

NEWS & TRENDS IN ORTHODONTICS

A JOURNAL OF INTERDISCIPLINARY TREATMENT FOR ORTHODONTISTS

Vol. 22 April 1, 2011

The Wisdom of Managing Wisdom Teeth:

Part I. Lower 3rd Molar Extraction in Class III Treatment

Dr. John Lin

Impacted Maxillary Canines on Both Sides:

One Palatally and One Labially

Dr. W. Eugene Roberts

Do You Need an Office Manager?

Charlene White



The Dr. Angle's statue has been placed in the AAO Library's rare book collection with the books that Dr. Angle wrote (photo by Jackie Hittner, AAO Librarian).

News & Trends in Orthodontics is an experience sharing magazine for worldwide orthodontists.
Download it at <http://orthobonescrew.com>.

2011

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。

	台北 (二)	高雄 (四)	LECTURE	LAB
1	5/24	5/26	理想入門病例 + Damon Q 黏著	Bonding (Damon Q) + BT
2	5/31	6/2	快速矯正療程四部曲	Ceph + Photo
3	6/7	6/16	簡捷有效的錨定系統	Damon + OrthoBoneScrew I
4	6/21	6/23	不拔牙與拔牙分析	Damon + OrthoBoneScrew II
5	6/28	7/14	Damon 診斷流程及微調	Finish Bending
6	7/19	7/21	完工檢測及報告示範	Fixed Retainer (FR)
7	7/26	8/4	維持及復發；病例示範	Presentation Demo
8	8/2	8/18	矯正力學及診斷分析 (1)	DDX + Case Reports I
9	8/23	9/1	軟硬組織及診斷分析 (2)	DDX + Case Reports II
10	8/30	9/8	兒童矯正及診斷分析 (3)	DDX + Case Reports III
11	9/6	9/15	成人矯正及診斷分析 (4)	DDX + Case Reports IV



International workshop

Keynote & management
OrthoBoneScrew & Damon

A班 5/10~12
B班 8/9~11
C班 11/15~17

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) 9/16 (含午、晚餐)



矯正進階課程

【課程】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。

高雄 (四)	Paper reviews	Topics & Case Demo	
1	5/26	Bracket Placement	Crowding: Ext. vs. Non-ext.
2	6/2	Impacted Canines	Upper Impacted Teeth
3	6/16	Canine Substitution	Lower Impacted Teeth
4	6/23	DI Workshop	Missing: Ant. vs. Post.
5	7/14	CRE Workshop	Crossbite: Ant. vs. Post.
6	7/21	Anterior Esthetics	Open Bite High Angle
7	8/4	Excellence in Finishing (occlusion)	Deep Bite Low Angle
8	8/18	Excellence in Finishing (esthetics & perio)	Gummy Smile & Canting
9	9/1	Ortho-Perio-Restore Connection	Esthetic Finishing (Transposition)
10	9/8	Adjunct to Perio	Implant-Ortho
11	9/15	Unhappy Patient	IDT-Adult Complex

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III 4/19 5/17 6/14 7/12 8/16 9/20 10/18 11/29
12/20 2/14/12 3/13

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) 10/7、14 (含午、晚餐)



課程資訊

上課地點

【台北】
恆毅資訊中心 畢卡索廳
/ 台北市復興北路99號12F
(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2F

【高雄】
國立科學工藝博物館
/ 高雄市三民區九如一路
797號

報名專線

湧傑 Yong Chieh

北區
(02) 27788315 楊文君 / 邵美珍

中區
(04) 23058915 張馨云

南區
(07) 5361701 王慧靜

*每次上課請依最新一期 NTO
公告為主

From the Founding Father of Our Profession to My Godfather of Orthodontics

Someone can sit in the shade today because someone else planted a tree a long time ago. If not for the hard work of Dr. Edward H. Angle in developing the concept of treatment of malocclusion, orthodontists around the world might never have gotten to the sophisticated level in which we have today. Dr. Angle, the founding father of orthodontics, had completely lifted the FACE of our profession. These are journeys that had turned into legends. At the age of 45, Dr. Angle decided to open his Angle school of Orthodontia in St. Louis. This small step in his life became a galvanizing event in orthodontic education later on.

Although many portraits of Dr. Angle had been made, there was no Angle's bust in the history. My team spent two years trying to capture the spirit of Dr. Angle at the age of 45. With the help of Dr. Lee Graber, this Angle's bust is now in display in the AAO library along with the books that Dr. Angle wrote. The photo taken by Ms. Jackie Hittner, the AAO Librarian, is the cover page of this issue of NTO. What a perfect spot for Dr. Angle's bust! Thank you, Ms. Jackie Hittner and Dr. Lee Graber!

It is easy to become brilliant at what you do when you stand on the shoulder of a giant - the trick is picking the right giant. The Beethoven Group has been very lucky to have Dr. Roberts as our mentor. Dr. Roberts is known to be an expert in bone physiology and biomechanics. After his retirement from Indiana University, Dr. Roberts became the owner of a famous winery in New Zealand and his wine has won several prestigious awards. With his permission, we have the opportunity to import and enjoy Dr. Roberts' wine. Before you lick the bottle, please pay attention to the label, an orthodontic force and moment diagram. **Look at the label carefully and be forewarned - if you drink Dr. Roberts' wine, your understanding of biomechanics will never be the same again.**



Chris HN Chang, DDS, PhD, Publisher



Consultant
Dr. W. Eugene Roberts



Consultant
Dr. Tom Pitts



Consultant
Dr. Kwang Bum Park

Editors (from left to right) :

Yu Lin Hsu, Associate Editor
Tzu Han Huang, Associate Editor
Billy Su, Chief Editor
Sabrina Huang, Associate Editor
Steven Lee, Associate Editor
Dennis Hsiao, Associate Editor
Chester Yu, Chief Editor
Grace Chiu, Associate Editor



03 Editorial

LIVE FROM THE MASTER

04 The Wisdom of Managing Wisdom Teeth: Part I. Lower 3rd Molar Extraction in Class III Treatment

16 Do You Need an Office Manager?

ABO CASE REPORT

22 Impacted Maxillary Canines on Both Sides: One Palatally and One Labially

FEATURE

36 OthoBoneScrew

54 阻生齒的軟組織處理面面觀

60 善用科技以促進與患者溝通-貝多芬矯正中心實例

INTERDISCIPLINARY TREATMENT

64 Sinus Augmentation

68 Prosthetics Considerations in Treatment Planning: The Restoration of the Cervical Contour; A Key to Implant Planning, Placement, and Restoration (Part II)

74 Principles of Abutment Selection for the Single Implant (Part I)

FEEDBACK FROM THE ORTHODONTIC WORLD

86 Feedback from Beethoven's Events



Consultant
Dr. Frederick J. Regennitter



Consultant
Dr. Larry White



Consultant
Dr. Fernando
Rojas-Vizcaya



Consultant
Dr. Homa Zadeh



Guest Editor
Dr. Rungsi Thavarungkul



Contributors (left to right) :

Dr. Hong Po Chang, Consultant
Dr. Ming Guey Tseng, Consultant
Dr. John Lin, Consultant
Dr. Frank Chang, Consultant
Dr. Johnny Liao, Consultant
Dr. Chris Chang, Publisher

The Wisdom of Managing Wisdom Teeth

Part I. Lower 3rd Molar Extraction in Class III Treatment

(A) Introduction

It was once believed that the eruption and impaction of wisdom teeth may result in crowding of front teeth especially for the lower incisors.^{1, 2} These concepts prompt orthodontists to routinely refer patients to have the 3rd molars removed to prevent lower incisor crowding in the post orthodontic treatment follow up.

Ricketts³ even claimed that removal of the lower 3rd molar buds at the age of 7 to 10 years is surprisingly simple and relatively atraumatic. This contrasts to the difficulty of extracting deeply impacted teeth in adults. Later this prediction was proved to be difficult to be precise⁴. Especially the so called geometric center of the ramous was, referred as the Xi point, is so difficult to trace accurately that the calculation derived from it is very unreliable. The suffering of the early enucleation of the 3rd molar bud is quite significant for young patients. Moreover, the 3rd molar can be very useful in a lot of situations. Early enucleation is not a wise method of managing wisdom teeth.

Many research findings⁵ indicate that the mandibular intercanine width tends to decrease between the age of 3 to 45. This suggests the lower anterior crowding is a natural phenomenon. The 3rd molars are an unrelated factor in contributing to this condition. Fastlicht⁶ found out that in orthodontically treated subjects, 11% of the cases had 3rd molars but 86% had crowding. It's difficult to conclude the 3rd molars are the main contributor to the post orthodontic treatment crowding. Ades et al's study⁷ showed no significant difference in mandibular growth patterns between the various 3rd molar groups whether erupted, impacted or congenitally missing. In the majority of cases there was incisor crowding.

In conclusion, it is not a good reason to extract the lower 3rd molars for preventing late lower incisor crowding. On the mutilated dentition, the 3rd molars can become crucial replacement for badly decay or hopeless teeth. In Taiwan, the mutilated dentition is a much more popular treatment option than in the western world. Whenever dealing with wisdom teeth, clinicians should always have a comprehensive diagnosis before extraction, instead of removing wisdom teeth as a routine practice to prevent late crowding.

(B) Cases Study

Case 1:

Extraction of two lower 3rd molars and two lower premolars to treat Class III (Complication: upper 2nd molars over-elongation)

A Class III case after two lower 1st premolar extraction treatment. Watch the over-elongated upper 2nd molars due to lack of antagonist.

Dr. John Jin-Jong Lin
MS, Marquette University
Consultant of NTO
President of TAO (2000~2002)
Author of *Creative Orthodontics*



Before orthodontic treatment, the lower 3rd molars were removed. Then for correction of the Class III, two lower 1st premolars were removed, too. Although the Class III was successfully corrected with a slightly prognathic but still acceptable profile, the two upper 2nd molars were over elongated due to lack of antagonist.

Remaining concerns:

1. Two upper 2nd molars not only over elongated due to lack of proper antagonist and with deep periodontal pocket.
2. Two upper 3rd molars look fine but cannot be used.
3. The retromolar areas are too narrow for dental implants.



Watch the over-elongated upper 2nd molars due to lack of antagonist.

What we can learn from this case:

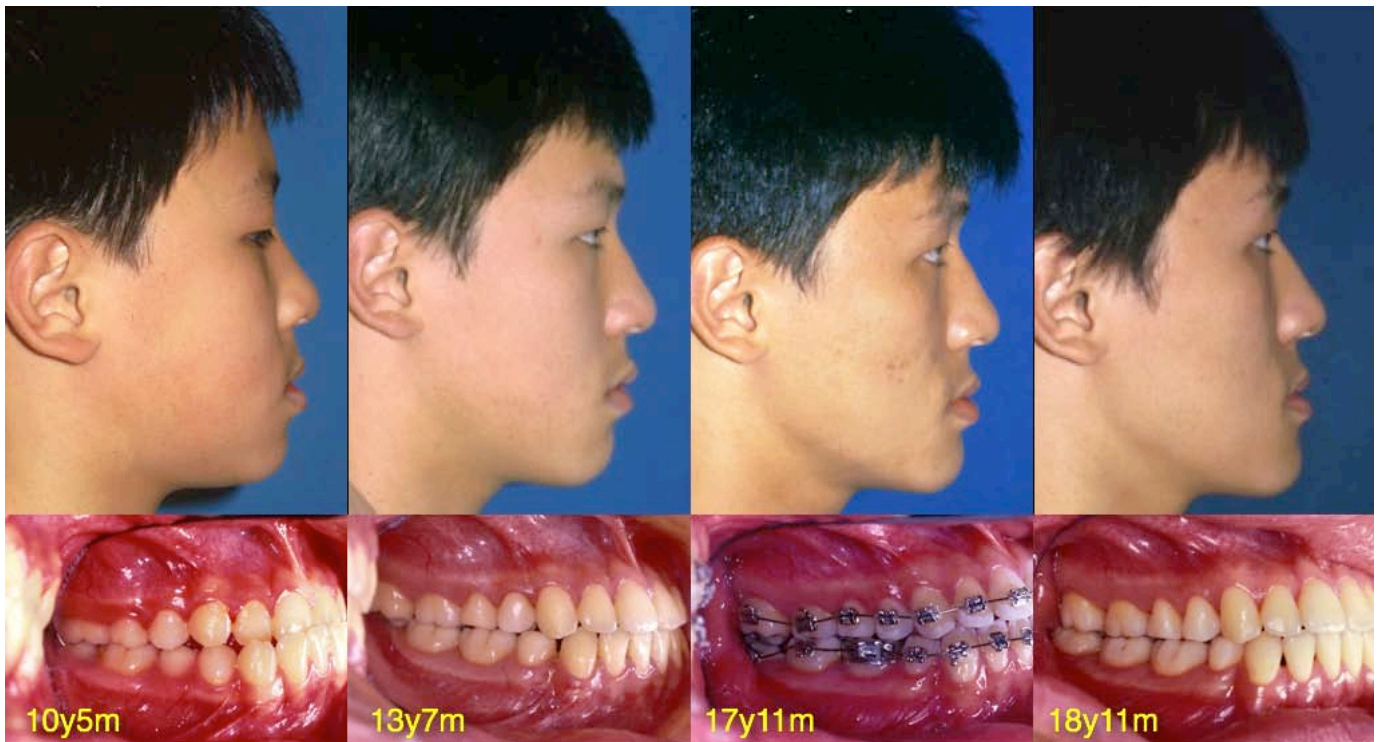
1. Before doing Class III with only lower arch premolar extraction treatment, clinicians should always check if the lower 3rd molars are present. If the patient has no lower 3rd molars, then two more upper 2nd premolar extraction may be indicated.
2. Nowadays, with the MEAW effect of Damon system and application of buccal shelf mini-screws, most difficult Class III cases can be treated without extraction. Many lower arch premolar extraction to treat Class III can be avoided.
3. Don't remove lower 3rd molars without a comprehensive diagnosis. When in doubt, diagnostic model setup will be very helpful.

Case 2:

Keep lower 3rd molars, extraction of two lower premolars to treat Class III (Prolonged treatment time)

This is a Class III case treated with two lower 1st premolars extraction.

At the age of 13 years and 7 months old right after two lower 1st premolar extraction treatment, the upper 2nd molar became a little elongated with lingual cusp hanging down. 2nd stage orthodontic treatment was postponed, until the lower 3rd molars erupted, to level the elongated upper 2nd molars and upright the mesial tilted lower 3rd molars to get a better finishing occlusion.



Case 2

10y5m: A Class III malocclusion with an acceptable profile. Nowadays this kind of case can be treated easily with the Damon system and nonextraction therapy.

13y7m: After the two lower 1st premolars extraction treatment, the lingual cusp of the upper 2nd molar was hanging down because the lower 3rd molars had not erupted yet.

17y11m: The lower 3rd molar erupted into a malposition. 2nd stage treatment was planned to level the elongated upper 2nd molar and upright the lower 3rd molar.

18y11m: After the 2nd stage treatment.



For single arch extraction of premolars to correct Class III, the lower 3rd molars should be present.



The panorex at the age of 10 years and 5 months showed there were two lower 3rd molars.

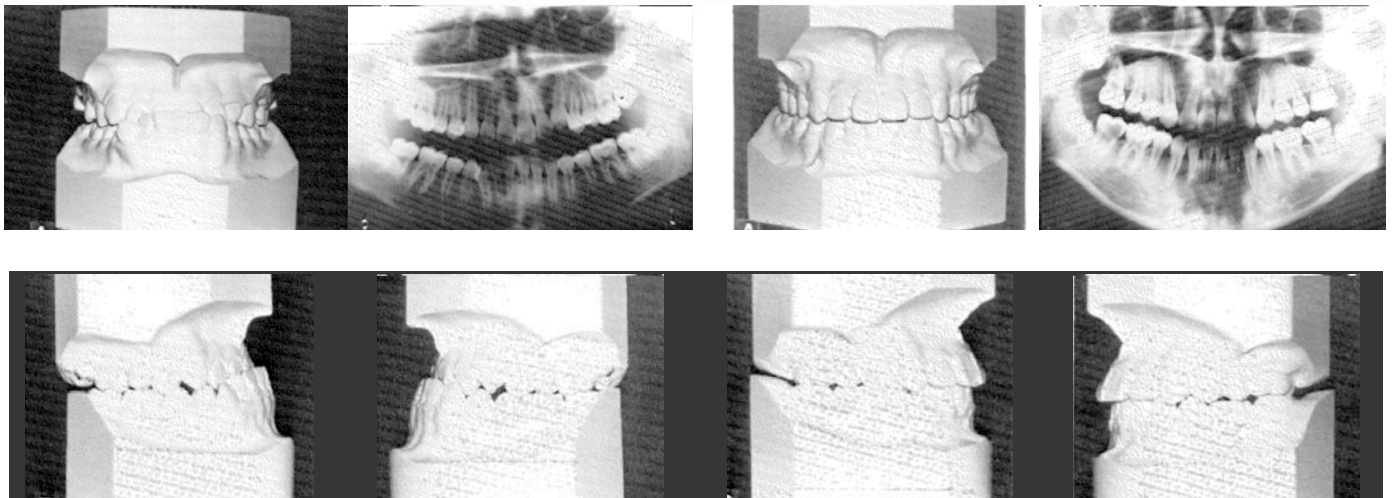
What we can learn from this case:

1. Before doing only lower arch 1st premolar extraction treatment, check the panorex to make sure the lower 3rd molars are present.
2. Disadvantages of only lower 1st premolars extraction treatment of Class III include the followings:
 - (1) As in this case when finishing the treatment at 14, the lower 3rd molars had not erupted yet. Further treatment could not be made until the eruption of 3rd molars.
 - (2) There is no good solution to prevent elongation of upper 2nd molars. Fixed retainers may be needed to prevent them from over eruption.
 - (3) The lower incisor will easily be dumping lingually, and it may be difficult to have a good torque control.
 - (4) The lower 3rd molars often cannot erupt into an ideal position, and the upper 2nd molar will be elongated. Hence, a 2nd stage treatment is required and the total treatment time will be prolonged significantly. So don't remove the lower 3rd molars without a careful treatment plan.

Case 3:

Keep lower 3rd molars and extract of two lower 1st premolars and two upper 2nd molars to treat Class III` (Unnecessary extraction of upper 2nd molars)

A severe Class III⁸ was corrected with traditional edgewise mechanics, by extraction of two lower 1st premolars and two upper 2nd molars.



What we can learn from this case:

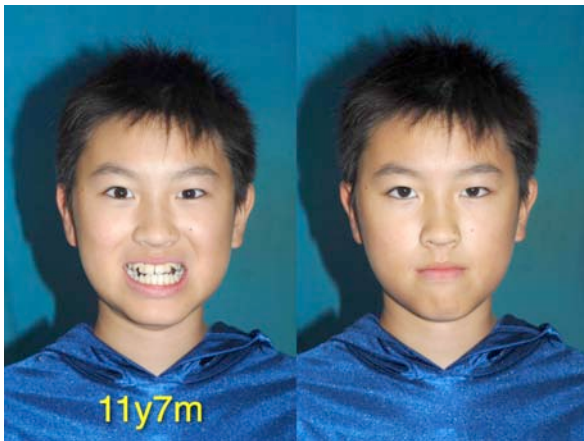
1. Extraction of two lower premolars makes the lower anterior teeth lingually inclined. The torque control is very difficult.
2. For preventing the upper 2nd molar from elongation before eruption of the lower 3rd molar eruption, the upper 2nd molars were removed. The 3rd molars usually cannot erupt directly into a good position and takes years to erupt. It means the treatment time will be prolonged significantly.

Case 4:

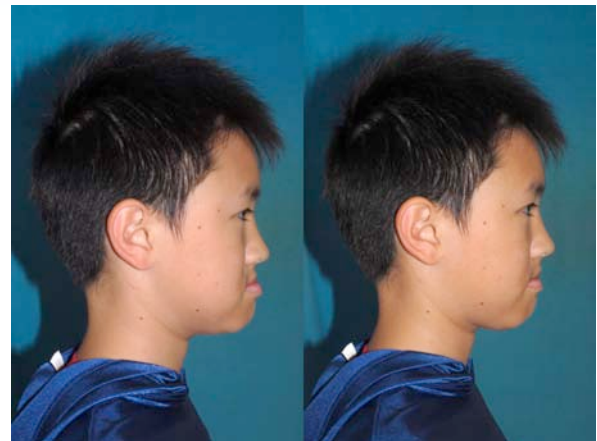
Early nonextraction treatment of the severe Class III with Damon system.

This is a 11 year and 7 month old boy, with severe Class III malocclusion, narrow upper arch, and functional shift. Even though the CR profile is orthognathic, the patient's chin has already deviated to the left side. For traditional orthodontics, it will be very difficult to treat without extraction. Now with the use of passive self-ligating brackets, like the Damon system, it makes correction of this kind of severe Class III at a young age possible. The author explained to the family that even though early treatment of severe Class III malocclusion is possible, more asymmetric growth is expected after orthodontic treatment. Long term follow up and re-evaluation is needed after the patient reaches the age of 18 to 20 when most of the active growth is completed.

The family understood and accepted an early treatment plan and decided to first treat the severe Class III high canine, anterior crossbite and a prognathic CO profile. The patient will return for evaluation of highly possible asymmetric growth when the active growth period is over.



Frontal profile showed the chin deviated to the left.



The patient has an orthognathic CR lateral profile.



A severe Class III malocclusion with lower midline deviating to the left.



Watch the upper arch was expanded with the Damon system. RPE was not used

The severe Class III malocclusion was corrected with the Damon system to well align the upper anterior teeth. The original narrow upper arch with buccal crossbite was corrected without using rapid palatal expander (RPE).



The upper teeth are well aligned.



Severe Class III was corrected.

What we can learn from this case:

1. In young severe Class III patients, it's possible to treat malocclusion with the Damon system and nonextraction therapy. There is no need to use the so-called orthopedic correction like RPE and face mask treatment.
2. Even though the Class III malocclusion can be corrected at a young age, the late asymmetric growth of the mandible is expected. Close follow up and re-evaluation after most of the mandibular growth is completed is indicated.
3. Now using the Damon system, many difficult severe Class III malocclusion cases can be corrected early and without extraction. So early extraction treatment of severe Class III should be avoided.

Case 5:

Extraction of two lower 3rd molars to treat adult severe Class III with Damon system.

This is a severe adult Class III patient with acceptable lateral profile. The Class III malocclusion was corrected with the Damon system without traditional premolars extraction (only two lower 3rd molars were removed).

What we can learn from this case:

1. For a severe Class III patient with an acceptable profile, nonextraction treatment in adult patients is possible. Early extraction treatment should be avoided.
2. Since no lower premolars were extracted, we don't have to worried about lingual dumping of lower incisors.
3. The original torque of D3MX brackets of upper central incisors is 12°, and 8° for upper lateral incisors. In the case of preventing upper incisors flaring due to the use of Class III elastics, all the four upper incisor brackets were placed upside down to apply super low torque on upper incisors.



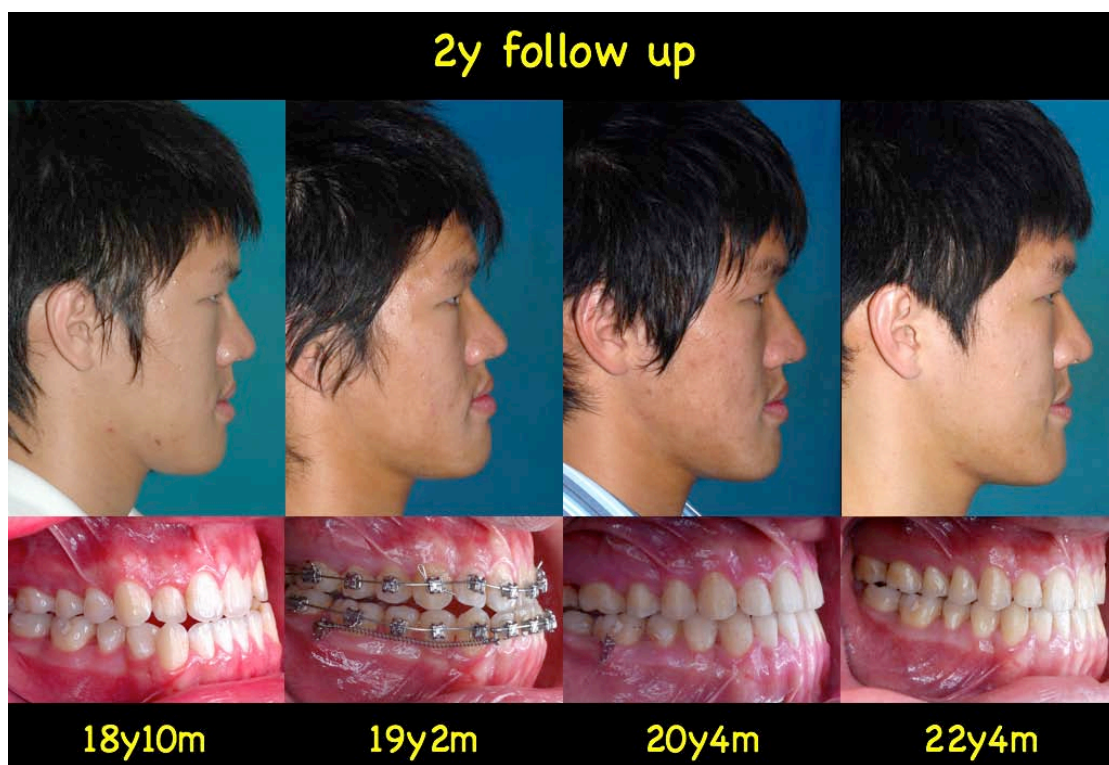
4. The original torque of D3MX low torque bracket on lower incisors is -6° , in this case all four incisors low torque D3MX brackets were placed upside down to make them $+6^{\circ}$, as high torque bracket to prevent incisor from dumping lingually while using Class III elastics.
5. Damon system is a very effective way of treating adult severe Class III patients with its special MEAW effect⁹. The combined use of Damon and Class III elastics can tip back the whole lower dentition significantly. In addition, the original larger retromolar area, after use of Class III elastics, became much smaller.
6. Notice the gingival recession over the left lower canine region due to original crowding and a lot of distal retraction. The chance of gingival recession is relatively rare in Damon cases. However, it is still advised to precaution patients about this possibility prior to the start of the treatment.

7. Since the patient has larger nasolabial angle before treatment, although using Class III elastics will procline the upper incisors and increase the nasolabial angle, it's acceptable in this patient. If the patient has acute nasolabial angle before treatment, then using buccal shelf mini-screws to distalize the whole lower dentition will be a better option to correct the Class III.

Case 6:

Extraction of two lower 3rd molars, to treat adult Class III with buccal shelf mini-screws and Damon system.

A severe Class III patient with a good lateral orthognathic profile. The Class III malocclusion was corrected with buccal shelf mini-screws. Two lower 3rd molars were removed before miniscrew distalization of the whole lower dentition. After two years long term follow up the occlusion is still quite stable.



Case 6

18y10m: A severe Class III malocclusion. The patient was very concerned with the upper lip's position, and asked for maintaining the upper incisor's angulation. He wished to keep the current upper incisors position.

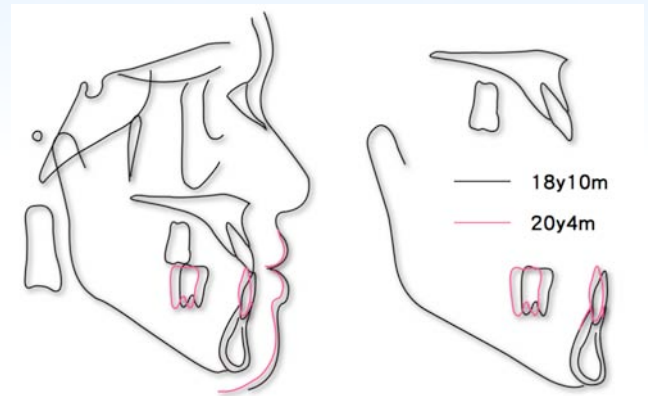
19y2m: To prevent flaring of upper incisors, only lower buccal shelf mini-screws were used to distalize the whole lower dentition distally.

20y4m: After 1 year and 6 months of buccal shelf mini-screw distalization, Class III malocclusion was corrected without the use of Class III elastics.

22y4m: After 2 years of follow up, the original post treatment Class I occlusion was maintained.

What we can learn from this case:

1. For a Class III patient with a good orthognathic profile, the use of the buccal shelf mini-screws makes it possible to correct severe Class III malocclusion without too much change on the upper lip's position.
2. Extraction treatment for young severe Class III patients is not advised. After active growth is complete, buccal shelf mini-screws can correct the malocclusion in a much simpler way.



(C) Conclusion

1. For severe Class III single arch extraction of two lower premolars, the treatment plan should take into consideration the presence of lower 3rd molars. Further extraction of two upper 2nd premolars should be planned in the absence of the lower 3rd molars to avoid the lack of antagonist for the upper 2nd molars.
2. Since the 3rd molars usually erupt quite late, and the morphology and erupting position are not ideal. If the treatment plan can avoid the use of the 3rd molar, it will be much simpler and easier.
3. For early severe Class III malocclusion, it's possible to correct the Class III with just the Damon system. It is unnecessary to use the so called orthopedic appliance. Early extraction treatment should be avoided.
4. Now by using MEAW effect of the Damon system, or buccal shelf mini-screws, it's possible to correct severe Class III without extraction of premolars. Only removal of the lower 3rd molars is needed.
5. Whenever dealing with the 3rd molar extraction, comprehensive diagnosis should be made. Avoid unnecessary extraction of the 3rd molars. Whenever in doubt, diagnostic model set-up will be helpful to make a more comprehensive treatment plan.

References

1. Bergstrom K, et al. Responsibility of the third molar for secondary crowding, Sven. Tandlak. Tidskr. 1961;54: 111-24.
2. Vego L. A longitudinal study of mandibular arch perimeter. Angle Orthod 1962;32:187-92.
3. Ricketts RM, et al. Third molar enucleation: Diagnosis and technique. J Calif Dent Assoc 1976;4:52-7.
4. Olive R, et al. Reliability and validity of lower third molar space-assessment techniques. Am J Orthod 1981;79:45-53.
5. Bishara SE, et al. Arch width changes from 6 weeks to 45 years of age. Am J Orthod Dentofac Orthop 1997;111:401-9.
6. Fastlicht J. Crowding of mandibular incisors. Am J Orthod 1970;58:156-63.
7. Ades AG, et al. A long-term study of the relationship of 3rd molars to changes in the mandibular dental arch. Am J Orthod Dentofacial Orthop 1990;97:323-35.
8. Popp TW, et al. Nonsurgical treatment for a Class III dental relationship: A case report. Am J Orthod Dentofacial Orthop 1993;103:203-11. John Lin. Creative Orthodontics, Blending the Damon System & TADs to Manage Difficult Malocclusions, 2nd Edition. Yong Chieh Co, Ltd. 2010.





2011 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 3/10 discount \$200 off;
before 4/10 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 3/10 discount \$200 off;
before 4/10 discount \$100 off

Registration:

A 50% deposit is required to confirm registration. To make a payment by wire, please email thhuang@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 consultant to *News and Trends in Orthodontics*.

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*



2011 Workshop Dates: 5/10-12, 8/9-11, 11/15-17



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 News & Trends in Orthodontics, 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

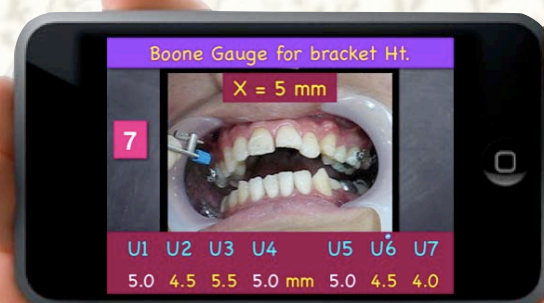
09:00—10:00	6 Essentials of the new Damon Q
10:00—10:10	Break
10:10—12:30	Damon + Screw Dr. John Lin
12:30—13:30	Lunch

Day 3

	Introduction of Keynote: Organize your patient files for presentation
14:00—15:30	
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



Do You Need an Office Manager?

Charlene White

Do You Need an Office Manager?

This is a big question facing many orthodontists today and, unfortunately, there is no easy “yes” or “no,” for anyone. Your need for an office manager is dependent on many criteria, and the manager’s role in the practice varies among offices. Some practice management firms advocate “self management” and are totally against having a person on the staff with the title “Office Manager” or “Office Administrator.” I do not agree with this because every practice is unique, and let’s face reality, not every office is staffed with a group of self-motivated people. If you eliminate management in this situation, chaos results.

I agree with having an appointed office manager, although I have consulted with offices that were running beautifully without one. These offices were either very small or staffed with a group of self-motivated people that practice excellent teamwork.

If you are unsure about whether or not to appoint an office manager, there are several questions you should consider.

1. Do you feel a need for someone to help you with the administrative aspects of your practice?
2. Are you experiencing stress due to lack of staff motivation?
3. Is there a lack of organization in your practice?
4. Does the teamwork need improvement?
5. Do you feel the need to check up on your staff to make sure their duties are complete?
6. Are you troubled by inner office conflicts?
7. Do you feel there is a lack of communication between you and your staff?
8. Do you have cliques in your office?

9. Do you feel stress due to lack of office policies being carried through?
10. Do you ever feel like it’s you against the staff?
11. Do you want a person to help you lead your team?
12. Are you a multi-doctor practice?

If the answer to most of these questions is YES, it indicates a need for an office manager in your practice.

Many of my clients have experienced a tremendous decrease in their amount of stress and an increase in their professional enjoyment after appointing a qualified person to help them lead their team.

What is the Role of an Office Manager?

This is an area that I know many doctors are uncertain about because many of the managers I meet are in the role of “sort-of office manager.” This type of situation creates frustration for the doctor, the manager and the staff. The office management needs the title and the authority to be effective, and only the doctor can make that a reality. Let’s look at some of the situations that create the “sort-of office manager” role:

1. If something goes wrong, the doctor gets frightened and takes some authority away from the “sort-of office manager.” On the other hand, if the doctor is feeling stressed, it becomes convenient to redelegate to this person. The doctor/office manager relationship must be cultivated over a period of time. The doctor must place his/her trust and confidence in the manager to prevent diminished morale.
2. Many doctors are unwilling to make a commitment by announcing a staff member’s appointment to the position of office manager. Often one person has taken the responsibilities of office manager on their

Charlene White

President, Progress Concepts
Orthodontic Consulting Firm
B.S. in Hygiene, Old Dominion University



shoulders to fulfill the doctor's requests and to meet the leadership needs of the practice. However, the doctor may be reluctant to announce the appointment, fearing the other staff members will object. This creates a frustrating situation for all especially for the person in the "sort-of office manager" role. The doctor must make a decision based on what is best for the practice.

3. Many doctors have been reluctant to give their "sort-of office manager" authority because the person has risen up through the ranks in the practice but does not possess the necessary skills to manage people. There is a tremendous need for advanced management training for the person who is going to be leading the orthodontic staff of the future. Continuing management education and self-study are essential to developing the management and people skills necessary to effectively lead an orthodontic team.

To prevent the "sort-of office manager" role from holding back your practice, I recommend the following:

1. Find the right person that you respect and trust.
2. Outline this person's job description and distribute it to the team.
3. Make an announcement to the staff regarding the appointment and the manager's role in the practice.
4. Make a commitment to support this person 100%. For example, if a staff member comes to you (the doctor) and complains about the manager or asks you a question concerning a department that is a responsibility of the manager, you should say, "Sally, I understand what you are saying, but you will have to talk with Jean about that."

Many managers undermine their authority by being message carriers for the doctor. For example: "Dr. Smith wants all of you to clean the sinks better starting Monday." This is not the role of a good office manager. An effective manager would say, "We all have a responsibility to keep our office clean for our patients. The sinks were not cleaned yesterday. Let's talk about what is preventing this job from getting done."

The staff needs to be fully aware of the responsibilities of the office manager. The following is a sample job description of an office manager. Each practice must design their own to meet the needs of their office.

Office Manager Sample Job Description

1. Responsible for all personnel issues in the practice.
To include the following:
 - ➔ Recruiting, hiring and training of all staff (clinical and administrative)
 - ➔ Management of all staff compensation (i.e., insurance, retirement, etc.)
 - ➔ Daily staff management
 - ➔ Annual performance and salary reviews of all staff
 - ➔ Any necessary probation or dismissal action against staff
2. Coordinate all staff meetings (i.e., daily morning huddles, weekly staff meetings, and retreats)
3. Coordinate any staff functions (i.e., staff picnics, holiday parties, etc.)
4. Act as a liaison for the staff on issues that demand the doctor's attention.

5. Maintain all personnel records.
6. Maintain the annual staff empowerment calendar and make sure that all birthdays, anniversary dates, etc., are recognized.
7. Act as a liaison between the financial coordinator and the accountant to verify that the financial systems are working properly.
8. Frequently review the scheduling coordinator's template to be sure that the appointments being scheduled adhere to office requirements.
9. Oversee staff schedules.
10. Stay abreast of new developments in training (i.e., home study courses, seminars, etc.) that may be of value to the staff and doctor(s).
11. Supervise all marketing strategies of the practice.
12. Be properly trained to act in the role of New Patient Coordinator, Appointment Coordinator, or Financial Coordinator when necessary.
13. Handle any customer service concerns of parents or patients.
14. Organize all travel requirements of the doctor(s) or patients.
15. Must constantly look for ways to streamline office systems.
16. Responsible for keeping the practice's policy and procedure manual updated and making sure these policies are followed.
17. Insure that the office facilities are well maintained.
18. Oversee any major projects for the practice (i.e., computer purchases, facility renovation, etc.)

Qualities of an Effective Office Manager

The following qualities are highly desirable in this position:

1. Energetic person who works the hours needed to get the job done.
2. Understands the big picture of the practice and shares the same values of the doctor.
3. Honest and direct with their communication. Can tell people the truth in a caring yet direct way.
4. Unwavering support of the office manual protocol.
5. Keeps confidence of the doctor and staff. The staff learns they can trust the manager.
6. Sees both sides and works to find win/win solutions.
7. Does not show favoritism.
8. Motivates and empowers the staff with their actions and communication.
9. Frequently solicits feedback from the staff regarding their thoughts and feelings.
10. Develops healthy communication lines with the doctor and is not afraid to be assertive when needed.
11. Is viewed by the staff as a hard worker and totally committed to the purpose of the practice.
12. Is professional in their look and their actions.
13. Proactively takes action and gets things done.
14. Knows how to have fun with the staff and still remain effective as a manager.
15. Creates a zero fear level. The staff members feel safe in discussing their feelings with the manager.

Evaluations of the Manager

Once every 6-12 months, the staff should have an opportunity to evaluate the manager. Confidential forms should be given to the staff. The forms should be returned to the doctor to review. The doctor should discuss the positives and any constructive feedback gleaned from the evaluations with the manager. A synopsis of the evaluations from the leader is more effective than reading them individually. A good manager desires feedback on how they can better serve the team.

Percentage Spent on Staff Salaries

I have reported in many previous publications that the total of staff salaries (not including lab technicians) range from 18%-23% with the average being 20%. This is the total amount of the W-2 forms. If a doctor decides to add an office manager who does not also function as a financial coordinator, new patient coordinator or appointment coordinator, it will increase the percentage by approximately 2%.

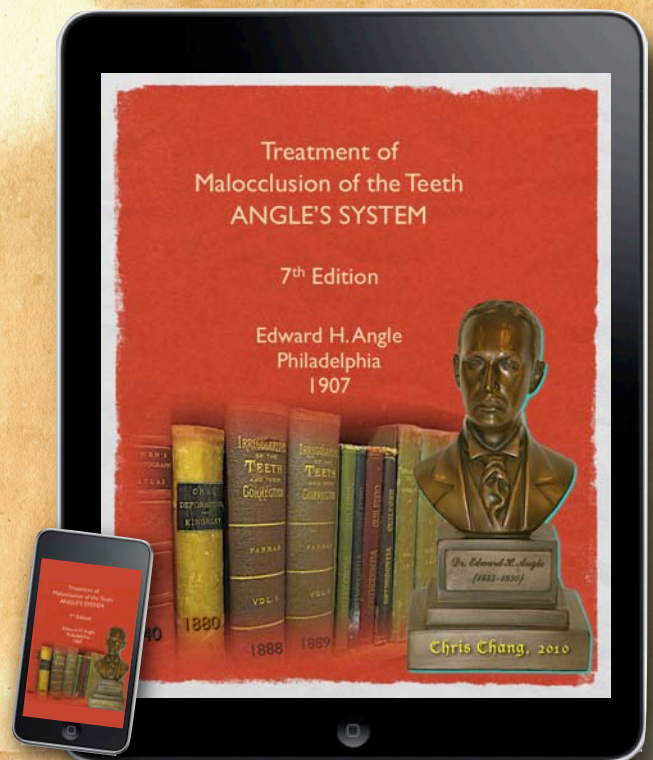
Many doctors tell me that the additional investment in the budget is well worth it because of their reduced stress level. They gladly give up the extra percentage. An effective office manager also helps keep the production moving up therefore balancing out the addition to the salary percentage.

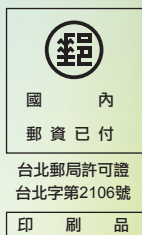


Contact us to find out how you can read the most famous orthodontic textbook from your iPad, iPod, or computer screen.

Tel: +886 3 5735676
Fax: +886 3 5736777
Contact: info@orthobonescrew.com

**Dr. Angle's Bust
NT1500**





Dr. Frank Bogdan



Putting It All Together

Advanced Damon system Mechanics

Time
Venue
Topic
Speaker

2011/6/12 星期日 9:00am - 5:00pm

臺灣金融研訓院 2F 菁業堂 - 台北市羅斯福路三段 62 號 (捷運台電大樓站4號出口)

Putting it all together - Advanced Damon system Mechanics

Dr. Frank Bogdan received his dental education at the University of Medicine and Dentistry of New Jersey, graduating in 1973. In 1976 he received certificate in orthodontics from the University of Medicine and Dentistry of New Jersey. He maintains a very active specialty practice in Bayonne, New Jersey and also manages to find time to lecture throughout the country. Dr Bogdan has been lecturing at the University of New Jersey since 2001 and became assistant clinical professor in the dept of Orthodontics in 2005. He runs the Damon clinic at the University Orthodontic on the clinic floor, while also lecturing the 36 hour didactic course. He was one of the 3 founding specialists who built all 19 modules for the University Damon teaching program released to University teachers of Damon from around the world, at the January 2008 Damon forum. Dr. Bogdan has lectured extensively on numerous orthodontic topics including Low-Force, Low-Friction Orthodontics Using the Damon System, Facial Driven Treatment and Hyper-Efficient Treatment Mechanics.

Content

Dr. Bogdan 早在2001年起，就參與許多 Self-ligating system 醫學會議，並發表多場演說。其演講內容層面極廣：包含 Light force mechanics, Class II MARA correction, Dentoalveolar remodeling 等等。他更是少數率先提及 Dr. Kondo Muscle training concepts 的國外醫師之一。近年來更提出在上矯正器之前，單純利用 Bite turbo 及 muscle training 來做 early treatment 之類似 functional therapy 的概念，在 Damon forum 中受到許多專業矯正醫師的讚許！他是一位具備絕佳觀察力的矯正科技先驅，演講中提及的許多 clinical tips 都非常經典、非常實用，值得親身體會，並一睹他精彩的演說內容與風采！

Fee

2011/6/3前，會員2,500元，非會員3,000元，學生1,500元，並隨機贈送牙寶寶乙個。
2011/6/3後，會員3,500元，非會員4,000元，學生2,000元

Registration

請先電話報名 02-27025499，並於三日內完成劃撥。戶名：社團法人中華民國齒顎矯正學會
帳號：14969234，線上刷卡：<http://www.tao.org.tw/on-line-pay.jsp>

Schedule

09:00 - 10:30 · Arch Wire Selection and Sequencing in Difficult Cases (Advanced Mechanics)
· Torque Selection
10:30 - 10:50 Coffee Break
10:50 - 12:20 · Early Light Elastics & How to Use Them
· Cases- Open Bite, Class 2, Class 3 Extraction
12:20 - 13:30 Lunch
13:30 - 15:00 · Face Driven Treatment Planning with Extraordinary Results
· Retention and Stability
· Finishing Tips
15:00 - 15:20 Coffee Break
15:20 - 17:00 · Asian Cases
· Discussion of the DQ and Damon Clear Advances
· Class II and the MARA Appliance
· Torque Control in a Passive SL System

Organizer：中華民國齒顎矯正學會 / Co-Organizer：湧傑企業股份有限公司

黃瓊嫻 吳致賢 邱琬棋 廖宥程 張文忠

How can Self-ligating system

work efficiently in Asian cases

Time

2011/6/13 星期一 9:00am - 5:00pm

Venue

台大集思國際會議中心 - 台北市羅斯福路四段 85 號 B1 (捷運公館站2號出口)

Schedule

Topics & Speakers

09:10 - 10:10 黃瓊嫻 | Power Up Your Vertical Control

Self-ligation bracket systems 近年來逐漸成為矯正器的主流，相對於傳統矯正器它的使用方法也有所改變，合併 bite turbos 以及 light elastics 的使用，也使得我們能夠用較簡單的方法及較短的時間去改做矯正治療中較困難的 vertical control。本次演講將針對不同的咬合不正類型，應配合使用哪一類 Bite turbos 及 Early light elastics 做討論。

10:10 - 10:25 Discussion

10:25 - 10:55 Coffee Break

10:55 - 11:55 邱琬棋 | Speed Up Treatment in Class II

Class II 的病例中，最為困難也最費時的就是執行 bite-opening mechanics。常常耗時一年半載才可能 bite 稍微打開，但在筆者接觸自鎖式矯正系統後，其 low force, low friction 的特性搭配 variable torque，使得 bite-opening 顯的輕鬆自如，搭配 TAD 同時進行治療更可大大減少治療時間。針對一些 retrognathic mandible 的患者臉部輪廓的改善更有加分的效果。

11:55 - 12:10 Discussion

12:10 - 13:00 Lunch

13:00 - 14:00 吳致賢 | Something About Low Friction & Light Force

Damon system 自鎖式矯正器以減小矯正器與矯正線之間的摩擦力，達到以 light force 移動牙齒的理想。輕微力量從生物力學的角度來看是如何影響牙齒的移動？低摩擦力與輕微力量究竟如何和六大治療完工之原則互相搭配？而整個治療過程中是否會有和低摩擦力與輕微力量相抵觸之時刻？本報告將從最基本的細胞生理、齒列移動原則、乃至於治療病例的應用，一一討論其中的奧秘！！

14:00 - 14:15 Discussion

14:15 - 15:15 廖宥程 | Treatment Comparison of Conventional Bracket & Self-ligating Bracket

自鎖矯正器從1930年代首次發表到近十年百家爭鳴，其優點也被廣泛討論，包括不須傳統的結紮方式、較少的回診次數、較短的看診時間、治療時程縮短、低摩擦力、牙弓擴張的效果以及患者舒適度的增加；但也有許多相關研究提出不同看法。本次報告將從文獻回顧及臨床實際經驗，針對傳統、自鎖矯正器在治療成效以及自鎖矯正器特質優劣做比較，並提出個人看法。

15:15 - 15:30 Discussion

15:30 - 15:50 Coffee Break

15:50 - 16:50 張文忠 | Force System Design in Low Friction and Light Force Orthodontics

少了摩擦力的阻礙，很輕的力量便可以快速移動牙齒，也因此讓我們能以更宏觀的視野來分析力量設計。在整個力量系統的組成元素裡，除了矯正器與鋼絲還包含了牙齒，與周圍的軟、硬組織。如果再加上其他的矯正裝置，力量系統又變得更複雜了！組成元素有些相輔相成，有些互相拮抗。所以設計力量系統時，應仔細分析組成元素，才能得心應手地駕馭他們。

16:50 - 17:10 Discussion



Moderators

林錦榮醫師、嚴永強醫師、況守信醫師

Content

每次聽完國外講師關於 self-ligating system 的演講，雖說總是驚豔於其效能及療效，但卻又覺得白種人的顱顏及咬合的型態與台灣病人有不小的差異，令人無法清楚地釐清在我們日常的病例中使用 self-ligating system 與否，到底有何差異？再者，講師所建議的 biomechanics 與一般大家使用的方式有無顯著的優劣？亦或使用不同的 system 就一定得變更使用的 biomechanics？許多醫師都有這些疑惑，當然試用之後就會有所心得，只是試用新的系統是醫師在成本、精神上的額外耗費。為了省卻大家的心力與成本，學會特別在國外講師之後，安排多位在 self-ligating system 很有心得的醫師，就 self-ligating 與否的比較、力學應用與設計的不同、及如何有效的應用 self-ligating system 達成 Class II & Class III correction 及 vertical control。

在前一天聽完國外講師的演講後，換成數名國內醫師來分享他們的臨床經驗，試著分析這些 Damon Philosophy 的想法與做法，他們有別於傳統矯正器的差別與意義何在。我們特別邀請林錦榮、嚴永強及況守信三位資深而又專精於教學的醫師擔任問題的討論與講評。希望透過這些討論能讓我們有新的認識與啟發，更深入地了解 self-ligating system 所能提供的效益。

Fee

2011/6/3前，會員2,500元，非會員3,000元，學生1,500元，並隨機贈送牙寶寶乙個。

2011/6/3後，會員3,500元，非會員4,000元，學生2,000元

Registration

請先電話報名 02-27025499，並於三日內完成劃撥。戶名：社團法人中華民國齒顎矯正學會
帳號：14969234，線上刷卡：<http://www.tao.org.tw/on-line-pay.jsp>

Organizer：中華民國齒顎矯正學會 / Co-Organizer：湧傑企業股份有限公司

湧傑 YONG CHIEH 105 台北市松山區敦化南路一段 2 號 5 樓之 1 / 服務專線：北區 (02)2778-8315 · 中區 (04)2305-8915 · 南區 (07)536-1701

ABO Case Report

Impacted Maxillary Canines on Both Sides: One Palatally and One Labially

HISTORY AND ETIOLOGY

A 13-year-8-month-old male was referred by his dentist for orthodontic consultation (Figure 1). His chief concern was delayed eruption of both upper permanent canines, associated with retained primary canines (Figure 2 and 3). There was no other contributing medical or dental history. The patient was treated to an excellent result as documented in Figures 4-10, as will be subsequently discussed.

The panoramic radiograph and 3D images (Figure 9) revealed two mesiodens and two impacted permanent canines, one on the palatal (right) and the other on the labial (left). The etiology of the malocclusion was deemed to be aberrant paths of eruption for both of the maxillary canines, possibly due to the presence of the mesiodens (Figures 7 and 9).

DIAGNOSIS

Skeletal:

Skeletal Class I (SNA 78°, SNB 74°, ANB 4°)

High mandibular plane angle (SN-MP 36°, FMA 31°)

Dental:

Right end-on Class II molar relationship

Left full cusp Class II molar relationship with full buccal X-bite

OJ 3.5 mm; OB 3.5 mm

Palatally and mesially impacted upper right canine; transposition with adjacent lateral incisor (Figure 9)

Labially and mesially impacted upper left canine with crown palatal to #9 (Figure 9)

Increased axial inclination (flaring) upper left lateral incisor (#10)

Peg shaped upper lateral incisors



Fig 1. Pretreatment facial photographs



Fig 2. Pretreatment intraoral photographs



Fig 3. Pretreatment study models

Dr. Shu Ping Tseng, Lecturer, Beethoven Orthodontic Course (left)
 Dr. Chris HN Chang, Director, Beethoven Orthodontic Center (middle)
 Dr. Eugene W. Roberts, Consultant, *News and Trends in Orthodontics* (right)



Fig 4. Posttreatment facial photographs



Fig 5. Posttreatment intraoral photographs



Fig 6. Posttreatment study models

Two mesiodens in the anterior palatal area of the maxilla

#2 buccal displacement

ABO Discrepancy Index 24, fitting the major malocclusion category (DI>20)

Facial:

Convex profile

Competent, moderately protrusive lips

SPECIFIC OBJECTIVES OF TREATMENT

Maxilla (all three planes):

- A - P: Allow for normal expression of growth
- 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: Correct flaring #10, increase axial inclination of incisors
- Vertical: Align impacted canines, allow for extrusion with growth
- Inter-molar: Release crowding and correct #2, #14 buccal cross-bite

Mandibular Dentition

- A - P: Retract incisors
- Vertical: Allow for growth-related extrusion
- Inter-molar / Inter-canine Width: Correct #18 lingual inclination, expand intercanine width

Facial Esthetics: Maintain convex profile with moderately protrusive but competent lips



Fig. 7. Pretreatment pano and ceph radiographs



Fig. 8. Posttreatment pano and ceph radiographs

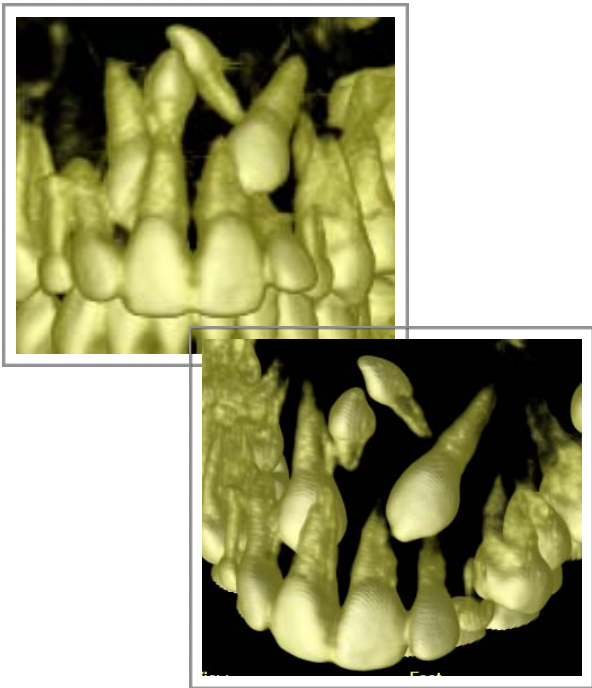


Fig. 9. Pretreatment 3D images from anterior view

CEPHALOMETRIC			
SKELETAL ANALYSIS			
	PRE-TX	POST-TX	DIFF.
SNA°	78°	78°	0°
SNB°	74°	76°	2°
ANB°	4°	2°	-2°
SN-MP°	36°	37°	1°
FMA°	31°	32°	1°
DENTAL ANALYSIS			
U1 TO NA mm	2.4 mm	4.8 mm	2.4 mm
U1 TO SN°	94°	103°	9°
L1 TO NB mm	2.8 mm	3.6 mm	0.8 mm
L1 TO MP°	90°	90°	0°
FACIAL ANALYSIS			
E-LINE(U)	1.0 mm	1.0 mm	0 mm
E-LINE(L)	1.5 mm	1.5 mm	0 mm

Table. Cephalometric summary

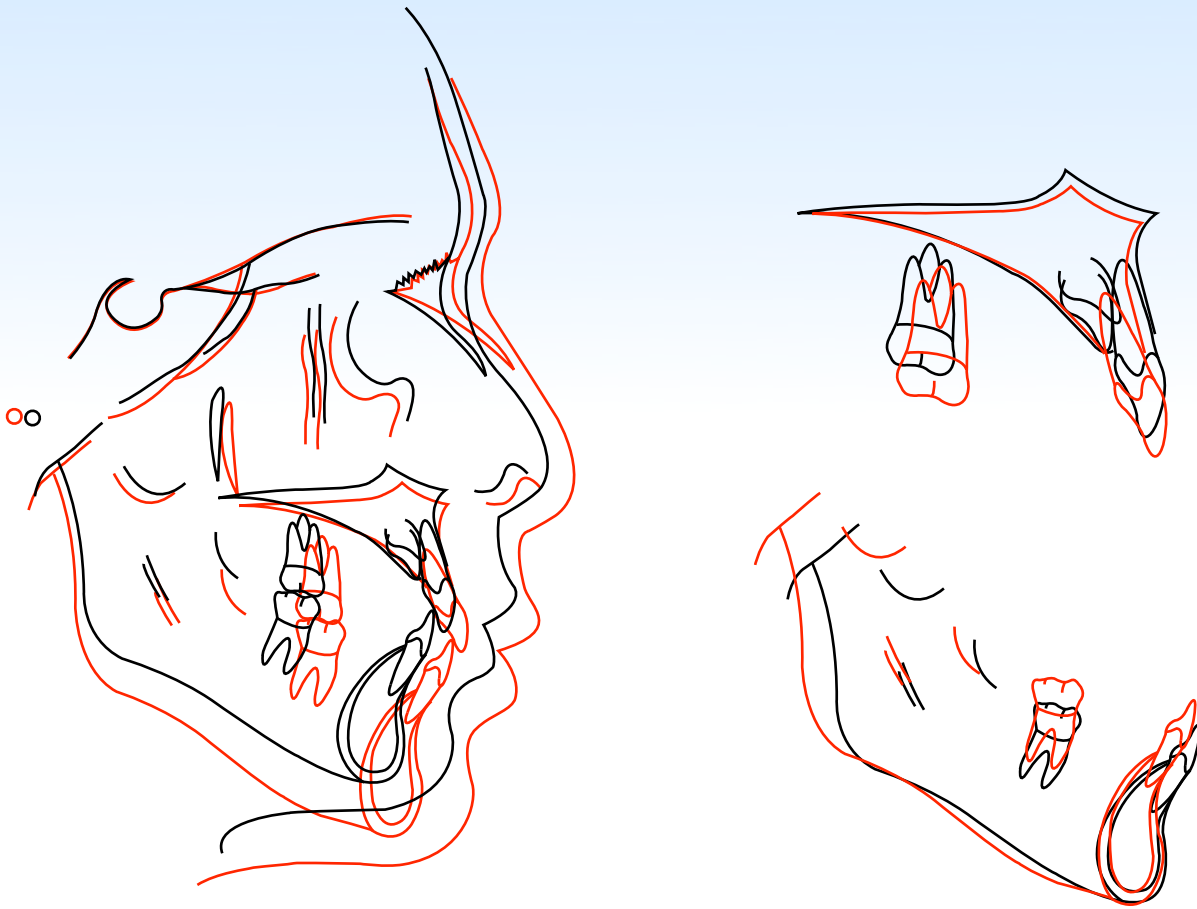


Fig 10. Superimposed tracings

TREATMENT PLAN

The retained primary canines and mesiodens were extracted. Since there was no significant crowding, nonextraction treatment was indicated. At the start of active treatment, space was opened with coil springs (Figure 11) and the buccal cross bite was corrected with a cross elastic on the affected side with a bite turbo on the opposite side to open the bite (Figure 12). The method for the labial impaction recovery was adapted from the approach of Leite et al.¹ and the technique for the palatal impaction followed the recommendations of Kokich.² The diagnosis and biomechanics modifications used in this case report are published.³⁻⁶ Figure 13 documents the recovery and alignment of the right maxillary canine, and Figure 14 shows the bite opening due to the turbo used to correct the canine cross bite. Figure 15 is the radiographic series demonstrating the correction of the upper right transposition and Figure 16 shows the use of a torquing spring. Regarding the peg laterals, their acceptable shape precluded the necessity for restoration, but the small size of the teeth presented finishing problems, that will be subsequently



Fig. 11. Cross bite correction by elastics combined with .014 copper NITi in lower arch.



Fig. 12. Lingual button on lingual surface of tooth #19, bite turbo on occlusal surface of tooth #30.

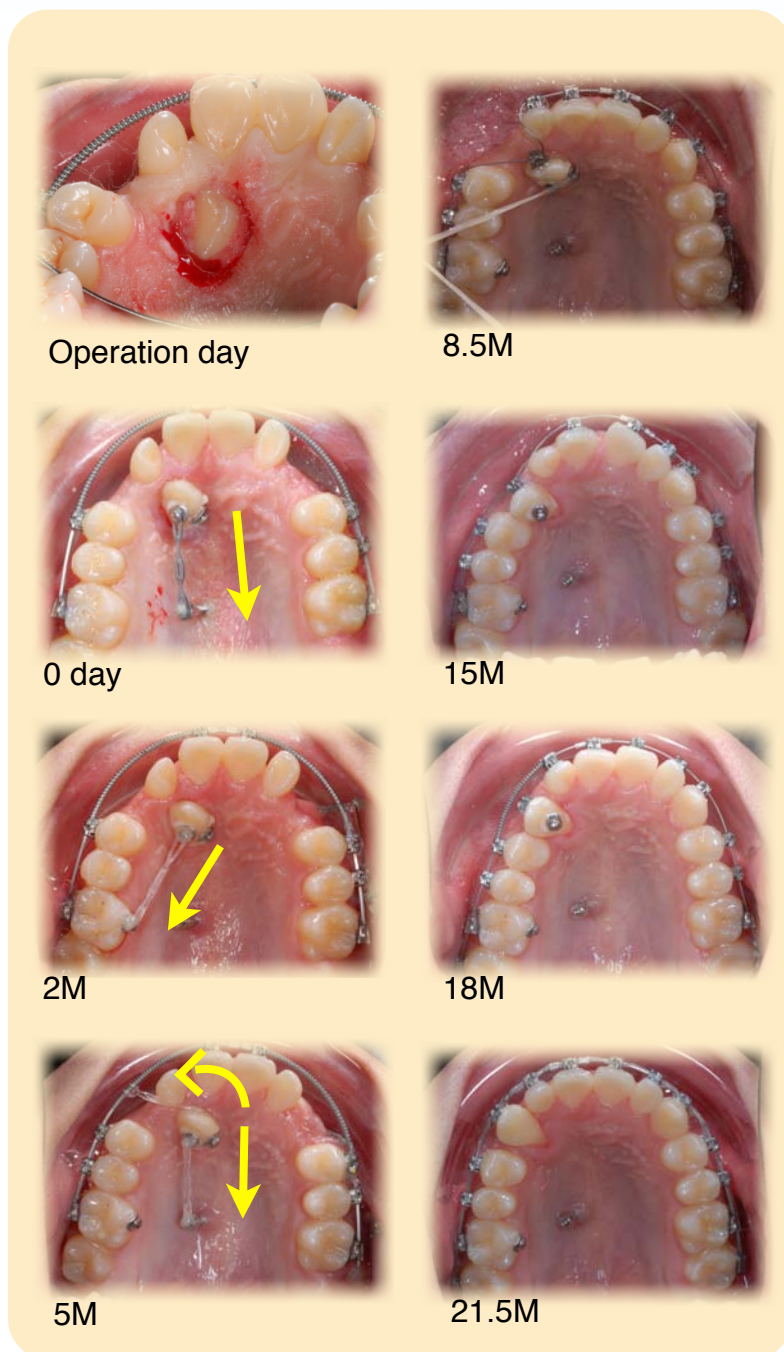


Fig. 13. Intra-oral photos showed the progress of tooth #6 alignment.

discussed. A full orthodontics fixed appliance was utilized in conjunction with two mini-screws to align and level the dentition.

The palatally impacted canine was exposed with an excisional uncovering method.² For the labially impacted canine, closed eruption technique was used with a bonded button and power chain (PC) attached.¹ To recover the impacted canines, one mini-screw was placed near the mid-palatal suture and a second mini-screw was inserted in the left infrazygomatic crest.^{3,4} PCs were used as needed to retract the impacted canines. Torquing springs were necessary for adjusting buccal root torque of both teeth (#6 and 10).

A lingual button and posterior bite turbo, combined with cross elastics, were used to correct the posterior cross-bite.

Class II elastics were used to solve the sagittal discrepancy and detailing bends produced the final occlusion. Fixed appliances were removed and the corrected dentition was retained with anterior fixed retainers in both arches.

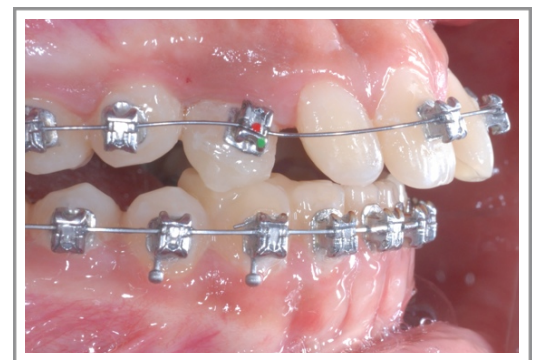


Fig. 14. Bite turbo on #27 in the 16M traction

APPLIANCES AND TREATMENT PROGRESS

0.022" Damon D3MX low torque brackets (Ormco) were selected. Two sections of open coil spring were applied between the central incisors and first premolars to create spaces for impacted maxillary canines. No brackets were bonded on the lateral incisors initially (Figure 11). A lingual button was bonded on tooth #19, a light cross elastic was hooked to tooth #14, and a composite bite turbo on tooth #30 was used for cross bite correction from the first day of treatment (Figure 12).

An open surgical technique was used to uncover the right palatally impacted canine in the 4th month of treatment. One month later, the crown had spontaneously erupted more than halfway to the occlusal plane, so two buttons were bonded on it for further traction and providing rotational control. A mini screw was inserted 2~4 mm away from the mid-palatal suture, palatal to tooth #3, and a power chain was used for canine distalization. Figure 13 demonstrates the steps in

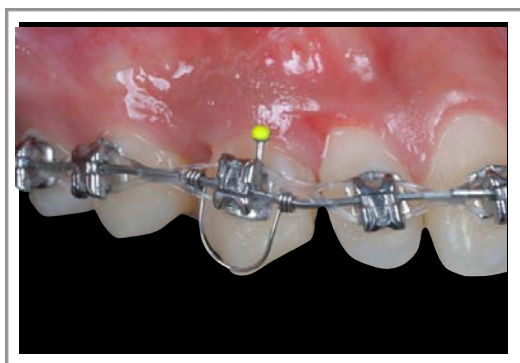


Fig. 15. Torquing spring in the 21.5 M traction

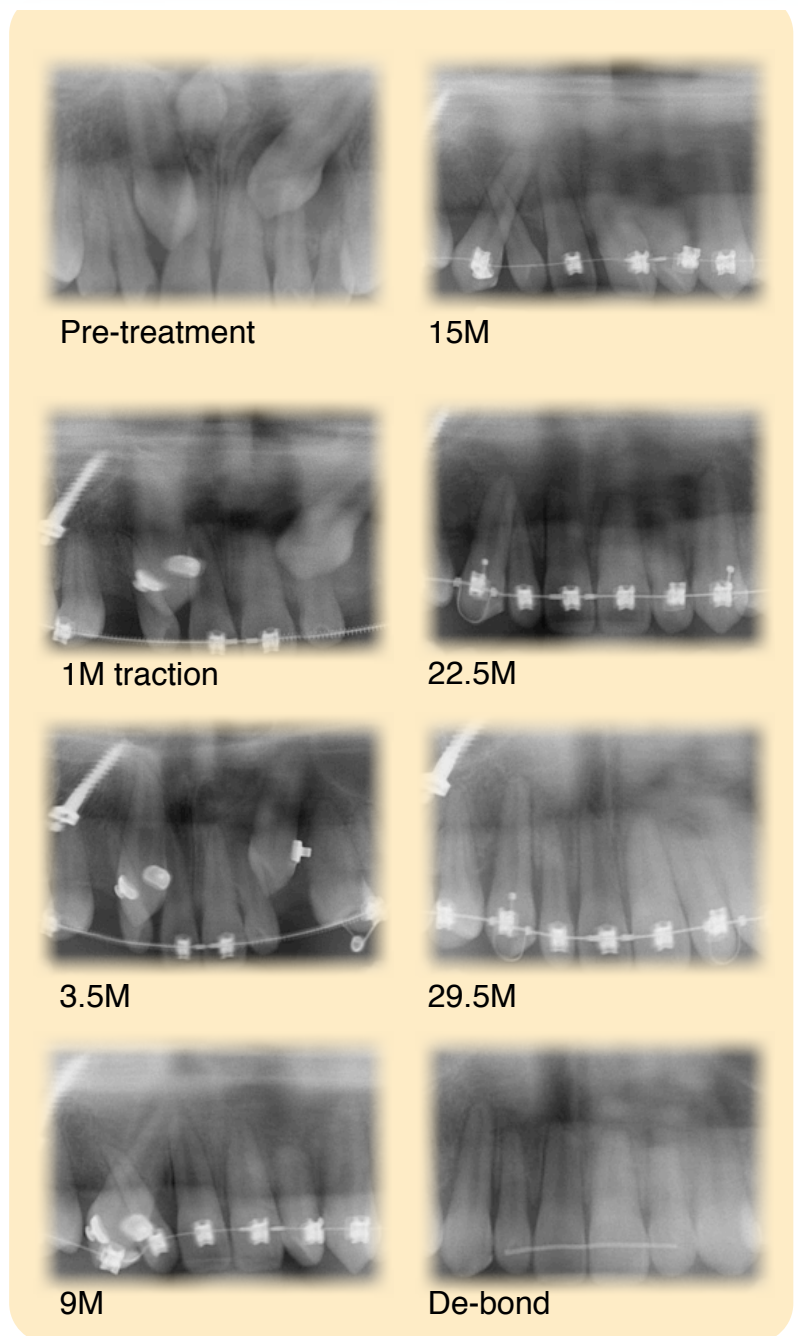


Fig. 16. X-ray films showed the progress of transposition correction.

treatment used to align the palatally impacted canine.

Bite opening was necessary to facilitate moving the canine labially. The root torque was corrected with a low torque bracket (or inverted high torque bracket) and a torquing spring (Figures 14, 15). After 15 months of traction, the crown was in the desired position. But it required another 14 months to achieve root movement with a wire sequence of .013 copper NiTi, .016 copper NiTi, .014X.025 copper NiTi and .017X .025 TMA (Figure 16).

For the left canine impaction, closed eruption technique was used to bond a button with a power chain in the 6th month of treatment (Figure 17). After wound healing, the power chain was directed occlusally and distally by a lever arm extended from the infrazygomatic mini-screw³. During subsequent visits, the helix was adjusted without removing it, 5.5 months later, the left canine was engaged with a .014 copper NiTi archwire (Figure 18).

The class II elastics were used to correct the Class II molar and canine relationships. A continuous, vertical elastic was used during final finishing and detailing. After 36 months of active treatment, the appliances were removed.

RESULTS ACHIEVED

Maxilla (all three planes):

- A - P: Optimal growth expression
- Vertical: Optimal growth expression
- Transverse: Maintained

Mandible (all three planes):

- A - P: Optimal growth expression
- Vertical: Optimal growth expression
- Transverse: Maintained

Maxillary Dentition

- A - P: Increased axial inclination of the incisors
- Vertical: Extrusion of the dental arch, impacted canines uncovered and optimally aligned
- Inter-molar / Inter-canine Width: Molar constriction due to buccal X-bite correction

Mandibular Dentition

- A - P: Maintained
- Vertical: Extruded molars and incisors
- Inter-molar/Inter-canine Width: Posterior expansion because the left first molar was uprighted

Facial Esthetics: A pleasing profile with competent lips was 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

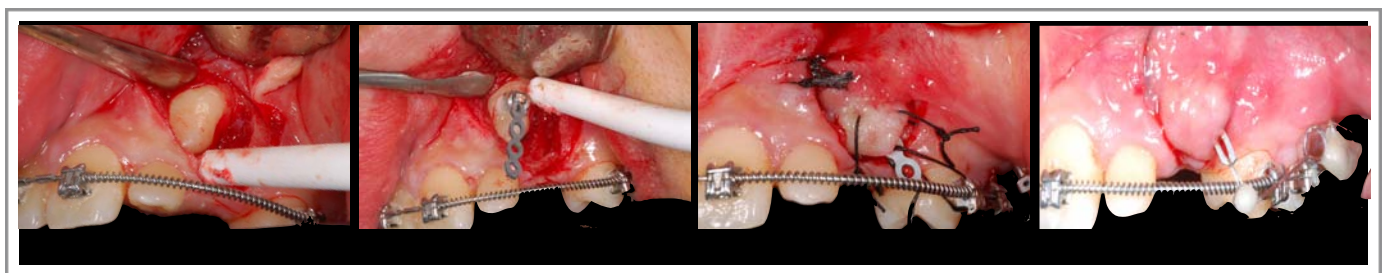


Fig. 17. Closed eruption surgery day and one week later.

was delivered. The patient was instructed to wear it full time for the first 6 months and nights only thereafter. The patient was instructed relative to proper home hygiene and maintenance of the retainers.

FINAL EVALUATION OF TREATMENT

The ABO Cast-Radiograph Evaluation was scored at 26 points. The major discrepancies were unevenly marginal ridges (7 points) and loss of some occlusal contacts (8 points) over left molars (Figures 19-21).

The impacted canines were in optimal alignment after treatment (Figure 22), the gingiva texture was pleasing, and the root prominence was satisfactory (Figure 22). From the radiographs, the root alignment was ideal, but some bone loss was noted for teeth #6 and #7. External apical root resorption (EARR) up to 3mm was noted on teeth #8-10, while the roots of teeth #6, #7, #11 were blunted (Figure 23).

The molar and canine relationships are both Class I. The OB and OJ are less than ideal (Figure 24), but acceptable, considering the unrestored maxillary peg-shaped lateral incisors (Figures 22, 24).

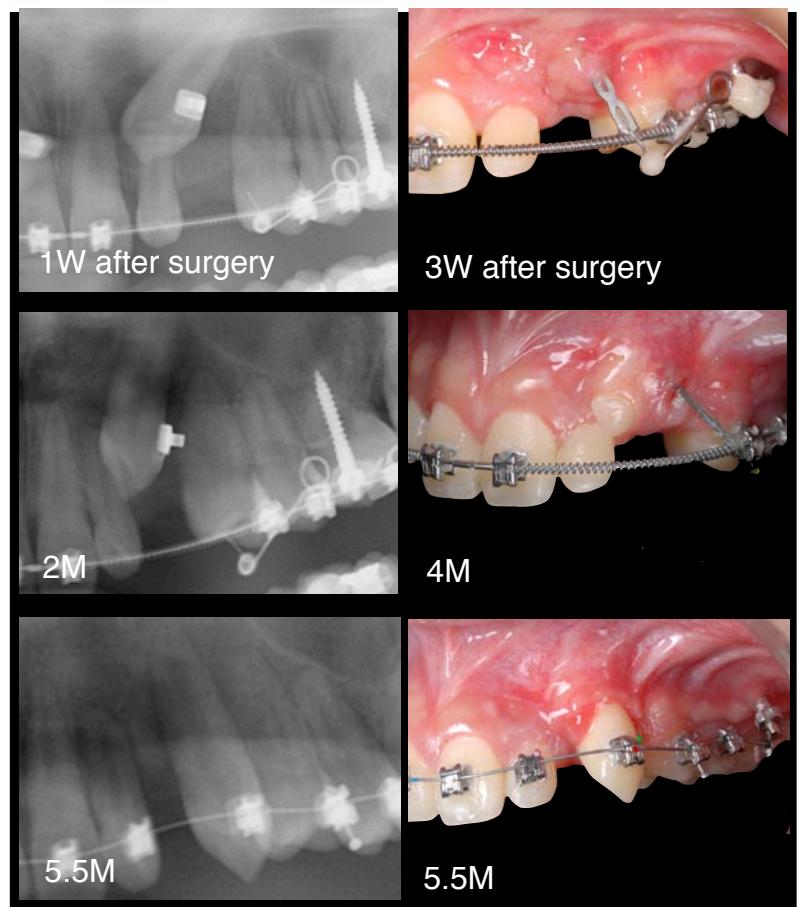


Fig. 18. Intra-oral photos and X-ray films show the progress of left canine traction.



Fig 19. Intra-oral photo of left view .



Fig 20. Buccal view of left posterior area.



Fig 21. Palatal view of UL area.

Overall, the treatment results for this challenging case were pleasing to the patient and the clinician.

DISCUSSION

For patients with canine impaction, extraction should be limited to teeth that are ankylosed, show severe internal or external root resorption, have severe dilaceration, display pathologic changes, and those where orthodontic movement could compromise adjacent teeth.¹ For the present patient, it was important to recover the poorly positioned, impacted canines. The challenge was to design a force system likely to achieve an esthetically pleasing, functional and periodontally healthy result, without damaging the adjacent teeth.

For a palatally impacted canine, Kokich² recommends an alternative technique for early uncovering of palatal canines and allowing for spontaneous eruption, before the start of active orthodontics traction. When the impacted canine cannot be palpated, cone-beam computer tomography (CBCT) imaging is indicated to design the surgical approach. Otherwise, the

surgical opening may be too large.³

CBCT images showed that the impacted right canine was completely transposed with the adjacent lateral incisor (Figure 9). This information was helpful for designing a surgical exposure to limit the size of the wound. The surgical uncovering was performed in the 4th month of treatment. It could be done in the same appointment when the supernumerary teeth were extracted. This would have resulted in less surgical and orthodontic treatment time.

The miniscrew in the palate was effective for retracting the canine crown away from the incisors. Instead of inserting the screw in the palatal suture, 3mm away from the suture was the best location for the largest mechanical locking³. In comparison to other areas of palate, this area has enough thickness of bone and more consistent structure than suture (Figure 25). The head of screw was positioned at the level of occlusal surface *to avoid an intrusive force on the canine*. Besides, if the UR posterior teeth were used to retract the canine posteriorly, some anchorage might be lost, the CII molar relationship might be



Fig 22. Closed-up photos for anterior six posttreatment

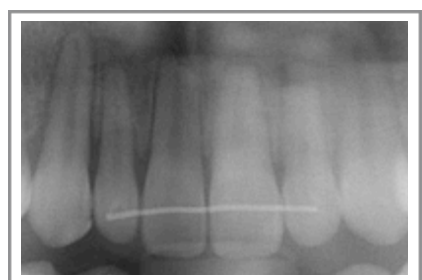


Fig 23. Posttreatment radiography



Fig 24. Reduced OB and OJ posttreatment

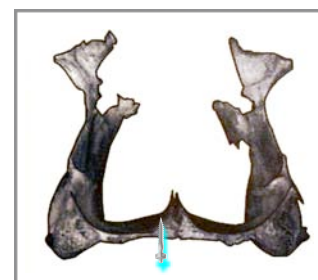


Fig 25. Miniscrew 3mm away from the suture

worsened and the upper midline would have shifted to the left due to the Canoeing effect (Figure 26). Besides, two *buttons* on the canine made the rotation control possible.

Root angulation and torque control for the transposed canine present significant challenges. There are several methods for solving these problems: 1. bond the *low torque bracket* (or inverted high torque bracket) in a position mesially tilting the tooth; 2. torque the segmental wire within the canine bracket; 3. add a torquing spring³. The most efficient and effective method to generate favorable torque expression is the use of an individual root torquing spring^{3,4}. In addition, the spring can be used earlier with round or relatively small rectangular archwires such as a .014 X .025 copper NiTi, or round the wire segment in the canine slot of the heavy rectangular wire in the late stage of treatment with green stone (Figure 27) which can shorten treatment time and produce a more favorable and stable result³. In comparison to Dr. Halazonetis' case published in 2009, he took 62 months to fix the transposed teeth with complicated mechanics and finished in the compromised occlusion and gingiva.⁹ In the present case, without any complex appliance construction or wire bending, the transposed canine was corrected with simple mechanics (Figure 16). *The important tip to keep in mind is that bonding the two transposed teeth alternately in the stage of switching the roots.*³ The torquing auxiliaries were very effective for correction of maxillary canine axial inclination (Figure 28). Correcting transposed teeth is usually a big challenge. To avoid root damage it is best to retract the impacted canine before bonding and aligning incisors. Unsurprisingly, occlusal interference may occur while

the canine moved labially, so bite opening by bite turbo or bite plate was frequently advised in this stage (Figure 14).

The surgical method strongly affects the outcome of soft tissue for labial impactions. There are three exposure techniques: excisional uncovering, apically positional flap (APF), and closed eruption technique.^{2,3} An APF is recommended by Kokich² when the impacted canine crown is over the root of lateral incisor. Niagara et al.⁷ suggested that labially impacted teeth might have a thinner plate of bone, and therefore are at greater risks for attachment loss if uncovering with an APF. For this reason, the closed eruption technique was chosen in this case and the bone on the designed pathway of canine were reduced with osteo-bur in the surgery to facilitate the movement of canine^{3,8} (Figure 17). Fortunately the final periodontal condition is nearly ideal.

After the closed eruption surgery, an occlusal and distal force was generated by the power chain hooked to the lever arm (Figure 29), that extended from the infrazygomatic miniscrew³. At subsequent visits, the device was reactivated by cutting loops off the power chain or adjusting the lever arm. The adjacent lateral incisor was not bonded and engaged on the arch wire until the canine had been moved away from it^{3,8}. 6 months later, the left canine was brought into arch successfully, contrary to the views of Dr. Becker and Dr. N. Dykstein in *The Orthodontic Treatment of Impacted Teeth*, that orthodontic resolution and alignment are often impossible to achieve for the canine root labial to the root of the lateral incisor and its crown palatal to the central incisor.¹⁰

The buccal posterior cross-bite was corrected in the first 3



Fig 26. Canoeing effect = increased OJ + ML off



Fig 27. Round the wire between the torquing spring

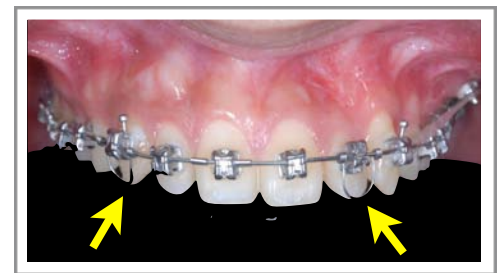


Fig 28. Torquing spring for #6 and #10

months with a lingual button, bite turbo and cross elastics. This proved to be an efficient mechanism for managing this functional problem early in treatment.

As previously mentioned, the peg-shaped maxillary lateral incisors were not restored. This approach presented a problem in finishing the maxillary anterior alignment without leaving interproximal spaces. It was necessary to reduce the overbite and overjet. Fortunately, the outcome was acceptable for both the patient and the clinician.

In treating patients with impacted canine and peg laterals, root resorption was always a concern. Comparison of the root form of the maxillary incisors before and after treatment revealed that the incisor roots were either blunted or displayed irregular root resorption (Figure 30). Under these circumstances the EARR was deemed to be in the acceptable range. However, it is important to ensure there is no occlusal trauma to the incisors in the finished position. Otherwise, the EAAR can be progressive following the treatment. Moreover, the alveolar crest bone levels were reduced for the right lateral incisor and canine. This problem does not appear to be progressive but it will be closely monitored.

The ABO Cast-Radiograph score was 26 points within the acceptable range for a board case. The major discrepancies were uneven marginal ridges (7 points) and failure to achieve

occlusal contacts in the left buccal segments (8 points) (Figures 19-21) due to the side effect of distalization by miniscrew (Figure 28). For achieving excellent finishing, take impressions before appliance removal and refer to the ABO-Cast-Radiograph-Evaluation list for a systemic review, are strongly recommended³. In this case, the impression and evaluation were done 5 months prior to the debonding day and the score was 42 points then (Figure 31). After carefully identified and corrected, the errors points were lowered to 26 points simply by rebonding some brackets and adjusting the wires in only 5 months and made the case pass³. Overall, the result was very good considering the severity of the malocclusion. An optimal finish was achieved in 36 months, which is a relatively short treatment time considering the difficult impactions, and particularly the tooth transposition⁹. This case report demonstrates a creative approach for management of a number of difficult problems in the same patient.

Regarding retention, the upper fixed retainer did not extend to maxillary canines (Figure 30). This approach maintains incisor alignment, but still allows the canines to function independently. The latter is important because previously impacted teeth tend to intrude. If they are tied to incisors with a fixed retainer, the entire maxillary anterior segment could be affected by a tendency for the canines to relapse.



Fig 29. 2x12 mm SS Miniscrew with lever arm



Fig 30. Periapical film revealed the root resorption posttreatment



Fig 31. Models for CRE analysis for fine tuning

CONCLUSION

For palatally impacted teeth, excisional uncovering as early as possible to allow for spontaneous eruption is an effective treatment method.^{2,3} For a canine, that is labially impacted above the mucogingival junction, with its root overlapping the root of the adjacent lateral incisor, the *closed eruption method*, with the use of lever arm from a miniscrew, is the best approach to achieve optimal periodontal health.³

To avoid, or at least minimize root resorption, delay bonding and arch wire engagement on teeth adjacent to impactions, until the traction on the impacted tooth moves it away from the adjacent roots. This method allows the unbonded teeth to spontaneously move out of the way of the path of canine traction, thereby avoiding or at least minimizing root resorption.

Torque control of recovered canines is readily managed

with proper bracket selection and torquing spring application.

Extra-alveolar endosseous miniscrews provide excellent anchorage for the specialized mechanics required for impaction recovery and transposition correction. These temporary anchorage mechanics allow for specialized movement of impacted and transposed teeth without undesirable side effects on adjacent teeth.³

This case report demonstrates that palatally and labially impacted teeth can occur in the same arch. The treatment strategies must be considered separately to avoid bilateral interference and gain a satisfactory result.

ACKNOWLEDGMENT

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

References

1. Heloisio de Rezende Leite et al: Labially displaced ectopically erupting maxillary permanent canine: interceptive treatment and longterm results. *Am J Orthod Dentofacial Orthop* 2005;128:241-51
2. Kokich VG. Surgical and orthodontic management of impacted maxillary canine. *Am J Orthod Dentofacial Orthop* 2004;126:278-83
3. Chang C. Advanced Damon Course No. 9: Impacted and transposed teeth, Beethoven Podcast Encyclopedia in Orthodontics 2011, Newton'A Ltd, Taiwan
4. Tseng SP, Chang C, Roberts WE. Palatally impacted maxillary canine. *News & Trends in Orthodontics* 2011; 21: 26-36
5. Huang S, Chang C, Roberts WE. Management of skeletal III malocclusion with a palatally impacted cuspid. *News & Trends in Orthodontics* 2010;17:28-35
6. Hsu YL, Chang C, Roberts WE. Early intervention for multiple impacted teeth: more comprehensive clinical assessment with the ISAS method. *News & Trends in Orthodontics* 2010; 20: 32-46
7. Niagara K et al. Impacted maxillary central incisor, canine, and second molar with 2 supernumerary teeth and an odontoma. *Am J Orthod Dentofacial Orthop* 2009;135:390-9
8. Tseng SP, Chang C, Roberts WE. High maxillary canine impaction with mesial and labial displacement. *News & Trends in Orthodontics* 2010; 18: 36-44
9. Halazonetis DJ. Horizontally impacted maxillary premolar and bilateral canine transposition. *Am J Orthod Dentofacial Orthop* 2009;135:380-9
10. Becker A. *The Orthodontic Treatment of Impacted Teeth*. 2nd ed. 2007 Imforma UK LTD. pp 172-3.



DISCREPANCY INDEX WORKSHEET

CASE # PATIENT Z. S. T.
 TOTAL D.I. SCORE

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 =

OVERBITE

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

Total =

ANTERIOR OPEN BITE

0 mm. (edge-to-edge), 1 pt. per tooth
 then 1 pt. per additional full mm. per tooth

Total =

LATERAL OPEN BITE

2 pts. per mm. per tooth

Total =

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 =

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. pts.
 additional

Total =

EXAM YEAR 2011
 ABO ID# 96112

LINGUAL POSTERIOR X-BITE

1 pt. per tooth Total =

BUCCAL POSTERIOR X-BITE

2 pts. per tooth Total =

CEPHALOMETRICS (See Instructions)

ANB $\geq 6^\circ$ or $\leq -2^\circ$ = 4 pts.

Each degree $< -2^\circ$ _____ x 1 pt. = _____

Each degree $> 6^\circ$ _____ x 1 pt. = _____

SN-MP

$\geq 38^\circ$ = 2 pts.

Each degree $> 38^\circ$ _____ x 2 pts. = _____

$\leq 26^\circ$ = 1 pt.

Each degree $< 26^\circ$ _____ x 1 pt. = _____

1 to MP $\geq 99^\circ$ = 1 pt.

Each degree $> 99^\circ$ _____ x 1 pt. = _____

Total =

OTHER (See Instructions)

Supernumerary teeth 2 x 1 pt. = 2
 Ankylosis of perm. teeth _____ x 2 pts. = _____
 Anomalous morphology 2 x 2 pts. = 4
 Impaction (except 3rd molars) 2 x 2 pts. = 4
 Midline discrepancy (≥ 3 mm) _____ @ 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 ≥ 2 mm) _____ @ 2 pts. = _____
 Tooth transposition 1 x 2 pts. = 2
 Skeletal asymmetry (nonsurgical tx) _____ @ 3 pts. = _____
 Addl. treatment complexities _____ x 2 pts. = _____

Identify:

Total =

Exam Year

2011

ABO ID#

96112

Examiners will verify measurements in each parameter.

Case #

1

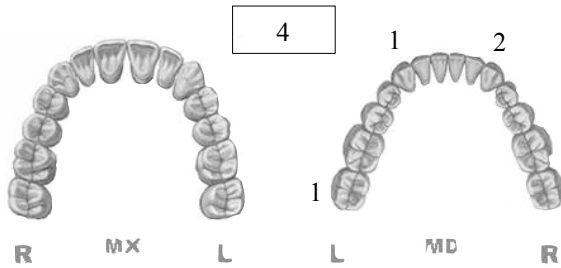
Patient

Z. S. T.

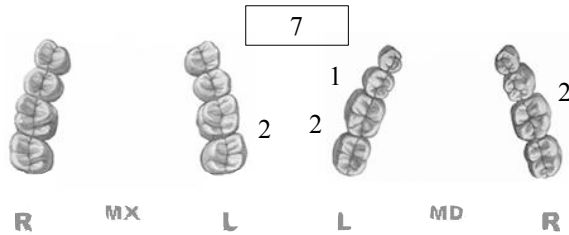
Total Score:

26

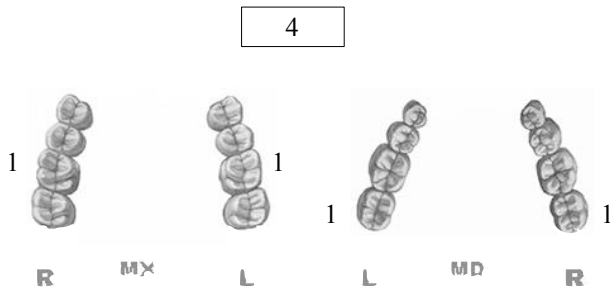
Alignment /Rotations



Marginal Ridges



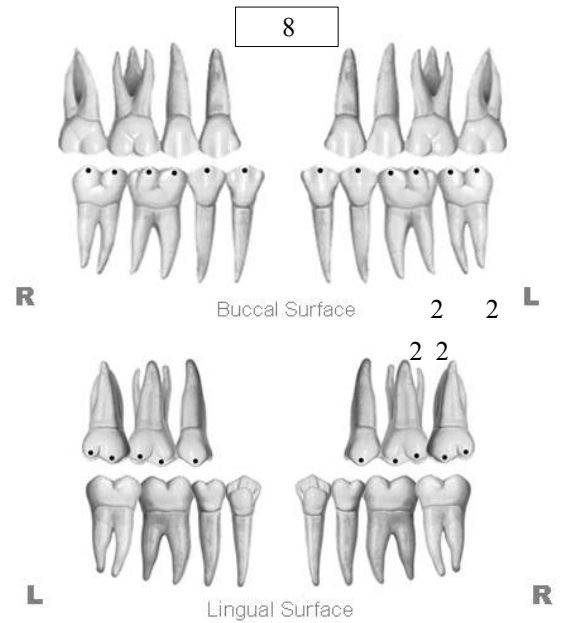
Buccolingual Inclination



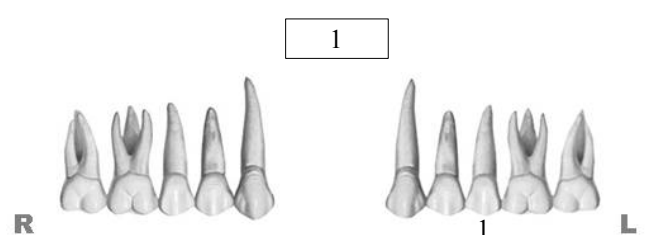
Overjet



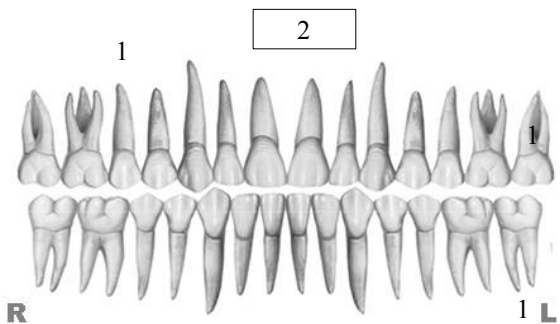
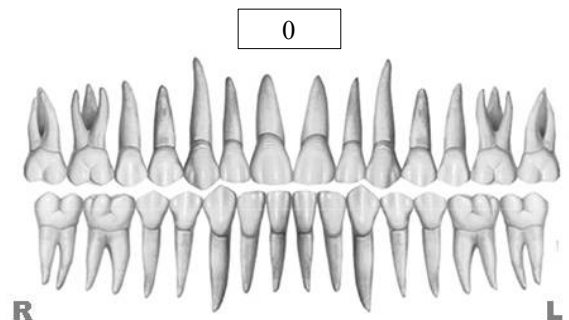
Occlusal Contacts



Occlusal Relationships



Interproximal Contacts



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.

OrthoBoneScrew

The Dream Screw for Next Generation's Orthodontists

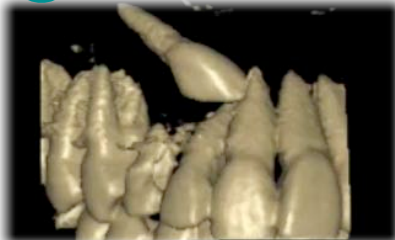
Beethoven Orthodontic Center, Taiwan

Yu-Lin Hsu, Chris HN Chang, W. Eugene Roberts

The 12 Applications of OBS on the Impacted teeth



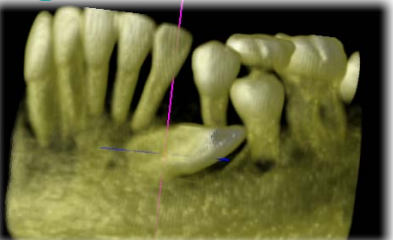
1



5



9



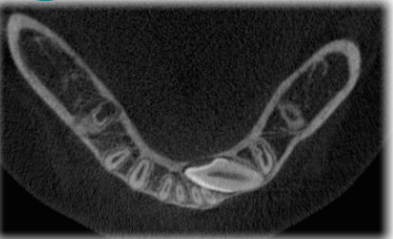
2



6



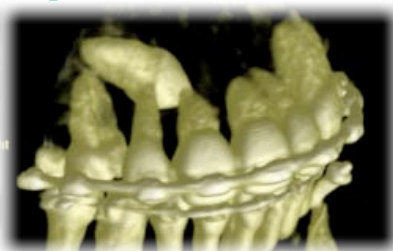
10



3



7



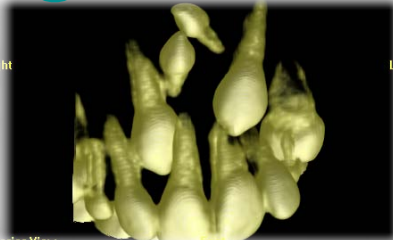
11



4



8



12



OrthoBoneScrew

Corporate Headquarters
2F, No. 25, Jian-Jhong First
Road, Hsinchu, Taiwan 300
Tel: +886 3 5735676
Fax: +886 3 5736777

: info@orthobonescrew.com

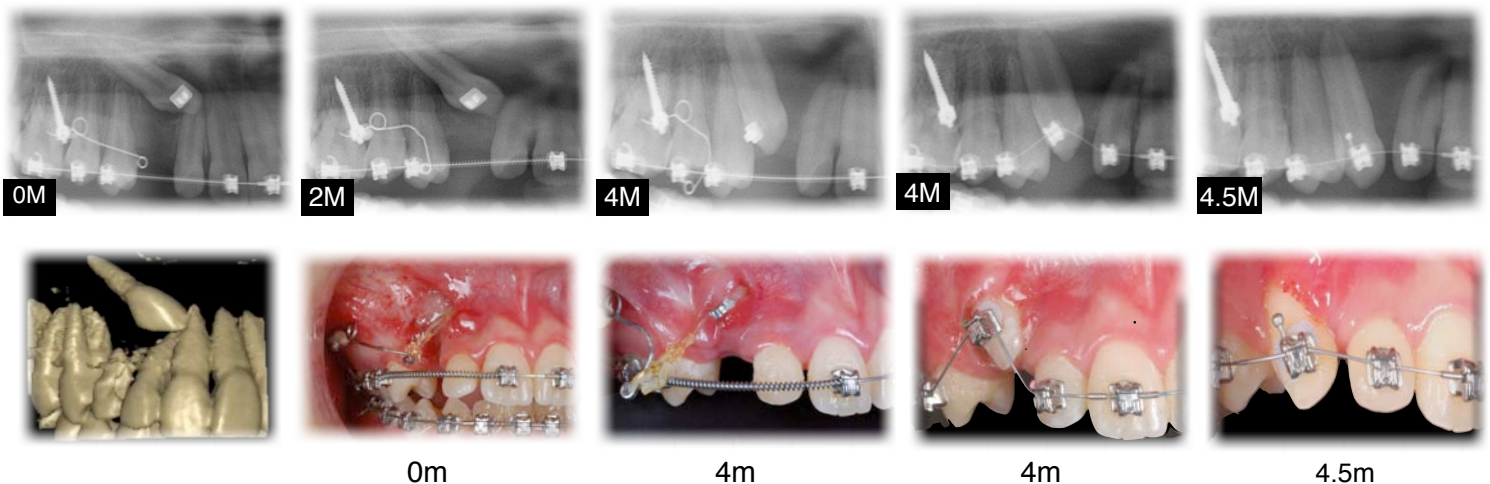
Upper labially impacted cuspids

1

OrthoBoneScrew (OBS) has a double-crossed rectangular slot on its neck. This 0.019" x 0.025" rectangular slot provides a versatile use of orthodontic mechanics. A 0.018" x 0.025" wire can be secured in the slot firmly.

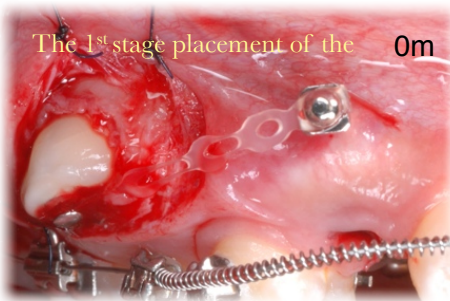
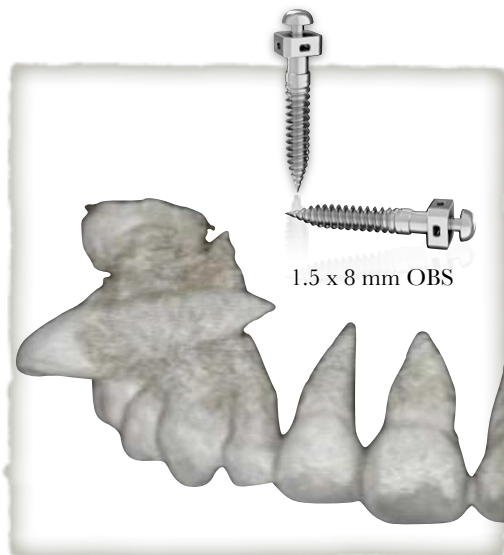
Mechanics design:

A 0.017 x 0.025-inch 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 OrthoBoneScrew (located at infrazygomatic crest) and activated, it could build a force system which distalized the canine first, then moved buccally slightly, and finally downward to the reserved canine space. If the mechanics were designed to exert force directly from the main arch wire, it would have been detrimental to the roots of the lateral incisor. During the follow-up visits, the helix was adjusted without taking it out. After four months, the impacted canine was successfully moved away from the previously impacted site and was ready for bracket bonding.

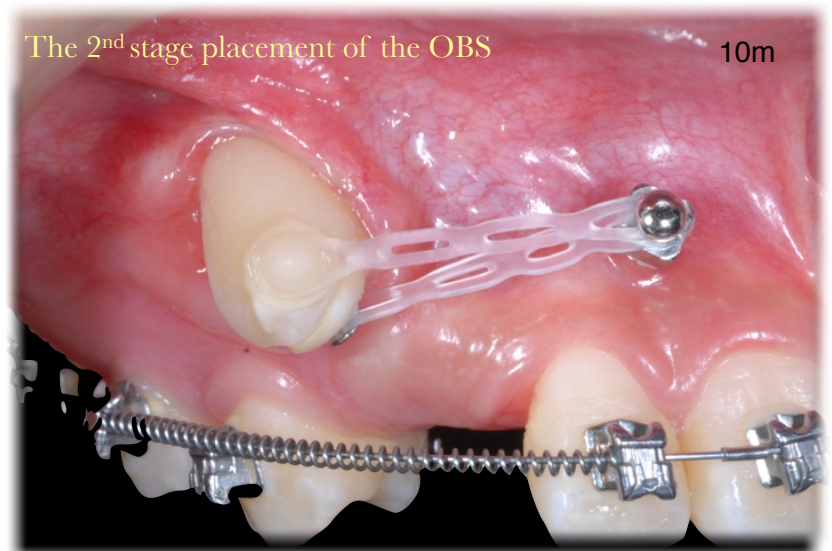


Upper labially impacted cuspids

2

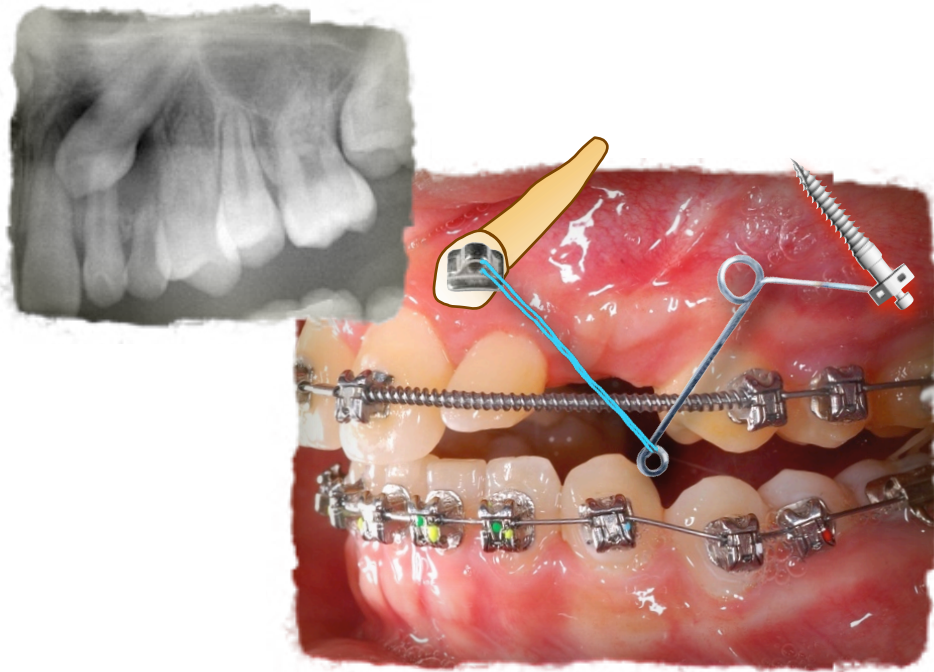


The transpositional cuspid has been exposed with a full-thickness apically positioned flap. After bonding a button, an 1.5x8 mm OrthoBoneScrew was inserted on the buccal side of canine space to protract the cuspid. Meanwhile, one should keep OBS as high as possible to make the switch easier. After 7.5 month-long treatment, this transpositional cuspid has been pulled mesially for 12 mm. The distance between the OBS and the cuspid has been shortened, as a result in the protraction, then the placement of the OBS was changed to the interdental space of the incisor and the lateral incisor. This two-stage placement of the OBS was to prevent the gingival impingement around the corner of the alveolar arch.

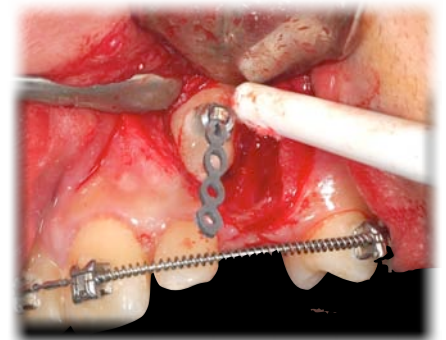


Upper labially impacted cuspids

3



Firstly the space was created by NiTi opening spring between #21 & #24 without engaging adjacent tooth during switching. Secondly a modified apically positioned flap was designed to expose the impacted canine. Then a 3D lever arm was inserted in the square hole of **OBS**, and attached to the impacted canine by an elastic chain. The force was applied consistently by adjustment of the 3D lever arm. Finally the crown of the impaction appeared in the oral cavity, and allowed for bracket bonding.



0m



1m



3m

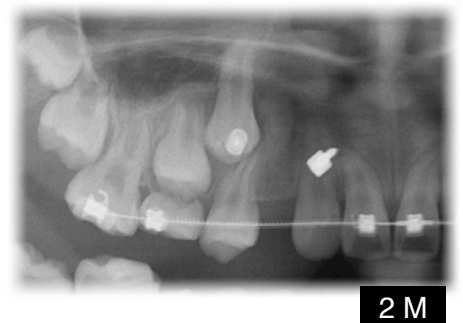
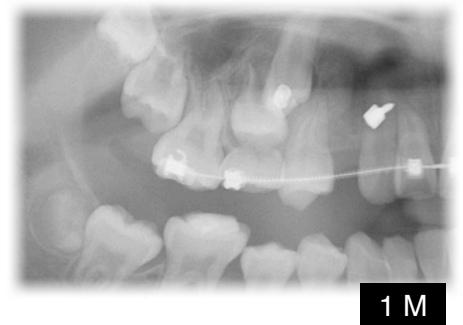
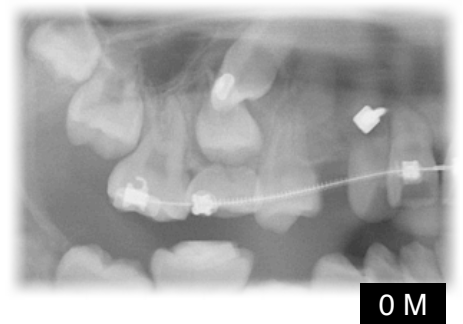
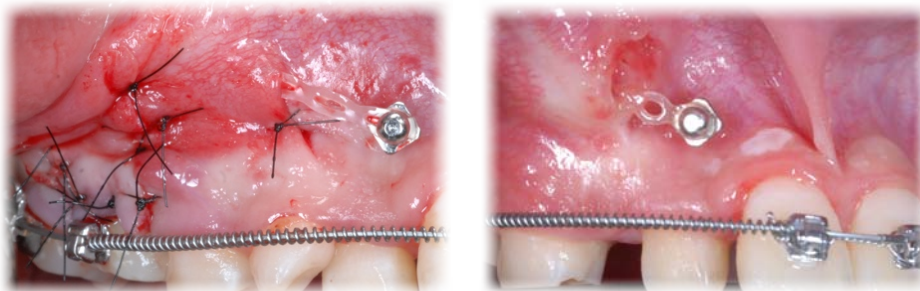
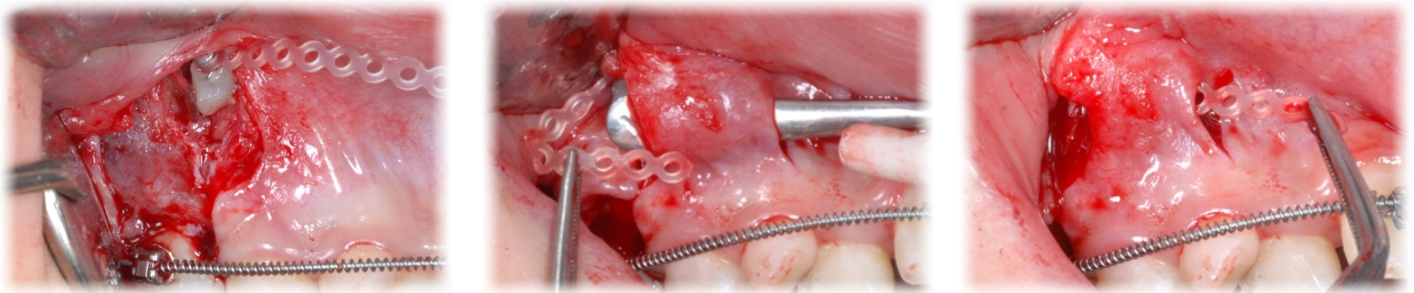


8m

Upper labially impacted cuspids

4

A closed eruption technique
Modified from **V**ertical **I**ncision **S**ubperiosteal **T**unnel **A**ccess
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 **O**рто**B**one**S**crew 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.

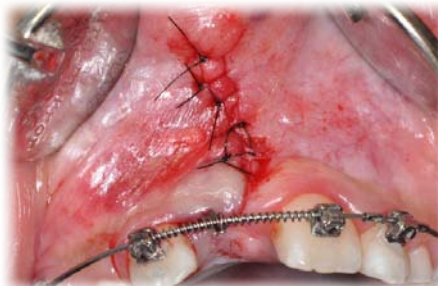
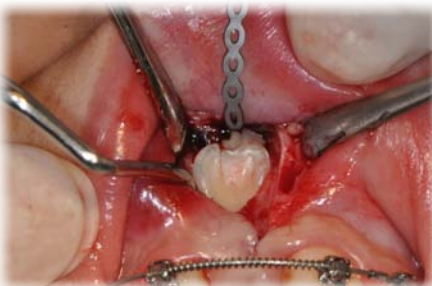
Upper labially impacted cuspids

5

A closed eruption technique
Modified from **V**ertical **I**ncision **S**ubperiosteal **T**unnel **A**ccess
VISTA (Dr. Homa Zadeh, USC)



The difficulty of this case is the position of the impacted incisor. The incisal edge was right in the anterior nasal spine. The treatment plan was to use a closed eruption technique modified from VISTA (vertical incision subperiosteal tunnel access). The key to the traction is the removal of the covering hard tissue. This modified technique is minimally invasive and relatively comfortable for patients with high impaction.



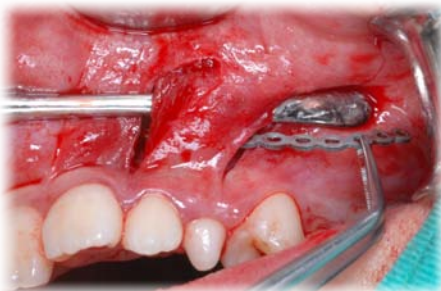
Upper labially impacted cuspids

6

A closed eruption technique
Modified from **V**ertical **I**ncision **S**ubperiosteal **T**unnel **A**ccess
VISTA (Dr. Homa Zadeh, USC)

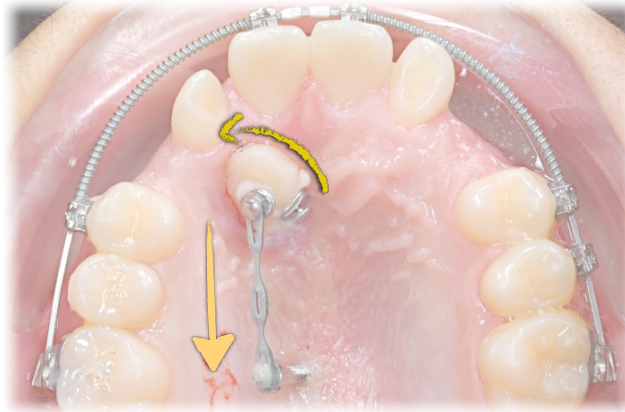


In this case, closed eruption technique was chosen for fast primary wound healing, more comfortable than APF. Unlike the traditional VISTA technique with only one vertical incision line, the double vertical incision lines could better expose the impacted tooth and create a clear field for removal of the bone on the traction route. This type of closed eruption technique, modified from VISTA, can not only avoid a 2-stage placement of **O**rtho**B**one**S**crew but also allow power chains connecting the **OBS** and the covered impacted cuspid.

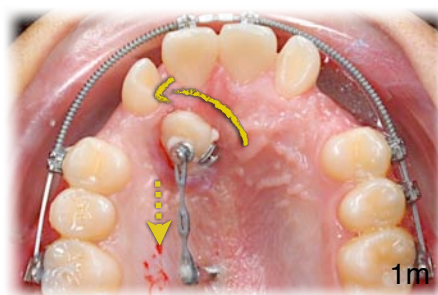


Upper palatally impacted cuspids

7

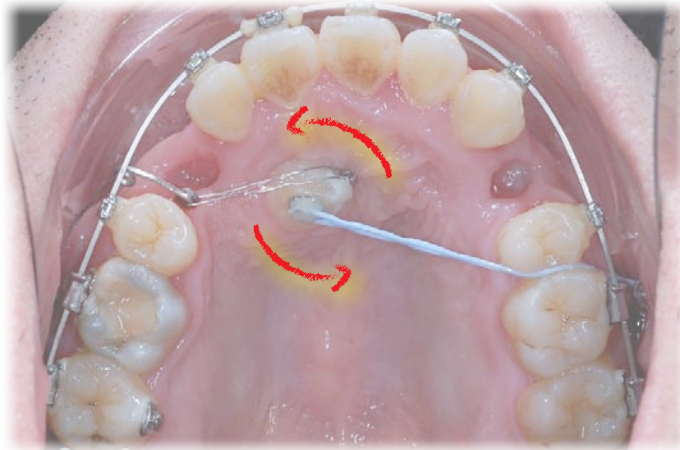


Firstly, the space was created by open coil spring. Secondly, the impacted canine was uncovered to allow auto-eruption. After the canine erupted, a rotating force system was created by a palatally inserted **OBS**, and an elastic chain connecting to the archwire. Once the impacted canine moved within the reach of a wire, a .014 CuNiTi was then placed for further alignment. Finally, the impacted canine was successfully moved into the arch .

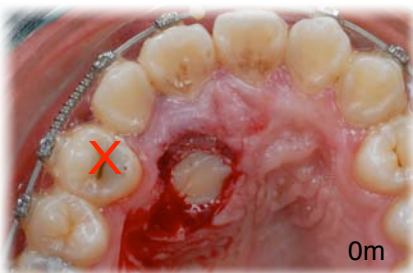


Upper palatally impacted cuspids

8

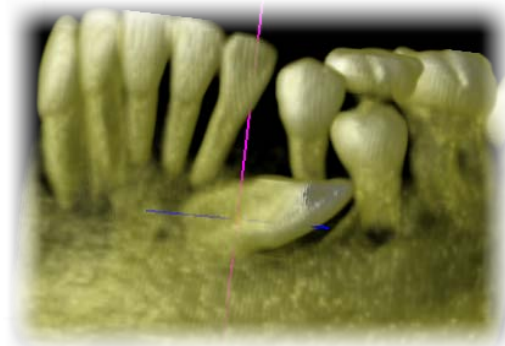


Firstly, the impacted canine was uncovered to allow auto-eruption. Secondly, the maxillary right 1st premolar was extracted. After the canine erupted, a rotating force system was created by a 3D lever arm stretching out from the right side of **OBS**, and an elastic chain connecting to the left side of **OBS**. Once the impacted canine moved within the reach of a wire, a .014 CuNiTi was then placed for further alignment. Finally, the impacted canine was successfully moved into the arch.



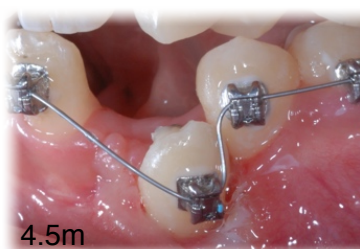
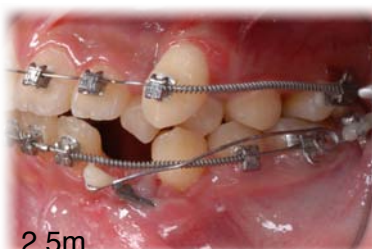
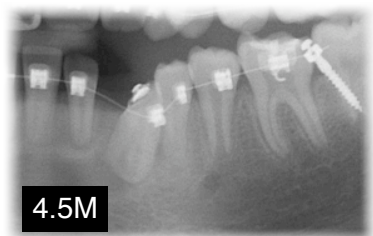
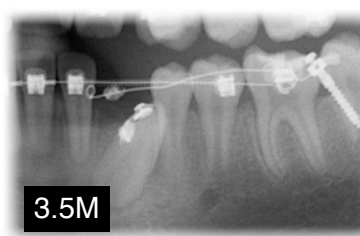
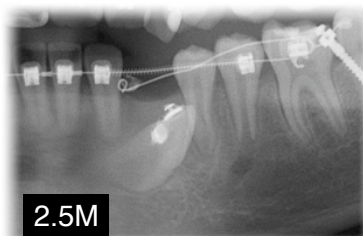
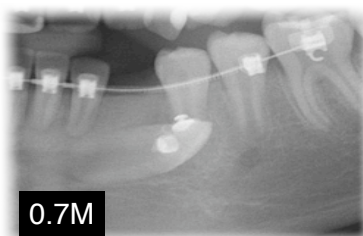
Lower horizontal impacted cuspids

9



Mechanics design:

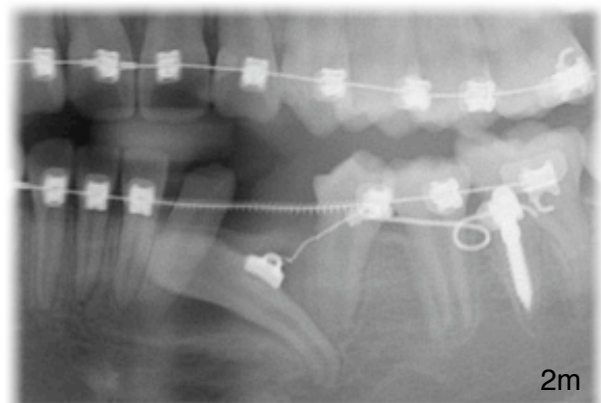
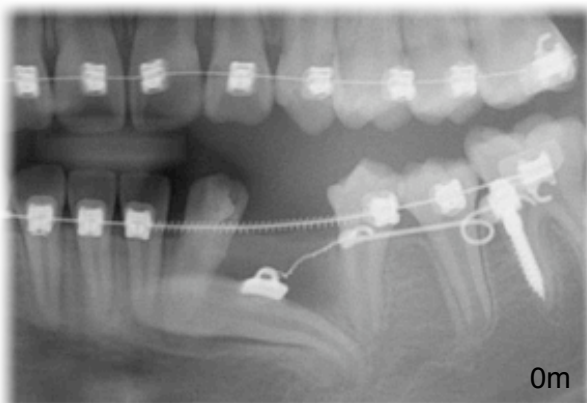
A 0.017 x 0.025-inch TMA lever arm was consisted of a helical coil on one end and helical attachment on the other end. When this lever arm was inserted in the square hole in the **OBS** (located at buccal shelf) and activated, it could build a force system which protracted the tip of canine first, then 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.





1st surgery

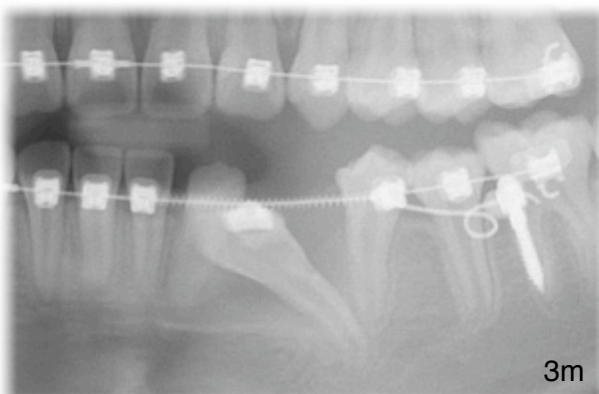
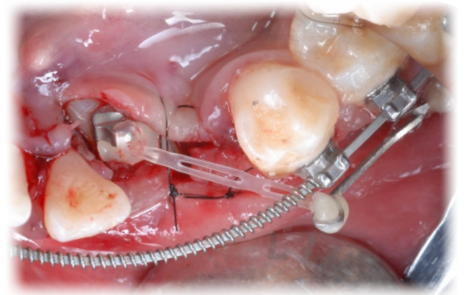
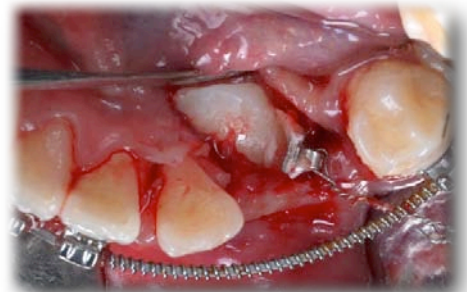
The force system was designed to deliver by a 0.019 x 0.025-inch SS lever arm and the **OBS** which was located at buccal shelf. When this lever arm was inserted in the square hole in the **OBS** and activated, it could upright the trans-alveolar canine first, then moved buccally, and finally elevated 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





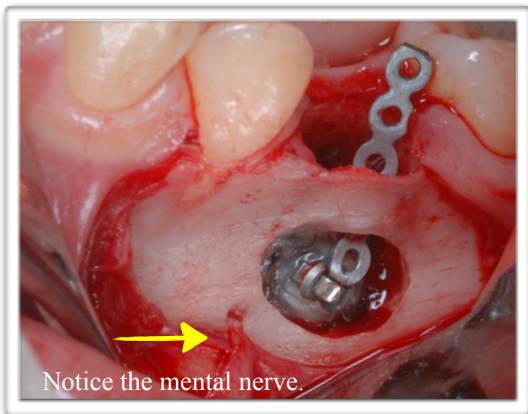
2nd surgery

to avoid cutting the mental nerve and sublingual 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.



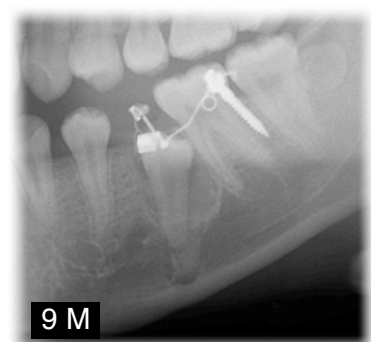
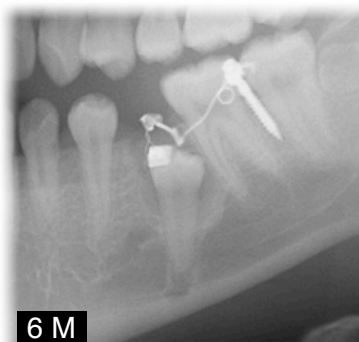
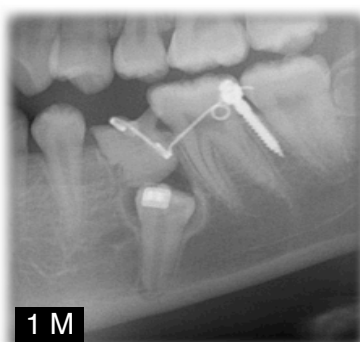
Lower impacted premolar

11



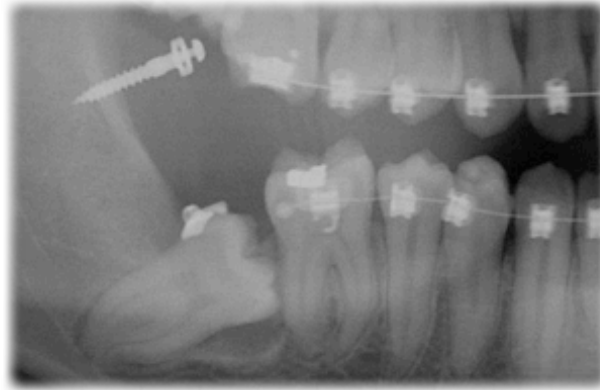
A 13-year old female had a lower impacted 2nd premolar, approximately 10 mm deep on the left side. The treatment plan was to extract the 2nd primary molar and pull out the 2nd premolar. During the treatment, the 2nd primary molar was first extracted, followed by bonding an eyelet bracket on the surgically 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 0.017 x 0.025-inch 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.

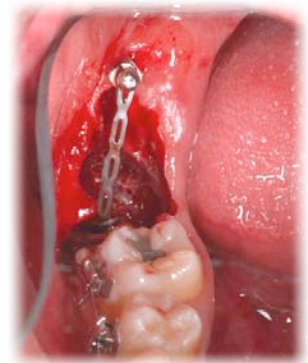


Lower impacted molar

12



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.



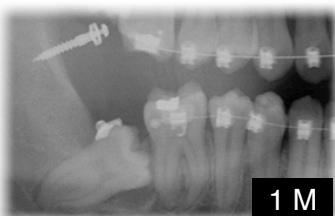
0m



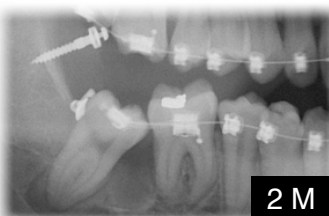
2m



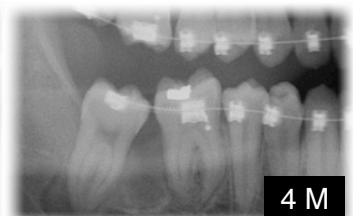
Initial



1 M



2 M



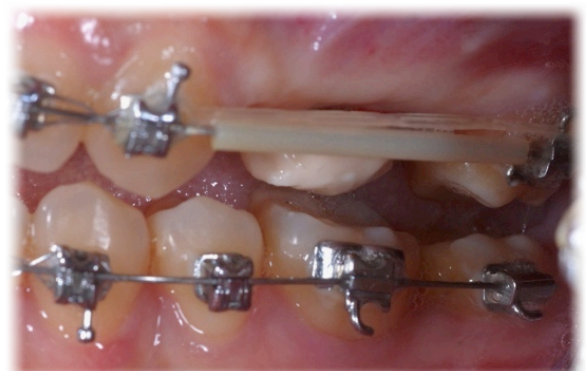
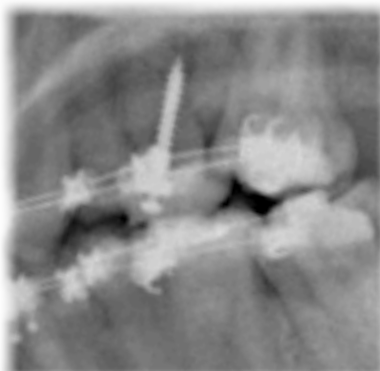
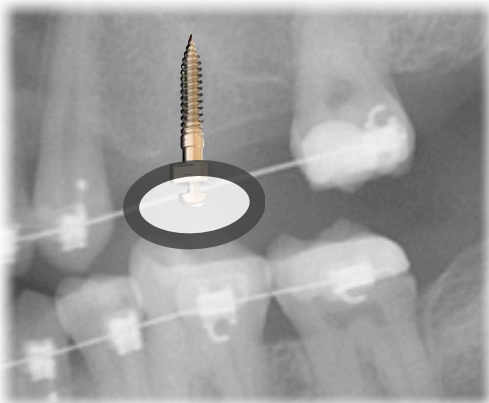
4 M

Molar intrusion

13



In this case the treatment plan was to use orthodontic treatment to intrude lower molars for subsequent implant therapy. However, it was very difficult to intrude the lower 1st molar in the absence of antagonist. Moreover, although a buccal miniscrew can provide an unilaterally intrusive force, it can also cause the 1st molar tipping buccally. Therefore, an OBS was placed in the upper missing area with its head covered by GIC. As such, an antagonist was created to provide an intrusive force when biting. In this way a lower molar intrusion was soon to be achieved.



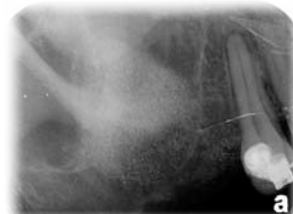
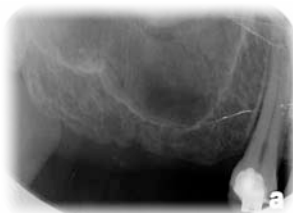
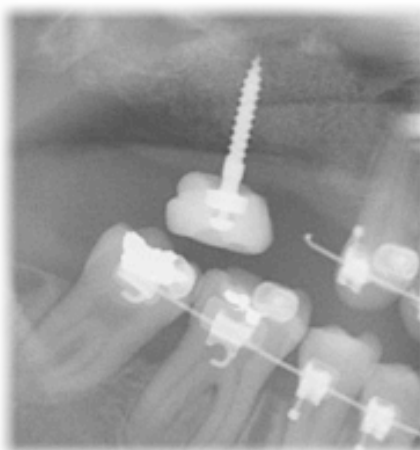
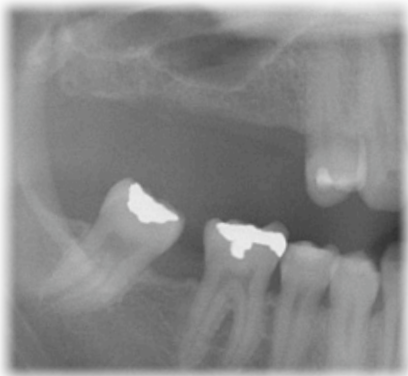
Molar intrusion

14

In this case the patient lost the upper right molars. The treatment plan indicated orthodontic treatment to level the lower molars followed by implant therapy. However, the absence of teeth over a long period of time had caused the upper sinus pneumatization. Furthermore, supraeruption of the mandibular molars had left little space for implant placement. Hence,

intrusion of the mandibular molars was indicated. The primary concerns included 1. lack of antagonistic force 2. difficulty in simultaneous miniscrew placements on both buccal and lingual side. Considering the objectives of current orthodontic treatment and future implant therapy, a lateral window opening was performed for sinus lifting and bone graft placement. Five months later an OBS was placed with its head covered by GIC to intrude lower molars. OBS was chosen as a preferred alternative

than a more permanent dental implant because the implant site couldn't be determined until the active orthodontic treatment was complete. In the event of loosening it is relatively easy to replace. Therefore, OBS provides an easy temporary solution to this type of ortho-implant combined cases.



六六大順

時間限定 4/30 止



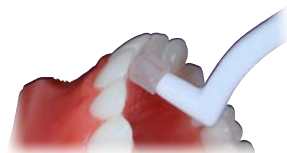
OBS 系列 六六折—

可客製化，完全依照醫師需要，現場搭配。
只要總價超過 **七萬五千七百元** 起，
即可享有 **六六** 折優待！

活動期間

再加贈 **Bite Turbo** 一組

原價兩千五百元。



凡參加六六大順方案的醫師，
仍可成為 **OBS** VIP 會員，
享受終身續購螺絲 VIP 價。

金牛頓藝術科技 03-5735676 新竹市建中一路25號2樓 (交大華廈)



購物簽證集點，優惠自由運用！
消費即獲VISA戳章！靈活選擇現金折抵、贈品兌換，更可升級VIP！

驚喜連連，四季不間斷！
每季皆有神秘贈品，等你來兌換！

2011全年度 湧傑奢華夢想旅程啟程
頂級VIP尊榮禮遇，隆重呈獻專屬禮品！

一、VIP享有本護照所有折扣優惠、贈品及VIP專屬禮品，2011整年度全商品定價8折，促銷商品再享95折。

二、VIP享有專屬預購，所有促銷案(不限本護照專案)皆可優先購物。

三、VIP專屬禮品將於每季初始憑VISA戳章數量兌換。

Season 1 : 3/20 ~ 5/25

- 1張VIP：萬寶龍STARWALK系列鋼珠筆
- 2張VIP：RIMOWA Class Flight 復古登機箱

Season 2 : 5/26 ~ 7/25

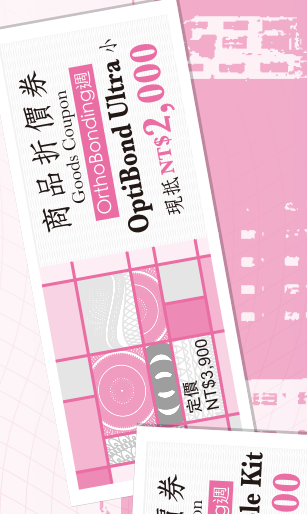
- 1張VIP：XBOX 360 4GB + Kinect + Adventure
- 2張VIP：RIMOWA SALSA DELUXE 29" 大行李箱
- 3張VIP：OSIM uSofa Petit

Season 3 : 7/26 ~ 9/25

- 2張VIP：RIMOWA TOPAS Business Trolley 登機箱
- 3張VIP：Macbook Air 11"

Season 4 : 9/26 ~ 12/25

- 3張VIP：RIMOWA TOPAS 32" 大行李箱
- 4張VIP：台北巴黎經濟艙來回機票一張



Kerr 套組No.01

Premisa
奈米三態聚合樹脂 / unidose(4g) 任選2組

OptiBond All-In-One
光照含氟全效型三合一黏著劑 / 1組

Surface Treatment Kit
極致亮澤拋光塑形組 / 1組

適用一般牙科
本專案消費可得**1**枚VISA戳章
特價**NT\$10,000** (定價NT\$14,300)

Kerr 套組No.02

Premisa
奈米三態聚合樹脂 / syringe(4g) 3組

OptiBond S
全功能二合一黏著劑 / 1組

Surface Treatment Kit
極致亮澤拋光塑形組 / 1組

適用一般牙科
本專案消費可得**1**枚VISA戳章
特價**NT\$10,000** (定價NT\$13,700)

Kerr 套組No.05

CompoThixo
超進化解脂塑形 魔術震動棒 / 1組(4 tips)

適用一般牙科
本專案消費可得**1**枚VISA戳章
特價**NT\$11,000** (定價NT\$15,000)

SybronEndo 套組No.06

Elements Diagnostic Unit
元素系列 第四代小衛星根管診斷斷機 / 1台

K-File
超彈性根管銼針 / 任選5盒

Soft Clamp
超舒適彈性橡皮障固定夾 / 1組(5's)

適用根管診斷
本專案消費可得**4**枚VISA戳章
折抵**NT\$28,000** (定價NT\$75,700)

Kerr 套組No.03

Herculite Precise
超手感奈米變色龍樹脂 / unidose(2g) 任選2組

OptiBond All-In-One
光照含氟全效型三合一黏著劑 / 1組

Carbide Bur FG332
高品質碳鋼磨針(50's)

Carbide Bur FG331
高品質碳鋼磨針(50's)

適用一般牙科
本專案消費可得**1**枚VISA戳章
特價**NT\$10,000** (定價NT\$13,600)

SybronEndo 套組No.07

Elements Apex Locator
元素系列 第四代根管長度測量機 / 1台

DG 16
根管專用探針 / 1支

Soft Clamp
超舒適彈性橡皮障固定夾 / 1組(5's)

適用根管診斷
本專案消費可得**3**枚VISA戳章
折抵**NT\$18,000** (定價NT\$56,400)

Kerr 套組No.04

Herculite Precise
超手感奈米變色龍樹脂 / syringe(4g) 任選2組

OptiBond All-In-One
光照含氟全效型三合一黏著劑 / 1組

Surface Treatment Kit
極致亮澤拋光塑形組 / 1組

適用一般牙科
本專案消費可得**1**枚VISA戳章
特價**NT\$10,000** (定價NT\$13,700)

SybronEndo 套組No.08

TF S & L Pack
旋轉金鋼鑽銼根管銼針 / 2盒

LA Axxess
根管冠部擴大器械 / 1組

DG 16
根管專用探針 / 1支

Soft Clamp
超舒適彈性橡皮障固定夾 / 2組(10's)

適用根管清潔塑型
本專案消費可得**1**枚VISA戳章
折抵**NT\$4,000** (定價NT\$14,800)

Ormco 套組No.09

Damon 3MX
戴蒙快速矯正器 / 10人份

Gingivally Offset Bondable Tube
加長型黏著式矯正類側管 / 4象限(40's)

適用齒顎矯正治療
本專案消費可得**8**枚VISA戳章
折抵**NT\$40,000** (定價NT\$131,600)

Ormco 套組No.10

Damon 3MX
戴蒙快速矯正器 / 10人份

Accent Bondable Tube
喇叭型迷你你焊接式矯正類側管 / 4象限(40's)

適用齒顎矯正治療
本專案消費可得**8**枚VISA戳章
折抵**NT\$40,000** (定價NT\$131,600)

Ormco 套組No.11

Damon Q
迷你舒適型戴蒙快速矯正器 / 10人份

Copper Ni-Ti Archwire
超感溫性鎳鈦合金線 / 1盒(10's)

Low-Friction TMA Archwire
鎳鈦合金反向弧形矯正線 / 1盒(10's)

Ni-Ti Rev Curve w/20 Ant
鎳鈦合金線 / 1盒(5's)

TI-NB Finishing Archwire
矯正完成期鈦鎳合金線 / 1盒(10's)

適用齒顎矯正治療
本專案消費可得**8**枚VISA戳章
折抵**NT\$50,000** (定價NT\$152,000)

Ormco 套組No.12

Damon Q
迷你舒適型戴蒙快速矯正器 / 10人份

Damon Q Drop-in Hook
戴蒙矯正器專用插入式掛鉤 / 1盒

Damon Q Opening Tool
戴蒙專用矯正器械 / 1支

Grengloo or Enlight Sample Kit
新一代變色光照矯正黏著組 / 1組
或光照含氟矯正專用黏著組 / 1組

適用齒顎矯正治療
本專案消費可得**8**枚VISA戳章
折抵**NT\$50,000** (定價NT\$149,200)

阻生齒的軟組織處理面面觀

蘇筌瑋 徐玉玲 張慧男

治

治療阻生齒與其他一般的矯正病患治療時間相比，往往需要較長的治療時間，這類病患的治療也涉及牙周手術與矯正科的參與協同。從術前診斷、正確的治療計畫到阻生齒暴露術式的選擇需與矯正的互相配合，有時還需要於矯正中及矯正後的簡單手術參與，才能進一步達到美學的要求。我們在臨床上遇到阻生齒的機會其實不低，平均約 1%，其中上下顎比例約四比一；上顎阻生齒中發生在顎側的比例較高；術式考量也與頰側完全不同。以下為各位醫師介紹我們在臨床上常用的四種術式。



Fig. 1. 此案例在左上顎側有一顆阻生犬齒，從斷層可以清楚的瞭解阻生齒的相關位置。



Fig. 2. 顎側阻生齒我們使用 open window technique，從圖上可看到我們拔除了乳犬齒，同時將阻生犬齒的牙冠暴露，以及移除將來犬齒往外牽引路徑的皮質骨。之後傷口覆蓋敷料，等待阻生犬齒自己萌發。

1. Open window technique

對於顎側阻生齒的治療，Dr. Kokich¹ 建議可以在矯正治療開始前就先進行暴露手術。文獻指出阻生齒在經由其上方軟硬組織去除而露出後會自動萌發，在此同時可利用矯正將所需要的空間騰出。案例為 11 歲 8 個月女生在左上顎側有一顆阻生犬齒（Fig. 1），我們使用 open window technique 將阻生齒暴露（Fig. 2）。傷口癒合移除敷料後，接下來要讓暴露的阻生齒順利地牽引至理想位置。**第一個關鍵：**不要在鄰近牽引路線的牙齒上黏著矯正器。目的是要讓阻生牙的鄰牙成為一個 free body，如此一來可以避免鄰牙的牙根阻礙到阻生齒萌發的路徑。另外，也相對降低鄰牙牙根吸收的機會。

第二個關鍵：設計力量系統。在阻生齒牙冠露出後，我們可以依照牙齒的角度方位來給與轉向或移動的力量方向，而力量來源則可以來自主線、其他牙齒，或是骨釘（Fig. 3-4）。當阻生齒接近牙槽位置時，臨床上我們容易看到軟組織覆蓋住牙冠讓我們無法放置矯正器在牙冠的理想位置上，這時可以使用雷射做簡單的牙齦切除術（Fig. 5），如此我們就可以馬上黏著矯正器（Fig. 6）。另外，要注意的是從顎側牽引出來的阻生牙儘管牙冠已經到達牙弓的位置，但往往牙根都還在顎側的方向沒有完全擺正。因此，我們會選用 low torque 矯正器或是 torquing spring，使牙根能夠往頰側移動。這個問題常常造成許多臨床上顎側阻生牙拉出後，仍然感覺該區的前庭軟組織相當塌陷的原因。想要得到美觀的成果，就要好好掌握軟組織的處理與牙根的角度（Fig. 7-8）。

蘇荃璋 醫師（左），貝多芬矯正課程暨植牙論壇講師
張慧男 醫師（中），貝多芬齒顎矯正中心負責人
徐玉玲 醫師（右），貝多芬矯正課程暨植牙論壇講師

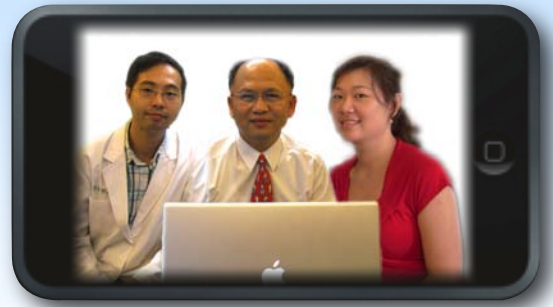


Fig. 3. 利用骨釘將阻生犬齒先往後移動，再利用 power chain 掛在黏於犬齒頰側的 button 往第一大臼齒拉，造成順時針旋轉。



Fig. 4. 換回軟線穿過阻生犬齒上的 eyelet，為了避免軟線滑開，我們在 #22 的遠心用樹脂做出倒凹讓軟線可以卡住。



Fig. 5. 當阻生齒漸漸往頰側移動，有時候軟組織會覆蓋在阻生齒的牙冠，可使用雷射做局部的牙齦切除，方便矯正器的黏著。



Fig. 6. 黏著矯正器時，需要考慮到從顎側往頰側拉的阻生齒，牙根仍然在比較顎側，需要矯正施力將牙根往頰側移動，此時我們會選擇 high torque 矯正器倒黏，提供 low torque。



Fig. 7. 治療前左側口內照。



Fig. 8. 矯正 22 個月，治療後左側口內照。

2. Closed eruption technique

在頰側阻生齒處理的術式中，如果阻生齒牙冠位置於 MGJ 附近，則此時多半考量 closed eruption technique 或是 apically positioned flap 來 approach。根據 Dr. Kokich² 在 2004 年的文章中指出，當阻生齒太高位時以 closed eruption technique 來處理較為合適。

案例為一 13 歲 7 個月的女性³，在左上顎側有一約 14mm 垂直高位的阻生犬齒（Fig. 9）。矯正騰出空間 4 個月後，我們著手進行阻生齒牽引手術，因為阻生齒比

較高位（高於 MGJ），選擇 closed eruption technique（Fig. 10）。由於手術中黏著的矯正器擔心術後脫落，我們通常會黏著兩顆 button 同時附以不同顏色的 power chain 以利區分（Fig. 11）。

牽引阻生齒的力量來自於置放在左側 infra-zygomatic crest 的骨釘以及延伸出來的 lever arm（17x25 TMA 或 19x25 SS wire），如此可保持矯正主線不會受到外力而變形（Fig. 12），將 flap primary closure（Fig. 13），之後只要調整 lever arm 來 activate 牽引的力量（Fig. 14）。

在 forced eruption 拉出阻生齒的過程中我們觀察到軟組織有三個階段的變化⁴：Stage 1. Gingival collar redness；Stage 2. The red patch；Stage 3. Keratinization。

Stage 1. Gingival collar redness：在 Forced eruption 的初期，阻生齒 gingival margin 的周圍會看到一圈鮮紅色的牙肉，此處為 pocket 內側 non-keratinized epithelium tissue 往外翻出所呈現的色澤（Fig. 15）。通常此時會有較深的 pocket depth，在此階段我們容易誤認為傷口癒合不佳或是牙周組織發炎，如果病人傷口清潔狀況不錯，

此階段其實不太會有 probing on bleeding。我們可以告訴病人在這個階段不用太擔心，是正常的現象。

Stage 2. The red patch：此時阻生齒仍繼續往下施力 eruption，但臨床上可以觀察到覆蓋到牙冠上的鮮紅色牙肉慢慢的回復。此時的 probing depth 從初期的約 5mm 上下恢復為較為正常的 3mm 上下，但因仍為 immature 的 erythematous non-keratinized epithelium tissue，所以色澤上仍較泛紅，與週邊的角化牙齦偏粉紅色的色澤仍可區分（Fig. 16）。



Fig. 9. 13 歲 7 個月女性，左上顎頰側有一約 14mm 垂直高位的阻生犬齒。



Fig. 10. 沿著阻生齒兩旁做垂直切線將 flap 翻開，暴露出阻生齒後將 CEJ 以上的皮質骨去除。

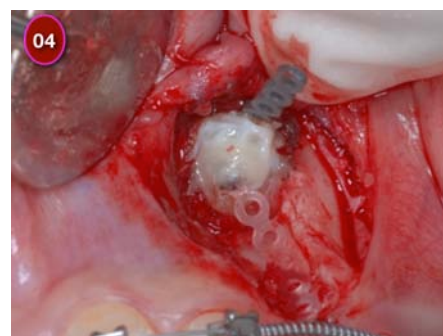


Fig. 11. 分別在阻生齒的頰側以及顎側黏上鈕扣，綁上不同顏色的 power chain 做記號。

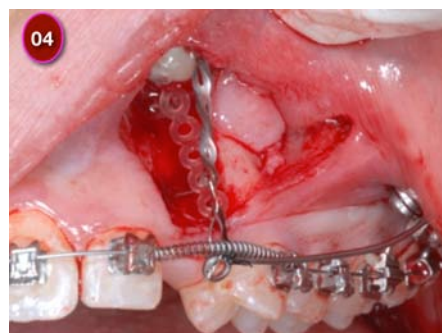


Fig. 12. 在左側 infra-zygomatic crest 打上骨釘，連接 lever arm 出來後將 power chain 綁在 lever arm 上，提供阻生齒往下牽引的力量。



Fig. 13. 將 flap 做 primary closure。



Fig. 14. 矯正治療第 11 個月，將 lever arm 往下彎折 activate 提供阻生齒繼續向下的力量。

Stage 3. Keratinization：當牙齒萌發到定位不再有向下的施力後，周圍的牙齦組織開始進行 proliferative 與 maturing 的過程，牙齦的角化約需 28~42 天。在 finish stage 我們仍然要去注意阻生齒牙根的角度，因為頰側阻生齒的牙根在此階段往往仍偏向頰側，所以 root convexity 仍然不自然，需要再去調整牙齒的 inclination。

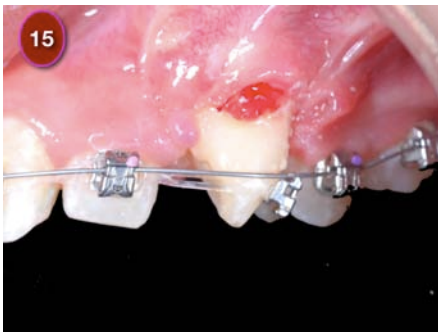


Fig. 15. 矯正第 15 個月，Stage 1. Gingival collar redness。阻生齒 gingival margin 的周圍有一圈鮮紅色的牙肉，此處為 pocket 內側因 forced eruption 而外翻出的 non-keratinized eppithelium tissue 的色澤。



Fig. 16. 矯正第 19 個月，Stage 2. The red patch。覆蓋到牙冠上的鮮紅色牙肉慢慢退縮回正常的 probing depth，仍為 immature erythematous non-keratinized epithelium，色澤較泛紅。

3. Apically positioned flap

頰側阻生齒的位置如果在接近或低於 MGJ，Dr. Kokich² 建議使用 apically positioned flap 的方式處理。9 歲 5 個月的 case⁵，她右上正中門齒往唇側突出（Fig. 17-18），因此為了增加將來角化牙齦的量，手術暴露阻生齒，黏上鈕扣及橡皮筋後（Fig. 19-20），在縫合時我們將 flap 往牙根處位移一些再固定（Fig. 21）。矯正治療完成後，我們可以看到術後產生的 scar 比較明顯（Fig. 22-23）。

在這個病例中我們可以比較出 APF 與 closed eruption technique 的優缺點³：如果使用 APF，能夠保持前庭的深度，增加角化牙齦的寬度，但缺點是傷口會比較大。如果使用 closed eruption，雖然可以得到比較小的傷口（primary closure），但相對的角化牙齦的寬度比較不能增加，另外可能會讓前庭深度減小。因此，回到這個病例，在術式上的選擇，我們仍會使用 APF，但在 flap 的 design 方面，我們會建議切平行的 vertical incision，這樣 flap 往牙根處置位的時候，incision line 比較能夠縫得密合，以減少 scar 的產生。



Fig. 17. 9 歲 5 個月女生，右上正中門齒往唇側突出。



Fig. 18. 治療前口內照。



Fig. 19. 矯正撐開正中門齒的空間後，手術暴露正中門牙阻生齒。



Fig. 20. 在阻生齒牙冠唇面黏上鈕扣以及套上 power chain。

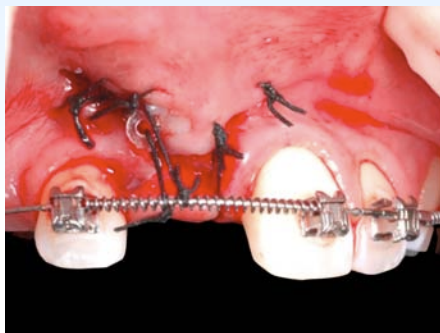


Fig. 21. 將 flap 往牙根置位 (apically positioned) 縫合。



Fig. 22. 矯正 30 個月，治療後口內照。術後產生的 scar 明顯。使用 APF，優點是能夠保持前庭深度，增加角化牙齦的寬度，缺點是術後仍會有 scar，flap design 我們建議可作較平行的 vertical incision，flap 往牙根置位的時候較能縫得密合，減少 scar 產生。



Fig. 23. 矯正 30 個月、治療後 PANO。

4. Vertical Incision Subperiosteal Tunnel Access

隨著處理阻生齒經驗增加，我們也不斷地思索如何能夠再改進 flap design。以下案例說明如何運用南加大的 Dr. Homa Zadeh 發明的 VISTA 術式⁶ (Vertical Vestibular Incision Subperiosteal Tunnel Access，垂直前庭切線骨膜下隧道法)，將 VISTA 應用在阻生齒的軟組織處理，達到最新最完善的傷口處理。

案例有一顆左上犬齒阻生在正中門齒唇側 (Fig. 24)，我們的計畫是手術暴露出阻生齒後去除牽引路徑上的骨頭，牽引力量的來源是從同側 infra-zygomatic crest 上的骨釘將犬齒拉到定位 (Fig. 25)。flap design 我們使用 VISTA 術式，首先從斷層標定阻生齒的相對高度，然後沿著左上正中門齒遠心前庭區作垂直切線 (Fig. 26)，沒有水平的切線的目的，是希望皮瓣盡量保持良好的血管供應。然後使用骨膜起子從垂直切線進入將皮瓣下骨膜掀開暴露出阻生齒 (Fig. 27)。暴露出來後，將覆蓋住牙冠上面到 CEJ 以上的骨頭移除。接下來，在乳犬齒前庭區，位於牙弓轉角處作第二條垂直切線，暴露出阻生齒牙冠將來需要往遠心移動路徑中間的骨頭，作 decorticotomy 的動作。當牙冠完整暴露後，在唇側黏上 button 並附著 power chain (Fig. 28)，並將 power chain 的另外一頭從第二條垂直切線處伸出 (Fig. 29)，使 power chain 可綁在位於左



Fig. 24. 11 歲 01 個月男生，在左上唇側有一顆阻生犬齒牙冠往近心傾斜到正中門齒牙根區。



Fig. 25. 術前先在照片上設計 flap design 以及力量的來源。我們預定使用 Vertical Incision Subperiosteal Tunnel Access (VISTA) 術式，來進行阻生齒牽引的手術。



Fig. 26. 在左上正中門齒遠心前庭處作第一道垂直切線，將皮瓣掀開游離暴露出阻生犬齒後，將覆蓋在牙冠上的皮質骨去除。

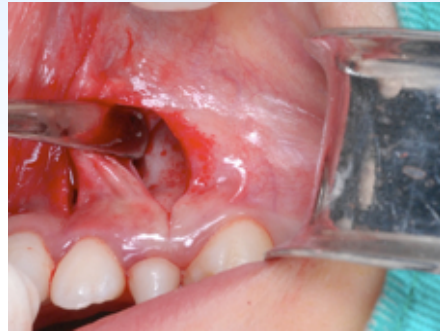


Fig. 27. 在犬齒前庭區（牙弓轉角處）作第二道垂直切線，游離皮瓣作隧道通往第一道切線處，並將此處阻生齒需要遠心移動路徑中間的骨頭作修磨。

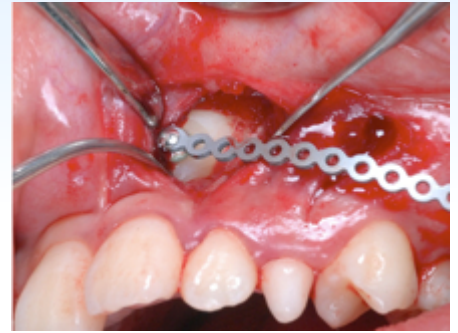


Fig. 28. 在阻生犬齒牙冠上黏著鈕扣以及綁上 power chain。



Fig. 29. 將 power chain 的另一頭沿著皮瓣下隧道往第二道切線處拉出。



Fig. 30. power chain 往遠心套在 infra-zygomatic crest 處的骨釘上提供阻生犬齒往後牽引的力量來源。兩道垂直切線分別以 Nylon 6-0 縫線縫合。

側 ingra-zygomatic area 的骨釘上，提供往遠心牽引的力量，兩道垂直切線使用 Nylon 6-0 縫合（Fig. 30）。與 APF 及 closed eruption technique 相比，VISTA 的手術操作過程雖然比較困難，但是 flap 縫合反而比較簡單，同時傷口明顯比較小，能帶給病人較舒適的感覺。

結論

阻生齒的處理，成功的要訣有三，**第一是術前需要 3D 斷層作精確的診斷**；**第二是適當的 flap design**；**第三是矯正力量來源的設計**。我們近幾年累積大量處理阻生齒的經驗，並透過每個步驟的照相，比較術前與術後的差異，以及參與各種繼續教育的學習，讓我們可以運用更好的術式，能讓阻生齒的患者得到最新最完善的治療。

References

1. Kokich VG, Surgical and Orthodontic Management of Impacted Maxillary Canines, Am J Orthod Dentofacial Orthop. 2004; 126(3):278-83
2. Kokich VG, Mathews DA. Impacted Teeth: Surgical and Orthodontic Considerations. Orthodontics and dentofacial orthopedics. 2001; 395-422
3. Huang CH, Chang CH, Roberts WE. High Maxillary Canine Impaction with Mesial and Palatal Displacement. News & Trends in Orthodontics. 2011; 21:38-49
4. Mantzikos T, Shamus I. Forced Eruption and Implant Site Development: An Osteophysiologic Response. Am J Orthod Dentofacial Orthop. 1999; 115(5):583-91.
5. Hsu YL, Chang CH, Roberts WE. Early Intervention for Multiple Impacted Teeth: More Comprehensive Clinical Assessment with the iSAS Method. News & Trends in Orthodontics. 2010; 20:32-46.
6. Chang HF, Chang CH, Vertical Vertibular Incision Subperiosteal Tunnel Access. News & Trends in Orthodontics. 2010; 20:82-85.



善用科技以促進與患者溝通

—貝多芬矯正中心實例—

金牛頓教育公關經理
黃思涵

「有好的內容不保證是一場成功的演講」，

…如何把治療計畫用一種簡單、清楚的方式表達出來，讓不管是病人或是媽媽甚至是阿嬤都可以了解治療的重要性。

張慧男 醫師

成功秘訣：患者溝通

要如何讓病患感覺到他的問題有經過徹底的了解分析，並且可以簡單輕鬆的處理，而且之後不會讓荷包瘦了一大圈，是牙醫師共同的課題。當張慧男醫師十幾年前從美國印第安那普渡大學拿到矯正博士後，選擇在新竹開業時，第一個月他只有兩個病人。當時對張醫師來說，這是一個沈重的提醒：提供好的治療給病人固然重要，但是這並不足以完全滿足病人的需求，也難以在眾多牙醫師中給病人留下深刻印象。他認為，「如果醫師和助理沒有辦法透過有效的溝通讓病人接受治療，再好的治療也沒有用」。

身為貝多芬矯正中心的負責人，張醫師常說他在還沒有成為矯正醫師和專業講師之前，原本想要成為一名

傳教士。依他的觀點，與病患的溝通就像是對病人做一場演講。「有好的內容不保證是一場成功的演講」，他說。相反地，重要的是如何把治療計畫用一種簡單、清楚的方式表達出來，讓不管是病人或是媽媽，甚至是阿嬤都可以了解治療的重要性。透過科技的協助，和患者溝通比以往更講求視覺化的呈現，也更容易讓患者了解。

科技輔助的溝通- 更視覺化，更貼近人心

大部分的人都同意科技在現代社會已經徹底改變了醫師和病人間的溝通。善用科技可以提昇診所效率，確保一致性，減低成本並因而創造成功。在貝多芬通常一



張慧男醫師（圖右）利用 iMac 與 iPad 向來自不同國家的醫師解釋牙科矯正案例

個診次為五個小時，在這段期間醫師要看相當多各類型病例。為此，科技的運用就是一個很重要的工具，確保與病患的溝通時能夠提供充分、簡明的資訊，同時兼顧效率的考量。貝多芬的衛教就是一個很好的例子來說明科技是如何輔助我們與病患進行溝通。

Mac + Keynote- 視覺效果最大化

傳統上認為所謂與病人的溝通就是讓醫師和病人建立一個親近的關係。在貝多芬大部分與病人的溝通都是透過助理，和病人以及家屬作為溝通的橋樑。舉例來說，通常在一個一小時的免費諮詢時段裡，醫師大概會花兩次各五分鐘的時間，第一次檢查病人口腔的情況，第二次透過蘋果電腦上簡報軟體 **Keynote** 來向病人和家屬詳細解釋病人的治療計畫。剩下的時間就是由助理蒐集病人的個人基本資料，以及臨床所需的資訊，並且回答病人針對療程、治療種類以及費用等等相關問題。助理首先利用 **Keynote** 以五分鐘的時間介紹接下來一個小時的諮詢所要包含的內容，接著就開始進行照相以及拍攝 X 光片。資料蒐集完後，助理就會開始把剛才蒐集的照片和影像，整理到診所標準的 **Keynote** 病例格式裡。10-15 分鐘後病人就可以馬上在目前最大的 27 吋蘋果電腦上看到自己的照片。「我們為什麼要用 27 吋的電腦，而不是小一點的 21.5 吋，就是因為我們希望病人在高解析度的電腦上看到自己牙齒的問題時，能夠留下一個深刻的印象」，也有助於醫師做更明確診斷說明，張醫師表示。除了讓病人看到自己的照片之外，張醫師也會立即告訴助理這個病人是屬於哪一種類型，所以助理可以立刻從現有的示範病例類別中挑出類似的病例，並且展示治療前後的改變。張醫師解釋：「除了靜態的照片之外，我們還利用動態的電腦模擬軟體 **Morpheus** 來為病人展示類似病例治療前後的變化。這些動態影片可以清楚表現牙齒的移動，可以用很簡單、清楚的方式的幫助病人了解矯正醫師是如何把牙齒排整齊，並且關閉多餘的空間」。此外，**Keynote** 還可以提供的優點是它使解說者可以直接從簡報中無間斷的播放影片，不像 **Powerpoint** 需要另外點擊超連結，所以助理可以很順暢的展示治療前後的效果，並且清楚的解釋各種不同治療方式的細節以及過程。

張醫師進一步補充，「我們也用很多影片來說明我們的治療過程」。舉例來說，維持口腔的清潔衛生是維

護牙齒健康很重要的一環。在我們診所固定會為病患講解該如何正確的刷牙。相對於一般充滿文字，以條列式為呈現方式的簡報，我們在 **Keynote** 簡報裡使用清楚的標題，高解析度的照片和簡短的视频，來創造一個以影像為主的簡報。張醫師從他多年教授專業演講技巧的背景解釋，「我們不需要使用很複雜的設備才能創造出一個視覺化的簡報。透過視覺化的方式我們希望觀眾可以很清晰、簡單的看到我們所要表達的意思」。



牙科助理利用 iMac 上的 Keynote 提供病人初診諮詢



病人正在 iPad 上觀看橡皮筋使用的示範影片



病人可以一邊躺在椅子上，一邊觀看自己的矯正檔案



Mac + Keynote-一致性、高效率

除了讓病患更輕鬆、容易了解療程之外，貝多芬開始使用標準化的患者諮詢流程是為了要確認每一個諮詢的內容都能一致，且達到我們所要求的高品質。牙科診所經常要面臨的挑戰是診所助理的流動，以及隨之增加的人員訓練成本。張醫師主張：「病人諮詢應該要像看圖說故事一般，簡單又清楚。我們對病人所講述的這個故事應該是正確且一致地」。為了要達到這個目標，「故事的內容應該可以輕易地由我們修改，但是不管是新進的助理或是資深的助理，講的應該都是一樣的故事」。

行動化科技-更以病患為中心，創造更有趣的醫療環境

我們一方面持續使用桌上型電腦和 Keynote 來做為我們最主要的病患諮詢工具，我們也開始嘗試使用 iPad 來和我們的病患溝通。因為大家實在太喜歡這個大玩具了！張醫師表示，「貝多芬總是很勇於嘗試新的科技來提昇我們和病人間的溝通。iPad 的廣受歡迎，以及它的輕便，讓我們相信它未來很有可能可以取代那些固定在診療椅旁邊，笨重又佔空間的電腦銀幕」。大部分的診所利用電腦螢幕或是電視螢幕只是被動的播放遠端電腦所傳送的影像，iPad 提供了一個更經濟，更有彈性的選

「我們不需要使用很複雜的設備才能創造出一個視覺化的簡報。透過視覺化的方式我們希望觀眾可以很清晰、簡單的看到我們所要表達的意思」。

張慧男 醫師

擇，讓我們不僅是可以呈現影像，還可以播放簡報，玩遊戲等等，提供更多元的使用經驗。

「目前我們已經把我們的衛教簡報轉成短片的形式，所以病人可以在等待的時候自行觀賞。病人可以選一個自己有興趣了解的主題，按照自己的速度來觀看學習。這樣的使用方式讓患者和他們的家人可以有更多的自由空間去探索治療相關的資訊，特別是那些有限的諮詢時間裡可能沒有完整解說到的資訊」。透過 iPad 來學習，相較於傳統的宣傳小冊子或是廣告單張，是更有趣也更完整。「如果你對牙科衛教沒有興趣的話，你也可以一邊坐在診療椅上玩玩最新的遊戲或者是一邊在臉書上告訴大家你的看牙經驗」，張醫師笑著強調說：「我們相信提供病人他們想要的，也就是最佳的治療和充分的資訊，並且是用一種有趣且吸引人的方式進行，我們可以創造出病人滿意的笑容」。

未來展望-開發

iPad/iPod touch/iPhone 應用程式

你知道怎麼使用橡皮筋嗎？最近經常聽到的迷你骨釘究竟是用來作什麼的呢？有很多這類的問題卻不知道該問誰嗎？貝多芬最近在與一組工程師合作，希望能夠在近期開發出一個針對蘋果掌上型的裝置 iPad/iPod touch/iPhone 上可以使用的應用程式。「iPad 這種讓你可以任何時間、任何地點都可以使用的特性，不僅是很吸引我們的病人，醫師也為之瘋狂」。張醫師補充說：「我們已經累積了很多很好的視覺化教材，幫助病人以及醫師更了解矯正。蘋果所提供的軟體平台，加上它優異的硬體設備，是我們選擇它作為我們未來最主要的溝通工具的兩大主因」。讓我們拭目以待這個新一代的溝通方式，讓看牙醫再也不是想到就害怕的事！

USC Comprehensive Surgical and Restorative Implant Training Program in Taiwan

南加大植牙專科進修課程 2011

時間:

7/9~7/10, 2011 (六, 日 - 演講與實作workshop)
8/14, 2011 (日 - 視訊教學)
9/17~9/18, 2011 (六, 日 - 演講與實作workshop)
10/2, 2011 (日 - 視訊教學)
11/12~11/13, 2011 (六, 日 - 演講與實作workshop)
12/11, 2011 (日 - 視訊教學)
1/25, 2012 (三 - 美國演講)
1/26, 2012 (四 - 美國可選修的cadaver workshop)
1/27~1/28, 2012 (五, 六 - 美國演講)
1/29, 2012 (日 - 美國可選修的cadaver workshop)
1/30, 2012 (一 - 美國演講, 畢業典禮)
9:00am - 6:00pm

地點: 集思交通部國際會議中心. 台北市中正區杭州南路一段二十四號. (2011年7月到12月)
Wilshire Grand Hotel. 930 Wilshire Blvd., Los Angeles, CA 90017. (2012年1月)

報名費: 台北和美國課程(包含USC牙醫學院發出的培訓證書)

6/1/11前報名:美金\$8500 • 6/1/11後報名:美金\$9000

台北課程(不含USC牙醫學院發出的培訓證書)

6/1/11前報名:美金\$5950 • 6/1/11後報名:美金\$6450

可選修的Cadaver Workshops on Bone and Soft Tissue Grafting課程(不含USC牙醫學院發出的培訓證書)

9/1/11前報名:每一堂課美金\$1115 • 11/1/11前報名:每一堂課美金\$1395 • 11/1/11後報名:每一堂課美金\$1595



南加大講員陣容

Homa Zadeh ★ Avishai Sadan ★ Baldwin Marchack ★ Casey Chen ★ Domenico Cascione
Ilan Rotstein ★ Yang Chai ★ Songtao Shi ★ Parish Sedghizadeh ★ Ramin Mahallati

演講嘉賓: Stephen Wallace ★ Lyndon Cooper ★ Fernando Rojas-Vizcaya ★ Clark Stanford

• 欲知詳情, 請與以下單位聯絡 •

USC

聯絡人: Julie • E-mail: julie.chen@usc.edu
電話: +1-213-821-5281 • 傳真: (07)615-0913
網址: www.uscdentalce.org

金牛頓藝術科技

聯絡人: 黃思涵 • Email: thhuang@newtonsa.com.tw
電話: (03)573-5676

Sinus Augmentation

Dr. Homayoun Zadeh



Dr. Homayoun Zadeh
Instructor, USC Implant
Training Program in Taiwan

一. 成功率（圖一 – 圖四）

植體放置在 sinus 的成功率平均值是 91.8%，sinus augmentation 後馬上植入植體的成功率和手術後三至六個月植入植體的成功率相當。放置的 bone graft 則以顆粒性的成功率大於整塊性的，至於自體骨異體骨或異種骨合成骨之間的成功率則沒太大區別。開窗處再以 membrane 覆蓋對於植體成功率大於沒覆蓋 membrane 的，而植體表面處理，rough surface 成功率大於 machine surface。

Systematic review of augmentation procedures of the maxillary sinus

- ▶ BioOss or Cersorb are as effective as autogenous bone
- ▶ There is no evidence that PRP improves the outcome of sinus lift procedure

Esposito M, Et al, Cochrane Database Syst Rev. 2010 Mar 17;3:CD008397.

二. Alveolar bone 不同高度的可行處理方式

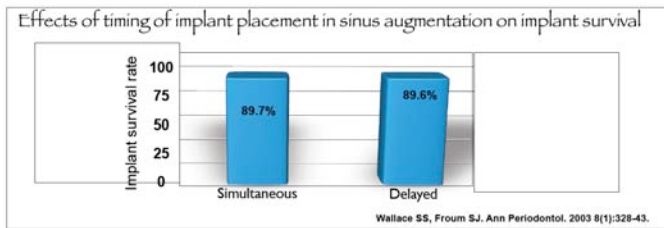
- (A) 3-6 mm：可用 crestal approach 去抬升 membrane，再植入 8 mm 的植體。
- (B) 1-5 mm：可開窗用 rigid barrier 抬升 membrane，即使不放骨粉也可成功。
- (C) 4-6 mm：可用短植體。

Systematic review of augmentation procedures of the maxillary sinus

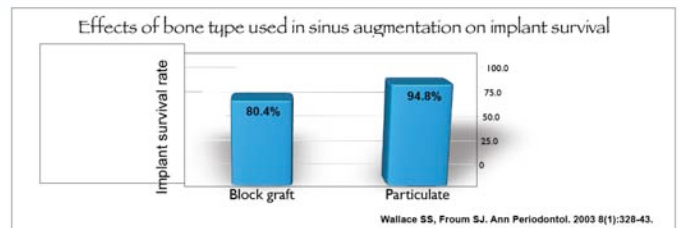
- Alveolar bone height of 3 to 6 mm:
 - ◆ Crestal approach to lift the sinus lining and placement of 8 mm implants leads to fewer complications
- Alveolar bone height of 1 to 5 mm:
 - ◆ Elevation of membrane with a rigid barrier without graft material is effective
- Alveolar bone height of 4 to 6 mm:
 - ◆ Short implants are effective

Esposito M, Et al, Cochrane Database Syst Rev. 2010 Mar 17;3:CD008397.

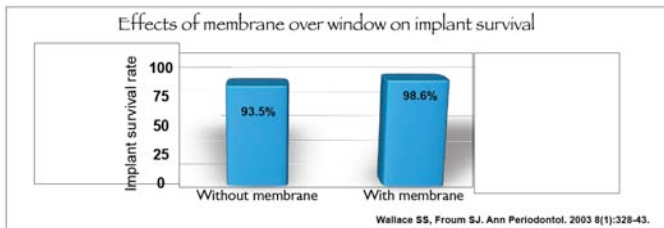
梁嘉元 醫師
當代牙醫診所
貝多芬矯正課程講師



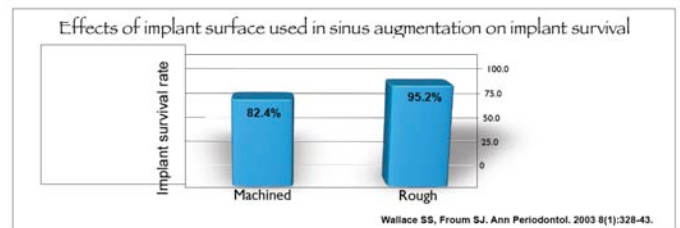
圖一



圖二



圖三



圖四

三. 手術方式

術前先給予病患 prophylactic antibiotics : 2g amoxicillin (如果 amoxicillin 有過敏就改給予 clindamycin, 但效果沒有 amoxicillin 好)。

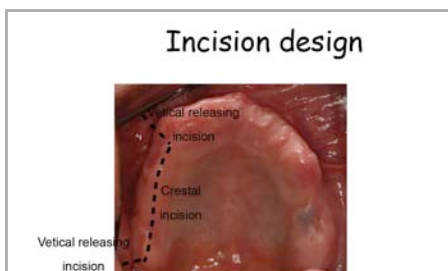
1. Soft tissue

先切 crestal incision, 再切 mesial vertical incision, 最後切 distal vertical incision (圖五)。

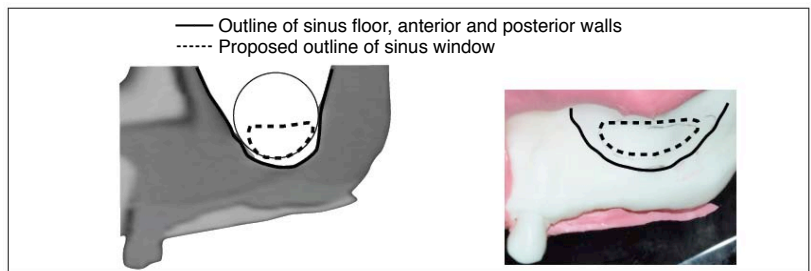
2. Bone

開窗處距離 sinus floor 約 2-3 mm (不要超過5 mm), 而開窗範圍要至少 7 mm, 以前開窗部位大多用 diamond bur 來修。自從 2006 年骨刀的發明, 運用骨刀來手術, 大大降低了 membrane 破裂的機率 (圖六)。

先用 rounded scraper 把開窗的範圍一層一層的把骨頭刮下 (刮下的 bone 可收集起來) 刮到可從骨頭看到 membrane 的透明度, 再換用 flat and cylindrical diamond-coated inserts, 沿著邊緣把那層薄薄的骨頭分離 (圖七), 再用 trumpet-shaped blunt 慢慢把 membrane 分離骨頭, 接著換 small curette (記得鈍頭朝 membrane, 銳



圖五

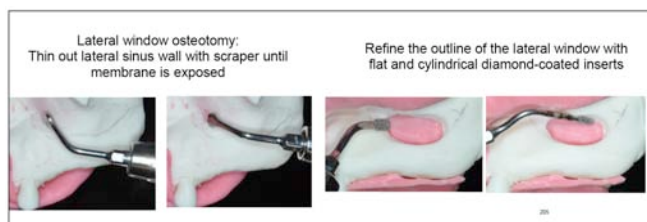


圖六

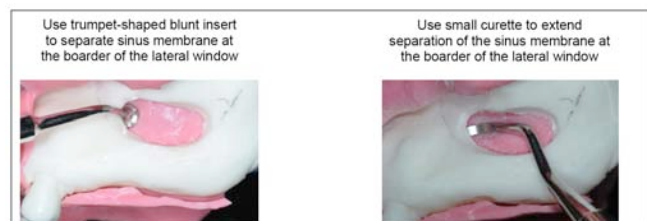
利那頭朝骨頭，才不會一不小心弄破 membrane），慢慢剝 membrane（圖八）。接下來，再用 large curette 把 membrane 抬起來，而 membrane 要整個抬升到 medial sinus wall（圖九），如果沒把 medial sinus wall 的 membrane 也抬升的話（圖十），會發生三大問題：1. medial sinus wall 被 membrane 所覆蓋住，無法提供主要長骨頭的來源，因為 lateral sinus wall 已被切掉了；2. 沒足夠的空間放 bone graft；3. 內側的 membrane 可能慢慢膨脹壓縮之前所抬的空間，也會壓迫植體使它鬆掉（圖十一）。

3. 植體處修型

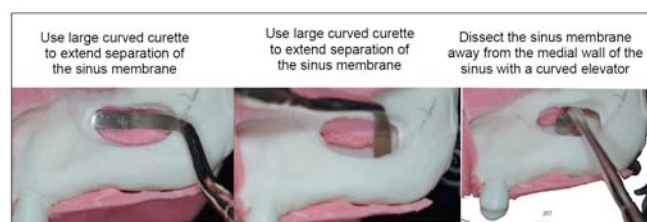
一般此處的骨頭厚度都不佳，但此厚度也是提供 implant stability 的最主要依靠，所以一般如果要放 5 mm



圖七



圖八



圖九

寬的植體，那就鑽到 4.7 mm 即可。如果直接鑽到 5 mm 那會太鬆，如果真的是太鬆那就要把植體 submerge 做二階。一般植入植體後如果 primary stability 好，就會做一階接 healing abutment 出來。

4. 放入骨粉

可用 3 c.c. 的針筒把骨粉打入，要 gently 的放入，不要擠壓（圖十二）。

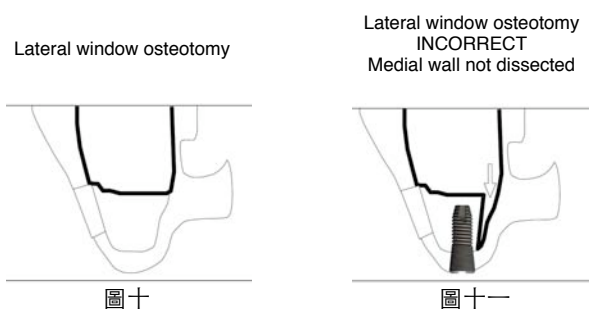
5. 放入植體

臨床 case 步驟，請參見圖十三至圖十七。

6. 放再生膜

再生膜要大於開窗處 3 mm，再生膜要乾乾的置放於開窗處。放置後再用生理食鹽水沖洗，如此可讓再生膜穩穩的貼附在開窗處（圖十八）。

7. 縫合（圖十九）



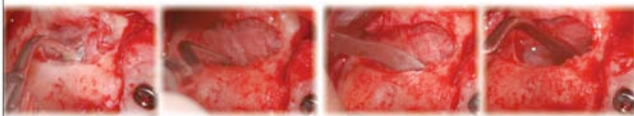
圖十

圖十一



圖十二

Dissection of sinus membrane



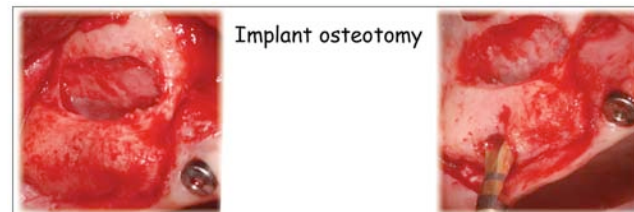
圖十三：步驟一

Bone graft



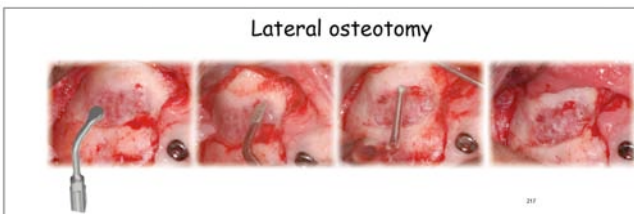
圖十四：步驟二

Implant osteotomy



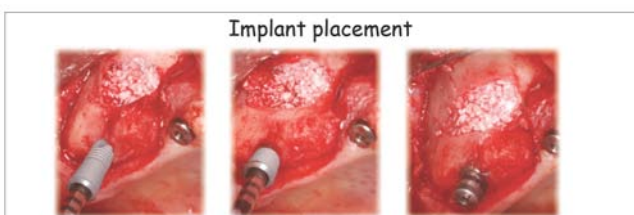
圖十五：步驟三

Lateral osteotomy



圖十六：步驟四

Implant placement



圖十七：步驟五

三. 手術中可能發生的狀況

最常發生就是 membrane 破了，一是墊再生膜在 inferior sinus wall 後繼續手術。二是一樣放入再生膜後，將手術區域關起來，六週後再做；有時會遇到 lateral artery 剛好經過開窗範圍，這時可用骨刀慢慢把血管分離出來，如果不小心切斷，就把血管 ligature 起來。

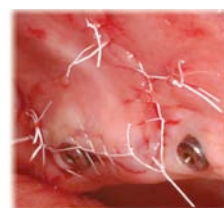
四. 術後發生感染怎麼辦

服用 875 mg 的 Augmentin (內含有 125 mg 的 Calvulanic acid，不管 100 mg、200 mg 或 500 mg 的 augmentin 都是內含 125 mg 的 Calvulanic acid，所以 Augmentin 不能一次吃兩顆 augmentin，這樣 Calvulanic 會過量)。每十二小時服用一次，連續服用一周，或可服用 Levaquin 750mg 一天一次，但可能會造成肌腱炎，要小心用藥。

Membrane placement



圖十八：步驟六



圖十九：縫合



Prosthetics Considerations in Treatment Planning

The Restoration of the Cervical Contour; A Key to Implant Planning, Placement, and Restoration (Part II)

Dr. Fernando Rojas-Vizcaya



Dr. Fernando Rojas-Vizcaya
Instructor, USC Implant
Training Program in Taiwan

前言

我們會舉例分別來闡述上期 NTO Dr. Fernando 所提的觀念如何在臨床上，現在從簡單的單顆植牙開始介紹，再進入複雜多顆。

CASE 1 :

Single Implant ; soft tissue level = cervical contour
(即拔即種立即臨時假牙)

先天缺牙 #13，乳牙仍在，軟硬組織條件都好（如圖一），pink esthetics 幾乎在以後犬齒植牙區的位置，我們只要來恢復 white esthetics 即可。我們利用乳牙來當做 guide（注意兩邊 gingival zenith 的位置），可以採取即拔即種。

手術步驟：

(A) Atraumatic tooth extraction

(B) 拔完後用 periodontal probe 來檢查骨頭的完整性，若沒有缺損，就進行立即植牙。

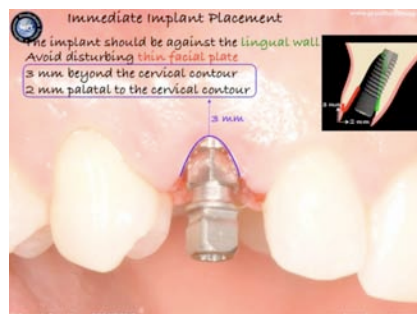
而植牙位置需 against the lingual wall 如圖二，不可順著原來牙齒的長軸。同時要避免傷及 thin facial plate 且要記得 3mm beyond the cervical contour，2mm palatal to the cervical contour。

植完後，評估 implant primary stability（是否 absent of lateral movement 與 resists rotation）。沒有問題後，就可做臨時假牙。而作臨時假牙的用意就在於維持住原來軟組織的位置，不希望它 collapse。

這個案例選擇用 direct abutment 來做 provisional crown。雖然是臨時假牙，但也要製作成接近未來 final 的外形。如圖三（注意：Immediate Provisionalization: transitional contour (emergence profile)）。



圖一



圖二



圖三

謝金龍 醫師
金龍牙醫診所



當骨整合好後就可做最後的印模，約在 12 周以後，接上 abutment，check 扭力 25 Ncm。

假牙製作完成後，接下來的關鍵步驟就是如何將假牙黏好。過多的黏著材料留在 sulcus，將肇成大災難：periimplantitis！

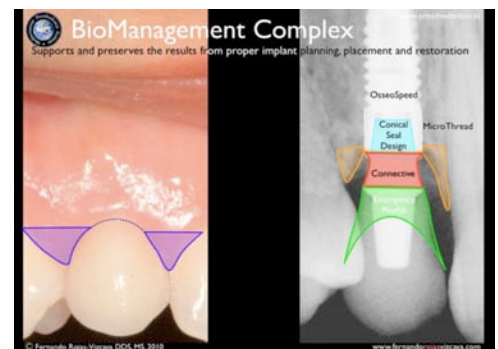
Cementation procedure（如圖四）：

1. Apply minimal amount of cement（先在口外模型）
2. Place the crown on the abutment replica
3. Remove the excess cement
4. Place the crown in the mouth

這樣就不會有過多的黏著材料在假牙上面了。

黏好後，再照一張根尖片，看有無到定位，及是否有多餘的黏著材料沒清乾淨。如此就可以達到美觀與功能兼顧的假牙，同時有一個健康的軟組織，marginal bone levels 又可以維持的很好。如圖五。

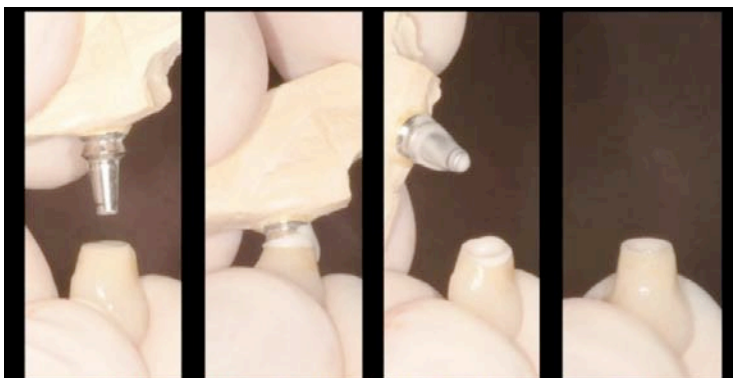
這些都歸功於：Supports and preserves the results from proper implant planning, placement and restoration。術前術後都維持的很好，如圖六。植完後兩年的追蹤，如圖七，white & pink esthetics 皆符合預期！



圖五



圖六



圖四



圖七

CASE 2 :

Single implant; soft tissue \neq cervical contour (如圖八)

這個案例與前一個剛好差在：軟組織與 cervical contour 不在同一位置。此時就要在植牙後，再做軟組織的處理。

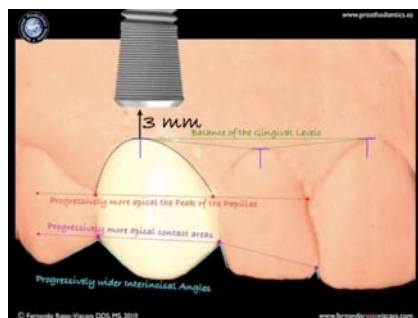
從照片我們可以看出 gingival levels 除了在犬齒是不對稱外，其餘都是兩兩對稱。所以我們的重點就是要如何將以後的牙齒植在我們的位置。這要回到：The restoration of cervical contour; a key to implant, placement and restoration。

所以我們就要將以下的因素考量進去（如圖九）：

1. Balance of the gingival levels
2. Implant 3mm below the gingival margin
3. Progressively more apical the peak of papillae
4. Progressively more apical contact areas



圖八



圖九



圖十

5. Progressively wider interincisal angles

手術步驟注意事項就如案例 1 一樣，不同的是：植體的邊緣現在要更往裡面植深一點（如圖十）。

經過 12 周的骨整合後，我們用 direct abutment 接來，準備製作臨時假牙。此時我們可以看到，牙齦的位置還不在理想的位置（如圖十一）。但我們不用擔心，因為我們的植體位置是正確的，我們將用臨時假的 cervical contour 來壓出我要的 pink esthetics（如圖十二），

此時的 provisional crown 就變得非常重要，要將 cervical contour 的位置與外形，contact area 與 crestal bone 的距離等，都要納入考量。

經過塑型後，我們改用 Ti design abutment 來做我們的 final restoration。記得假牙的 finish line 要維持在 subgingival 1mm 內（如圖十三）。2.5 年後的追蹤，可看到術前與術後的整個變化。

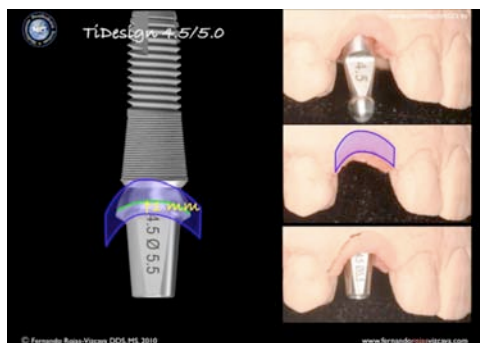
圖十四 再一次說明了：The restoration of cervical contour; a key to implant, placement and restoration。



圖十一



圖十二



圖十三



圖十四

CASE 3 :

Multiple implants (如圖十五)



圖十五

患者左上缺牙 #24-26，如何來恢復？

臨床上我們會去量缺牙區了 M-D 的距離多少，來設計該選擇多大的植體與植在何處。而前提是我們的腦海裡要先有每顆牙齒的 M-D 的寬度（如圖十六），選擇適當的牙齒寬度再應用到缺牙區，看是否能符合各方面的需求（如圖十七）。

從圖十四我們就有資訊來決定該用何種的植體直徑，然後再利用 Parameters for predictable papillae（如圖十八）我們就又可用來決定植體植的位置，也就可控制整個 3D 的空間位置，如此就不只可得到完美的 white esthetics，更可以不會犧牲到 pink esthetics。

然後我們可以用 denture teeth 來做 wax-up（如圖十九）模擬出以後的牙齒位置。而後複製灌石膏，做 stent（radiologic, restorative, surgical），將 stent 鑽洞，貼上鉛片條（可從根尖片取得），然後去照 CT。如此這個 stent 不只可以去照 X 光片來決定植體的 B-L 的位置，還可以在手術時拿來決定 O-G 的垂直位置（如圖二十）。

手術當中，我們可藉由 stent 的 cervical contour 來取捨是否該修 alveolar ridge 以達到 biological width（如圖二十一）注意 abutment 放

	Crown Length	MD Crown	MD Cervix	BL Crown	BL Cervix
Central	10.5	8.5	7	7	6
Lateral	9	6.5	5	6	5
Canine	10	7.5	5.5	8	7
1st Premolar	8.5	7	5	9	8
2nd Premolar	8.5	7	5	9	8
1st Molar	7.5	10	8	11	10
2nd Molar	7	9	7	11	10

Wheeler and Ash, 1984

© Fernando Rojas-Vizcaya DDS, MS 2010

www.fernandorajavizcaya.com

圖十六

	Crown Length	MD Crown	MD Cervix	BL Cervix
1st Premolar	8.5	7	5	8
1st Molar	7.5	10	8	10

Wheeler and Ash, 1984

© Fernando Rojas-Vizcaya DDS, MS 2010

www.fernandorajavizcaya.com

圖十七

Restorative Environment	Proximity Limitations	Vertical Soft-Tissue Limitations
		Mean Range
Tooth-Tooth	1 mm	4.5 to 5 mm
Tooth-Pontic	N/A	6.75 4 to 9 mm
Pontic-Pontic	N/A	6.5 5 to 9 mm
Tooth-Implant	1.5 mm	6.5 4 to 9 mm
Implant-Pontic	N/A	5.75 5 to 9 mm
Implant-Implant	3 mm	4.5 4 to 7 mm

Immediate Total Tooth Replacement.
Garber et al. Compendium March 2001

© Fernando Rojas-Vizcaya DDS, MS 2010

www.fernandorajavizcaya.com

圖十八

進去，finish line 是否剛好在牙齦下 1mm。

當確定好植牙 3D 位置都恰好時，接上 direct abutment 準備做臨時假牙，我們放入 impression coping 來取模製做（如圖二十二）。

注意：若兩個 impression coping 會擠壓到時，務必修到不會干擾，否則印模就會不準確。

再次強調製作 provisional restoration 的注意事項：

1. Finish line
2. Cervical contour (with pressure)
3. Embrasure (without pressure)
4. Transitional contour
5. Interproximal contact

這五個要項都要兼顧到，這會影響到以後 final restorations 的結果。

在黏臨時假牙時，要在 suture 前黏，此案例選用 Ketac cement (permanent cement)，因為要確保臨時假牙可維持 8~12 週。黏完後，再次確定有無殘餘 cement 留在 sulcus，然後再縫合。7~10 天回診時，也要再次確認沒有殘餘 cement（如圖二十三）。最後，骨整合好後接上 final restoration（如圖二十四）。

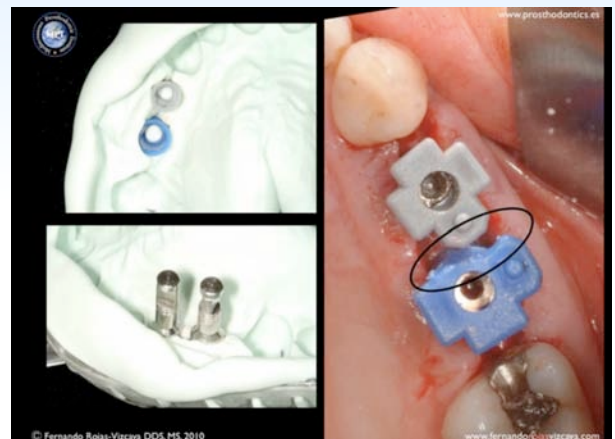
從以上的案例，我們得到以下的結論：

1. Implant therapy guided by restorative plan
2. Implant location should be based on cervical contour of the planned restoration in an ideal 3D position—3mm depth, 2mm palatal
3. Adequate dimensions in provisional restorations to maintain and guide the soft tissue: ovate pontics, embrasures, transitional contour





圖十九



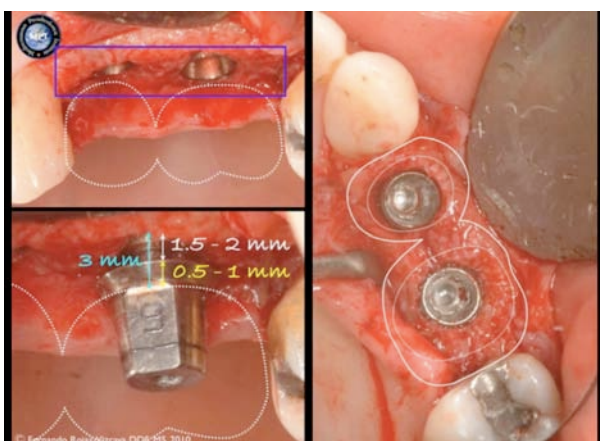
圖二十二



圖二十



圖二十三



圖二十一



圖二十四

Principles of Abutment Selection for the Single Implant (Part I)

Dr. Baldwin W Marchack



Dr. Baldwin W Marchack
Instructor, USC Implant
Training Program in Taiwan

今天主題是當 implant 已經骨整合之後，要怎麼設計補綴物（restorative options）。怎麼選擇 abutment 以及怎麼設計贗復物（prosthesis）。

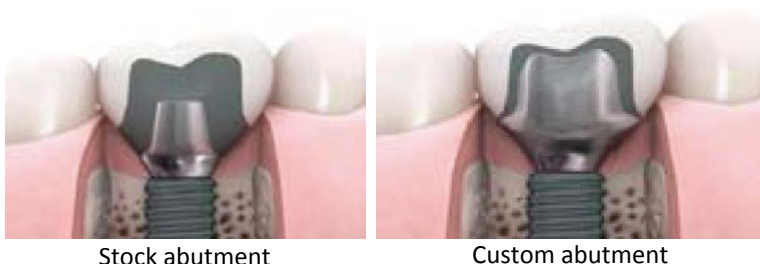
主要先聚焦在單一缺牙補綴物的設計，包括後牙和前牙兩部分。Dr. Baldwin 90% 的案例是使用 Nobel Biocare implant。其他大多是 Astra 或 ITI 系統。但是原則都是相同的。

對於在後牙的單顆植牙（single posterior implant）的補綴物可以做：screw retained restoration 和 cement retained restoration 兩種。而 cement-retained restoration 又可以將牙冠黏在 stock（市售現成的）abutment 或是 custom abutment 上。所以後牙單顆植牙的 abutment 有三種選擇：stock abutment、custom abutment 和 no abutment（non-segmented, screw-retained）（也就是牙冠和 abutment 在一起不分開）（圖一）。

最簡單的情況就是在 implant 骨整合之後，裝上 stock abutment，再黏上一顆 crown 就完成。但是不是每顆牙齒的情況都這麼簡單。有一些情況必須考量：

- 從植體頭部到（軟）組織最高點的距離，早期稱之為 running room。
- 從軟組織最高點到對咬牙的距離，意即 interarch dimension。
- 軟組織的 biotype：薄的還是厚的、透明還是不透明的。
- 軟組織的形狀和外型（contour）：指的是外型是平的（flat）還是很有弧度像扇貝（scallop）一樣有比較漂亮的 papilla 的形狀。

如果在後牙的植體，植體周圍的牙肉組織高度很理想（1~3mm）、比較平的軟組織外型（flat shape）、理想的 interarch dimension（5~10mm）（圖二、三）。這種狀況直接選一個 stock abutment 接上即可。但是 stock abutment 的



Stock abutment

Custom abutment

圖一



劉芳燕 醫師
美齊牙醫診所

貝多芬矯正課程暨植牙論壇講師

margin 要在 subgingiva 1mm 以內，否則 cement 容易清不乾淨造成 implantitis。反之；如果軟組織的形狀中間雖是平的、但是植體植得很深（牙肉到植體的頂端距離深）。如果用 stock abutment，容易因為 crown margin 在 subgingiva 太深，cement 清潔不易而發炎（圖三）。例如（圖四）這個案例：因為牙肉組織都發炎，crown 掉下來後發現 crown margin 在牙齦下很深的位置。所以 Dr. Baldwin 做了一個 custom abutment 以提高 cement margin 且吻合牙齦的形狀。要有一個成功的 cement-retained restoration，就必須要有清得到的 cement margin。

另一個案例是：interarch dimension 不夠，結果雖然有好的牙齦組織及 cement margin。但是牙冠卻因為咬合調整磨穿了（圖五）。所以到底多少的 inter-arch clearance 才夠呢？一個 study 指出：在不同的 abutment 高度用多大的力量可將黏在 Titanium abutment 上的 Zirconia coping 拿下來。結論是：6.5mm 高的 abutment 是 198.09N 牛頓，而 5.5mm 高的 abutment 是 124.89N 牛頓¹。也就是說：abutment 每減少 1mm，將 crown 取下來的力量就減少約 40%。我們建議 abutment 的高度不要少於 4mm（圖六）。

到底要如何選擇 Abutment 呢？Dr. Baldwin 設計了關於後牙的 abutment 種類選擇的 decision tree，讓我們可以依循著路徑最後做出比較合理的決定（圖七，各個廠牌因為 abutment 的商品名稱以及可供選擇的 abutment collar height 有一些不同而會有些許調整，但是基本原則都是一樣），首先要看的是：interarch distance。如果 interarch distance 少於 5mm，必須做成 screw-retained restoration。因為去掉 crown 本身厚度所需要的 2mm，再加上 cement margin 在 subgingival 1mm，則 abutment 的高度還有 $5-2+1=4\text{mm}$ 。所以如果不足 5mm 的話，abutment 高度將不足 4mm；這樣的情況做成 screw-retained restoration 才不會 failure。所以在：1. 上下顎空間不足。2. 病人有磨牙的習慣。3. 必須要能拿下來重製的情況下，可以考慮用 one piece, non-segmented screw（圖八）。



Ideal tissue depth - 1 to 3 mm,
Flat shape, Ideal interarch
dimension - 5 to 10 mm

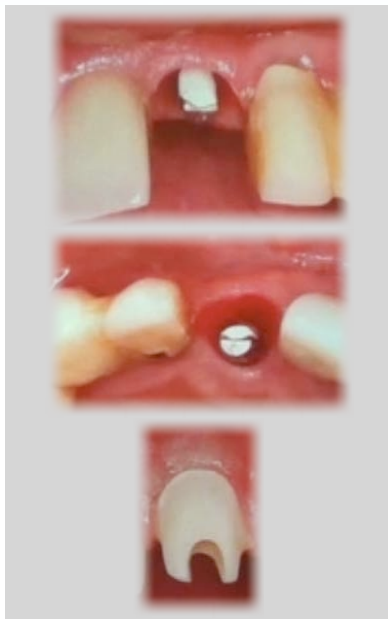
圖二



Flat - too deep, very scalped,
well defined papilla

圖三

1. Micro-movements at the implant-abutment interface: measurement, causes, and consequences. Holger Zipprich, Paul Weigl, Bodo Lange, Hans-Christoph Lauer. Implantologie, Vol. 15, 2007 Issue 1, p.31-46. (www.kgu.de/zzmk/werkstoffkunde/index_en.html)



圖四

例如以下的案例（圖九），在組織長好之後，發現 implant 深度不深，軟組織平坦、papilla 不高的情形下，原本我們選擇 stock abutment 就可以，但是因為 interarch dimension 不足 5mm，所以還是選用了 screw-retained restorations，裝上 impression coping 來取模。Soft tissue model 和 one-piece restoration，用 torque 將 screw 鎖到 35N，在 screw hole 放一點棉球再補上一點 composite resin 就完成了。

綜合以上的結論：在後牙植體的補綴物的設計，implant head 到牙肉最高點的距離不是重要考量。重要的是 interarch distance 的多少。如果 ID 少於 5mm，screw access 又位於咬合中心，就必須選用 no separate abutment (one piece, non-segmented restoration)。

One piece、Non-segmented、Screw-retained restorations 在 Nobel Biocare 系統裡有：1. NobelProcera™ custom abutment (Zirconia)；2. GoldAdapt™ abutment 可供選擇。在 Astra 系統裡有：1. Atlantis™ custom abutment (Zirconia)；2. Castdesign™ abutment。不管廠牌如何，原則都是一樣的。

回到之前的 Decision Tree，在 interarch distance 大於 5mm 的情況下（圖七），就有機會選用 cement retain restoration。但是如果有 restoration 拿下來的需



圖五

To have successful cement-retained restorations,

- We need access to the cement margins
- We need adequate inter-arch clearance

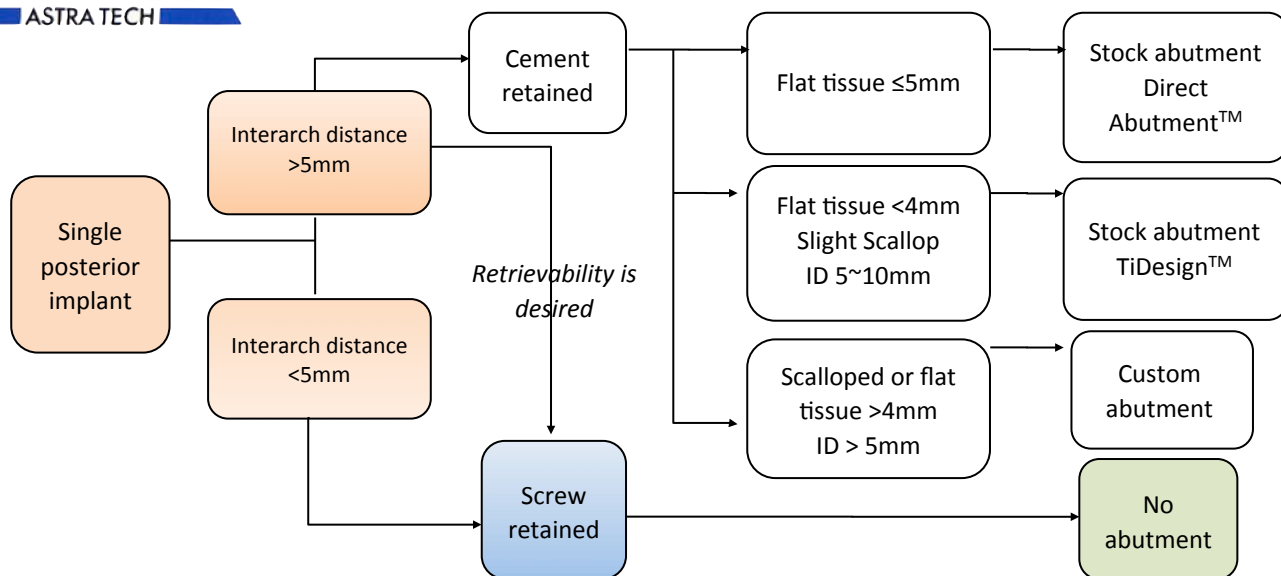
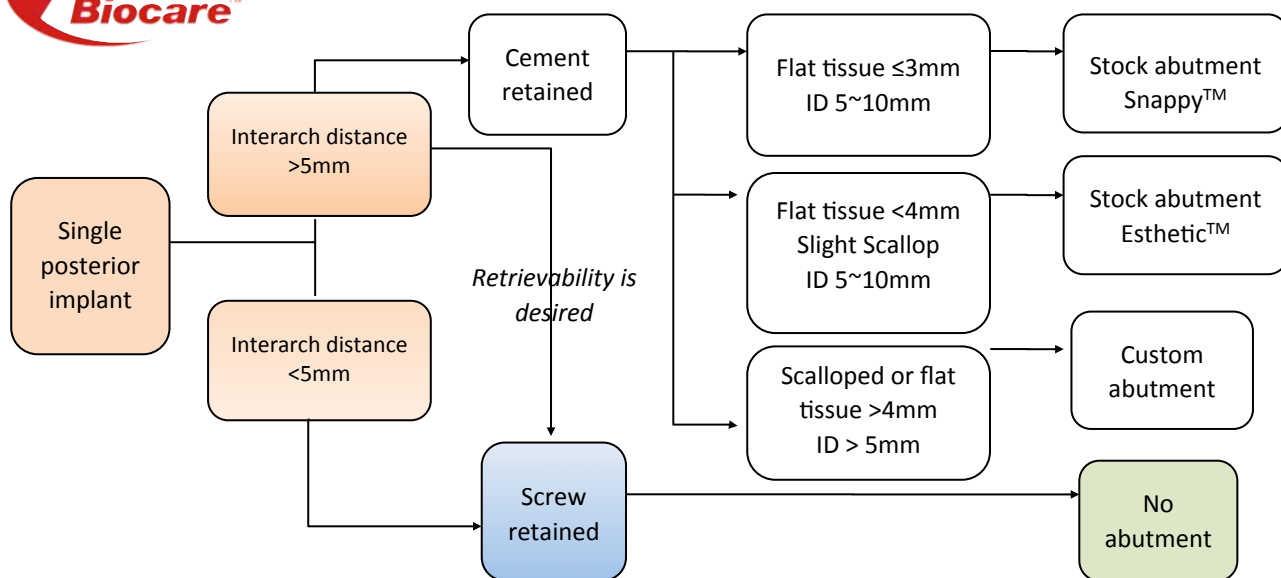
To avoid cemented crowns from dislodging:
We need adequate abutment height

圖六

One piece, Non-segmented Screw-retained Restorations

1. Limited interarch dimension
2. Patient is a bruxer
3. Retrievability is desired

圖八



圖七、Posterior Abutment Decision Tree® (@Copyright by Baldwin W. Marchack, DDS)

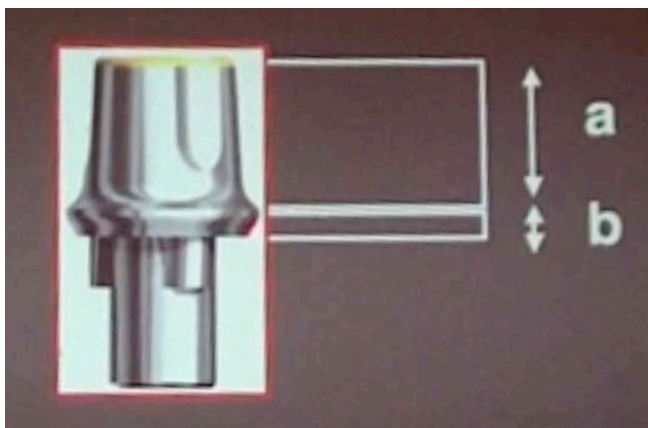
要時，也可以做 screw retained restoration。第二步我們要注意的，就是「組織的形狀」；如果軟組織比較平（flat），高度小於 3mm，就可以選用 stock abutment 就可以。一般所謂 stock abutment 的高度可細分為二：分別為 a=abutment height，b=collar height（圖十）。Nobel Biocare 的內六角系統有：a=4mm or 5.5mm；b=0.5 or 1.5mm；外六角系統有：a=4mm or 5.5mm；b=1 or 2mm。因此軟組織高度若有 2mm 則可選用 collar height 1mm 的 stock abutment。（cement margin subgingival 1 mm + collar height 1mm=2mm）（圖十一、十二）。

以下這個案例（圖十三）使用 stock abutment 用

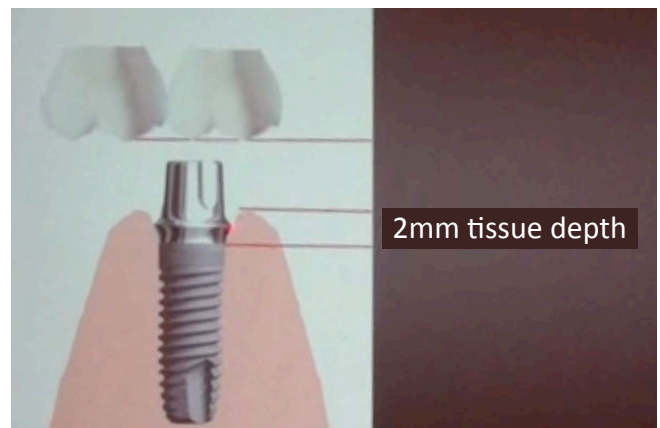
35N 力量鎖上（圖十四）；Stock abutment 印模過程簡單，取 abutment level 時，先放上 abutment impression coping，再用 close tray impression method 取模（圖十五），做出軟組織的模型和牙冠（圖十六）之後黏上牙冠（圖十七），cement margin 將會在 subgingival 1 mm 以內，以利 cement 的清除。所以使用 cement retained restoration 的 indication 有：1.軟組織的高度適當。2. cement 可以清得乾淨。3. 足夠的 interarch dimesion。4. 軟組織的外型較平坦。好處是：很容易印模、很容易製作假牙、也很容易黏著。缺點是：沒有 scalloped design、collar height 的選擇有限制、只適用於後牙，前牙美觀區



圖九



圖十



圖十一

Single missing posterior tooth

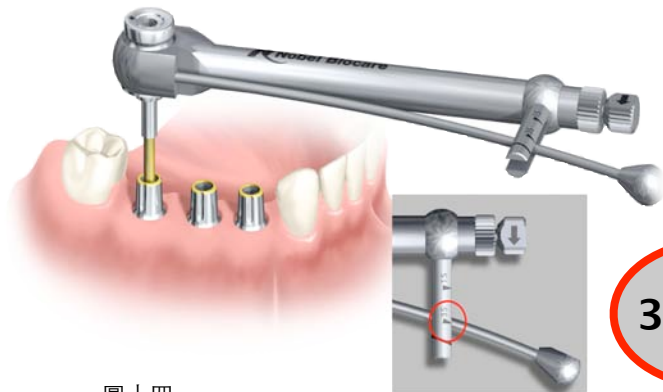
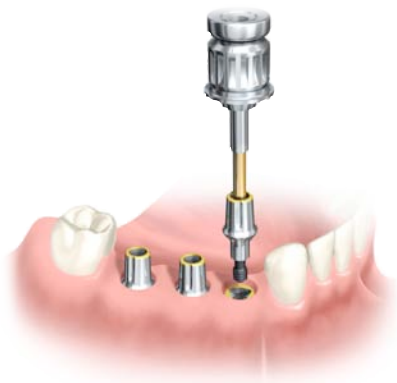
1. Head of implant to crest of tissue = 1~3mm
 2. Crest of tissue to opposing tooth = 5~10mm
 3. Shape/Contour of tissue = Flat
- Stock Abutment (Snappy™, NobelBiocare)



圖十二

圖十三

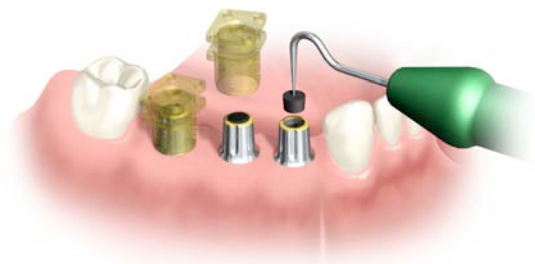
1. Abutment connection



圖十四

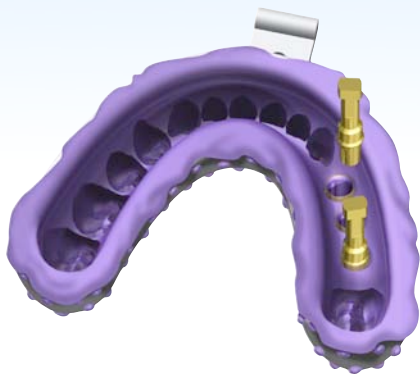
35 Ncm

2. Impression abutment level



圖十五

3. Laboratory procedures



圖十六



4. Final restoration



圖十七



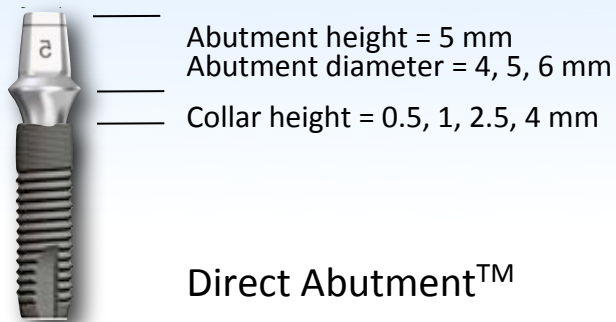
不適用。每家廠牌的名字或有不同，所使用的 torque 也有所不同。例如 Astra 系統建議鎖到 25N 牛頓就好。超過 25N torque 就會折彎無法再使力。

Astra 的 stock abutment 叫做 Direct Abutment™，他的 Collar height = 0.5~4mm。Abutment height = 5mm（在 4mm 位置有 marker）（圖十八）。由於 Astra 系統的 collar height 最高到 4mm。所以組織深度最深可以到 5mm（圖十九）。但是如果組織深度超過 5mm，形狀比較 scalloped 的話，就不可以選用 stock abutment（圖二十），因為 cement 會清不乾淨。

第二種 cement retained restoration 的 stock abutment 叫做 Esthetic abutment（圖二十一）。應用於軟組織的形狀比較平、有輕微的 scallop 的弧度、也就是 papilla 比較明顯的情況。Abutment 本身有角度，collar 做成傾斜

的，高度：buccal collar:1~3mm 來分。臨床上取出模型之後，還可以在模型上修磨調整形狀以配合軟組織和咬合高度。等在 Lab 修整完之後，就可以直接做好 crown 來 cement。除了可以取 implant level 的模型之外，也可以把 abutment 鎖上之後當成一般 crown 來取模，也很容易黏固定（cement）。綜合以上所述；組織高度快到 4mm，interarch dimension 為 5~10mm，軟組織有點弧度，就可以選用 Esthetic abutment。如果 interarch dimension 超過 10mm 的話，就不要選用這種 esthetic abutment。因為這種 abutment 最高只有 5mm，這樣 crown 的高度會太厚，要改用 custom abutment 較為理想（圖二十二）。Astra 有角度的 abutment 叫做 Ti-Design，有不同的 abutment 寬度。

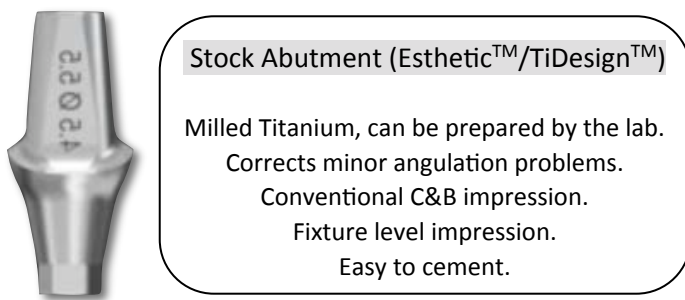
第三種情形是：如果組織高到超過 4mm，甚至到 9mm、也有很漂亮 papilla、有弧狀（scalloped）的外



圖十八



圖十九



圖二十一



圖二十

型時，就需要 custom abutment。Dr. Baldwin 以一個案例來說明：implant restoration 裝上之後有很嚴重的 peri-implantitis（圖二十三）。會造成 implant 周圍組織發炎有四個原因：plaque retention, loose abutment, poor fit of margins, cement retention。但是病人的 oral hygiene 很好，照 X-ray 可發現牙冠 margin 很好也沒有鬆掉。就只有 cement retention 的問題。這種情形有兩種選擇：1. 在牙冠上打個洞、找到 screw，把 abutment & crown 拿起來把它清乾淨或是整個重做。後來 Dr. Baldwin 將 abutment 取下，重新印模之後發現軟組織的高度約 8~9mm。

治療的步驟是先做一個很理想的 provisional restoration 放在 implant 上（圖二十四）。

Prepare 好了以後取下來請 technician scan 到電腦裡

做出一模一樣的 abutment（圖二十五）²。也只有 custom abutment 可以將 cement margin 提高 7~8mm 到 subgingival 1mm 以內的地方（圖二十六）。將這個 custom abutment 鎖回 implant 上，再黏上 crown。

所以在組織深度很深、ID 足夠、組織外型較有高低弧度、screw access 在 buccal side 或是 working cusp tip 處，就需要做 custom abutment（圖二十七）。

custom abutment 用於 cemented crown 在 Nobel Biocare 有：1. NobelProcera™ custom abutment（Zirconia, titanium）；2. GoldAdapt™ abutment。Astra 系統有：1. Atlantis™ custom abutment（Zirconia, titanium）；2. Castdesign™ abutment。

綜合以上所述：在後牙植牙的 abutment 的考量：先看 interarch distance 夠不夠 5mm。如果不夠 5mm 的話，

只能做 screw retained restoration。大於 5mm 時只要 screw hole 不是從 buccal side 或 working cusp 出來，則兩種都可以。其次考慮組織的外型弧度、厚度、深度及高低來選擇 stock abutment、esthetic abutment 或是 custom abutment。

不同的廠牌系統在某些 abutment 的高度或名字有所不同，但是選擇的原則是一樣的。

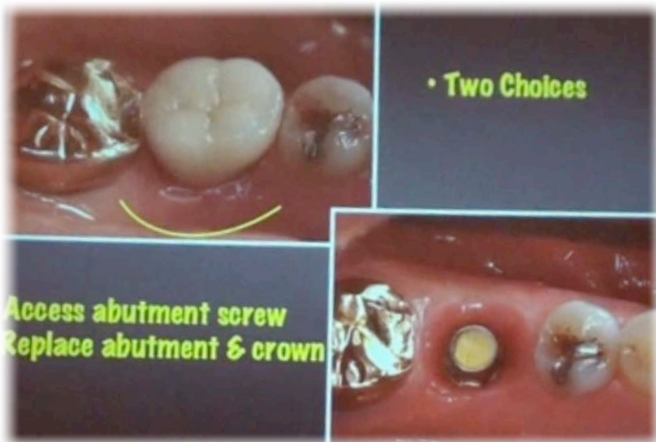
Dr. Baldwin 提醒大家，不管使用什麼樣的系統，都要很熟悉自己所使用的系統，才能發揮最大的效用。

Single missing posterior tooth

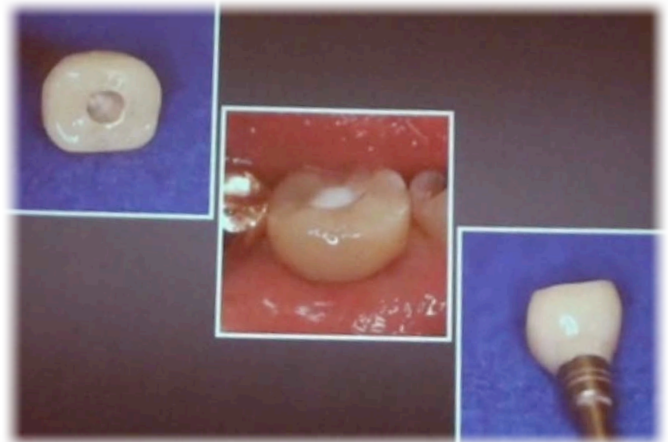
1. Head of implant to crest of tissue = up to 4mm
2. Crest of tissue to opposing tooth = 5~10mm
3. Shape/Contour of tissue = Scalloped

Stock Abutment (Esthetic™/TiDesign™)

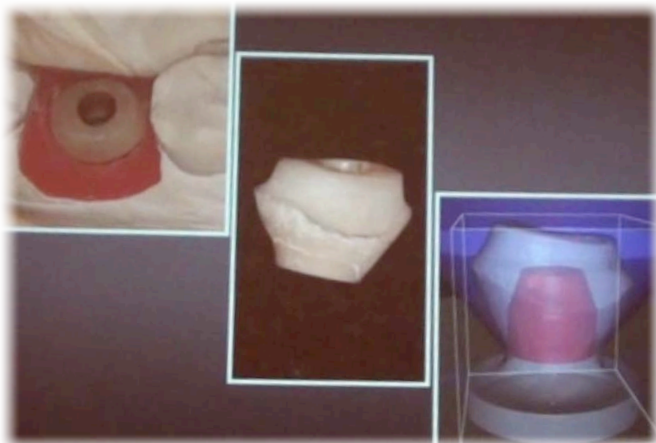
圖二十二



圖二十三



圖二十四



圖二十五



圖二十六

VISTA & Sinus Lift

In-office Workshop (sheep)



2011 06/26 (日) 9:00~5:00

1. VISTA technique
2. Lateral window technique
3. Osteotome technique
4. OBS placement

- ◆ 地點：金牛頓教育中心 新竹市建中一路25號2樓
- ◆ 費用：20,000 (費用包含午餐講義、視訊(iPad / iPod 版))
- ◆ 匯款帳號：109-25203060-000
戶名：金牛頓藝術科技股份有限公司
- ◆ 報名專線：03-573-5676 黃思涵小姐



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 News & Trends in Orthodontics, he has been actively involved in the design and application of orthodontic bone screws.

當矯正遇上植牙

2011 *Newton's A* **Implant** Forum

金牛頓植牙論壇

Implant Technique + DDX + Basic Knowledge



- ◆ 時間：2011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
- ◆ 費用：22,000
單次2500元
費用包含講義、視訊
- ◆ 匯款帳號：109-25203060-000
戶名：金牛頓藝術科技股份有限公司
- ◆ 報名專線：03-573-5676
黃思涵小姐

現在的牙科治療已經是各科統合彙整的時代，協同矯正、植體、牙周、補綴讓治療成果臻於完美是我們追求的目標。

邀請您一起迎接「協同性整合」的新牙科時代，讓我們從植體與矯正的對話出發，透過整合各科精華，締造集美觀、功能於一身的全方位治療。張醫師相信，儘管課程內容可能相似，但是貝多芬對於資料的呈現方式不一樣！唯有自己消化吸收後的整理，才是真正屬於自己的難能可貴的經驗，這就是貝多芬精神！

關於植牙論壇的定位與期許：

1. 將目前眾多植牙演講精華，重新整理過在自己的場合報告
2. 提供訓練平台供學員報告自己的case，從中相互學習。
3. 提升助教的演講技巧，培養新講師群。
4. 作為未來植牙專科醫師考試的考前訓練班



2011 Newton's Implant Forum

	日期 (W5)	09:00 ~ 10: 00		10:20 ~ 11:00		11:10 ~ 12:00
		Lecture Moderator: Chris Chang		Case Analysis (12+8)mins x2		Classic Article Review
1	2/25	實用植牙骨生理學	張慧男 醫師	Case 1	Case 2	ITP chap 10, Stable occlusal scheme
2	3/25	6個植體補綴的製作盲點	廖文堅 醫師	Case 3	Case 4	ITP chap 6, Diagnostic driven IDT planning
3	4/23	矯正與植牙-前牙美觀區	黃瓊嬋 醫師	Case 7	Case 8	ITP chap 2, Altering vertical dimension-The orthodontic possibilities
4	5/27	上顎竇增高術面面觀	方鍾鼎 醫師	Case 5	Case 6	ITP chap 8, Approaches to vertical dimension
5	6/24	特別演講 - 植體設計 主講人 林靜毅 醫師				
6	7/29	特別演講 - 前牙植體美學 主講人 溫世政 醫師				
7	8/26	常見植體的錯誤與修正	王肖龍 醫師	Case 9	Case 10	Immediate screw-retained provisional implant crown
8	9/30	特別演講 - 植體的6個膺復祕訣 主講人 張光漢 醫師				
9	10/28	特別演講 - 植體膺復中的魔鬼與細節 主講人 彭炯熾 醫師				
10	11/25	前牙美學-牙周觀	邱上珍 醫師	Case 11	Case 12	Immediate implants loading-The operative protocols
11	12/30	特別演講 - 全口重建 主講人 歐亦焜 醫師				



邱丕霞醫師

邱丕霞牙醫診所負責人

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》

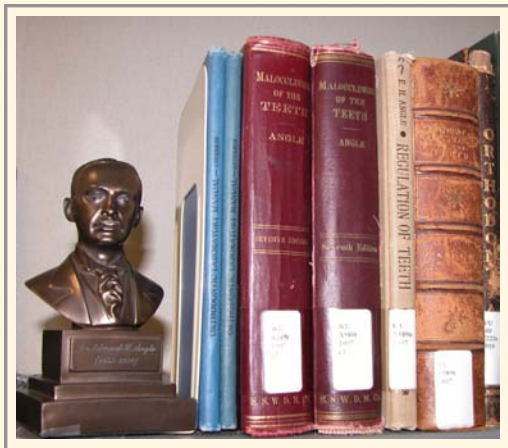
Feedback from the Damon Forum



Dear Dr. Chang,

Dr. Lee Graber was recently at the AAO headquarters in St. Louis. On his visit he left me the bust of Dr. Angle that you created. The likeness to Dr. Angle is incredible. The bust has been placed in the AAO Library's rare book collection with the books that Dr. Angle wrote. I have attached a picture so you can see where the bust is in the AAO Library collection. The bust is a wonderful addition to the AAO Library collection.

Thanks,



Dr. Chris Chang handed Dr. Angle's statue to Dr. Lee Graber.

Jackie Hittner

AAO Librarian
American Association of Orthodontists



Chris,

I wanted to tell you how much I enjoyed our time together on the golf course. It was also great to learn some things about you that I did not know. You are a master at so many things. You have given me more than I can ever repay. Like I told you, **you are one of the three best teachers I have ever had, and I have used much of what I have learned for the benefit of my patients.** I hope you and ShuFen and your family have a wonderful 2011, and I will look forward to the next time we get to play the game we love. I also hope you will talk Tom into having Progressive in Taiwan. We will make that part of our schedule. Thanks again. Prof.



J. Michael Steffen DDS, MS
the American Association of Orthodontists
the American Dental Association



Dear 張醫師、高老師：

謝謝您們一直以來的栽培與鼓勵，這次韓國的演講和今天的演講，讓我感觸良多。

在韓國的演講，是近年來所有的演講中，給我最大成就感的一次，我從來沒有想過，沒有degree、沒有留過學的我，有一天會有機會站上國際舞台，跟您與林老師，一起讓世界上的人知道，台灣，這個小小的國家，是不容小覷的！兩年前的曼谷 forum，我還只是個給 Tom Pitts 做 slides 的小卒，這簡直像夢境般不真實。

非常慶幸我參加了完整的貝多芬課程，跟著您們的腳步，我沒有後退的餘地，只能奮不顧身的往前衝！張醫師在韓國演講時，Stuart 轉頭問我，妳認為台下這些人，有多少人知道，Chris 這些 slides 花了多少時間製作？我跟他說，我不認為大家知道！聽眾或許知道這必須付出許多努力，可是努力的程度卻是他們無法想像的！而 Stuart 也同意我的看法。

今天的演講，我可以誠實的說，近年來在台南辦演講，已經很少有像今天這麼多人的盛況！

張醫師講評的時候對我很客氣，可是其實您一定知道，我其實對自己的 slides 還不夠熟，因為我昨天晚上才從大阪玩回來～～第一次製作 3:1 slides 的壓力不小，到今天早上我到達會場為止，事實上我的 conclusion 還令我很頭大，我一直在思考，到底要怎樣才能有邏輯的做出分析！在張醫師第一堂演講的期間，我突然想出如何做結論，這樣快速的邏輯思考訓練，其實就是您平常一直要求、不斷練習的結果！我自己也很訝異，這麼短的時間我能做出還算像樣的檔案。

知易行難，只有自己親身做過，才會知道，像今天張醫師這樣收放自如的站在講台上，其實不事件容易的事！我會更加努力的～～

謝謝您們，晚安！

瓊嫻



黃瓊嫻 醫師
成大醫學中心口醫部兼任主治醫師
幸福牙醫診所主治醫師
貝多芬課程講師



Feedback from Dr. Chang's Lectures

在門診中常碰到有多顆缺牙又長期未做贗復的病例，這些患者即使是以矯正方式把牙齒推回原位，以後在植牙的過程中，常會碰到 Alveolar ridge 寬度不足，必須做 bone graft 或是因 Sinus wall 太低必需做 Sinus lift 的手術，這些手術對一個熟練的植牙醫師當然不是問題，但是對患者而言，不但多了一次侵入性的治療，荷包也多一次的失血。這些問題有時候可以在矯正治療過程中多一點用心，藉著牙齒的移動增加 Alveolar ridge 的寬度，或是把牙齒移到 Sinus Wall 較低的位置，讓出足夠的空間與高度給植入的牙根，如此可以讓患者少受一次手術之苦。所以矯正與植牙醫師，並非兩條平行線，彼此都應該努力了解對方的領域，如此才能帶給患者最完美的治療。



黃鎮洋 醫師
名揚牙醫診所

Feedback from the USC Implant Training Course



執業到這把年紀的醫師，大概都開始想著何時退休？或者是該如何安全"下莊"？免得晚節不保，錢沒賺到還惹了醫療糾紛。說實在的，當初參加植牙論壇，也只是想聽聽就好。沒想到張醫師又搞了個USC課程！一定有很多人會問：學矯正的還撈過界哩，這個課程會好嗎？的確，隔行如隔山，矯正跟植牙，怎麼個扯在一塊兒？我們不是要追求 IDT 嗎？第一次參加會不會變成白老鼠啊？可我還是堅定地參加了，理由無他，因為我看到了張醫師的決心！上過張醫師的矯正課，應當可體會到張醫師對學問的追求，與教學的效率！同時又有張醫師對講師教學的"監控"，不啻是為課程掛了品質保證。如今，很多學員也跟我一樣，真正做到了：IDT（I Do the Treatment all by myself）各位看倌，還猶豫乎？



謝金龍 醫師
金龍牙醫診所



本課程擁有來自跨國、跨領域的國際大師級講師師資，由淺入深，紮實統整，實為當前台灣不可多得，能時刻接軌國際的課程。還有一群喜愛追求成長的牙醫師同好們，相互砥礪，在技術上不斷精進，且精益求精，並又樂在其中。由張慧男醫師領導的貝多芬與金牛頓團隊，是最堅強的後備支援，在課程之後幫助大家在臨床，身體力行，具體落實與應用。我誠摯的推薦牙醫師同好們一起來參與，共同成長，您一定會感到不虛此行。



廖文堅 醫師
三軍總醫院口腔廣復科主任



Fine taste with a long tradition of Excellence

Marlborough Pinot Noir 2007

市價：2,450 整箱 16,800 (1,400/瓶)

Jawbone Sauvignon Blanc 2008

市價：1,650 整箱 12,000 (1,000/瓶)



Owner: Dr. Eugene Roberts (left)

雙瓶尊爵禮盒 3,000 紅：1,700 白：1,300

品味專線 03-5735676 呂小姐



酒後不開車，安全有保障



降價囉！



售價 NT\$12,900 起

iPad	16G	32G	64G
Wi-Fi	12,900	15,900	18,900
Wi-Fi + 3G	16,900	19,900	22,800

中華電信 iPad 上網獨享方案

適用條件	一般用戶		mPro950 用戶
月繳	320	680	425
贈送傳輸量	500MB	無限瀏覽	無限瀏覽
收費上限	至多 1,100 元		
享中華電信Wi-Fi全省熱點免費上網優惠！ (限定使用行動電話及emome密碼登入，使用方式及上網地點請參考中華電信Wi-Fi網頁)			

訂購請洽 金牛頓藝術科技 交大校園店

地址：新竹市建中一路25號2樓

訂購專線：03-5735676、03-5739923



貝多芬矯正中心見習獎學金辦法

目的：

為促進國內牙科學術教育與牙科實務工作間的學習交流，並鼓勵國內牙醫系所學生在學期間能認識牙科實務操作環境，貝多芬齒顎矯正中心與安徒生兒童牙科特聯合提供本獎學金以及四天觀摩見習的機會。

實習目標：

1. 提昇對牙醫實務操作環境與診所管理的認識與了解。
2. 學習如何應用資訊科技來提昇實務工作效率。
3. 觀摩矯正與兒童專科診所的經營模式。

聯絡人：黃思涵

聯絡地址：新竹市建中一路25號2樓

聯絡方式：03-573-5676

電子郵件：thuang@newtonsa.com.tw

- ★ 甄選對象：全台灣牙醫系四升五年級學生
- ★ 名額：每校3-5名
- ★ 獎助內容：三天兩夜五星級飯店住宿以及見習期間餐飲費補助。
- ★ 遴選方式：學期成績在全班前30%或成績平均在75分以上，且對牙科實務展現積極學習的態度。
- ★ 見習時間：100年7月28日（四）-7月30日（六）
- ★ 申請截止日期：100年6月30日，以郵戳為憑。
- ★ 檢覆文件：該學年成績單影本（一份），自傳（請簡述學習經歷及申請目的）。請將申請文件郵寄到：新竹市建中一路25號2樓黃小姐收。



參加完這次的見習活動，我只能用嘆為觀止來形容，雖然在學術、技術方面的學習可能不能在這短短三天使我們全盤了解，但是就如同張慧男醫師對我們所言：「這次見習的重要性是給你們一個啟發。」在貝多芬、金牛頓、安徒生裡面的每一處所見所聞，都不斷衝擊我的思考，不斷地想：「為什麼有人能做到這樣地步？」、「原來還有這樣的做事方法！」在這邊三天之中我覺得絕對可以讓我們學習到的就是面對事情、處理事情的態度；因為張慧男醫師有了passion、practice、persistence的信念，他能有凡事都盡可能做到最好的熱忱，這種精益求精、鍥而不捨的態度感染了在醫師身邊工作的所有人，讓大家在正向的環境中互相進步成長。對我來說，這次見習給我的啟發就是讓我在往後的日子中不斷思考該如何成為一個擁有passion、practice、persistence且具有領導特質的人。



國防醫學院 謝尹騰

這次能夠獲選參加貝多芬獎學金實習覺得非常幸運且收穫良多，不管是聽講課程的安排還是到貝多芬齒顎矯正中心及安徒生兒童牙醫診所的見習，每每都讓我對習得的新事物或見聞感到驚喜不已。也由於創辦人張慧男醫師對電腦硬體軟體的重視，以致不論在醫師經營的金牛頓藝術科技中心或診所內皆使用蘋果電腦，而教學課程更由於有Morph軟體的輔助，讓平常艱深難懂的植體、矯正教學簡單起來。

除了牙科相關學習活動外，也很感謝貝多芬另外安排了教授我們演講祕訣及自傳履歷書寫要點的課程，使我們未來不論在校內還是職場上能比他人更突出，爭取更好的機會。歷經這三天的實習課程，腦中猶記得此活動創辦人—張慧男醫師送給我們的良言：「每天只要做對一件事就好了！持續下去，十年下來必定能有不錯的成就。凡是皆要抱著持之以恆，不被挫折打敗的心！」



台北醫學大學 謝春怡



2011 貝多芬矯正精修班 Part III

No.	日期 (W2)	精緻完工病例分析 09:00~09:50	精選文章分析 10:00 ~ 10:50	精緻完工技巧 11:00~11:50
23	4/19	Class I Case	Design Factors in Orthodontic Appliance (p.373 ~ 377)	Finishing Tip 1
24	5/17	Class II Case	Mechanical Aspects of Anchorage Control (p.377 ~ 383)	Finishing Tip 2
25	6/14	Class III Case	Determinate Versus Indeterminate Force Systems (p.383 ~ 393)	Finishing Tip 3
26	7/12	Complex Deep Bite	Removable Appliance (p.395 ~ 407)	Finishing Tip 4
27	8/16	Complex Open Bite	Fixed Appliance (I) (p.407 ~ 418)	Finishing Tip 5
28	9/20	Tough High Angle	Fixed Appliance (II) (p.418 ~ 430)	Finishing Tip 6
29	10/18	Tough Buccal X-bite	Non-skeletal Problem in Preadolescent Children - Special Considerations (p.433 ~ 449)	Finishing Tip 7
30	11/29	Tough Impacted Incisor	Early Treatment - Occlusal, Eruption, Ectopic, Traumatic Problems (p.449 ~ 462)	Finishing Tip 8
31	12/20	Root Resorption	Early Treatment - Space-related Problems (p.463 ~ 493)	Finishing Tip 9
32	2/14/12"	Adult Complex Case	Skeletal Problem in Children - Timing, Transverse Mx. Constriction (p.495 ~ 502)	Finishing Tip 10
33	3/13/12"	Implant-Ortho Case	Skeletal Problem in Children - Class III Problems (p.502 ~ 510)	Finishing Tip 11



課程目標：

協助每位學員了解古典到現代之文獻，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。

- ◆ 時間：2011年每月中週二
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：02-2778-8315*123
湧傑 劉品困小姐

貝多芬六大視訊系列課程

Beethoven Orthodontic Podcast Encyclopedia



Learn anytime, anywhere

10 Damon Q. Damon 矯正有聲基礎視訊課程十一大系列：		\$14,300
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		
10 A. 矯正有聲進階視訊課程系列		\$14,300
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		
10 OBS. 有聲植體視訊課程系列:		\$2,600
Eng. C 有聲助理視訊課程五大系列：		\$7,000
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. 有聲精修視訊課程系列 (一):		\$14,300
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. 有聲植牙論壇系列：		\$14,300
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 & foreced eruption	Session 10: Save vs extraction	
Session 5: Vista	Session 11: Prosthesis and sinus lifting	
Session 6: Ortho-Implant Posterior		



貝多芬創辦人：張慧男醫師

· 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)

· News & Trends in Orthodontics 發行人

· 美國印地安納普渡大學齒顎矯正研究所博士

貝多芬牙科團隊 A Learning Organization

文 / 陳建綱、徐玉玲、黃思涵、蘇瑩瑋

引言

貝多芬，是世界知名的音樂家，但是在台灣，他同時也是一家牙醫診所的名字。在知名的搜尋引擎 Google 中鍵入關鍵字「貝多芬」，在第五個順序就會自動出現「貝多芬牙醫」，點入之後有將近六千筆的結果，可見民眾在網路上想要去了解「貝多芬牙醫」的熱烈程度。

貝多芬牙醫團隊簡介

貝多芬牙科團隊是由張慧男醫師領導，從矯正牙科出發，包含「貝多芬一般牙科」、「安徒生兒童牙科」牙周病專科、膺復專科等牙醫專科醫師及優秀的牙醫助理團隊所組成。此外，強調以「學習」為核心價值的貝多芬團隊還另外成立「金牛頓藝術科技」，專職負責牙醫資訊科技，醫療器材研發以及牙科教育推廣的工作。為了能提供更完整的牙科照顧，我們也即將在明年成立「植牙中心」，希望能讓有缺牙困擾的民眾更全面的治療環境。

貝多芬矯正中心-環境介紹

一進到貝多芬矯正牙科，櫃台美麗而親切的助理立即起身招呼，眼前寬敞的候診區以及初診病患的諮詢台，周圍不僅有整排的書櫃，有各種張醫師精選的書刊提供候診病患自由選擇，最難能可貴的是大面積的落地窗，讓光線自然而豐富的灑入，舒適而且無壓。

向內進入看診區，同樣的還是一整排的落地窗，這對於整天在診所內工作的牙醫師而言，這真是一個天堂！因為只要自然的一抬頭，就可以看到窗外中庭的綠樹，可以讓工作中的壓力與緊張感自然的舒緩；看診區是開放式的安排，且前方有足夠的陪診空間，方便醫師與家長溝通，或是讓候診病患能 standby，這樣的設計方便順暢的處理大量病患。

診療台後方的供應區，主要是擺放看診器械及病歷資料，讓所有的治療過程都能有足夠的後援，供應區台面上的 Apple 桌上型電腦 iMac 也提供醫師在治療時所需要的資訊，而櫃台掛號資訊系統也整合在 iMac 裡面了，病患看診結束，助理也及時的將

病歷記錄和照片輸入完成。當然囉，所有的工作站之間都是內部網路連線的，這樣，不管醫師走到哪裡，只要有電腦，配合診療過程，所有的病例資料都可以一覽無遺。



診療區

貝多芬矯正中心-診療運作系統

貝多芬矯正最值得研究的，應該是它的診療運作系統。診所內的每日看診病患量非常大，而且每天到診所內支援的住院醫師及專科醫師組合都不相同，但是對於病患的處理卻都能依照標準作業流程，按步就班的貫徹



圖
像
式
病
歷

張醫師為病人量身訂作的治療計畫，而且效率依然一流！這要歸功於精簡明瞭的病歷設計，不論病患的外觀、口內照片、主訴、基本資料、治療計畫、拔牙位置、特殊發現等，都整合在一張病歷紙上，一目了然！每位住院醫師只要看到病歷上的指示，依照標準操作方式完成每個病例每次的調整，不管是由誰操作，治療的結果都能成就完美。這表示，只要診斷正確，貝多芬矯正牙醫的標準作業流程如果複製到其他牙醫診所，每一位醫師都能如此輕鬆、快樂、有效率的完成矯正治療！

韓國名醫 Dr. Park 夫婦（前排左一、左二）訪貝多芬。



貝多芬團隊 BEETHOVEN

OBS 繼續教育



印尼國際班醫師認真在模型上練習植入迷你骨釘。

也許大家都會有疑問，住院醫師的訓練不是應該經過4~5年嗎？為什麼大家都能這麼快的進入狀況呢？我想答案應該是「標準訓練流程」。所有的住院醫師都需要經過張醫師的矯正基礎班、進階班的訓練，然後繼續在精修班中逐漸精進成熟。張醫師的教學活潑而且與門診同步，您很難看到萬年不變的教材幻燈片，

因為張醫師自己一直在進步。我們會看到就在上個禮拜或是昨天門診中遇到的病例，及時的套入當天的課程主題，而且更令人驚奇的是，當天上完的課程，下午的門診病患裡就有同一類型的病例，真是現學現用零時差！

貝多芬矯正中心-國際化課程

張醫師所設計的課程，不光適合國內醫師，就連國外的醫師也都踴躍報名參加 international workshop，每個梯次的報名都非常踴躍，學員們結業後都說還要再來參加，可見張醫師的課程魅力非常吸引人！張醫師也同時與國際接軌，國際間的演講邀約不斷，漸漸的成為另一個台灣之光！另外，每每只要有國際學者到台灣演講，張醫師有機會都會邀請他們參觀診所，張醫師會為他們簡報介紹診所的運作以及訓練課程，我們看到這些國際大師他們專注而且驚訝的表情，相信貝多芬牙醫在他們心中都留下了深刻的印象。

貝多芬矯正中心-出版專業刊物

News & Trends in Orthodontics

貝多芬矯正中心經過張醫師十幾年來的經營，深獲病人的信任與支持，除了提供矯正專業服務外，張醫師也致力於繼續教育的開辦以及國內外學術活動的交流。為了讓更多牙

醫師能有一個實務交流平台，張醫師也出版了一份著重牙科實務經驗分享以及報導國外矯正新知的季刊「News & Trends in Orthodontics」，邀請國內外知名牙醫師分享他們臨床上的秘訣，並且透過此平台也讓貝多芬矯正的理念能夠透過教育，傳達給認同這份精神的醫師，並且對學習充滿熱忱，不斷精進。

貝多芬醫療團隊

貝多芬醫療團隊，當然不是由張醫師一個人單打獨鬥，我們面對的是廣泛的病人群，年齡從0歲到99歲。沒關係，小的可以送到安徒生兒童牙醫，年長者有贖復專科解決您「無牙」的問題，牙周病及植牙方面有牙周專科醫師，其餘如口腔外科及根管治療、一般牙科都有專人負責，因為都是團隊內轉診，團隊醫師群共同來照顧，對於治療計畫的擬定及溝通較為直接且方便，對於病患的照顧當然是無微不至。

當然，有一群像貝多芬牙醫的全能助理是必要的。助理群也是貝多芬牙醫治療標準流程的重要關鍵！每一位新病人從進入診所開始，就由專業的公關組助理引導填寫基本資料，並介紹環境及

貝多芬醫師團隊。



諮詢流程，並且拍攝收集病患的口外及口內照片、取模。而在每日的門診治療流程，則由資深的助理組長來指揮，跟診助理引導回診病患就診前刷牙，看診前對病患的關心及詢問，器械準備好了之後由住院醫師先執行治療計畫，之後由張醫師檢查、微調。最後再由助理來指導病患口腔衛教，橡皮筋的佩

戴、術後注意事項....等等，然後結束回診流程。助理在病患及醫師之間，扮演重要的關鍵角色，就像鋼筋永遠需要水泥一樣，如果您診所的助理還沒能達到您的理想，請參加貝多芬舉辦的專業助理訓練班吧！

安徒生兒童牙科 守護孩子口腔的健康



診療台頂上就是繽紛的花朵，讓孩子徜徉在童話的懷抱裡。

安徒生兒童牙科-緣起

在貝多芬矯正中心與一般牙科深耕新竹公學新村社區多年後，社區的里長跑來跟貝多芬院長張醫師反應說，社區

的孩子牙齒痛都需要跑到市區才能得到專科的照顧，里長伯代表社區的家長們希望貝多芬也能在社區開一個專門為兒童設計的兒童牙科。因為聽到社區民眾的心聲，以及許多在貝多芬做矯正的家長也在反應一樣的需求，2008年元旦我們開設了「安徒生兒童牙科」。安徒生的院長徐玉玲醫師表示，安徒生的理念是希望能塑造一個父母安心，孩子開心的看牙環境，提供永續優質的服務，照護不僅是孩子的口腔生理與心理的健康。

安徒生兒童牙科-環境介紹

診所以經典童話作家安徒生命名，將耳熟能詳的故事，如國王的新衣、賣火柴的小女孩、拇指姑娘融入診所的場景中，並結合童趣的想像信手塗鴉，留予親子間歡欣共處的童話氛圍。希望在寶貝的成長過程中，看牙不只是為了健

金牛頓藝術科技 牙醫科技教育中心

成功的牙醫師們經常要面臨的兩難就是，想學的新技術這麼多，永遠抽不出足夠的時間讓我們好好坐下來，完整地聽一場演講或是從頭到尾讀完一本新書。金牛頓藝術科技將貝多芬精湛的臨床技術以及完整的教學系統，透過蘋果科技的硬體 iPod touch 以及軟體 Podcast，變成隨時隨地可以學習矯正的行動學習工具，已經掀起國際矯正界的一場學習旋風。

金牛頓藝術科技- 行動學習 iPod touch + 視訊課程

張慧男醫師率先研發將 Damon 高效矯正、迷你骨釘 OrthoBoneScrew 以及助理訓練這三種屬性完全不同，但是又與牙醫師在職教育密切相關的課程，透過蘋果電腦內建的簡報軟體 Keynote，製作成以照片和影片為主的簡報檔案，

再透過軟體本身內建的轉檔功能，將平時授課的電腦簡報內容轉化為視訊影片，並安裝在 iPod touch 或 iPad 裡。不論是已經上過課希望溫故知新，或是沒時間親自來上課的牙醫師，都可以透過反覆觀看這些包含清楚分解動作的視訊影片，來增強高效學習的效果。由於 iPod 視訊課程是完全數位化的內容，也方便日後任何的修改和更新，所以完全不用擔心一旦有新的修正或改變，過去已經購買的珍貴資料就變成明日要被淘汰過期的垃圾。

金牛頓藝術科技- 教學利器蘋果電腦+Keynote

金牛頓除了提供牙科專業視訊課程外，也負責設計、規劃、維護貝多芬牙醫團隊的教學資訊環境。舉例來說，日前台大張心涪主任帶著目前仍在美國接受矯正專科訓練，正好回台休假的女婿來參觀貝多芬。診所當天剛好有一個門診手術的個案，訓練有素的助理們有些協助醫師執行臨床上的步驟，有些則進行手術過程的攝影及錄影。待手術過程結束後，助理立刻就將手術的照片放入病人專屬的 Keynote 簡報檔案中，連同病人過去的病例照片，以及剛才的手術錄影畫面，一起整理在這個病人的電子病例檔案中。執刀的醫師則立刻在電腦銀幕上秀出這個病人的治療歷程，向病患及家屬說明治療的進程以及療效，之後則繼續利用這個案例與張醫師進行深度的專業個案討論。討論結束後立刻將這個案例的電子檔燒成光碟，讓張醫師和他的女婿可以帶回去做進一步的研究。

What is Your Tx. Plan?



貝多芬團隊 BEETHOVEN

康，也能是一件有趣、親子同樂的經驗。從依孩童身高設計不同高度的刷牙檯面，兒童專屬的廁所，到兒童專屬的遊戲區和閱讀區，安徒生從許多細節裡體現一個以兒童為中心的診療環境。

安徒生兒童牙科-長期完整保留兒童口腔資料

對兒童牙科而言，安徒生希望能提供的是長期照護，因為生長的過程中，除了在心理上漸漸與小朋友建立關係之外，在口腔顏面發育的部份更希望能透過口內外照片的收集與追蹤，充分掌握整體口腔健康，骨骼生長的情況。所以，為了達成這個目的，每位孩子的資料完整收集，電腦傳輸方式以及大量資訊的統整合理，安徒生都採用最先進的軟硬體技術，高畫質數位單眼相機與即時無線傳輸直接到個人病歷，以及蘋果電腦方便的雙作業系統界面功能，兼顧健保作

業及儲存個人影音記錄等作業系統。一點一滴地保存所有小朋友的生長及看牙記錄，藉以提升學術及研究與服務品質。

安徒生兒童牙科-兒童衛教

預防勝於治療，尤其是幫年紀尚幼的孩子處理蛀牙更是一項挑戰父母與醫師心臟的浩大工程，有鑑於此，衛生健康教育應向下紮根，所以安徒生兒童牙科除了現在已有幼稚園定期來院檢查塗氟之外，希望還能定期為社區媽媽充實口腔知識以及提供一對一教學，幫助媽媽們從小幫助孩子養成正確的觀念與習慣。另外與孩子口腔健康有切身相關的領域，就是乳牙幹細胞的培養。有鑑於國內外此方面的研究發展已漸臻於成熟，聰明的爸媽除了自寶寶出生後打好口腔健康的基礎，更要懂得保存未來的本錢。

植牙中心 未來展望

一般醫師可能認為這需要幾個實習醫師花上一個星期才能做出來的病例報告，利用適當的科技工具，這一切在短短的30分鐘內就全部完成了，不論是與病人，家屬溝通，訓練新進醫師、助理或與其他資深醫師進行專業討論，蘋果電腦加上 Keynote 的組合，讓進行個案討論和製作專業訓練教材，變得輕而易舉。再搭配 Keynote 最新加入的即時錄音功能，醫師教學講解的內容可以透過電腦內建的麥克風錄下來，透過影片轉檔的功能，新製作好的教學內容就可以放入 iPod，讓你立刻隨身帶著走。

金牛頓藝術科技- 研發迷你骨釘 OrthoBoneScrew

由貝多芬矯正中心的實務經驗出發，張慧男醫師領導開發矯正用的迷你骨釘，金牛頓的研發團隊包含國內外學界專家如 University of Indiana-Purdue 牙醫所所長 Dr. Eugene Roberts 教授，中央大學林上智教授，以及國內知名矯正醫師林錦榮醫師等。兩年來不斷改進，深受國內醫師的喜愛。透過矯正骨釘的使用，可以大大減少因為矯正需要拔牙的機率，傳統上某些特殊需要接受手術矯正的案例也可以透過骨釘獲得不錯的治療效果。

近年來，貝多芬矯正中心的病人逐漸由兒童青少年轉向成人病人為大宗的結構，這意味著成人對美感的要求也愈發強烈，但這也是貝多芬的全新挑戰，因為面對成人的治療時，往往除了牙齒排列的問題需要矯治外，牙周病，大範圍的缺牙，舊有假牙補綴物汰舊以及矯正後的植牙或假牙補綴評估與重建。因此貝多芬有義務，也必須為成人提供矯正前中後完整的全面專業的治療建議與治療。

過去一般認為成人的牙科治療只需要兩個專科：牙周與補綴，但我們現處於強調 inter-disciplinary 科際間協同治療的時代，其中，矯正與植牙更是扮演了協同治療中最重要兩個支柱，矯正提供了地基，植牙則是蓋房子的支柱，因此，金牛頓植牙中心的成立，是為了要提供病人更完善的治療，以及建構更完整的貝多芬醫療專業。

貝多芬體系的核心價值在於教育兩字，金牛頓植牙中心也將落實教育當作成立的最高宗旨，透過課程的建立，會讓貝多芬各個專科的駐診醫師擁有相互溝通的舞台，張醫師相信，唯有在課程中報告給參與的學員分享，才會真正的認真整理自己的病例或是將自己的治療心得內化成有系統的 SOP。透過一次次的整理，相互討論，將能大大提升醫師的專業能力，醫療品質也相對提升。

金牛頓植牙中心即將於 2011 年成立，在去年，我們成立了植牙論壇，預先替矯正及植牙科際協同整合治療作暖身，今年度更與美國南加州大學（University of Southern California）合作，成立了南加大泛太平洋在台的植體繼續教育課程。希望對學習有相同熱忱的醫師能夠加入我們，一起為提升醫療品質作努力。接下來，今年度重頭戲最值得推薦您一定不可錯過的六月份 VISTA & Sinus Lift Workshop！



Come & Learn



anytime

想上Mac的課程可是週末總是抽不出時間嗎？
來金牛頓預約最新的課程，讓您 learn Mac
anytime you want!

課程預約專線：03-573-5676 詳細辦法請上 <http://www.newtonsa.com.tw>

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	6 月 30 日 (四) 09:00~16:00	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	7 月 28 日 (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	8 月 25 日 (四) 09:00~17:00	科技人、醫師、 教師、學生
International	Damon and OBS workshop	1.Damon System 2. OrthoBoneScrew	5/10-12, 8/9-11, 11/15-17	International Orthodontists

Newton's A Summer 11' 課程

For comfort & retention of elastic chain
磨菇頭部外型

For lever arm to solve impacted tooth
方形角線釘孔

For ease of hygiene control & extra attachment
雙頸部設計



Ortho Bone Screw

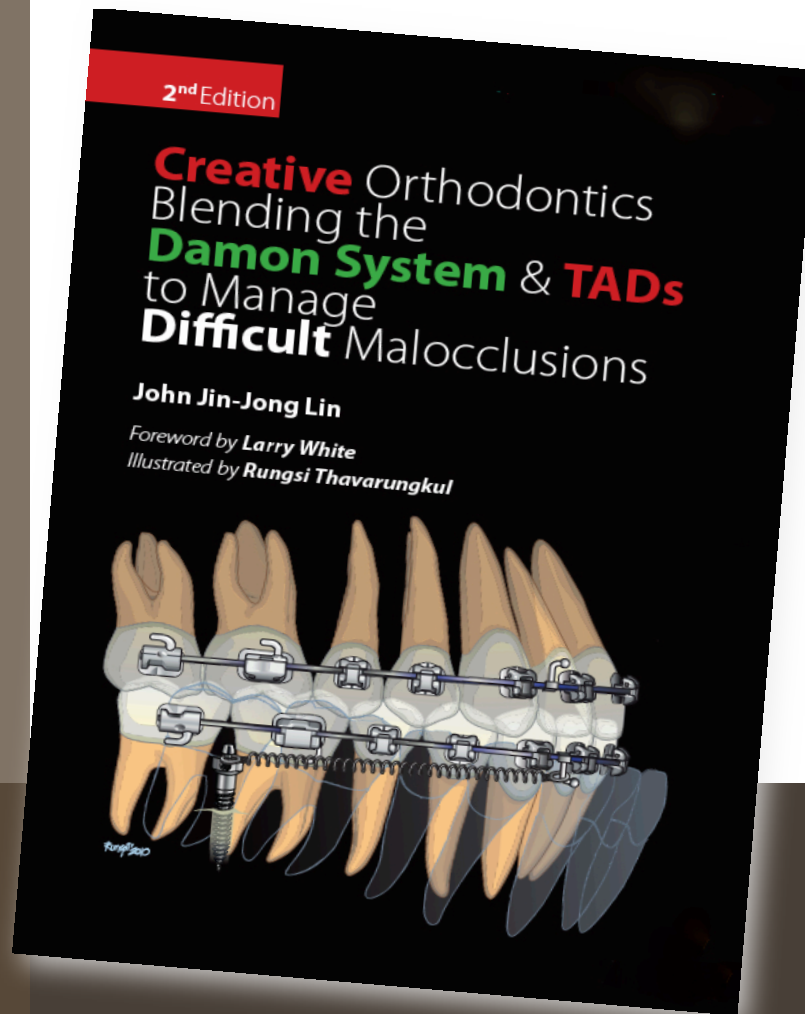
矯正專家強烈推薦

Order: +886-3-573-5676 Ms.OBS

For more information, visit <http://orthobonescrew.com>

“An excellent instructive and reference text for postdoctoral orthodontic students and specialist clinical orthodontists. Definitely recommended reading!”

—Alex Jacobson, associate editor of *AJODO*



Dr. Chris Chang gave a lecture at 4th Asia Damon Forum, Seoul, Korea, April 2-3, 2011