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Reference: Failure Rates for SS and Ti-Alloy Incisal Anchorage Screws: Single-Center, Double Blind, Randomized Clinical Trial (J Digital Orthod 2018;52:70-79)

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Reference: Failure rates for stainless steel versus titanium alloy infrazygomatic crest bone screws: A single-center, randomized double-blind clinical trial (Angle Orthod 2019;89(1):40-46)

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Management of Anterior Deep Bite and Posterior Crossbite with a Reengineered Self-Ligating Bracket System: A Four-Premolar Extraction Case

Abstract

A 24yr-5m-old male presented with skeletal Class II relationships (ANB = 6˚), severe crowding, deep overbite, posterior crossbite, and mandibular midline deviation. After 26 months of active treatment, the deep bite was significantly improved with leveling of curve of Spee. Treatment involved extraction of four premolars, combined with staged bite-opening strategies, including the use of posterior and anterior bite turbos (BTs), along with elastics to facilitate posterior occlusal settling and to achieve ideal overjet and overbite. A four-wall rigid orthodontic bracket system based on a reengineered self-ligating design was utilized to enhance torque control of anterior teeth and improve the efficiency of space closure. This case with a Discrepancy Index (DI) of 17 points was finished with a Cast-Radiograph Evaluation (CRE) score of 10 points and a Pink and White esthetic score of 3 points. (J Digital Orthod 2026;78:28-46)

Key words:
Skeletal Class II, severe crowding, deep bite, posterior crossbite, midline deviation, anterior bite turbo, posterior bite turbo, four premolars extraction, Damon Ultima™

Introduction

Correction of deep overbite is a key objective in orthodontic treatment because of its impact on occlusal function and stability. It may be achieved through anterior intrusion, posterior extrusion, or both, depending on skeletal pattern, vertical dimension, and interocclusal space.[1-3] Anterior intrusion requires precise control of force magnitude and direction, which can be achieved with intrusion arch mechanics or temporary anchorage devices.[1,4,5] Posterior extrusion is less force-sensitive but must be controlled to avoid occlusal plane canting, and may be accomplished with continuous arches, tip-back mechanics, or anterior bite turbos with Class II elastics.[1,6,7]

Management is more complex when deep overbite is associated with severe crowding, midline discrepancy, deep curve of Spee, and transverse disharmony, particularly in adults with a balanced facial profile.[3] Although extraction is often required to relieve crowding, it may lead to deepen the curve of Spee and overbite, loss of anterior torque control, and incisor retroclination. Careful control of incisor inclination and vertical dimension is therefore essential.

This case report describes a 24-year-old male with a skeletal Class II pattern (ANB = 6˚), severe crowding, deep overbite, posterior crossbite, and mandibular midline deviation with bilateral Class I canine and molar relationships. Treatment included extraction of four first premolars and third molars, combined with staged bite-opening strategies, including the

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W. Eugene Roberts,
Editor-in-Chief, Journal of Digital Orthodontics (Right)

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

use of posterior and anterior bite turbos, along with elastics to facilitate posterior occlusal settling and to achieve ideal overjet and overbite.

A reengineered passive self-ligating system (Damon Ultima™, Ormco, Glendora, CA) was used in this case. It features a novel bracket-archwire interface,

consisting of a parallelogram-shaped slot and a round-sided rectangular archwire that combines the characteristics of round and rectangular wires. This configuration permits up to four points of contact between the archwire and bracket slot in cross-sectional view, enabling earlier control of rotation and angulation while maintaining effective torque expression.

The dental nomenclature for this report follows a modified Palmer notation. Four quadrants are defined as upper right (UR), upper left (UL), lower right (LR), and lower left (LL). Permanent teeth are numbered 1-8 from the midlines, and deciduous teeth are designated a-e.

Diagnosis and Etiology

A 24-year-5-month-old male presented with chief complaints of crowding, deep bite, posterior crossbite, and dental midline discrepancy.

Facial examination and intraoral findings revealed a straight facial profile with a 6-mm deep overbite (Fig. 1). The mandibular dental midline was deviated 2 mm to the left relative to the maxillary midline. A blocked-out upper right canine (UR3), a buccal crossbite involving the upper left second molar (UL7), and a deep curve of Spee were noted. The molar and canine relationships were Class I bilaterally. The overjet was 3 mm, and the overbite was 6 mm, consistent with a deep bite. Severe crowding was present in the mandibular arch, measuring approximately 9 mm.

Radiographic evaluation, including panoramic radiography (Fig. 2) and cephalometric analysis (Fig. 3; Table 1), revealed impacted third molars in the upper left (UL8) and lower left (LL8) regions. A skeletal Class II relationship (ANB = 6°) with proclined mandibular incisors (L1-NB, 7.5 mm; L1-MP, 100°) and a straight facial profile was noted.

Fig. 2: *Pre-treatment panoramic radiograph*

Fig. 3: *Pre-treatment cephalometric radiograph*

CEPHALOMETRIC SUMMARY			
	PRE-TX	POST-TX	DIFF.
SKELETAL ANALYSIS			
SNA° (82°)	84°	84°	0
SNB° (80°)	78°	78°	0
ANB° (2°)	6°	6°	0
SN-MP° (32°)	34°	34°	0
FMA° (25°)	27°	27°	0
DENTAL ANALYSIS			
U1 TO NA mm (4mm)	3	-1	4
U1 TO SN° (104°)	103°	93°	10°
L1 TO NB mm (4mm)	7.5	4	2.5
L1 TO MP° (90°)	100°	94°	6°
FACIAL ANALYSIS			
E-LINE UL (-1mm)	0.5	0	0.5
E-LINE LL (0mm)	1.5	0.5	1
%FH: Na-ANS-Gn (53%)	56.5%	57%	0.5%
Convexity:G-Sn-Pg' (13°)	13°	12°	1°

Table 1: *Cephalometric summary*

Pretreatment dental 3D models are shown in figure 4. The American Board of Orthodontic Discrepancy Index score for this malocclusion was 17 points (Worksheet 1). There was no contributing medical or dental history, and no temporomandibular disorders were identified.

Treatment Objectives

The treatment objectives were to maintain the existing straight facial profile while addressing the dental and occlusal discrepancies. In the maxillary dentition, the goals were to relieve crowding, achieve proper alignment, and correct the posterior crossbite. In the mandibular dentition, the objectives included relieving severe crowding, aligning the dentition, leveling the deep curve of Spee, and intruding the anterior teeth to correct the deep overbite while maintaining appropriate torque of the anterior teeth. The occlusal objectives were to establish ideal overjet and overbite, achieve and maintain Class I canine and molar relationships, and correct the dental midline discrepancy. Preservation of a balanced facial profile was also an essential treatment goal.

Treatment Alternatives

Two treatment alternatives were considered. The first option was a non-extraction approach, except for removal of the impacted third molars (UL8 and LL8). This approach is less invasive and may shorten treatment time; however, alignment of severe crowding could result in anterior proclination and a more convex facial profile. Additional anchorage, such as temporary skeletal anchorage devices (TSADs), and interproximal reduction (IPR) may be required to control incisor position and facial esthetics.

The second option involved extraction of four first premolars in addition to the impacted third molars. This approach facilitates relief of severe crowding and helps prevent flaring of the anterior teeth, thereby maintaining a more favorable facial profile. However, it may prolong treatment time and presents greater challenges in anterior torque control, with a risk of retroclination, deepening of the overbite, and accentuation of the curve of Spee.

Additional anchorage or auxiliaries may be required to manage these effects.

After a thorough discussion of the advantages and disadvantages of the two treatment options with the patient, he elected to proceed with the extraction treatment plan.

Treatment Progress

Following extraction of the four first premolars, the patient was scheduled for fixed appliance therapy. A reengineered passive self-ligating (PSL) bracket system (Damon Ultima™, Ormco, Glendora, CA) was initially bonded to the maxillary dentition only. Procline (high-torque) brackets were selected for the maxillary central incisors and canines to facilitate root control and minimize risk of cortical plate encroachment during space closure, whereas neutral (standard-torque) brackets were used for the maxillary lateral incisors, and a 0.014-in CuNiTi archwire was inserted. One month later, the mandibular dentition was bonded with the same bracket system and a 0.014-in CuNiTi archwire was placed. Bracket torque selection was procline (high-torque) for canines and neutral (standard-torque) for mandibular incisors. Note the bonding position of LR1, which was placed approximately 2 mm more incisally to compensate for occlusal wear associated with the deep bite and to facilitate relative intrusion in preparation for future restorative treatment. This offset was estimated based on the extent of exposed dentin, suggesting approximately 2 mm of tooth structure loss (Fig. 4).[8] A button was bonded to the lingual surface of the lower left second molar (LL7), and bite turbos were placed on the mandibular first molars to disclude the posterior teeth. Cross elastics (Kangaroo, 3/16-in, 4.5 oz; Ormco, Glendora, CA) were applied from UL7 buccal to LL7 lingual and were subsequently progressed to (Chipmunk, 1/8-in, 3.5 oz; Ormco, Glendora, CA) to enhance crossbite correction (Fig. 5).

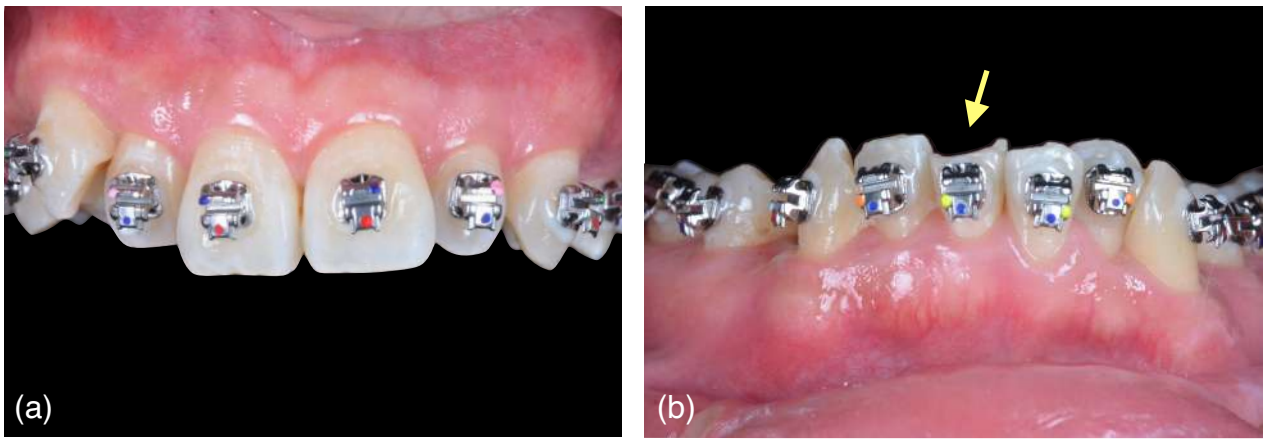

Fig. 4:
Torque selection and bonding position for maxillary and mandibular anteriors. (a) Procline (high-torque) brackets were selected for the maxillary central incisors and canines, whereas neutral (standard-torque) brackets were used for the maxillary lateral incisors. (b) Neutral brackets were used on mandibular incisors, and procline brackets on canines. Note the bonding position of LR1, due to the tooth wear (yellow arrow), bracket was bonded more incisally.

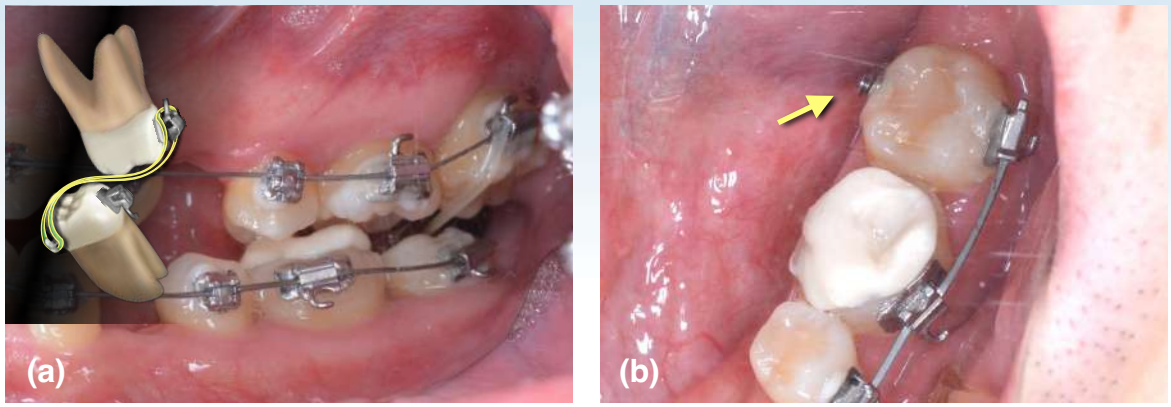

Fig. 5: *Cross-elastic configuration and bite turbo application.*
(a) Intraoral lateral view showing a bite turbo placed on LL6. A cross elastic was applied from the buccal side of the maxillary left second molar (UL7) to the lingual side of the mandibular left second molar (LL7). A schematic illustration in the upper left corner demonstrates the direction of the cross-elastic traction.
(b) Intraoral occlusal view showing a bite turbo placed on LL6 and a lingual button bonded on the lingual side (yellow arrow) of LL7 to facilitate cross-elastic application.

By the 4th month, both arches were advanced to 0.014 × 0.0275-in CuNiTi archwires for further alignment and leveling. The posterior crossbite was corrected by the 6th month, allowing discontinuation of the cross elastics and removal of the posterior bite turbos.

At the 7th month, both arches were progressed to 0.018 × 0.0275-in TMA archwires. Anterior bite turbos were placed on the maxillary incisors, and Class II elastics (Fox, 1/4-in, 3.5 oz; Ormco, Glendora, CA) were applied to guide the mandibular dentition and establish ideal overjet and overbite.

By the 8th month, both arches were advanced to 0.016 × 0.0275-in stainless steel archwires, and elastic chains (power chains) were used to initiate closure of the extraction spaces. At the 10th month, Class II L-shaped elastics (Fox, 1/4-in, 3.5 oz; Ormco, Glendora, CA) were continued, and Z-shaped elastics were added on the left side to correct the dental midline (Fig. 6). Finishing was completed on 0.016 × 0.0275-in stainless steel archwires with continued space closure and midline refinement. The archwire sequence employed was 0.014-in CuNiTi, 0.014 × 0.0275-in CuNiTi, 0.018 × 0.0275-in TMA, and 0.016 × 0.0275-in stainless steel. Full treatment progress is documented in figures 7-11.

Active treatment was completed at the 26th month, and all brackets and appliances were removed. Laser gingivectomy was performed for minor gingival recontouring to improve dental proportions while biological width was considered prior to the gingivectomy.[9-11] Clear overlay retainers were delivered for both arches, with full-time wear for the first 6 months followed by nighttime wear only. Fixed retainers were delivered for both maxillary and mandibular anteriors. At the 1-month follow-up, the gingival tissues showed favorable healing with well-contoured gingival margins (Fig. 12).

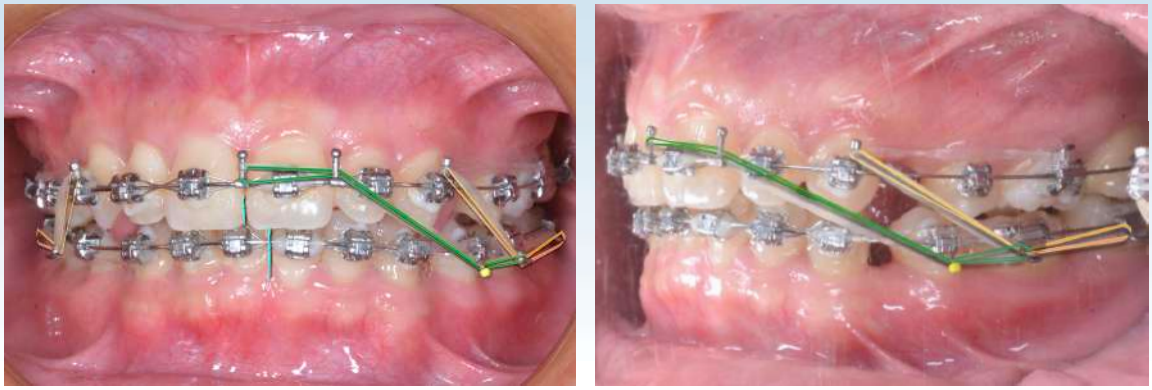

Fig. 6:
Class II L-shaped elastics (orange line) with Z-shaped elastics (green line) were coordinated to facilitate ideal overjet and midline correction. Both elastics were Fox elastics (1/4-in, 3.5 oz; Ormco, Glendora, CA).

Fig. 7:
Treatment progression is shown in the frontal view in months (M) with arch wire specification shown from the start of treatment (0M) to twenty-six months (26M). Treatment progression demonstrating favorable correction of the deep overbite with anterior bite turbos and Class II elastics. Note the subsequent midline correction achieved with unilateral Z-shaped elastics.

Treatment Results

After active treatment, the deep overbite was significantly improved with concurrent leveling of the curve of Spee, resulting in ideal overjet and overbite relationships. The posterior occlusion demonstrated good interdigitation, and the dental midlines were coincident (Fig. 13). Nearly ideal dental alignment was achieved, as evidenced by an American Board of Orthodontics Cast-Radiograph Evaluation (CRE)[12] score of 10 points (Worksheet 2). The remaining discrepancies were primarily related

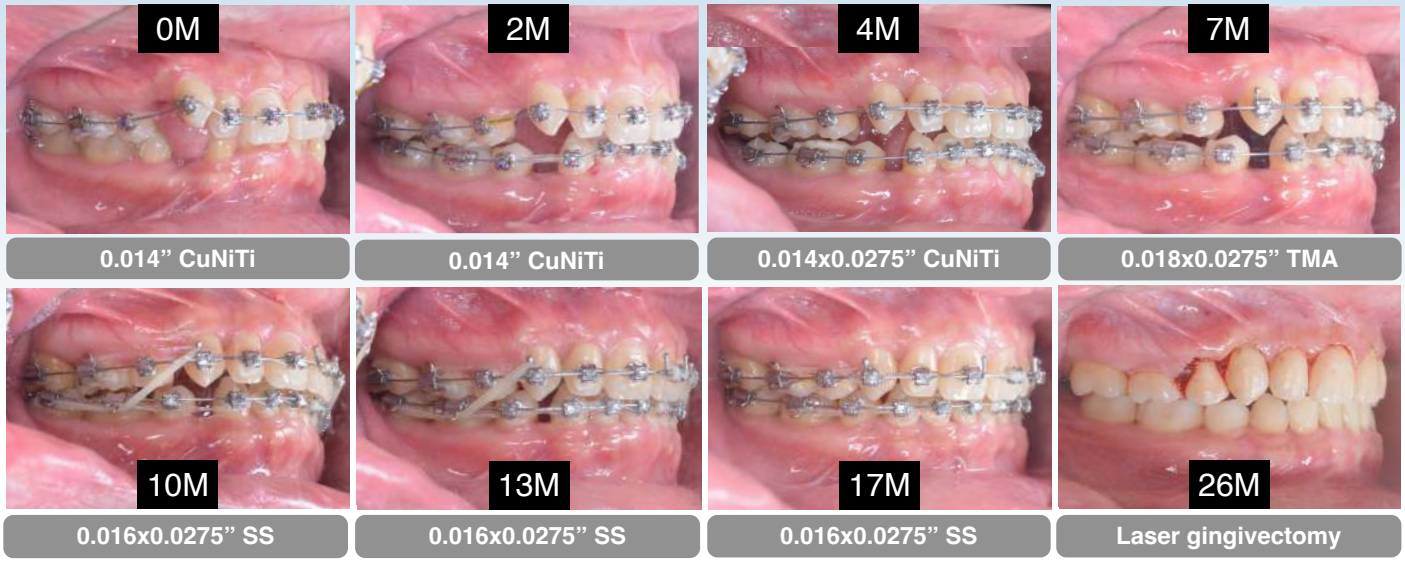

***Fig. 8**: Treatment progression from the right buccal view*

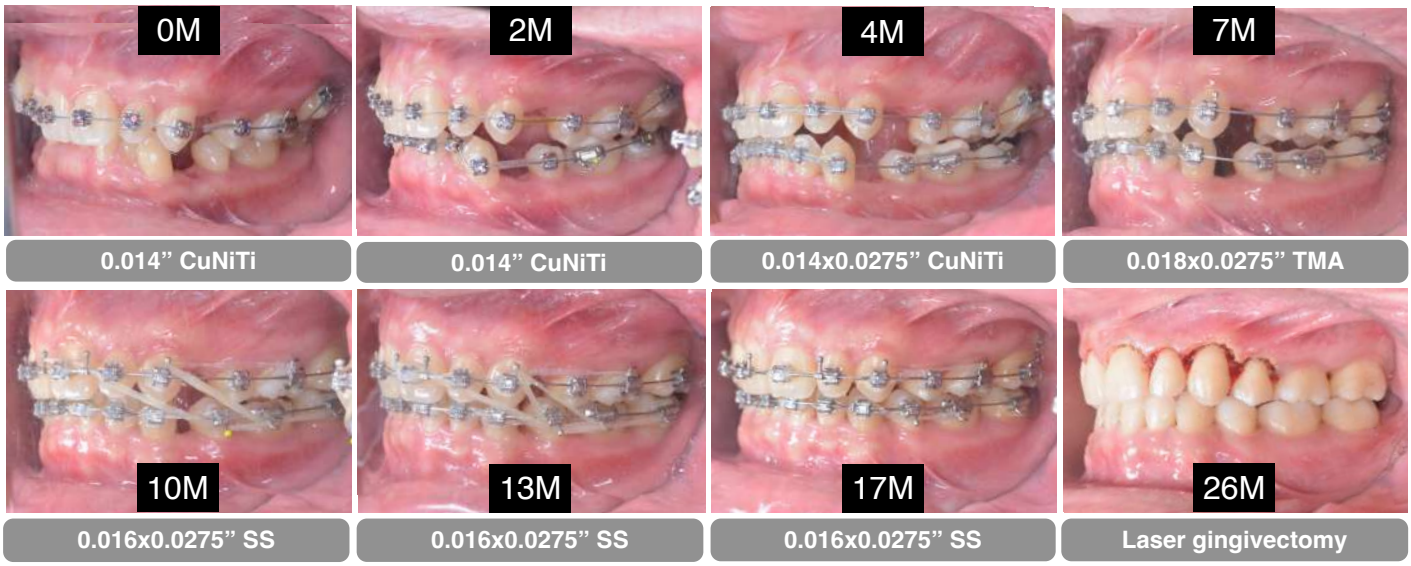

***Fig. 9**:*
Treatment progression from the left buccal view. Buccal crossbite of the UL7 was corrected and posterior bite turbos were removed following crossbite correction (7M). In the later stage, a unilateral Z-shaped elastic was used to facilitate midline correction (10M).

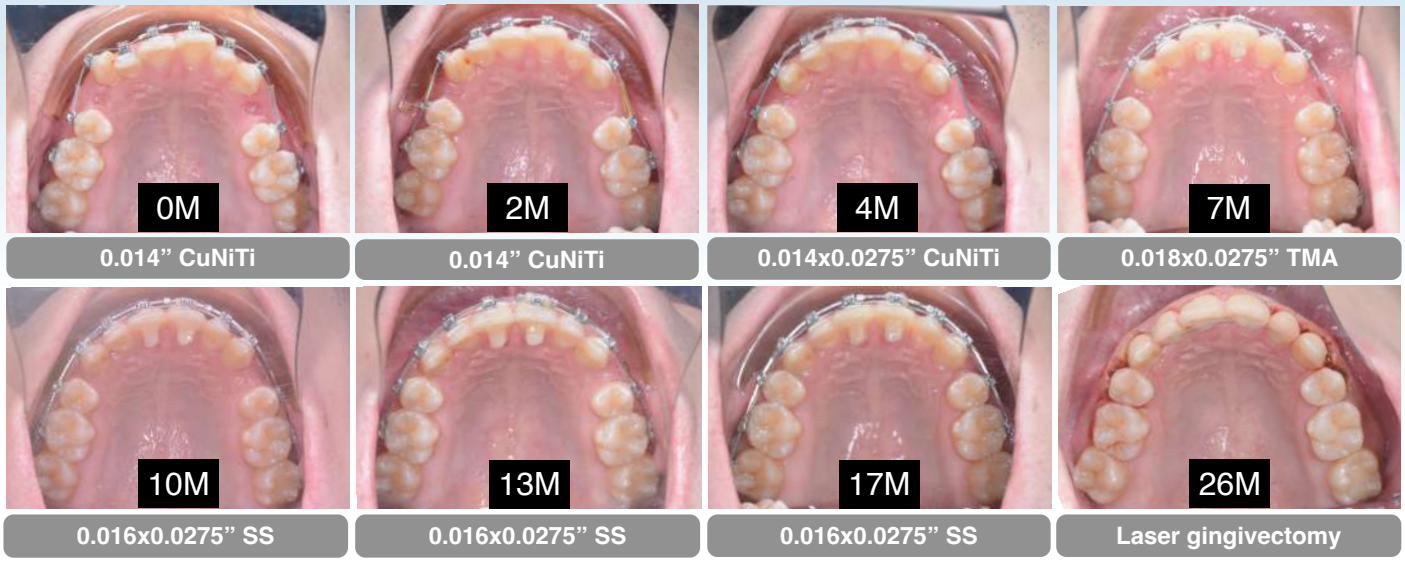

***Fig. 10**:*
Treatment progression from the maxillary occlusal view. Anterior bite turbos were added in the 7th month (7M) of treatment with the combination of Class II elastics to facilitate deep bite correction and space closure.

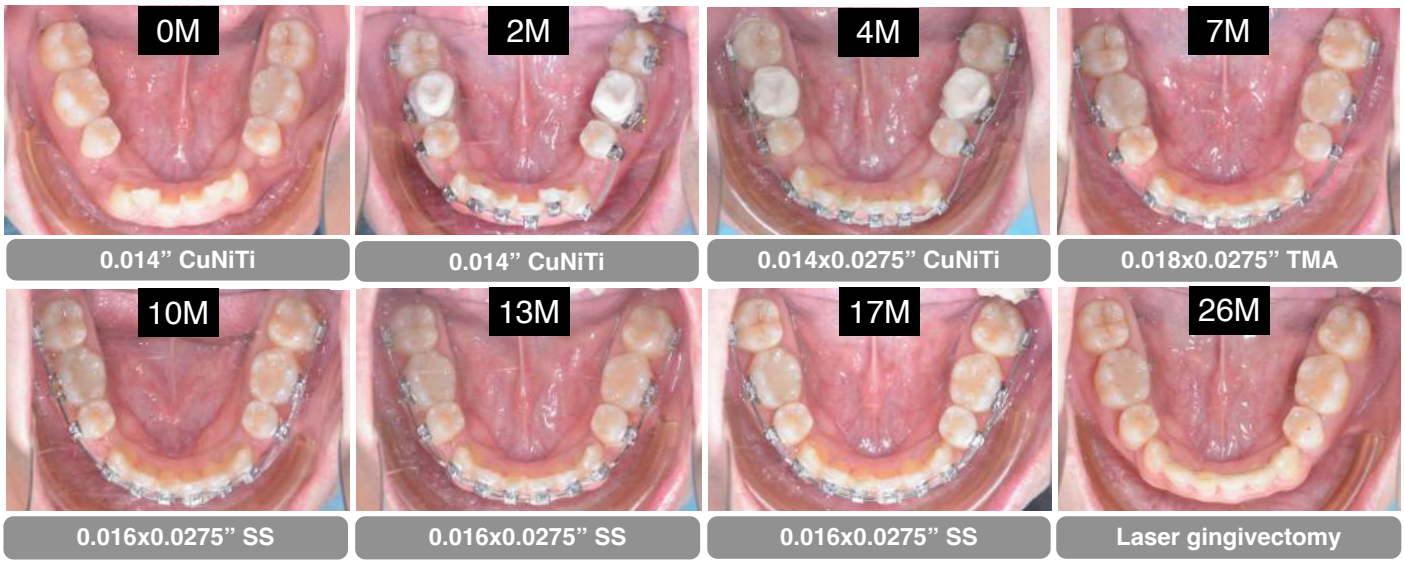

***Fig. 11**:*
Treatment progression from the maxillary occlusal view. Mandibular crowding was resolved with extraction space, and posterior bite turbos were placed on the mandibular first molars to open the bite and facilitate crossbite correction (2M).

Fig. 12:
(a) A frontal view of the anterior maxillary segment shows poor dental proportions after active treatment of brackets. (b) Following the gingivectomy the gingival margins are near-ideal and tooth proportions improved. (c) One month after gingivectomy, soft tissue response was favorable with harmonious tooth proportions obtained.

to minor overjet and root angulation. The Pink and White esthetic score was 3 due to enlarged U1s tooth size (Worksheet 3).

The posttreatment panoramic radiograph demonstrated well-aligned dentition with satisfactory overall alignment (Fig. 14). Slight deviations in root angulation were noted in the maxillary right lateral incisor (UR2) and mandibular second premolars (L5s). The increased overjet of UR3, UR2, and UL2 (Fig. 15) maybe attributed to tongue thrusting during swallowing and should be addressed through habit modification.

The posttreatment lateral cephalogram (Fig. 16) and superimposition (Fig. 17; Table 1) showed that, although the skeletal relationship remained Class II, the maxillary incisors exhibited decreased inclination (U1-SN: 103° to 93°), whereas the mandibular incisors showed improved inclination (L1-MP: 100° to 94°). The facial profile was well maintained, remaining straight (Figs. 1 and 13). The retroclination of the maxillary incisors is likely attributable to the effects of Class II and midline-correcting elastics, which produce retractive forces on the anterior segment, in conjunction with space closure following bilateral first premolar extractions. In addition, intrusion of the anterior teeth and extrusion of the posterior teeth are achieved (Fig. 17).

Following completion of active treatment, gingival recontouring with gingivectomy resulted in a marked improvement in gingival architecture and tooth proportion (Fig. 12), contributing to enhanced esthetics (Worksheet 3).

Discussion

A key aspect of this case was the staged application of bite turbos to address distinct treatment objectives. Immediately after bracket bonding, posterior bite turbos fabricated with glass ionomer cement (Fuji II type II, GC America, Alsip IL) were placed on the mandibular first molars in conjunction with cross elastics to correct the severe posterior crossbite between UL7 and LL7, effectively resolving the transverse discrepancy within 4 months (from the 2nd to the 6th month). After correction of the posterior crossbite, treatment progressed to anterior bite turbos placed on the palatal surfaces of the maxillary incisors. In conjunction with Class II elastics, this approach

Fig. 13: *Posttreatment facial and intraoral photographs*

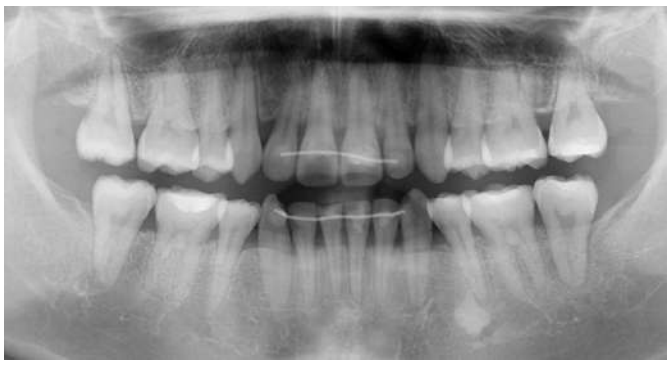

Fig. 14: *Posttreatment panoramic radiograph*

Fig. 15:
Posttreatment intraoral photograph revealed increased overjet in UR3, UR2, and UL2, which may be attributed to tongue thrust.

Fig. 16: *Posttreatment cephalometric radiograph*

facilitated correction of the deep overbite, guided the mandible forward, and promoted posterior disclusion, thereby improving vertical interdigitation and allowing passive eruption of the mandibular posterior teeth.[13] This staged protocol enabled efficient leveling of the deep curve of Spee and establishment of ideal overjet and overbite.

Although anterior bite turbos can promote posterior disclusion, they cannot substitute for posterior bite turbos for two main reasons: mandibular anterior crowding and the initial upright (palatally tipped) position of the maxillary incisors. First, during the initial stage, the presence of mandibular anterior crowding would

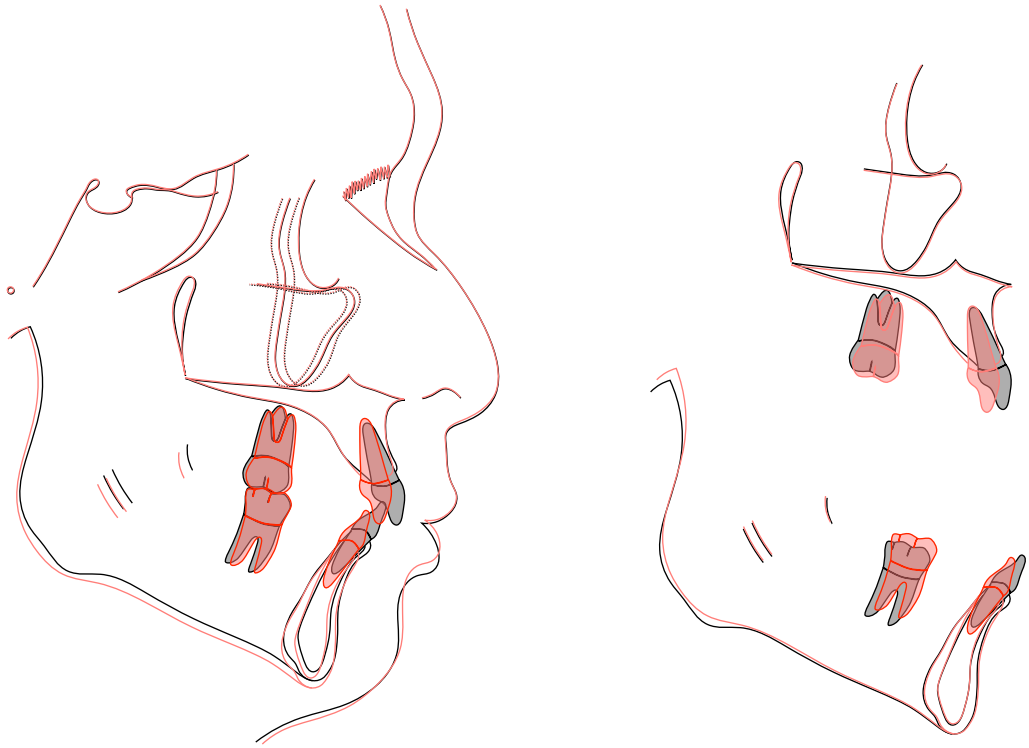

Fig. 17:
Superimposition of the cephalometric tracings before (black) and after (red) treatment documented retroclination of the maxillary incisors, anterior intrusion, posterior extrusion and clockwise rotation of the mandible with maintenance of a favorable facial profile.

concentrate occlusal forces on a limited number of teeth, potentially increasing the risk of dental trauma and complicating anterior alignment, with a possible risk of archwire deformation or fracture. Second, in the presence of relatively upright maxillary incisors, placement of anterior bite turbos may create a force vector from the mandibular incisors that is applied lingual to the center of resistance of the maxillary incisors. This results in a clockwise rotation tendency, further uprighting the maxillary incisors. If the force is applied excessively, this movement may bring the roots of maxillary incisors closer to the buccal cortical bone and increase the risk of undesirable root resorption (Fig. 18). Accordingly, in light of these considerations, posterior bite turbos were employed during the initial stage. Following correction of the posterior crossbite, the posterior bite turbos were removed. Anterior bite turbos were subsequently introduced once mandibular alignment had improved and the maxillary incisors had been proclined to a more favorable position.

Another important aspect was the use of a reengineered passive self-ligating bracket system with a parallelogram-shaped slot, used in conjunction with round-sided rectangular archwires (Figs. 19 and 20). When transitioning from an initial round wire to a 0.014 × 0.0275-in CuNiTi archwire, vertical play was maintained while horizontal play was minimized within the 0.028-in slot. This allowed relatively passive decrowding and alignment while maintaining arch form and improving rotational control. As the archwire progressed to 0.018 × 0.0275-in TMA, the wire became more fully engaged within the parallelogram slot (Fig. 20), initiating effective torque expression and allowing controlled

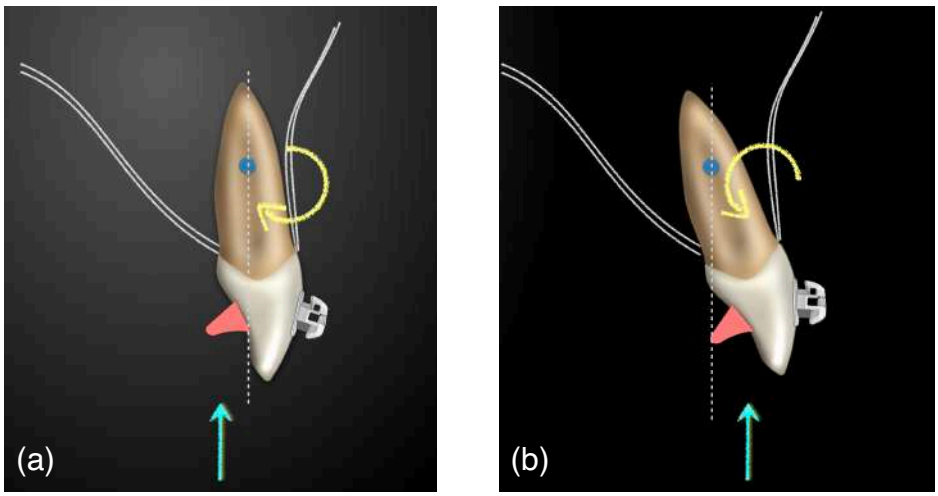

Fig. 18:
(a) When the maxillary incisors remain relatively upright, placement of anterior bite turbos is deferred, as occlusal contact (blue arrow) is behind center of resistance (dark blue dot), which may generate a clockwise moment (yellow curved arrow) on the incisors, resulting in further retroclination. (b) When anterior bite turbo is placed on relatively flared incisors, the occlusal force (blue arrow) would produce a counter-clockwise moment (yellow arrow), which is more favorable for establishing ideal inclination, overjet, and overbite.

preparation for subsequent space closure and Class II mechanics.

With further progression to a 0.016 × 0.0275-in stainless steel archwire, the treatment focus shifted to space closure, settling of the posterior occlusion, and final adjustment of overjet and overbite. The slightly smaller dimension of this wire provided additional freedom for efficient space closure; however, a mild degree of maxillary incisor torque loss was observed, with the inclination decreasing from 103° to 93°, likely influenced by the use of Class II elastics. Despite this, the final occlusion and facial esthetics remained within an acceptable range. Notably, although Class II elastics typically tend to procline the mandibular incisors, the mandibular incisor inclination improved from 100° to 94°, indicating effective torque control throughout treatment.

Midline correction was addressed in the later stage using unilateral Z-shaped elastics on the left side after placement of the rigid stainless steel archwire (Fig. 6). At this stage, the anterior dentition had been fully consolidated, and the rigidity of the archwire provided sufficient control to support asymmetric mechanics. As a result, the midline discrepancy was effectively corrected without inducing occlusal canting or unwanted side effects. This further demonstrates that the bracket system was able to maintain both horizontal and vertical control even when a slightly smaller finishing archwire was used.

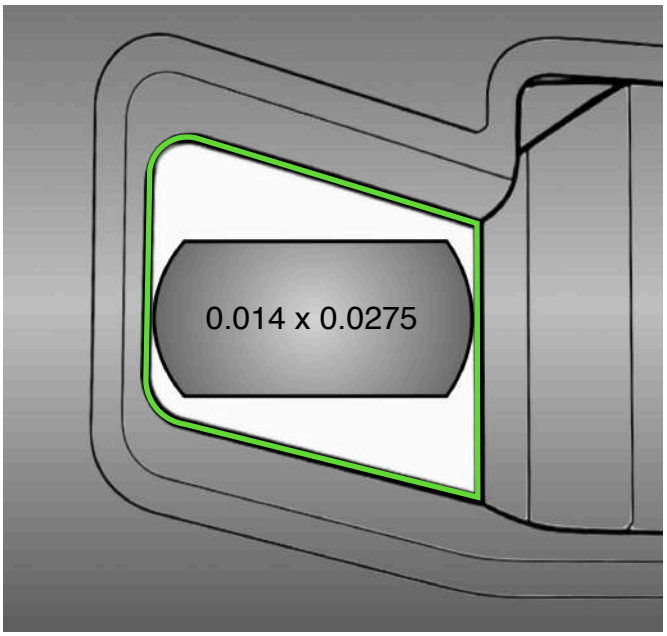

Fig. 19:
Sagittal view of the reengineered passive self-ligating procline (high-torque) bracket. A 0.014 x 0.0275-in CuNiTi wire, a round-sided rectangular shape wire, is place in the parallelogram slot (green line).

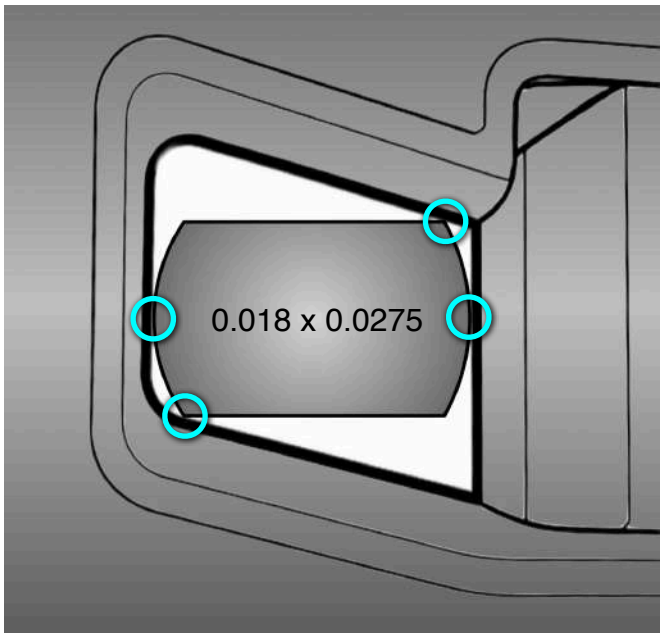

Fig. 20:
Sagittal view of the reengineered passive self-ligating procline (high-torque) bracket. As the archwire progressed to 0.018 × 0.0275-in CuNiTi, engagement increased, establishing at least four points of contact (blue circles) and improving torque control.

Based on these observations, the reengineered bracket system provided reliable torque expression and mechanical control throughout treatment. Although a 0.016 × 0.0275-in stainless steel archwire was used for finishing in this case, the use of a 0.018 × 0.0275-in stainless steel archwire may further enhance torque control in similar situations.

Conclusions

1. The staged use of posterior and anterior bite turbos, combined with cross elastics and Class II elastics, effectively addressed transverse discrepancies (posterior crossbite), vertical problems (deep bite), and sagittal control (facilitating anchorage control during space closure), resulting in ideal overjet and overbite.

2. The parallelogram slot design with round-sided rectangular archwires provided efficient three-dimensional control with reliable torque expression while maintaining arch form.

3. To further minimize maxillary incisor torque loss, a 0.018 × 0.0275-in stainless steel finishing archwire may provide near-full slot engagement and improved torque control in similar cases.

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Discrepancy Index Worksheet

TOTAL D.I. SCORE 17

OVERJET 3 mm

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 = 0

OVERBITE 6 mm

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

Total = 3

ANTERIOR OPEN BITE

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

Total = 0

LATERAL OPEN BITE

2 pts. per mm. Per tooth

Total = 0

CROWDING (only one arch) Ⓛ 9 mm

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

Total = 7

OCCLUSION

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

Total = 0

LINGUAL POSTERIOR X-BITE

1 pt. per tooth Total = 0

BUCCAL POSTERIOR X-BITE 27 X-bite

2 pts. Per tooth Total = 2

CEPHALOMETRICS (See Instructions)

ANB ≥ 6° or ≤ -2° = 4 pts. ANB=6°

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

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

SN-MP

≥ 38° = 2 pts.

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

≤ 26° = 1 pt.

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

1 to MP ≥ 99° = 1 pt.

Each degree > 99° 1 x 1 pt. = 1

Total = 5

OTHER (See Instructions)

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

Identify:

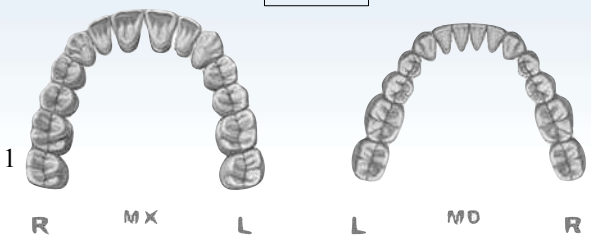
Total = 0

Cast-Radiograph Evaluation

Total Score: 10

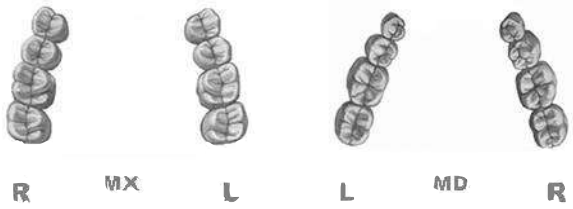
Alignment/Rotations

1



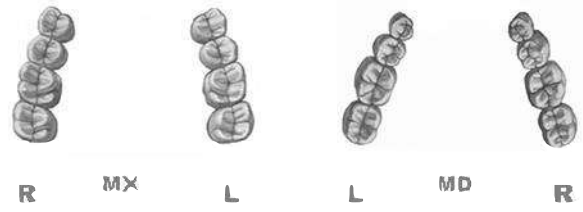
Marginal Ridges

0



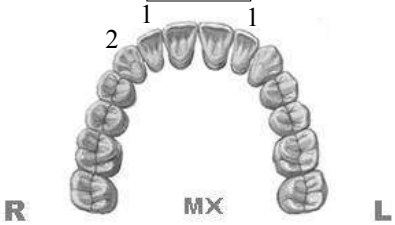
Buccolingual Inclination

0



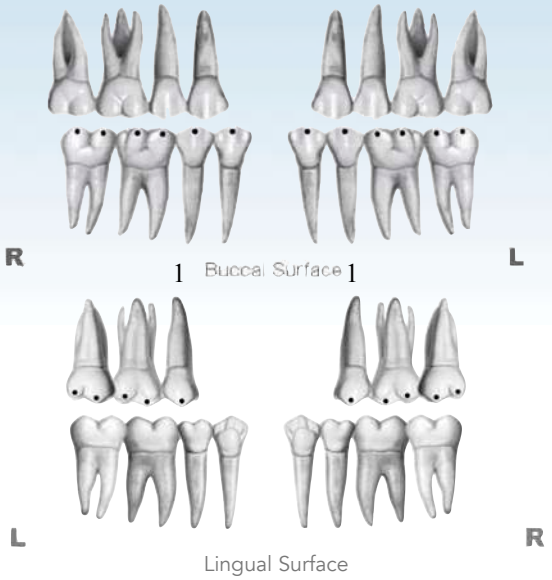
Overjet

4



Occlusal Contacts

2

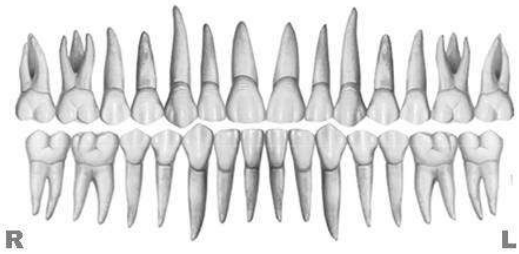


Occlusal Relationships

0

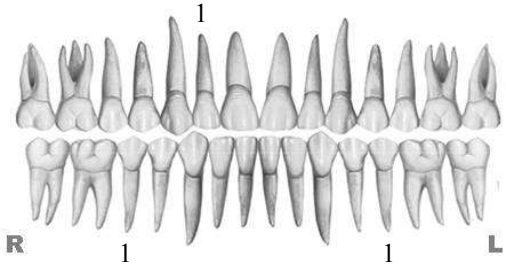
Interproximal Contacts

0



Root Angulation

3



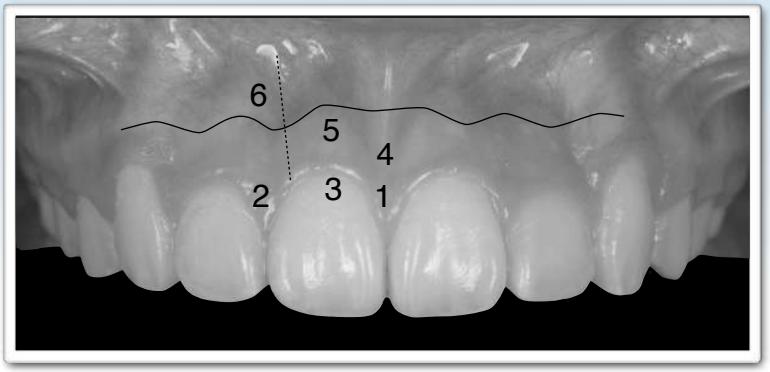
INSTRUCTIONS: Place score beside each deficient tooth and enter total score for each parameter in the white box. Mark extracted teeth with "X". Second molars should be in occlusion.

IBOI Pink & White Esthetic Score

Total Score = 3

1. Pink Esthetic Score

Total = 1

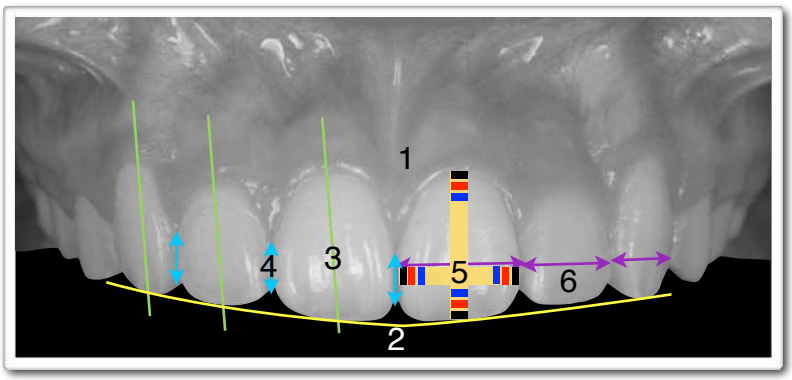


1. M & D Papillae	0	1	2
2. Keratinized Gingiva	0	1	2
3. Curvature of Gingival Margin	0	1	2
4. Level of Gingival Margin	0	1	2
5. Root Convexity (Torque)	0	1	2
6. Scar Formation	0	1	2

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

2. White Esthetic Score (for Micro-esthetic)

Total = 2



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

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

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