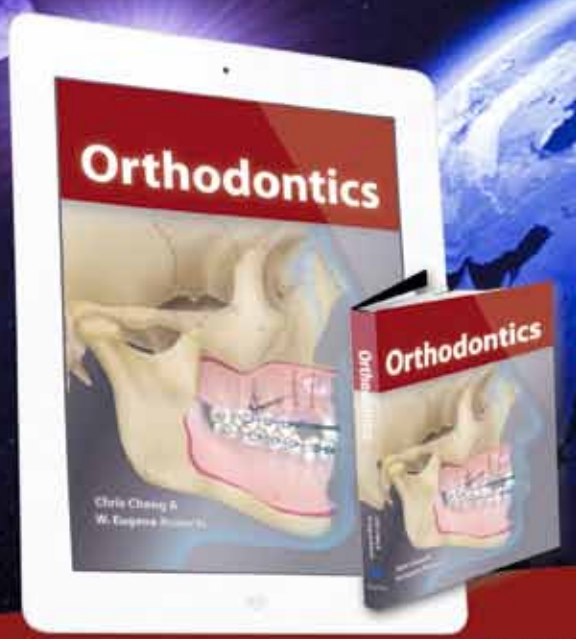

Apple announced its e-book publishing tool, iBooks Author, in January 2012. It is not just a software that empowers users to create their own books but a digital revolution that makes reading/learning fun and efficient with its intuitive interface design, multi-touch, and interactive widgets. Armed with such a powerful software in combination with iPads' dominance in the tablet market, Apple is expected to change the e-textbook market as we know it.

In view of this trend, Beethoven, as leader in the field of digital learning in orthodontics, is now publishing ***Orthodontics***, the first orthodontic e-book using iBooks Author technology. Come experience it and learn like you never did before.

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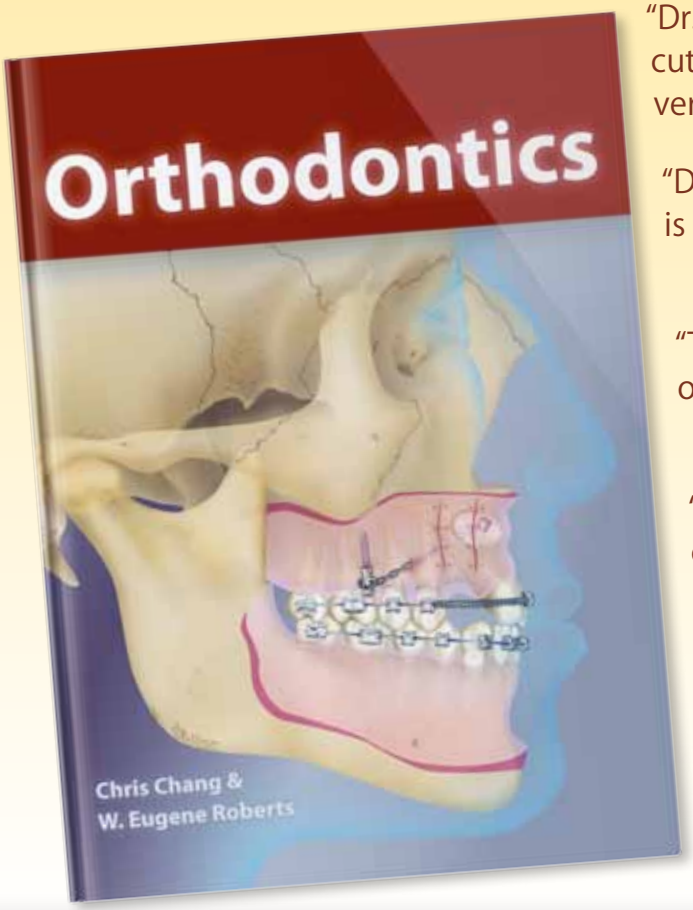
This method of learning is quantum leap forward. My students at Oklahoma University will benefit greatly from Chris Chang's genius. *Dr. Mike Steffens, Oklahoma, USA*



"Dr. Chris Chang's innovation eBook is at the cutting edge of Orthodontic Technology... very exciting! " *Dr. Doraida Abramowitz, Florida, USA*

"Dr. Chris Chang's first interactive digital textbook is ground breaking and truly brilliant! "

Dr. John Freeman, California, USA

"Tremendous educational innovation by a great orthodontist, teacher and friend."

Dr. Keyes Townsend Jr, Colorado, USA

"I am awed by your brilliance in simplifying a complex problem."

Dr. Jerry Watanabe, California, USA

"Just brilliant, amazing! Thank you for the contribution." *Dr. Errol Yim, Hawaii, USA*

"Beyond incredible! A more effective way of learning." *Dr. James Morrish Jr, Florida, USA*

The 1st Case Report Demonstration Conference, International Association of Orthodontists and Implantologists, Taipei, Taiwan. Dec.18. 2011

ISSN 2079- 6862