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2025

第四届

张慧男正畸大师班

全新重启的 2025 贝多芬张慧男正畸大师系列课程是由**国际知名讲师张慧男医师亲自规划及授课，课程特色强调由临床病例带动诊断、分析、治疗计划拟定与执行技巧。**

本年度**特别新增两天的课程，加入最新的隐形牙套内容**，让学员可以物超所值地学习最新正畸趋势！透过数位视频反覆观看，课堂助教协助实操，让学员在短时间能快速上手，感染**"热爱正畸学，热爱学正畸"**的热情。

名额有限，一年仅有一次机会完整体验正畸大师课程，错过只能等明年啰！

2024/12月课程地点：五星级厦门五缘湾凯悦酒店（厦门，湖里区，湖里区日圆二里五号）

(后续课程地点待公布)

课程 1 - 6/1, 12/22('24)
1. 如何选择第一个病例:建立自信
2. 精准的托槽定位法
3. 高效正畸治疗"四步法"
4. 病例总结和讨论
5. 托槽粘结+BT(合垫)+头影测量

练习：临床摄影技术

课程 2 - 6/2, 12/23('24)
1. 简单高效的支抗系统的运用
2. 拔牙与否的诊断分析
3. 病例总结和讨论
4. 实操：微种植支抗系统 + 间隙关闭法 + 牵引钩的使用 + 弹簧的使用

练习：头影测量；完成患者照片记录（模板）

课程 3 - 6/22
1. 戴蒙系统的诊断与微调
2. 正畸完成后的效果评判
3. 病例总结和讨论
4. 实操：弓丝的弯制和固定保持器的制作

练习：指导患者拍照记录（用自己的时间）；修图技术

课程 4 - 6/23
1. 完美的结束：病例演示
2. 保持和复发：病例演示
3. 病例总结和讨论
4. 实操：演讲演示

练习：演示病例报告

课程 5 - 7/20
1. 正畸中生物力学的诊断分析
2. 正畸中软组织和硬组织的诊断分析
3. 青少年与成人正畸的诊断分析
4. 病例总结和讨论

练习：病例报告

课程 6 - 7/21
1. 对于拥挤病例拔牙与否的诊断分析
2. 如何实现上颌的压入
3. 如何实现下颌的压入
4. 病例总结和讨论

文献探讨：托槽的定位；埋伏尖牙的正畸

- **第三届学员补课日期：**
  2024/12/22-23

  (第三届学员可参加本届实体课程，需事先登记以利教室准备。)

- **本届学员方案二选一：**
  1. 参加 2024/12/22-23 实操课程，2025/6/1-2 可现场听课复习不实操
  2. 参加 2025/6/1-2 现场实操课程

课程 7 - 9/14
1. 缺失牙的正畸分析：前牙缺失 vs. 后牙缺失
2. 反合的正畸分析：前牙反合 vs. 后牙反合
3. 病例总结和讨论

文献探讨：尖牙替代缺失的侧切牙的正畸分析

课程 8 - 9/15
1. 高角开合与低角深覆合病例的诊断分析
2. 美国正畸协会，DI CRE 分值测量实操
3. 病例总结和讨论

文献探讨：DI & CRE 文献

课程 9 - 10/12
1. 如何改善露龈笑；矫治器拆除的注意事项
2. 正畸结束时的微调
3. 病例总结和讨论

文献探讨：完美的正畸效果（良好的咬合；前牙的美学效果）

课程 10 - 10/13
1. 联合种植支抗的正畸治疗
2. 多学科联合治疗成人复杂病例
3. 病例总结和讨论

文献探讨：IDT

课程 11 - 11/16
1. 隐形牙套正畸
2. 隐形牙套及其挑战

文献探讨：隐形正畸前置治疗

课程 12 - 11/17
1. 隐形牙套结合支抗钉治疗
2. 隐形牙套力学

文献探讨：（待公布）

课程含案例互动与模型实操，并赠课程电子书讲义、课程视讯。
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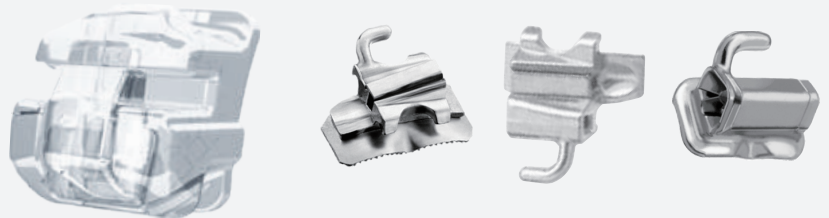
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Class II Malocclusion with Impacted and Transposed Canines Treated with Modified Vertical Incision Subperiosteal Tunnel Access (VISTA) and Bone Screws

Abstract

Introduction: *A 11yr-8mo-old female presented with a chief complaint of unerupted bimaxillary right canines.*

Diagnosis: *The patient had a right end-on Class II and left full-cusp Class II dental malocclusion with an overjet of 8mm. A 100% impinging deep bite was also noted. This severe malocclusion was further complicated by an incompletely transposed and impacted maxillary right canine and a completely transposed and impacted mandibular right canine. The discrepancy index (DI) was 59.*

Etiology: *The cause of the severe impaction was a deviated path of eruption that may be related to over-retained primary canines.*

Treatment: *A right-sided infra-zygomatic crest (IZC) bone screw and a right-sided buccal shelf (BS) bone screw were used as anchorage for a modified vertical incision subperiosteal tunnel access (VISTA) submucosal procedure to retract unerupted bimaxillary right canines to their correct sagittal relationships, respectively. Bilateral IZC bone screws, Class II elastics, combined with anterior and posterior bite turbos (BTs) were used to correct the Class II malocclusion, excessive overjet, and deep bite.*

Outcome: *After 35 months of active treatment, this difficult malocclusion, with a Discrepancy Index of 59 points, achieved a Cast-Radiograph Evaluation score of 26 points and a Pink and White esthetic score of 4 points. The patient was very pleased with the treatment outcome. Final records were collected at the 1.5-year recall appointment. (J Digit Orthod 2024:75:54-74, reprinted with permission from Int J Orthod 2021;32(2):7-17)*

Key words:
Impaction, impacted and transposed maxillary canine, impacted and transposed mandibular canine, incompletely transposed impaction, completely transposed impaction, modified vertical incision subperiosteal tunnel access, VISTA, bone screw, closed eruption technique

Introduction

Recovering severely displaced, impacted canines is among the most challenging clinical problems in orthodontics. An impacted canine can lead to strenuous tooth eruption and movement, which could thereby negatively influence its esthetics and functions.[1-4] Notably, the corrective treatment for a transposed impaction becomes an even greater challenge. The standard procedure to recover impaction includes surgical exposure and forced orthodontic eruption.[5,6] Kokich[7] has proposed three surgical methods for uncovering labially impacted maxillary canines: an excisional uncovering, a closed eruption technique (CE), and an apically positioned flap (APF). Accordingly, deep and high bony impactions require treatment using the latter technique, whereas horizontal bony impactions are more suitable for the last type. Previously, the anchorage for traction of the

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

impacted canines has been achieved either through adjacent anchorage of teeth or through a main wire. If the deep impaction is severely displaced, it becomes impossible to move. In such a case, the anchorage for traction cannot provide a three-dimensional force to pull back the impaction to the baseline position.

Bone screws can help guide impacted canines with greater precision during eruption while avoiding unwanted movement of anchorage teeth.[7] Their other advantages include ease of placement and removal, minimal need for patient compliance, and cost effectiveness.[8] They constitute a strategic component to the treatment of impacted teeth.

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

The vestibular incision subperiosteal tunnel access (VISTA), as developed by Zadeh,[9,10] repositions the gingival margins coronally to correct periodontal defects in the maxillary anterior region (Fig. 2). In contrast, a modified VISTA approach, as developed by Chang,[10-14] exposes the crown of the canine surface and provides an exit tunnel for the power chain. Its advantage lies in its relief on the strain when creating a full thickness flap in the procedure, whereby bone screws play an auxiliary role as anchorage devices.

The current patient is a rare and difficult case because she had two impacted and transposed canines: maxillary right canine, an incompletely transposed impaction, and mandibular right canine, a completely transposed impaction.[15-17] The purpose of this case report is to document our use of a modified VISTA method combined with placement of bone screws for managing transposed, labial impacted canines.
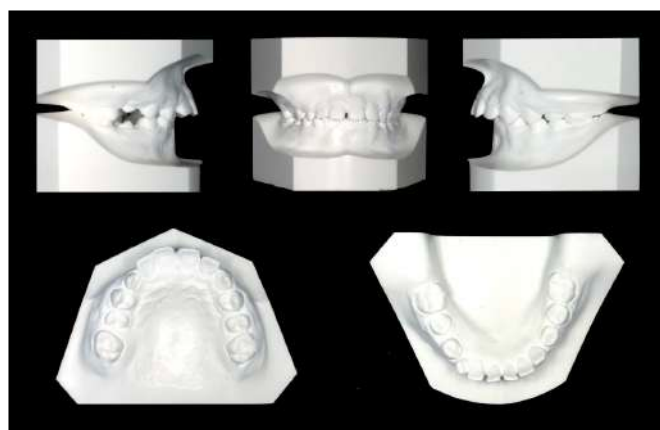
Diagnosis and Etiology

A 11-year-8-month-old girl presented with her parents for orthodontic consultation to evaluate her unerupted bimaxillary right canines. Clinical examinations showed that primary right canines in both arches were over-retained. In addition, the overjet was 8 mm, and the overbite was 100% impinging deep bite. Right end-on Class II and left full Class II molar relationships were noted. A 2 mm diastema was noted between the maxillary central incisors. On average, a 1 mm space was found between all mandibular teeth (Figs. 1 and 3).

A panoramic radiograph revealed that the apex of the maxillary right canine was located in the proper eruption site, but its vertical position was 12 mm apical to the alveolar crest. Besides, its crown tip overlapped the distal root surface of the maxillary right central incisor. The impacted mandibular right canine was parallel to its adjacent teeth, but its crown and root structure overlapped the root of the mandibular right lateral incisor. The

Fig. 2:
As shown from left to right, the VISTA procedure is a novel, minimally invasive approach for undermining the labial mucosa to correct soft tissue defects in the maxillary anterior region.

Fig. 3: Pre-treatment study models (casts)

maxillary right canine was diagnosed as incomplete transposed impaction, and the mandibular right canine was diagnosed as complete transposed impaction (Fig. 4).[15-17]

Lateral cephalometric analysis of the pre-treatment data indicated a low mandibular plane angle (15°), a convex profile (G-Sn-Pg, 26°), and a protrusive upper lip (3mm to the E-Line). The bimaxillary incisors had increased axial inclination (U1 to SN, 118°, L1 to MP, 116˚) (Fig. 5; Table 1). Pre-treatment CBCT images showed that the bimaxillary right canines are both labial impactions (Figs. 6 and 7). The American Board of Orthodontics (ABO) Discrepancy Index (DI) was 59 as shown in the subsequent worksheet.

Treatment Objectives

The treatment objectives were to align the bimaxillary impacted canines without causing detrimental effects on the adjacent incisors, to close all spacing, and to establish ideal overjet and overbite.

Treatment Alternatives

The ideal objective for a full fixed-appliance treatment would be to resolve the malocclusion and align the impacted cuspids. Two treatment plans were thus proposed: Option 1 would require surgical removal of the impacted canines, substituting them with the adjacent first premolar, and extracting the other two first premolars. This treatment option would warrant a shorter treatment time but would be detrimental to the patient's profile. On the other hand, Option 2 would involve a non-extraction treatment to align the transposed canines to their original positions. This would take more time to treat but would result in better esthetics and occlusion. After discussing the advantages and disadvantages of each option with the patient and her parents, we chose Option 2, the non-extraction treatment.

■ *Fig. 5: Pre-treatment cephalometric radiograph*

CEPHALOMETRIC SUMMARY

SKELETAL ANALYSIS	PRE-TX	POST-TX	DIFF.
SNA° (82°)	82°	82°	0°
SNB° (80°)	79°	79°	0°
ANB° (2°)	3°	3°	0°
SN-MP° (32°)	15°	17°	2°
FMA° (27°)	8°	10°	2°
DENTAL ANALYSIS			
U1 TO NA mm (4mm)	8	3	5
U1 TO SN° (104°)	118°	93°	25°
L1 TO NB mm (4mm)	3	1	2
L1 TO MP° (90°)	116°	115°	1°
FACIAL ANALYSIS			
E-LINE UL (-1mm)	3	-0.5	3.5
E-LINE LL (0mm)	0.5	-1	1.5
%FH: Na-ANS-Gn (56%)	52%	53%	1%
Convexity: G-Sn-Pg (13°)	26°	23°	3°

■ **Table 1:** *Cephalometric Summary*

Treatment Progress

The treatment can be divided into two phases: the first phase to correct the impaction, and the second to complete the final alignment.

Phase 1: Correct the impaction

A self-ligating fixed appliance (Damon Q®, Ormco Corporation, Brea, CA) was bonded on all maxillary permanent teeth, except for the maxillary right lateral incisor. Notably, the unbonded lateral incisor acted as a free body to avoid any interference with the path of retraction which might result in more root resorption. A 0.014-in CuNiTi archwire was then engaged. A closed coil spring was inserted between the brackets on the maxillary right central incisor and the maxillary right first premolar to create space for the impacted maxillary right canine.

One month later, the initial surgery to expose the impaction was incorporated with a modified VISTA procedure designed to coordinate with an orthodontic retraction mechanism anchored by an extra-alveolar OrthoBoneScrew® (OBS) (2x12-mm, iNewton, Inc., Hsinchu, Taiwan). The bone screw had been placed in the right infra-zygomatic crest (IZC). The first vertical incision was performed along the mesial line angle of the lateral incisor. Following the initial incision, a periosteal elevator was used to detach the periosteum and expose the impaction, after which the bone covering the crown was removed down to the cementoenamel junction (CEJ). A button was bonded to the crown of the impaction. The bone in the planned path of retraction was removed with a #4 carbide round bur to facilitate tooth movement. Then, a second incision was performed along the mesial line angle of the maxillary right first premolar to make an exit tunnel for a power chain. A power chain was attached from the button to the IZC screw. After engaging the force, the two vertical incisions were sutured using 6-0 nylon to ensure minimal damage to the mucosa (Fig. 8).[10]

The procedure to recover the impacted mandibular right canine is similar to that mentioned above. The modified VISTA procedure was applied to coordinate with an orthodontic retraction mechanism that was anchored by an extra-alveolar OBS (2x12-mm)
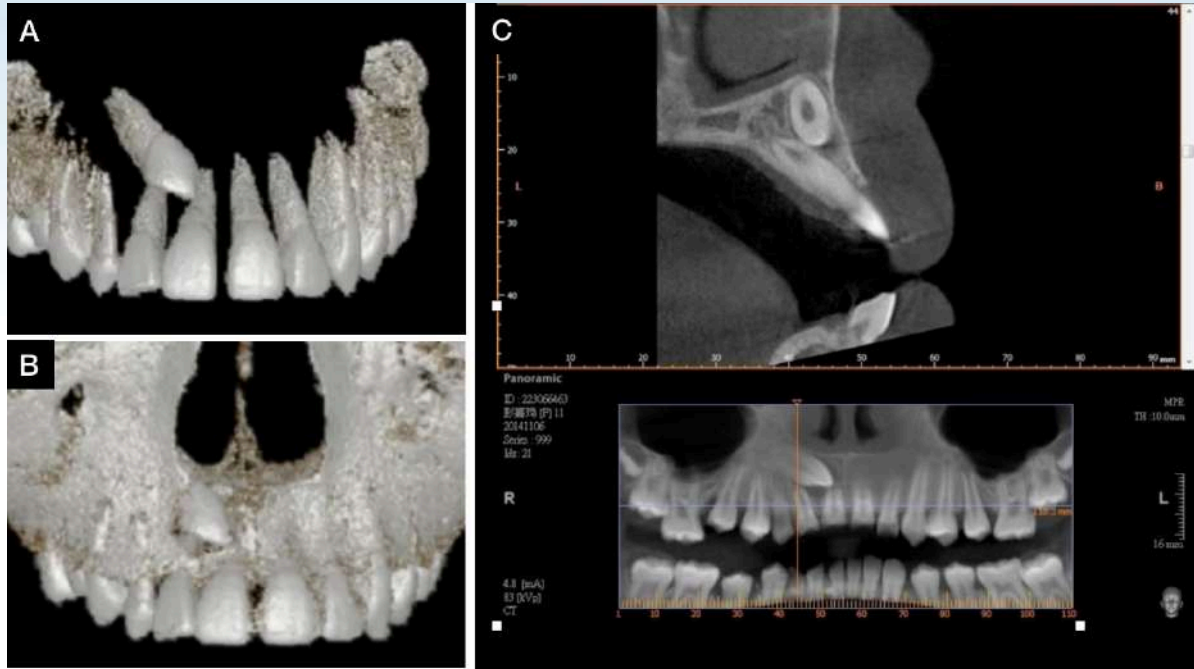
■*Fig. 6:* Pre-treatment CBCT
A. 360º rotated animation around the impaction with the bone covering deleted. B. 360º rotated animation around the impaction covered with bone. C. Cross sectioned slice through the impaction
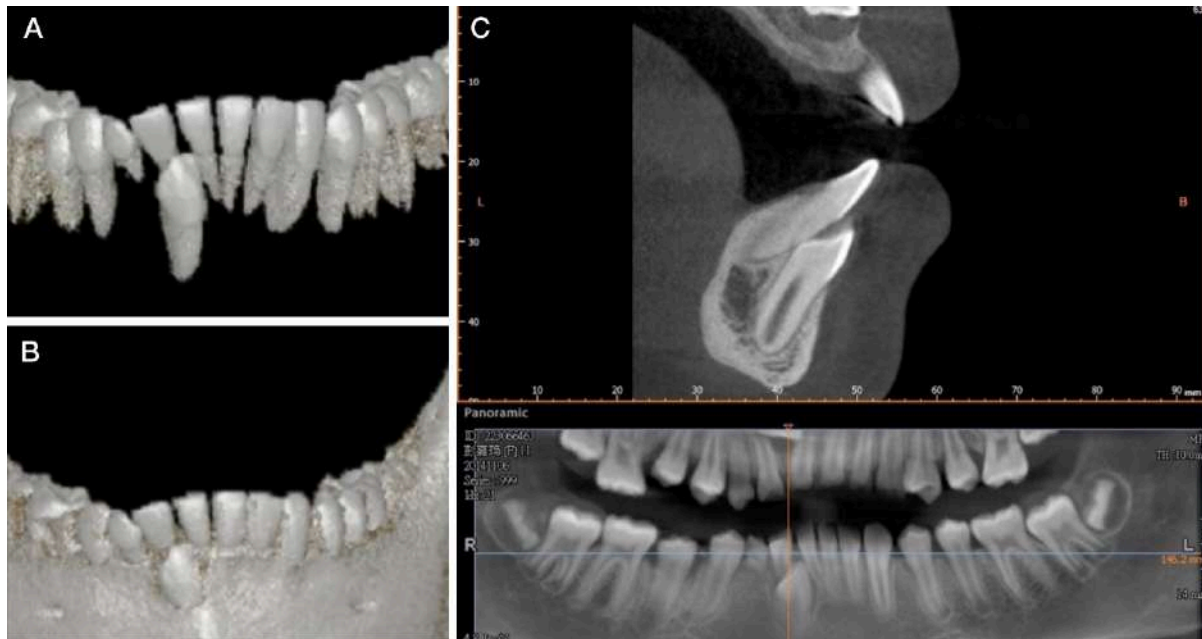
■*Fig. 7:* Pre-treatment CBCT
A. 360º rotated animation around the impaction with the bone covering deleted. B. 360º rotated animation around the impaction covered with bone. C. Cross sectioned slice through the impaction

placed in the right buccal shelf (BS) (Fig. 9). Primary bimaxillary canines were then removed.

During the 5th month, the incision around the exit tunnel for the power chain had healed well. The loop of power chain was cut to reactivate the retraction force (Fig. 10). During the 7th month, a panoramic radiograph was taken to check the position of the two impacted canines. The mesio-distal position of impacted maxillary right canine was in the correct eruption position, but its vertical position was still far from the alveolar crest. The mandibular right canine crown went back into the oral cavity, but the apex was still located between the mandibular central and lateral incisors (Figs. 10 and 11). Subsequently, the right BS screw was removed, and a left IZC screw was installed.

During the 11th month, closed eruption technique was performed because of the unexposed maxillary right canine. The bone covering the maxillary right canine was removed to attach a ligature wire from the impacted crown to the main wire (Fig. 12). The track of tooth movement was recorded in Fig. 11.

Phase 2: Complete the final alignment

Also, during the 11th month, a self-ligating fixed appliance (Damon Q®, Ormco Corporation, Brea, CA) was bonded on all mandibular permanent teeth and the maxillary lateral incisor, standard torque brackets were selected for the lower incisors, and high torque brackets were chosen for canines. An 0.014-in CuNiTi archwire was engaged. Notably, the axis of the
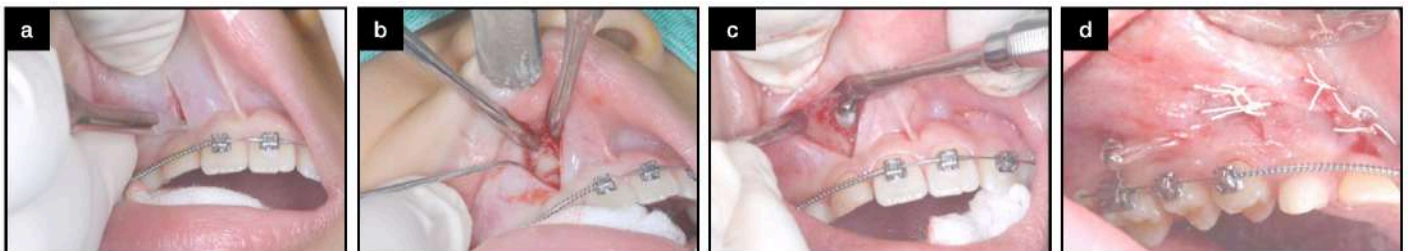

■ *Fig. 8: Procedure of the maxillary right canine surgery*
(a) The first incision was made along the mesial line angle of the maxillary right lateral incisor. (b) The bone covering the crown of the impaction was exposed, and then removed. (c) A button was bonded onto the crown of the impaction and all obstacles were removed. (d) a second incision was performed along the mesial line angle of the maxillary first premolar to establish a traction route for the power chain. The power chain was retracted from the IZC screw to the button. Finally, the two incision lines were closed with a 6-0 Nylon.
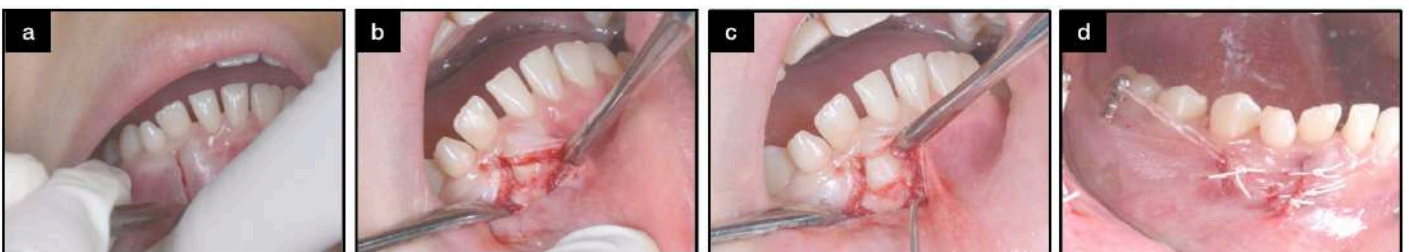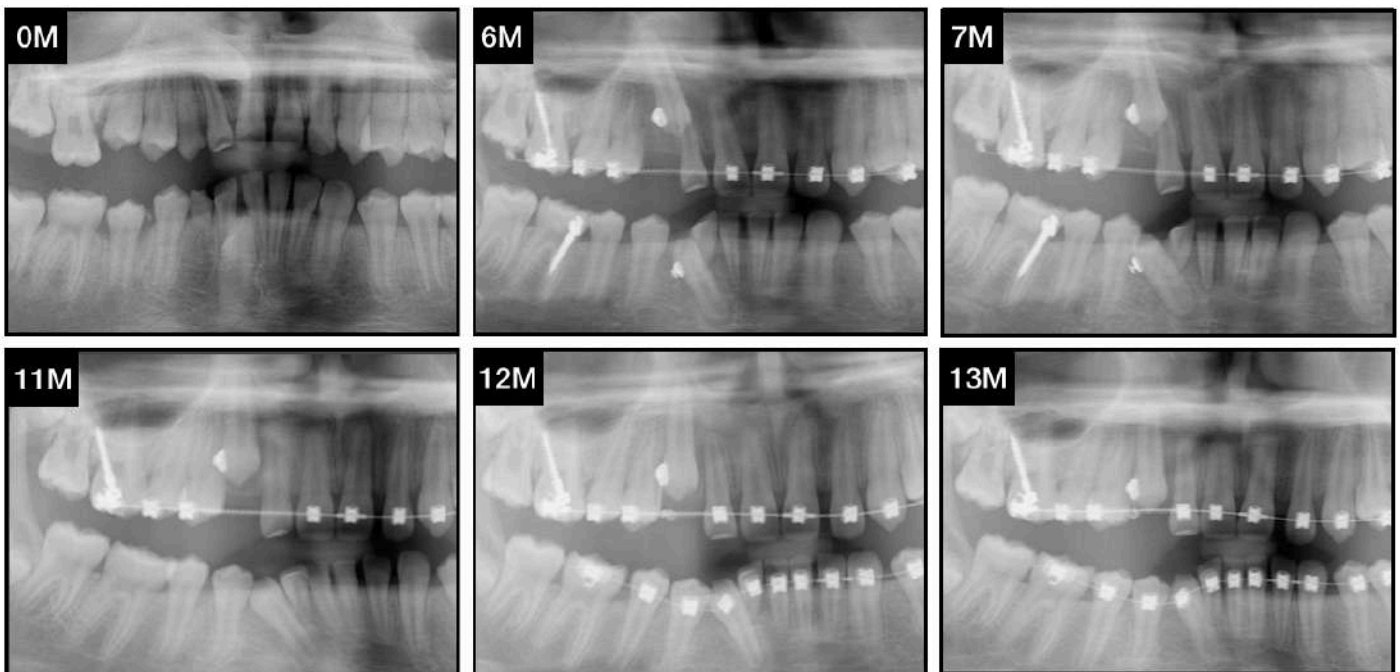

■ *Fig. 9: Procedure of the mandibular right canine surgery*
(a) The first incision was along the mesial line angle of mandibular right lateral incisor. (b) The bone covering the crown of the impaction was exposed, and then removed. (c) All obstacles were removed after the button was bonded onto the crown. (d) A second incision was performed along the mesial line angle of the mandibular first premolar to establish a traction route for the power chain. The power chain was retracted from BS screw to the button. Finally, the two incision lines were closed with a 6-0 Nylon.
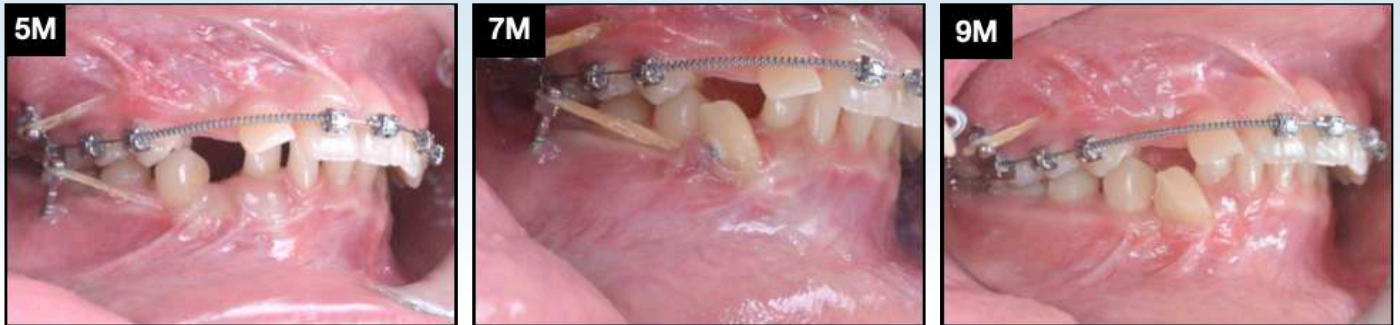
Fig. 10: *Healing process after surgical exposure in the 5th month, 7th month, and 9th month*

Fig. 11: *Track of tooth movement*

Fig. 12: *Procedure of the closed eruption technique in the 11th month*

bracket had been tilted distally relative to the axis of the mandibular right canine, such that the apex could be shifted distally in order to correct for its transposed apex (Fig. 13).

During the 14th month, the maxillary right canine had been finally completely recovered. A high torque Damon bracket was bonded. The sequence for the upper archwire was 0.014-in CuNiTi, 0.014x0.025-in CuNiTi, 0.017x0.025-in TMA, and 0.016x0.025 SS. The sequence for lower archwire was 0.014-in CuNiTi, 0.014x0.025-in CuNiTi, and 0.017x0.025-in TMA (Table 2).

During the 16th month, bite turbos were bonded on the occlusal surfaces of bilateral mandibular first molars to remove any occlusal interference. A canine

Fig. 13:
The axis of the bracket was tilted distally to the axis of mandibular right canine in order to move the apex distally.

Class II malocclusion was observed; as such, Class II elastics (Quail 3/16-in 2-oz, Ormco, Glendora, CA) were bilaterally worn from the upper canines to the lower first molars.
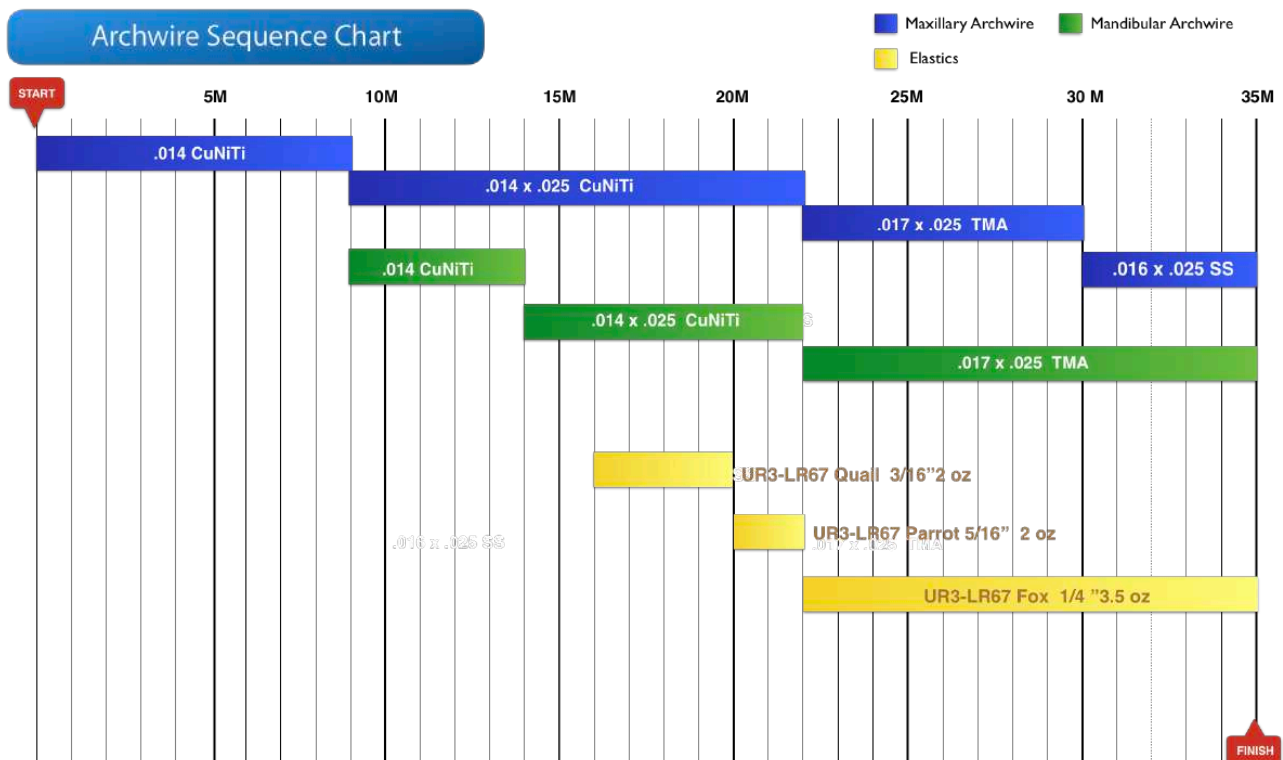

Table2: *Archwire sequence chart*

Alignment and leveling were completed in the 22nd month, but deep bite, 2mm overjet, and bilateral canine Class II relationships were still noted. In order to fix the above problems, the bite turbos were removed in the lower arch, and new ones were placed on the lingual surface of the bilateral maxillary central incisors. In addition, Class II elastics and bilateral IZC screw retraction were used. After 35 months of orthodontic treatment, all brackets were debonded, and a fixed retainer was bonded on the lower anterior incisors. Maxillary and mandibular

clear overlay retainers were delivered for full-time wear for the first six months and nights only thereafter. The entire treatment sequence is documented in Figs. 14-18.

Treatment Results

The treatment results for this patient were excellent. All teeth have been well aligned in their proper positions (Figs. 19 and 20). Bilateral occlusal relationships are Class I with a normal overjet and
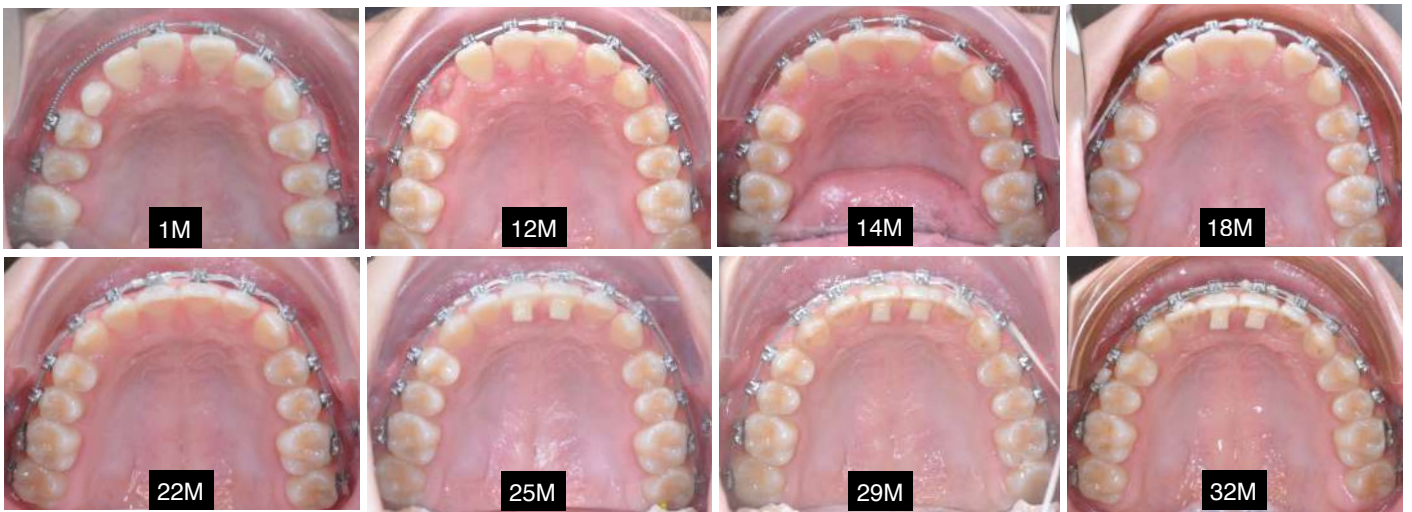

■ *Fig. 14:* Frontal view of the treatment sequence is shown at treatment times in months (M): 1M, 12M, 14M, 18M, 22M, 25M,29M, and 32M.
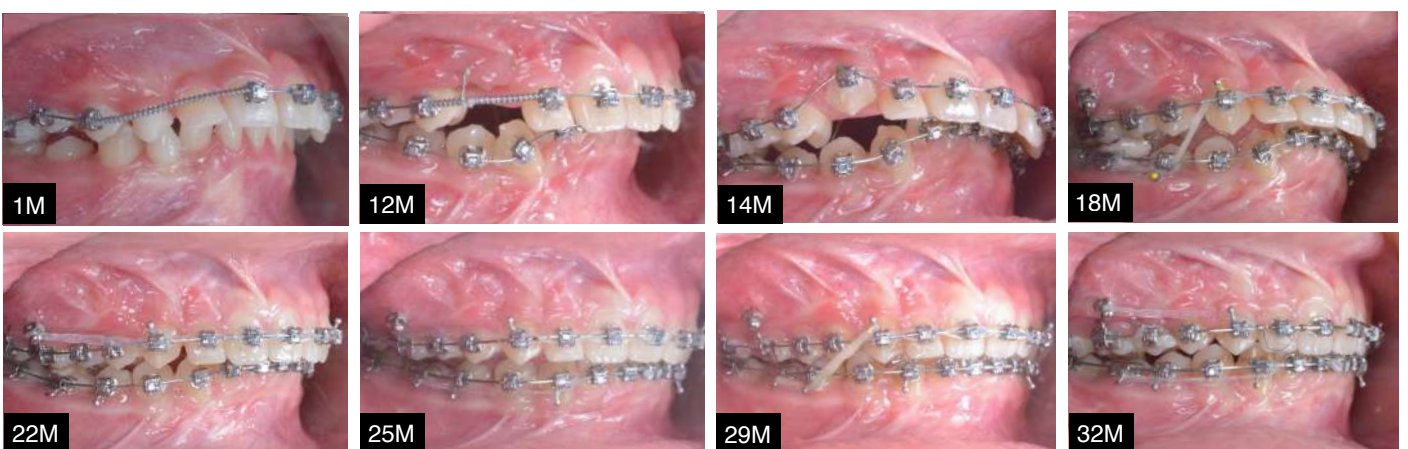

■ *Fig. 15:* Right view of the treatment sequence. Note: the eruption procedure of the impacted bimaxillary right canines
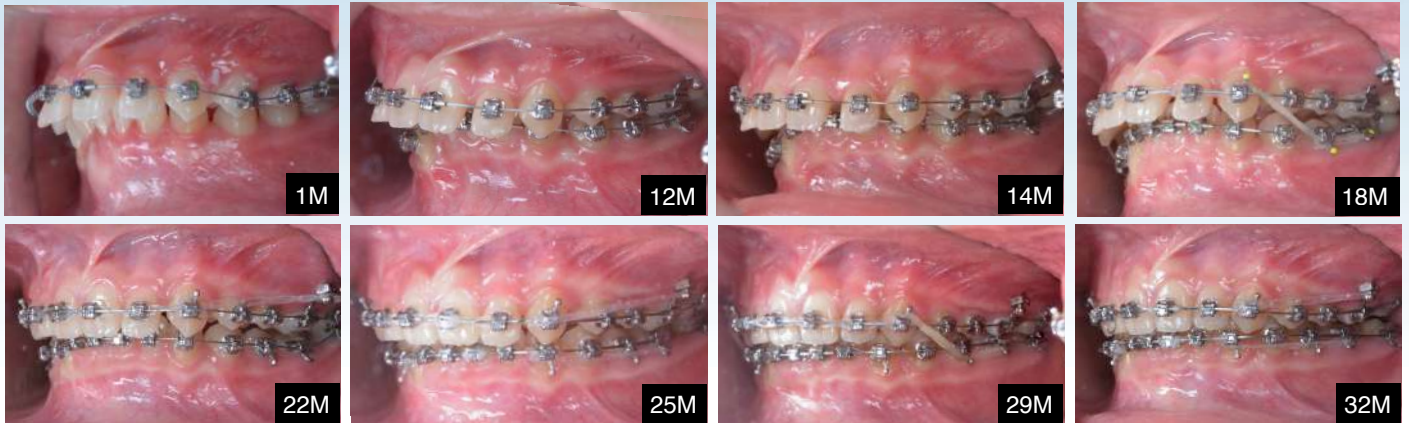
■ Fig. 16: Left view of the treatment sequence. Note: the correction procedure for deep bite

■ Fig. 17:
The progress of the upper arch is shown. Note: Bite turbos were boned on the lingual surface of bilateral maxillary central incisors to remove occlusal interference.
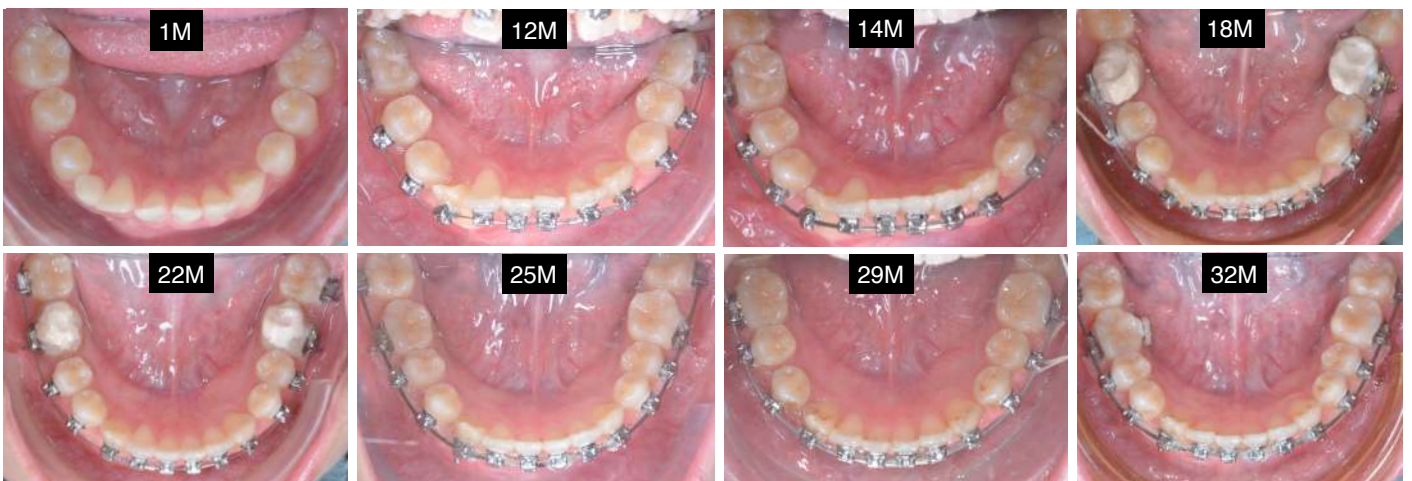
■ Fig. 18:
The progress of the lower arch is shown. Note: The correction procedure for distal-tilting mandibular right canine is at 12M, 14M, 18M and 22M.

overbite. All treatment objectives were successfully reached. A panoramic radiograph revealed good root parallelism (Fig. 21). The superimposed mandibular image of the post-treatment cephalometric data (Table 1) and the cephalometric superimpositions (Figs. 22 and 23) show the growth in condylar length that contributes to the increased facial height. The maxillary incisors have been retroclined by 25°, and the mandibular incisors have moved vertically downwards. The patient was satisfied with her teeth and profile. The CRE score was 26 points as shown in the subsequent worksheet. Most of the points deducted were for

the buccolingual inclination and occlusal contact. Four points were deducted from the P&W esthetic score, as documented in the supplementary worksheet at the end of this report. At the 18-month follow-up, intra-oral photographs show that the occlusion was still stable (Fig. 24).
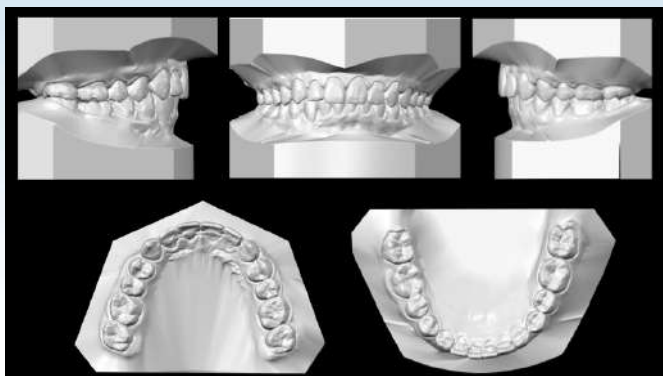
Discussion

Phase 1: Correction of the impaction

According to Kokich's[7] article in 2004, there were three techniques which can recover impacted labial impactions: excisional uncovering, apically positioned

■ Fig. 19: *Post-treatment facial and intra-oral photographs*

■ *Fig. 20:* Post-treatment study models (casts)

■ *Fig. 21:* Post-treatment panoramic radiograph

■ *Fig. 22:* Post-treatment cephalometric radiograph

flaps, and closed eruption (CE) techniques. For surgical exposure of a labial or intra-alveolar impaction of a maxillary canine, Kokich identified four criteria which should be evaluated to determine the correct method for uncovering the tooth:

1. the labiolingual position of the impacted canine crown,

2. vertical position of the tooth relative to the mucogingival junction (MGJ),

3. the amount of keratinized tissue surrounding the impacted canine, and

4. the mesiodistal position of the canine crown.

When the impaction is apical to the MGJ, either an apically positioned flap (APF) or closed eruption technique may be chosen. The closed eruption technique is more appropriate than an APF when the impaction is in a high position.[18] APF is indicated for cases where the crown of the impaction is positioned mesially and over the root of the lateral incisor.

For our patient, not only was her maxillary right canine highly impacted, but its crown tip also overlapped distal root surface of the maxillary right central incisor. Her mandibular right impacted canine was parallel to the adjacent teeth, but its crown and root structure overlapped the root of the mandibular right lateral incisor. Based on Kokich's criteria, neither CE nor APF can solve this

dilemma. The main reason for this is that Kokich did not apply bone screws in his methods that provided a three-dimensional force to help the tooth recover from such a deep and severely displaced impaction. Therefore, the surgical exposure of impacted canines was limited.

In addition to bone screws, the modified VISTA technique developed by Beethoven Orthodontic Center, originally devised by Zadeh[9] in 2011, provides a minimally invasive yet effective method to resolve such difficulty.

Presently, the criteria proposed by Kokich[7] to determine the correct method for uncovering the tooth has been modified to include the following three main criteria: 1. CBCT assessment of the

labiolingual position of the impacted canine crown, 2. a proper design for surgical intervention, and 3. precise mechanical design of the force system.[10]

1. CBCT assessment of the labiolingual position of the impacted canine crown

Three dimensional CBCT imaging is essential for designing a treatment plan for the impacted canine, as it reveals the relationships between the impacted tooth, adjacent teeth, and the cortical bone. Three types of 3D images are required: 1. 360˚ rotated animation around the impaction covered with bone, 2. 360˚ rotated animation around the impaction with the bone covering deleted, and 3. cross-sectioned slices through the impaction.[19]
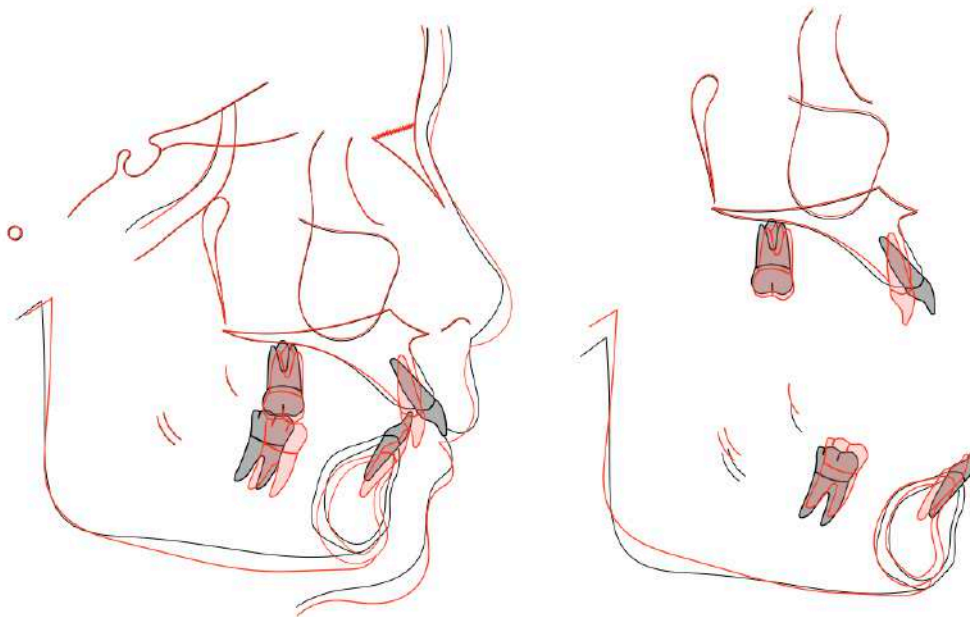
■*Fig. 23:*
Superimposed tracings of the initial (black) and final (red) cephalometric films reveal the skeletal and dental changes that occurred during treatment. After treatment, mandibular growth, retroclination of upper incisors, and intrusion of lower incisors were observed.

■ *Fig. 24: 18-month follow-up facial and intraoral photographs*

2. A proper design for surgical intervention

The design for surgical intervention is determined by the location of the apex, as well as the mesio-distal and vertical position of the crown tip.[20] APF is the most disadvantageous among the three techniques proposed by Kokich. Because high labial impactions were uncovered with an apically positioned flap, it would result in instability of the crown and possible reintrusion of the tooth after orthodontic treatment. This disadvantage is not observed in teeth uncovered with closed eruption technique.[7] Therefore, APF is seldom used in Beethoven's practice. The vestibular incision subperiosteal tunnel access (VISTA) method coronally repositions gingival margins to correct periodontal defects in the maxillary anterior region (Fig. 2).[7] This approach begins with a vestibular access incision which can be made through the periosteum to elevate a subperiosteal tunnel. The Beethoven group led by Chang[10-14] further adapted a modified VISTA technique for the surgical management of labially

impacted, transposed canines. The modified procedure utilizes the same subperiosteal tunneling method to produce a path for submucosal retraction of the impacted canine.[10-14] Either modified VISTA or CE is the present surgical technique used.

This procedure of the modified VISTA decreases invasive surgery, optimizes esthetic outcomes, and limits the threat of external root resorption.[10] Full-thickness flap (closed eruption technique) provides better visibility but results in shrinkage of flap and gingival recession.[21] In contrast, the modified VISTA method eliminates any substantial loss of gingival height because it does not reflect any flap. Its major drawback lies in its limited visibility related to the full-thickness flap and the surgery method and is therefore technique-sensitive.

3. Precise mechanics of force system

The force to retract impaction could be anchored in the main wire, molars, or bone screws. If the impaction is far away from the eruption site, the former two may result in archwire deformation and unwanted tooth movement. The independent force system of bone screws provides the necessary retraction force, without producing undesired side effects on other teeth.[10,18]

As mentioned previously, the patient had two canine impactions, both of which are labial impactions according to CBCT images. The cause of the severe impaction was apparently a deviated path of eruption that may be related to over-retained primary canines.[1] The impacted maxillary right canine, incompletely transposed impaction, was uncovered by the modified VISTA procedure and was retracted using an IZC screw. After ten months of

retraction, the mesio-distal position of the impacted maxillary right canine was corrected, but its vertical position was still 3mm apical to the alveolar crest. At this moment, the IZC occlusal retraction was limited. Hence, the secondary surgical exposure, closed eruption technique was performed to expose the impacted crown. The bone surrounding the crown was removed, and a ligature wire was tied between the maxillary right canine button to the main wire. After three months, the impacted maxillary right canine was recovered, and a high torque bracket was bonded. The treatment then moved on to align all teeth. If the first surgical exposure had been performed with 3D lever arm[14] and bone screws were done, the secondary surgical exposure could have been avoided.

The impacted mandibular right canine, completely transposed impaction, was uncovered by modified VISTA and retracted by BS screws. After six months, the impaction was recovered; four months later, a full mouth fixed appliance was bonded on all lower teeth. In Fig. 18, the tip of mandibular right canine tilted distally at the 12th month. The axis of the bracket was tilted distally relative to the axis of mandibular right canine in order to move the apex distally to correct its transposed apex. The axis of mandibular right canine was corrected successfully during the 22nd month.

Phase 2: Alignment of all dentition

When considering whether to extract or not for the eruption site, the patient's craniodental relationship should be taken into consideration. The current patient was diagnosed as having proclined anterior incisors with an 8mm overjet, but the skeletal

relationship was Class I. Spacing was noted over bimaxillary arch, and incomplete growth of her nose and mandible was also found, due to the fact she was only 11 years old. As a result, non-extraction procedure was chosen. IZC screws, along with bite turbos and Class II elastics were used to solve the Class II malocclusion, deep bite, and 8mm overjet.

Conclusions

The treatment of impacted and transposed teeth constitutes a challenge for clinicians. For our patient with two severely impacted and transposed canines, we found it necessary to apply the following steps in devising her treatment:

1. assessing the labio-lingual position of the impacted canine crown using a three dimensional image (CBCT),

2. a proper design for surgical intervention, and

3. a precise mechanics of force system design.

Subsequently, we found that a modified VISTA method, together with application of bone screws, benefitted the patient mainly because of its minimal invasiveness, more solid recovery, and also limitation of subsequent morbidity.

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Discrepancy Index Worksheet

TOTAL D.I. SCORE 59

OVREJET

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

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

Total = 4

OVERBITE

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

Total = 5

ANTERIOR OPEN BITE

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

Total = 0

LATERAL OPEN BITE

2 pts. per mm. Per tooth

Total = 0

CROWDING (only one arch)

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

Total = 0

OCCLUSION

Class I to end on	=	0 pts.
End on Class II or III	=	2 pts. per side ____ pts.
Full Class II or III	=	4 pts. per side _2_ pts.
Beyond Class II or III	=	1 pt. per mm. _4_ pts. additional

Total = 6

LINGUAL POSTERIOR X-BITE

1 pt. per tooth   Total   = 0

BUCCAL POSTERIOR X-BITE

2 pts. Per tooth   Total   = 0

CEPHALOMETRICS   (See Instructions)

ANB $\geq 6°$ or $\leq -2°$ = 4 pts.

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

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

SN-MP

  $\geq 38°$ = 2 pts.

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

  $\leq 26°$ = (1 pt.)

  Each degree $< 26°$ _11_ x 1 pt.   = __11__

1 to MP $\geq 99°$ = (1 pt.)

  Each degree $> 99°$ _17_ x 1 pt.   = __17__

Total = 30

OTHER   (See Instructions)

Supernumerary teeth	_____ x 1 pt.	=	_____
Ankylosis of perm. Teeth	_____ x 2 pts.	=	_____
Anomalous morphology	_____ x 2 pts.	=	_____
Impaction (except 3rd molars)	_2_ x 2 pts.	=	4
Midline discrepancy ($\geq$ 3mm)	@ 2 pts.	=	_____
Missing teeth (except 3rd molars)	_____ x 1 pt.	=	_____
Missing teeth, congenital	_____ x 2 pts.	=	_____
Spacing (4 or more, per arch)	_1_ x 2 pts.	=	2
Spacing (Mx cent. diastema $\geq$2mm)	@ 2 pts.	=	2
Tooth transposition	_____ x 2 pts.	=	_____
Skeletal asymmetry (nonsurgical tx)	@ 3 pts.	=	_____
Addl. treatment complexities	_3_ x 2 pts.	=	6

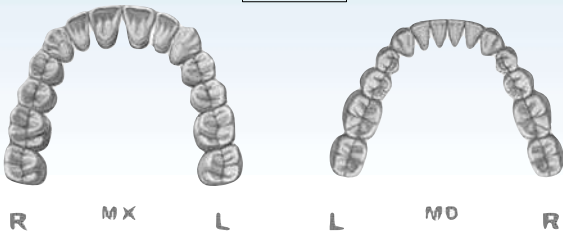Identify: One highly incomplete transverse impaction, one complete transposed impaction

Total = 2
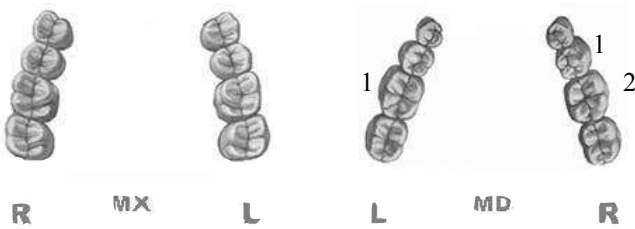
Cast-Radiograph Evaluation

Total Score: 26

Occlusal Contacts
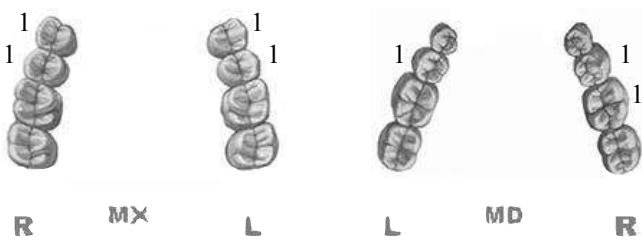
6

Buccal Surface

Lingual Surface

Alignment/Rotations

0

R MX L   L MD R

Marginal Ridges

4

R MX L   L MD R

4

Buccolingual Inclination

7

R MX L   L MD R
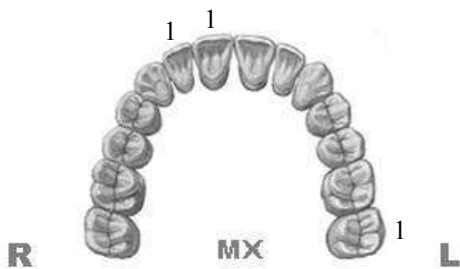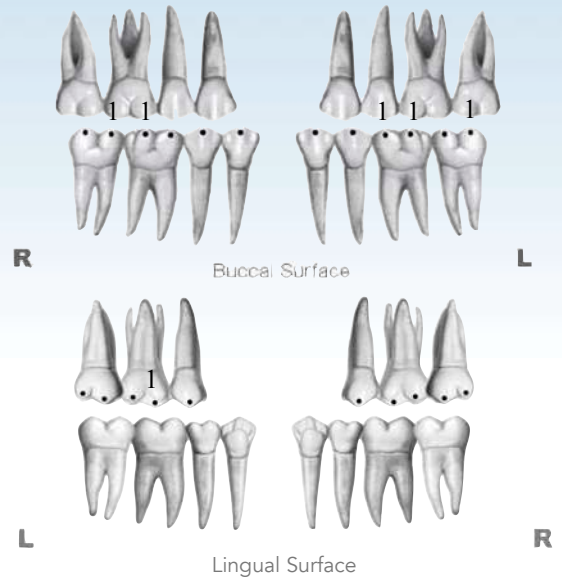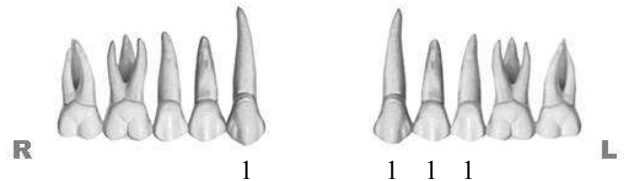
Interproximal Contacts

0

R L

Overjet

3

R MX L

Root Angulation

0

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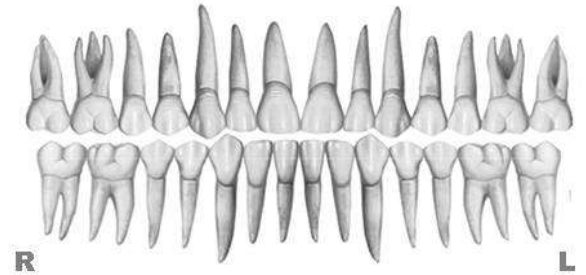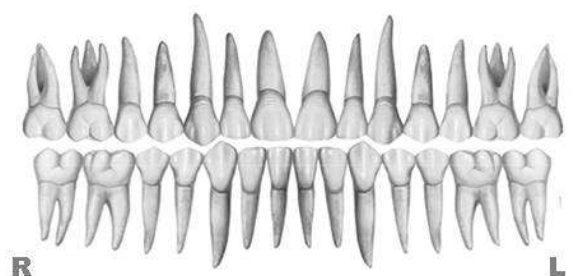
INSTRUCTIONS: Place score beside each deficient tooth in the white box. Mark extracted teeth with "X". Second molars should be in occlusion.

IBOI Pink & White Esthetic Score
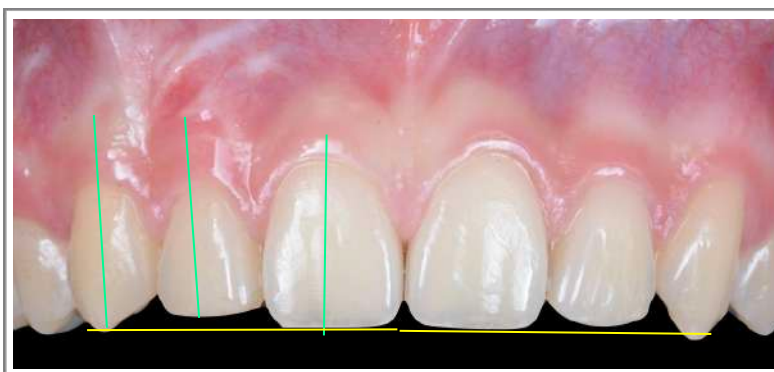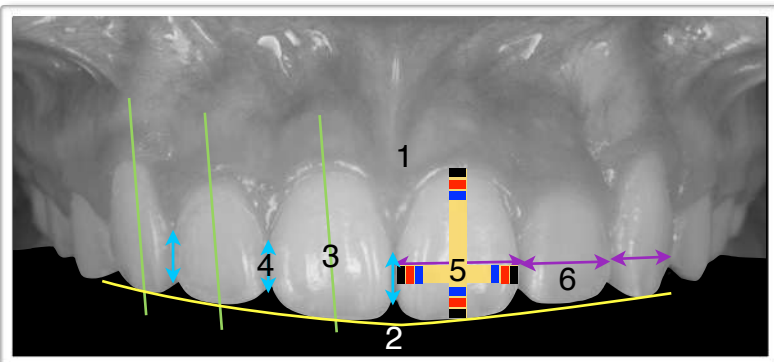
Total Score = [4]

1. Pink Esthetic Score

Total = [0]

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

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

2. White Esthetic Score (for Micro-esthetic)

Total = [4]

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

	0	1	2
1. Midline	**(0)**	1	2
2. Incisor Curve	0	**(1)**	2
3. Axial Inclination (5˚, 8˚, 10˚)	0	**(1)**	2
4. Contact Area (50%, 40%, 30%)	0	**(1)**	2
5. Tooth Proportion	**(0)**	1	2
6. Tooth to Tooth Proportion	0	**(1)**	2

2024-2025 第十六年度
貝多芬 矯正精修班

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

上課日期：

2024 4/16、5/21、6/18、7/9、8/13、9/10、10/22、11/5、12/10

2025 1/14、2/18

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

全新的第十五年度 2024-25 貝多芬精修班，是由國際知名講師張慧男醫師主持，並偕同貝多芬牙醫團隊住院醫師群共同主講。

每月一次的課程之中，包含了：

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

2024-25 貝多芬精修班內容豐富精彩，讓您經由每個月一次的課程，在面對各式的臨床案例時，更能游刃有餘、得心應手。

學習目的：

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

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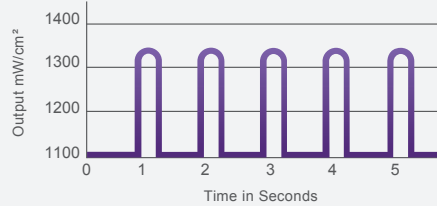
Source: Nova Southeastern University. Kerr's website.
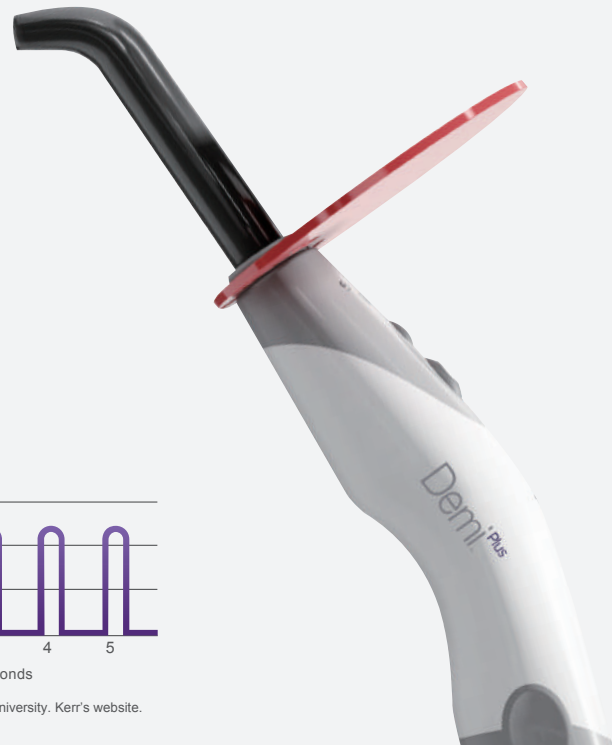
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2025

一年一度
Damon Master Program

全新改版的 2025 年貝多芬高效 Damon 矯正大師系列課程，是由國際知名講師張慧男醫師親自規劃及授課，課程特色強調由臨床病例帶動診斷、分析、治療計畫擬定與執行技巧，本年度亦特別加入最新的**數位矯正與隱形牙套**的內容，並邀請了貝多芬牙科集團各院院長演講特別矯正專題。

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

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

Module 1 - 3/13

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

Practice: Clinical photography（黃亭雅, 陳韻如醫師）

Module 2 - 4/17

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

Practice: Patient photo management（金牛頓工程師）

Module 3 - 5/1

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

Practice: Ceph tracing（金牛頓工程師）

Module 4 - 5/15

1. Excellent finishing
2. Retention & relapse

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

Module 5 - 5/22

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

Practice: Case report demo（陳俊宏醫師）

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

Module 6 - 6/5

1. Class III correction
2. Class II correction

Topic: Early orthodontic treatment（曾淑萍醫師）

Module 7 - 6/19

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

Topic: Modified VISTA（蘇筌瑋醫師）

Module 8 - 7/3

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

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

Module 9 - 7/17

1. Implant-ortho combined treatment
2. Asymmetry

Topic: Impacted cuspid treatment（張譯文, 張瑜珍, 黃亭雅, 陳韻如醫師）

Module 10 - 7/31

1. Minor surgeries in orthodontics
2. Digital orthodontics

Topic: Modified 2X4 appliance in ortho treatment（李亮賢醫師）

Module 11 - 8/14

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

Topic: Pre-aligner treatment（林詩詠醫師）

🔺 Special lecture: 1:30-3:00 pm

時間：週四全天（9:20 am - 5:00 pm）
地點：金牛頓藝術科技（新竹市建中一路 25 號 2 樓）
費用含課程視訊*、iPad、課程電子書與材料。
*贈送之課程視訊提供兩年時間串流觀看。

報名專線 湧傑 Yong Chieh
北區 邵美珍　　　中區 張馨云　　　南區 王慧靜
02-27788315 #120　　04-23058915　　07-2260030

LINE@ 官方帳號

Facebook 官方帳號