

# Dento-Facial Asymmetry Treated with the Insignia™ System and Bone Screw Anchorage

## Abstract

**History:** A 22-year-old female presented with a chief complaint (CC) of anterior crossbite associated with asymmetry of the face and dentition. Her upper left canine (UL3) was extracted at age 12 yr.

**Diagnosis:** Anterior crossbite with a 3mm anterior functional shift, missing UL3, upper right second premolar (UR5) in buccal crossbite, and 2mm left deviation of the mandible in centric occlusion (Co). The discrepancy index (DI) was 26.

**Etiology:** Ectopic palatal eruption of the upper left central incisor (UL1) resulted in a functional shift and anterior crossbite.

**Treatment:** Insignia™ system appliance with passive self-ligating brackets was constructed for a treatment plan to correct dentofacial asymmetry by extraction of three first premolars (UR, LR and LL). The UR8 was also extracted, and bone screws were to supplement posterior anchorage. Dentofacial asymmetry was corrected with differential space closure favoring mesial movement of molars.

**Outcome:** After 25 months of active treatment, this challenging, asymmetric malocclusion was corrected to a near ideal result with a Cast-Radiograph Evaluation (CRE) of 18, and an excellent dental esthetics (Pink & White) score of 3. (*J Digital Orthod* 2019;53:56-72)

**Key words:**

Insignia™ system, passive self-ligating brackets, digital set-up, archwire sequence, dento-facial asymmetry, asymmetrical mechanics, Class II intermaxillary elastics, IZC screw, temporary anchorage devices (TADs)

## Introduction

The dental nomenclature is a modified Palmer notation with four quadrants: upper right (UR) and left (UL), and lower right (LR) and left (LL). Teeth are numbered relative to the midline from 1-8 in each quadrant. A 22-year-old female presented with a chief complaint (CC): protrusive lower lip, asymmetric dental and facial esthetics (Figs. 1 and 2). Radiographic documentation of the original malocclusion is a lateral cephalometric film (Fig. 3), panoramic radiograph (Fig. 4), and temporomandibular joint (TMJ) views (Fig. 5). The patient's malocclusion concerns were associated with a missing UL3, anterior crossbite (UL1 and UL2), anterior openbite (UR2), posterior buccal crossbite (UR5), and an anterior functional shift that resulted in mandibular deviation 2mm left (Fig. 6). The abnormal habitual occlusion resulted in asymmetric mandibular condyles (Fig. 5), and a relatively protrusive lower lip. The maxillary incisors are in an ideal cephalometric relationship (Fig. 7). To correct the dentofacial asymmetry and lower lip protrusion, the patient and her family preferred extractions<sup>1</sup> and bone screws for anchorage, rather than orthognathic surgery. Following 25 months of active treatment (Figs. 8-13), a desirable outcome was achieved (Figs. 14-16).

**Dds. Kristine Chang,**

*Clerk, Beethoven Orthodontic Center (Upper left)*

**Dds. Jennifer Chang,**

*Clerk, Beethoven Orthodontic Center (Upper center)*

**Dr. Tai Hua Lee,**

*Resident, National Taiwan University Hospital Hsinchu Branch (Upper right)*

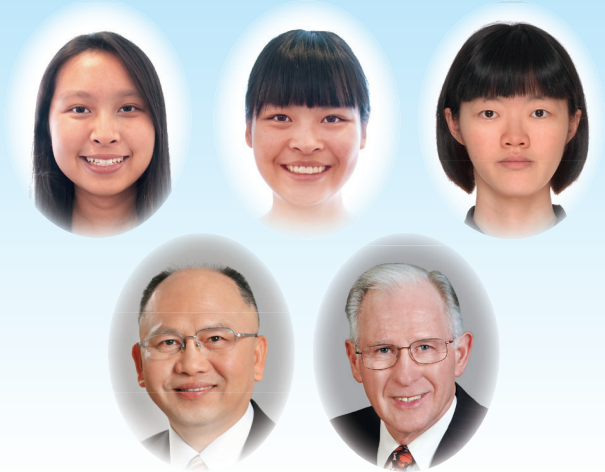
**Dr. Chris Chang,**

*Founder, Beethoven Orthodontic Center*

*Publisher, Journal of Digital Orthodontics (Lower left)*

**Dr. W. Eugene Roberts,**

*Editor-in-chief, Journal of Digital Orthodontics (Lower right)*



## History and Etiology

This developmental malocclusion was probably precipitated by ectopic eruption of the UL1 at about age 6yr. The anterior crossbite of the UL1 resulted in a shift of the mandible anteriorly and to the left to achieve functional occlusion. Inadequate arch development in the UL incisal and canine area resulted in a labial ectopic eruption of the UL3, which was subsequently extracted (Fig. 2). In functional occlusion (Co), the molars are in a Class I relationship and the UL incisors in crossbite (Fig. 1). The casts are articulated in centric relation (CR) and both buccal segments are slightly Class II (Fig. 2).



■ Fig. 1: Pre-treatment facial and intraoral photographs in centric occlusion



■ Fig. 2: Pre-treatment dental models (casts) in centric relation

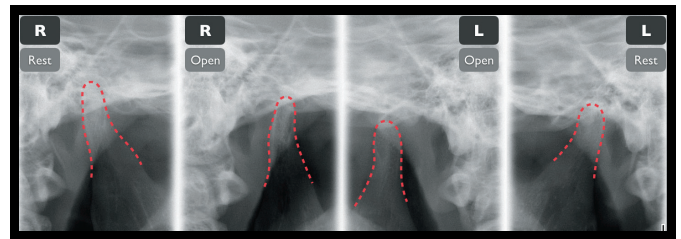


■ Fig. 3: Pre-treatment lateral cephalometric radiograph



■ Fig. 4: Pre-treatment panoramic radiograph

The panoramic radiograph reveals a missing UL3 which was extracted at age 12 as part of a treatment plan to correct the malocclusion surgically. The patient's parents declined orthognathic surgery because of the potential for severe complications.<sup>2,3</sup> 10 years later, when the patient was a dental student, she opted to seek conservative treatment for the problem with extractions, bone screws and orthodontics.



■ Fig. 5: Pre-treatment TMJ transcranial radiographs show the right (R) and left (L) sides in the rest and open positions. The mandibular condyles are outlined in red. Note the asymmetric mandibular condyle heads are longer on the right compared to the left side.



■ Fig. 6: The dental midlines were coincident, but shifted 2-3mm to the left consistent with the asymmetric heads of the mandibular condyles.

## Diagnosis

### Skeletal: Bimaxillary Protrusion

- Class I relationship:  $SNA\ 84^\circ$ ,  $SNB\ 84^\circ$ ,  $ANB\ 0^\circ$
- Mandibular plane angle:  $SN-MP\ 33^\circ$ ,  $FMA\ 25^\circ$

### Dental: Slight Class II in $C_R$

- Anterior crossbite:  $UL1$  and  $UL2$
- Overjet:  $-2mm$
- Upper Incisors: Tipped anteriorly ( $U1$  to  $NA\ 3mm$ ,  $U1$  to  $SN\ 111.8^\circ$ )
- Lower Incisors: Tipped posteriorly ( $U1$  to  $NB\ 4mm$ ,  $L1$  to  $MP\ 85.5^\circ$ )

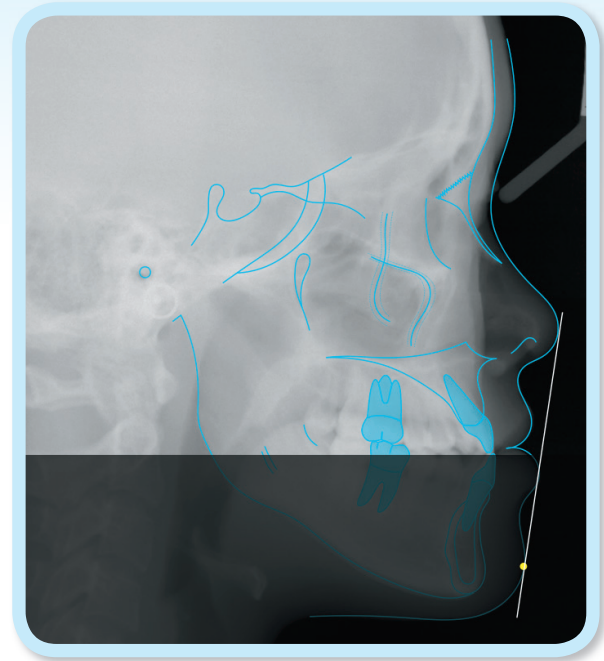
### Facial: Relatively protrusive lower lip

The UL to E-line cephalometric measurements was  $-4mm$ , which is consistent with a retruded upper lip, but the latter is almost perfectly position to the nose (Fig. 7). However, the mandible is protrusive with a prominent chin, so the relatively protrusive lower lip is actually the problem. Carefully evaluating lip protrusion is a vey important aspect of treatment planning. The American Board of Orthodontics (ABO) Discrepancy Index (DI) was 26 points as shown in the subsequent worksheet.

## Treatment Objective

After discussing relevant options with the patient, the following treatment was accepted:

1. Extract the  $UR8$ , and three first premolars ( $UR4$ ,  $LR4$  and  $LL4$ ) to compensate for the missing  $UL3$ .



■ Fig. 7:

Despite the aberrant UL to E-line cephalometric measurement, the upper lip is in an ideal position relative to the nose when the lower third of the face is covered. See text for details.

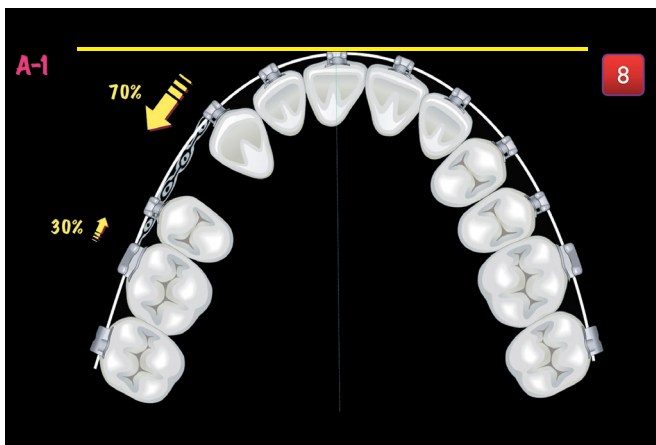
2. Protract UR buccal segment with posterior TAD anchorage.
3. Correct maxillary asymmetry with TAD anchorage and Class II elastics.
4. Move both dental midlines to the right to correct the bimaxillary asymmetry.
5. Establish ideal overjet and overbite.

## Treatment Alternatives

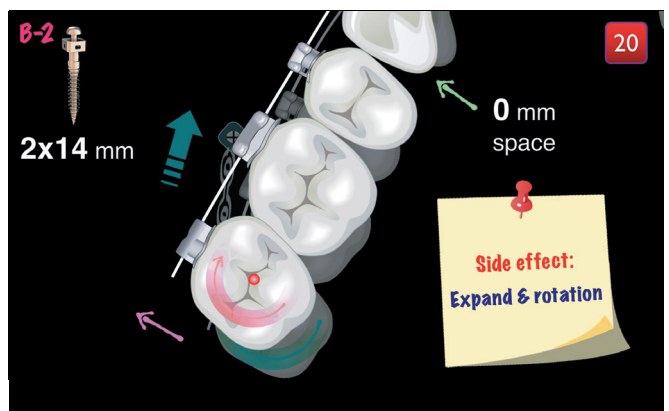
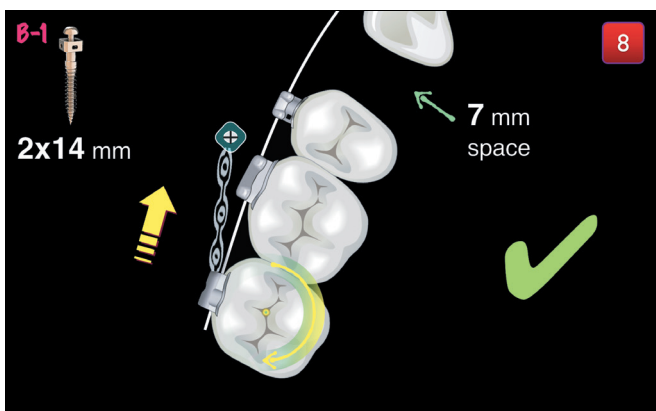
**First Option:** Use conventional molar anchorage to close the  $UR4$  extraction space. With this treatment option, space closure is expected to be 70% by

retracting anterior teeth, and 30% by protracting posterior teeth. The disadvantage with this option was decreasing the protrusion of the upper lip, which was an unacceptable outcome for the patient (Fig. 8).

**Second Option:** Use a right infrazygomatic crest (IZC) screw as anchorage to protract the molar. With this treatment option, space is closed 30% by retraction of anterior teeth, and 70% by molar protraction. This option is designed to maintain upper lip support (Fig. 9).



**Fig. 8:** A-1: The first option (A-1) is conventional mechanics which results in too much retraction of the incisors. Although the upper arch is well aligned (A-2) there would be an anterior crossbite relationship with the lower arch, which is unacceptable to the patient (red cross).

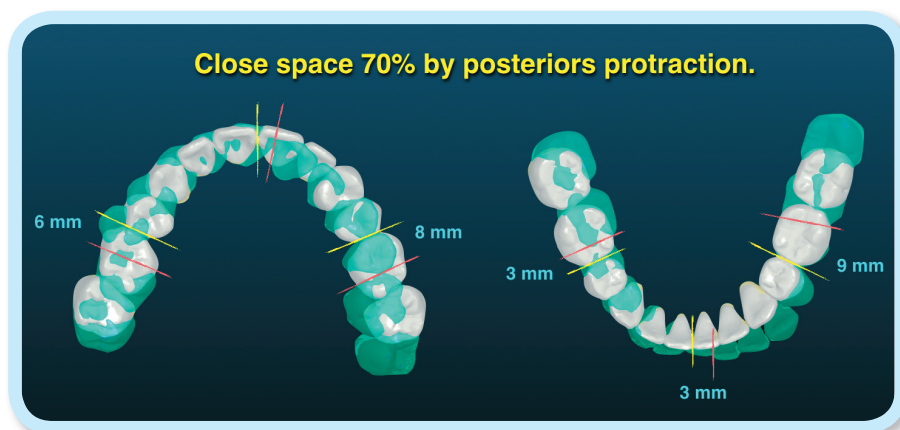


**Fig. 9:** B-1: The second option (B-1) uses a 2x14mm IZC bone screw as anchorage to close the 7mm space primarily with molar protraction. A side effect of these mechanics is buccal movement (purple arrow) of the second molar (B-2), which must be controlled with archwire adjustment. See text for details.

## Digital Set-up

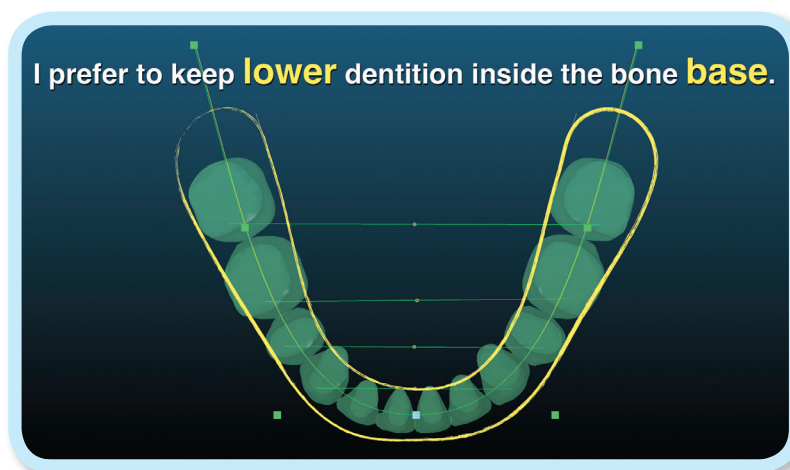
Things that need to be checked before approval:

1. Extract: UR4, LR4, LL4 and UR8
2. Space Closure: ~70% posterior protraction (Fig. 10).
3. Supporting Bone: Maintain the lower dentition over the apical base of bone (Fig. 11).
4. Occlusion: Ideal Class I
5. Bracket Positions: In the center of tooth crowns.
6. Alignment: Straight wire planes



■ Fig. 10:

Green teeth are the pre-treatment position of the dentition. Pink lines mark the pre-treatment and the yellow lines show the post-treatment mesial surface of the first molar, as well as the midline. The prescribed space closure shown in mm in both arches is 70% posterior protraction and 30% mesial movement of buccal segments. See text for details.



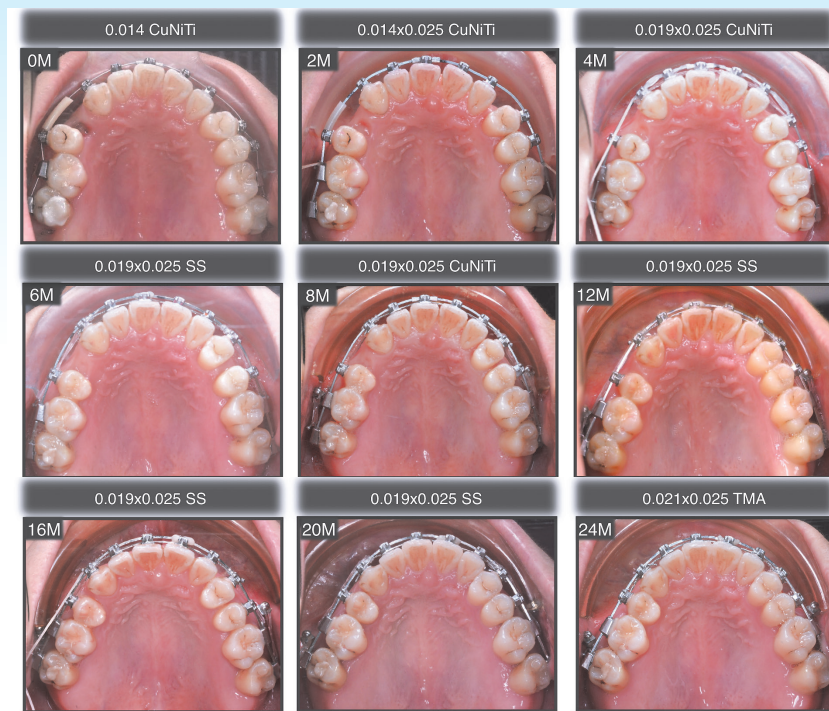
■ Fig. 11: It is important to confirm that alignment of the lower arch is over the apical base of bone.

## Treatment Progress

Two months following the prescribed extractions, all teeth were bonded with an Insignia™ digitally-designed 0.022-in custom appliance, as specified.<sup>4</sup> All treatment and sequencing details are shown in Table 1 and illustrated in Figs. 12 and 13.

Appointment	Archwire	Notes
1 (0 months)	U/L: 0.014-in Damon CuNiTi	Bond Insignia™ digitally-designed 0.022-in custom appliance upper and lower from 7-7
2 (2 months)	U/L: 0.014x0.025-in Damon CuNiTi	Parrot (5/16-in, 2-oz) from U6s to L3s
3 (4 months)	U/L: 0.019x0.025-in Damon CuNiTi	6 hooks, power chain (PC) + power tube (PT) Fox (1/4-in, 3.5-oz) from U3s to L6-7s
4 (6 months)	U/L: 0.019x0.025-in Insignia SS	Fox (1/4-in, 3.5-oz) from U6-7s to L3s Close the spaces 2 180° Drop in Hooks + PC
5 (7 months)		PC Expand the upper archwire
6 (8 months)	U: 0.019x0.025-in Damon CuNiTi	IZC bone screws buccal to UR6 and UL6 Cut the frenum
7 (10 months)	U: 0.019x0.025-in Insignia SS	Kangaroo (3/16-in, 4.5-oz) from U3s to L6s
8-12 (12-17 months)		New PC were used to re-activate space closure mechanics. Kangaroo (3/16-in, 4.5-oz) from U3s to L6-7s
13 (18 months)	L : 0.014x0.025-in Damon CuNiTi	Fox (1/4-in, 3.5-oz) from U3s to L6-7s
14 (18 months)	L: 0.019x0.025-in Damon CuNiTi	IPR U3-3 to eliminate the V shape Chipmunk (1/8-in, 3.5-oz) from U3 to L4 (inside) Fox (1/4-in, 3.5-oz) from U3 to L6-7
15-20 (20-25 months)	U/L: 0.021x0.025-in Insignia TMA	Detail adjustment

■ Table 1: Treatment sequence



■ Fig. 12 :

A progressive series of upper occlusal photographs show treatment progress and the archwire sequence for the upper arch in months (0M) from the beginning of the treatment (0M) to twenty-four months (24M).



■ Fig. 13 :

A progressive series of lower occlusal photographs show treatment progress and the archwire sequence for the lower arch in months (M) from the beginning of the treatment (0M) to twenty-four months (24M).

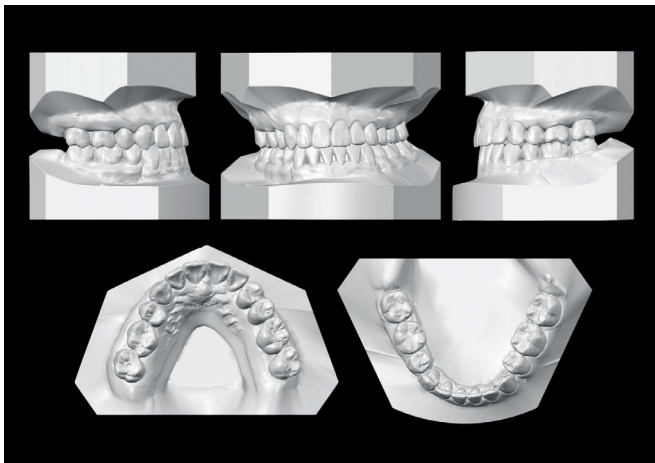


### Treatment Result

After 25 months of active treatment, both the patient and the clinician were satisfied with the outcomes (Figs. 14, 15, 16 and 17). Post-treatment evaluation revealed the maxillary molars were moved mesially relative to the IZC bone screws, as documented in photographs (Fig. 18) and panoramic radiographs (Fig. 19).



■ Fig. 14: Post-treatment facial and intraoral photographs



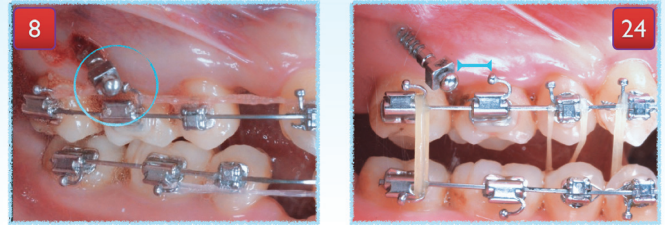
■ Fig. 15: Post-treatment dental models (casts)



■ Fig. 16: Post-treatment lateral cephalometric radiograph



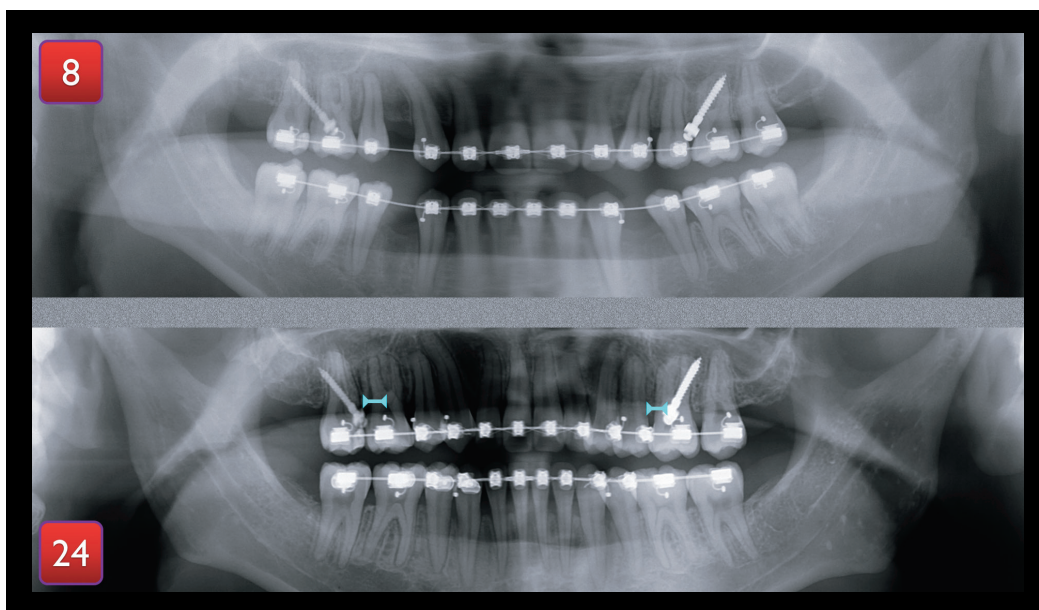
■ Fig. 17: Post-treatment panoramic radiograph



■ Fig. 18:

**Left:** The blue circle indicates the proximity of the bone screw to the first molar in the 8<sup>th</sup> month of treatment.

**Right:** In the 24<sup>th</sup> month the first molar is moved anteriorly compared to the bone screw. See text for details.



■ Fig. 19:

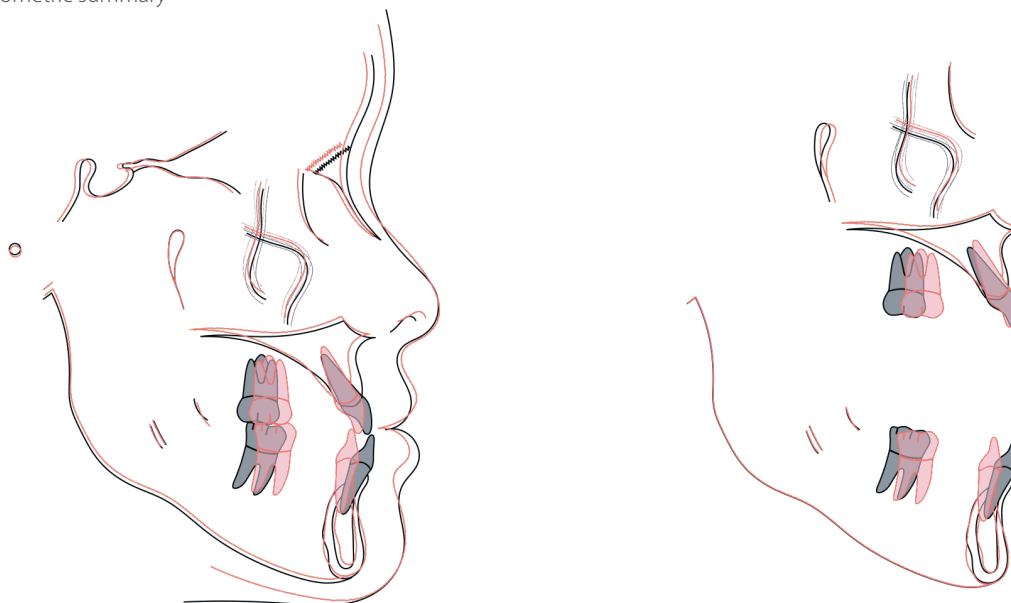
Panoramic radiographs from 8<sup>th</sup> (upper) to 24<sup>th</sup> month (lower) show mesial movement (blue lines) relative to the bone screws.

Dentoalveolar changes are documented in the superimposed cephalometric tracings before and after treatment (Fig. 20). The molars were protracted, while the maxillary incisors and the upper lip were well maintained in the sagittal plane. Lower incisors were retracted to achieve a desirable overjet and overbite relationship. Cephalometric details are summarized in Table 2.

The ABO Cast-Radiograph Evaluation (CRE) score was 18 as shown in the subsequent worksheet, which is an excellent outcome for a challenging malocclusion with a DI of 26 points. The major CRE discrepancies were buccolingual inclination (9 points), and alignment/rotation (3 points).

CEPHALOMETRIC SUMMARY			
SKELETAL ANALYSIS			
	PRE-Tx	POST-Tx	DIFF.
SNA° (82°)	84°	84°	0°
SNB° (80°)	84°	83°	1°
ANB° (2°)	0°	1°	1°
SN-MP° (32°)	33°	30.5°	3.5°
FMA° (25°)	25°	23.5°	2.5°
DENTAL ANALYSIS			
U1 To NA mm (4 mm)	3 mm	2 mm	1 mm
U1 To SN° (104°)	11.8°	105°	6.8°
L1 To NB mm (4 mm)	4 mm	-1 mm	5 mm
L1 To MP° (90°)	85.5°	76°	9.5°
FACIAL ANALYSIS			
E-LINE UL (-1 mm)	-4 mm	-3 mm	1 mm
E-LINE LL (0 mm)	0 mm	-2 mm	2 mm
%FH: Na-ANS-Gn (53%)	56%	56%	0%
Convexity: G-Sn-Pg' (13°)	-1°	0°	1°

■ Table 2: Cephalometric summary



■ Fig. 20: Superimposed cephalometric tracings showing dentofacial changes over 25 months of treatment (red) compared to the pre-treatment position (black). See text for details.

## Discussion

### 1. IZC screw / Archform

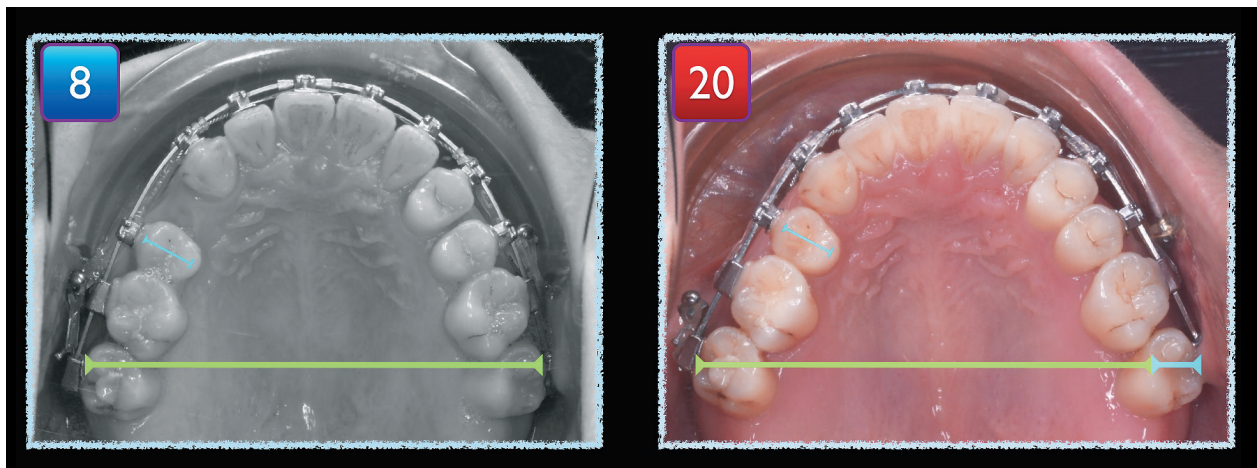
The infrazygomatic crest (IZC) bone screws were placed buccal to the roots of the maxillary molars, which provides extra-radicular anchorage for retraction or protraction of individual teeth or the entire arch. This is a very effective anchorage for correcting skeletal asymmetry.<sup>5,6</sup>

For the present patient, the IZC screws were anchorage for closure of the extraction spaces by protracting the molars. The IZC screws were loaded and reactivated every month with pre-stretched power chains.<sup>7</sup> Tying the power chains from the IZC screws to the second molar protracts the buccal segments during space closure, but can induce side effects such as rotation of the second molar and arch expansion (Fig. 9). After the IZC screw were inserted (8 mo), the force system created the side effect

that expanded the archwire (Fig. 21). This problem was easily solved by constricting the archwire during the treatment process (Fig. 22).

## 2. Asymmetry

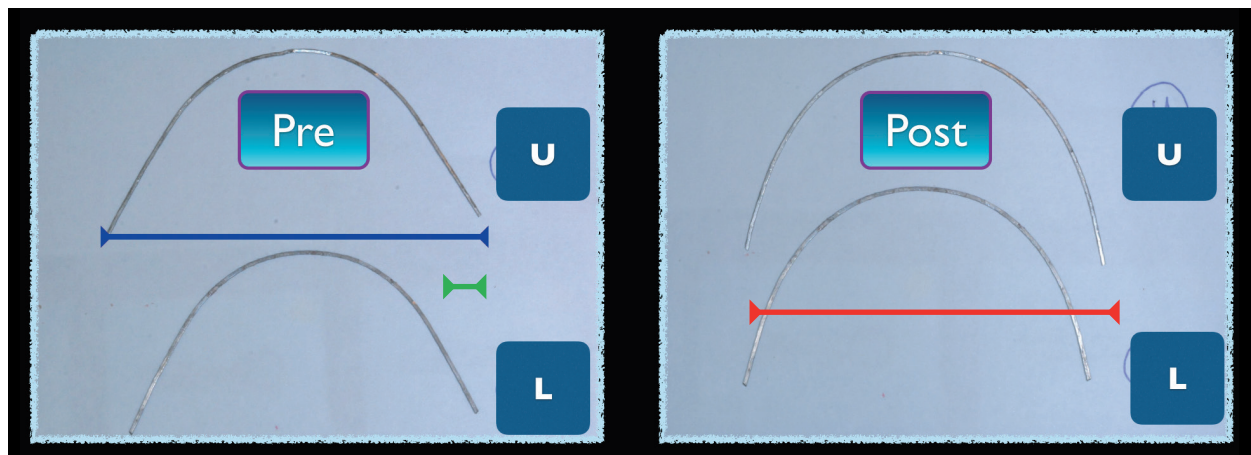
Patients may have unrealistic expectations regarding the resolution of asymmetry.<sup>8</sup> During the pretreatment consultation, it is important to inform the patient that conservative treatment may result in outcomes that are harmonized, but not necessarily normalized. If a patient insists on a normalized treatment result, the preferred treatment option is orthognathic surgery.



■ Fig. 21:

**Left:** The green line at 8 months (left) shows intermolar width when protection force is applied to the second molars.

**Right:** The blue line at 20 months shows the distance that the arch was expanded. See text for details.



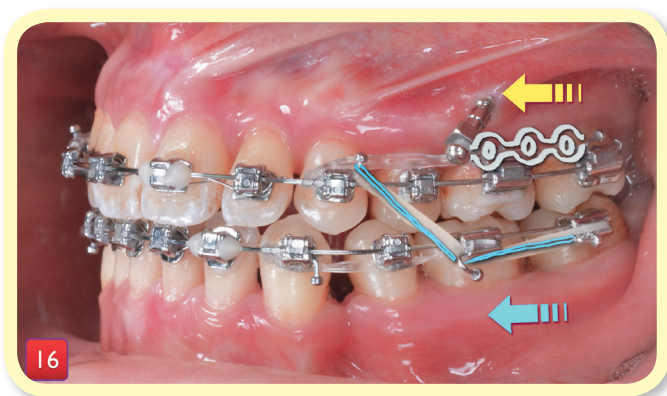
■ Fig. 22:

**Left:** The blue line indicates the width of the pre-adjusted upper (U) archwire compared to the lower arch (L).

**Right:** The red line indicates the width of the adjusted archwire in the 24<sup>th</sup> month. The green line (left) indicates the constriction in width that is required. See text for details.

The point at which acceptable correction of asymmetry becomes unacceptable is not easily defined. The critical factor is the clinician's sense of balance relative to the patient's perception of an imbalance. Therefore, it is important for the patient, family and clinician to have a clear consensus before treatment is initiated in order to achieve treatment outcomes acceptable to all.<sup>8-10</sup>

The present patient agreed to the non-surgical/orthodontic treatment plan realizing a good outcome is a compromise. IZC bone screw anchorage with power chains is a good differential space closure mechanism for the compensation of asymmetric anterior tooth loss. The midlines were corrected with UL4 substituting for the missing UL3. Class II elastics were useful for moving the lower posterior teeth anteriorly to align the lower dental midline with the upper (Fig. 23). From the patient's perspective, this was a very important objective.



**Fig. 23:** The force system in the 16<sup>th</sup> month (16) shows the IZC bone screw and the power chain in upper arch. The yellow arrow indicates the mesial force in the upper arch and blue arrow shows the space closure force in the lower arch. See text for details.

The patient's asymmetrical facial midlines were associated with skeletal asymmetries of the mandibular condyle heads (Fig. 5). For skeletal malocclusions, a dental midline deviation of 3mm is often acceptable.<sup>11</sup> The present patient was particularly concerned, so after 25 months of treatment, the dental midline deviation was reduced to 0mm, and the facial balance was reasonably harmonious. The patient was satisfied, although a mild facial asymmetry was still present. However the asymmetry was consistent with the deviations found in nature.<sup>8</sup>

### 3. Insignia™ digital set-up

Communication with the technicians preparing the digital set-up may be challenging because the clinicians often provide too much unnecessary information. For example, mechanical decisions such as placing bone screws and use of elastomer elastics should not be provided to the technician. Technicians are charged with providing an ideal set-up based on the last archwire. It is the purview of the clinician to plan supplemental anchorage to achieve the final tooth positions consistent with the final set-up.<sup>4</sup> Important information for the technician is as follows:

1. Extract three premolars: UR4, LR4 and LL4
2. Space closure: 70% posterior protraction of molars

The Insignia™ technician's role is to plan a final ideal occlusion, based on bracket positions and desired

wire planes. The clinician then plans the mechanics to achieve tooth positions consistent the planned set-up at the end of active treatment. It is important to keep it as simple as possible: technicians are not doctors!

## Conclusion

Insignia™ is a powerful weapon in the orthodontic arsenal. The full potential requires that an orthodontist understands the precision of the mechanism for achieving the final result with minimal if any adjustments. However, a careful application of supplemental mechanics is necessary to move teeth into the correct relative positions for finishing. Only then can Insignia™ show its true value.

## Acknowledgments

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## References

- Huang C, Shern L, Chang CH, Roberts WE. Extraction vs. non-extraction therapy: statistics and retrospective study. *Int J Orthod Implant* 2016;44:76-86.
- Aldridge T, Gulati A, Baker N. Theories of acquired blindness following Le Fort 1 osteotomy. *British J Oral Maxillofacial Surgery* 2013 Sept;51(6):e86.
- Kim YK. Complications associated with orthognathic surgery 2017 Feb; 43(1):3-15.
- Chang CH, Lee A, Lee WE, Roberts WE. Insignia® System with bone screw anchorage: Class I crowded malocclusion with severe maxillary protrusion. *J Digital Orthod* 2018;51:22-39.
- Chang CH, Huang C, Lee WH, Roberts WE. Failure Rates for SS and Ti-Alloy Incisal Anchorage Screws: Single-Center, Double Blind, Randomized Clinical Trial. *J Digital Orthod* 2018;52:70-79.
- Tseng LYL, Chang CH, Roberts WE. Diagnosis and conservative treatment of skeletal Class III malocclusion with anterior crossbite and asymmetric maxillary crowding. *Am J Orthod Dentofacial Orthop* 2016;149:555-66.
- Kin KH, Chung CH, Choy K, Lee JS, Vanarsdall RL. Effects of prestretching on force degradation of synthetic elastomeric chains. *Am J Orthod Dentofacial Orthop* 2005;128:477-482.
- Bishara SE, Burkey PS, Kharouf JG. Dental and facial asymmetries: a review. *Angle Orthod* 1994;64(2):89-98.
- Lundstrom A. Some asymmetries of the dental arches, jaws, and skull, and the etiological significance. *Am J Orthod* 1961;47:81-106.
- Hayashi K, Muguruma T, Hamaya M, Mizoguchi I. Morphologic characteristics of the dentition and palate in cases of skeletal asymmetry. *Angle Orthod* 2004;74(1):26-30.
- Kokich VO Jr. Comparing the perception of dentists and lay people to altered dental esthetics. *Esthet Dent* 1999;11:311-324.



# Discrepancy Index Worksheet

**TOTAL D.I. SCORE** 26

**OVERJET**

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

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

Total = 8

**OVERBITE**

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

Total = 0

**ANTERIOR OPEN BITE**

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

Total = 5

**LATERAL OPEN BITE**

2 pts. per mm. per tooth

Total = 0

**CROWDING** (only one arch)

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

Total = 7

**OCCLUSION**

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

Total = 0

**LINGUAL POSTERIOR X-BITE**

1 pt. per tooth Total = 0

**BUCCAL POSTERIOR X-BITE**

2 pts. per tooth Total = 2

**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 = 0

**OTHER** (See Instructions)

- Supernumerary teeth \_\_\_\_\_ x 1 pt. = \_\_\_\_\_
- Ankylosis of perm. teeth \_\_\_\_\_ x 2 pts. = \_\_\_\_\_
- Anomalous morphology \_\_\_\_\_ x 2 pts. = \_\_\_\_\_
- Impaction (except 3<sup>rd</sup> molars) \_\_\_\_\_ x 2 pts. = \_\_\_\_\_
- Midline discrepancy ( $\geq 3$ mm) \_\_\_\_\_ @ 2 pts. = \_\_\_\_\_
- Missing teeth (except 3<sup>rd</sup> molars) **1** x 1 pt. = \_\_\_\_\_
- Missing teeth, congenital \_\_\_\_\_ x 2 pts. = \_\_\_\_\_
- Spacing (4 or more, per arch) \_\_\_\_\_ x 2 pts. = \_\_\_\_\_
- Spacing (Mx cent. diastema  $\geq 2$ mm) \_\_\_\_\_ @ 2 pts. = \_\_\_\_\_
- Tooth transposition \_\_\_\_\_ x 2 pts. = \_\_\_\_\_
- Skeletal asymmetry (nonsurgical tx) \_\_\_\_\_ @ 3 pts. = **3**
- Addl. treatment complexities \_\_\_\_\_ x 2 pts. = \_\_\_\_\_

Identify:

Total = 4

# Cast-Radiograph Evaluation

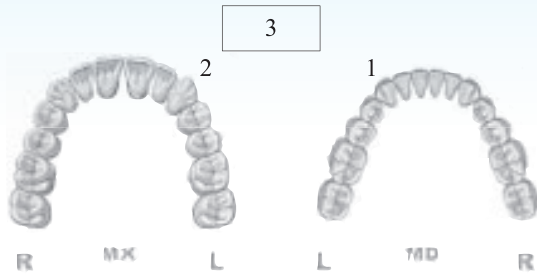
Case #

Patient

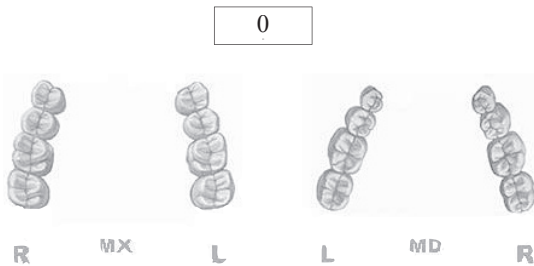
Total Score:

18

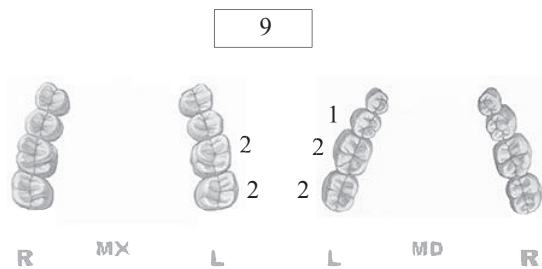
## Alignment/Rotations



## Marginal Ridges



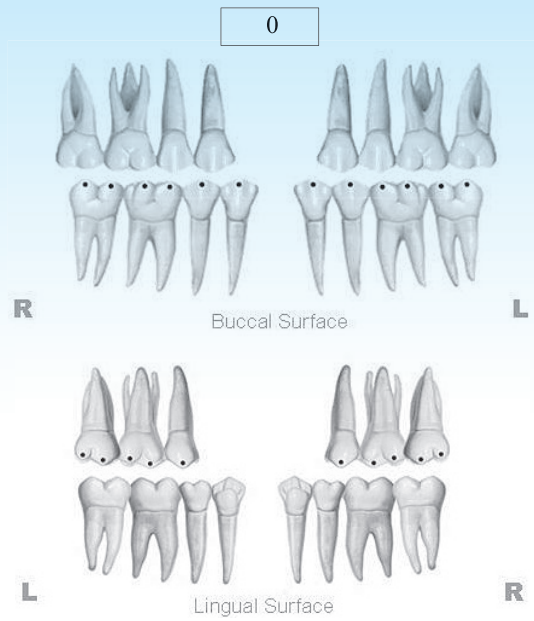
## Buccolingual Inclination



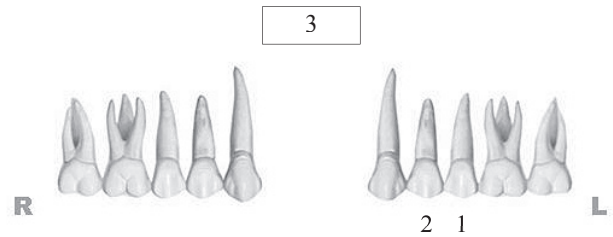
## Overjet



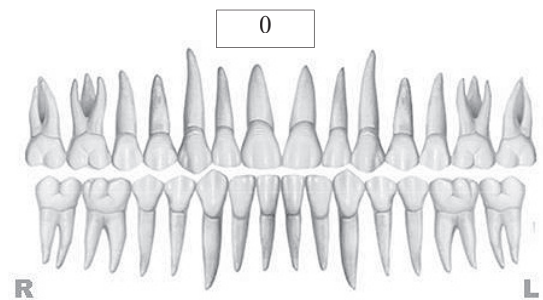
## Occlusal Contacts



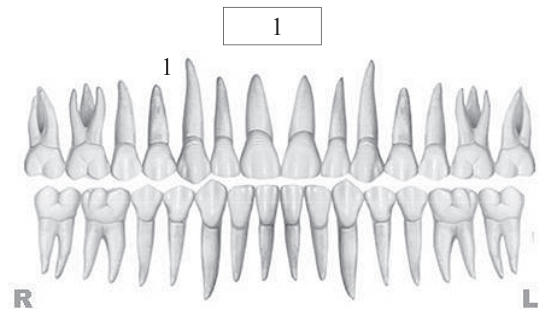
## Occlusal Relationships



## Interproximal Contacts



## Root Angulation



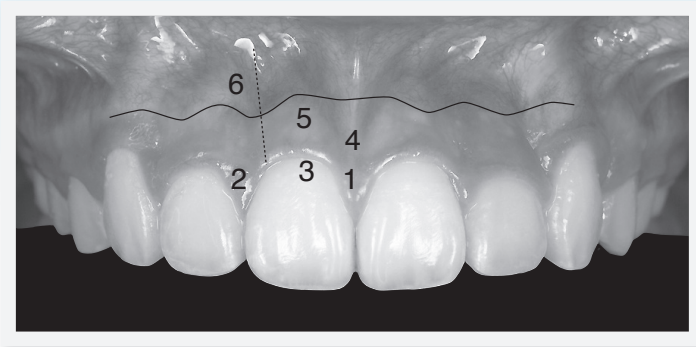
**INSTRUCTIONS:** Place score beside each deficient tooth and enter total score for each parameter in the white box. Mark extracted teeth with "X". Second molars should be in occlusion.



## IBOI Pink & White Esthetic Score

Total Score: = 2

### 1. Pink Esthetic Score

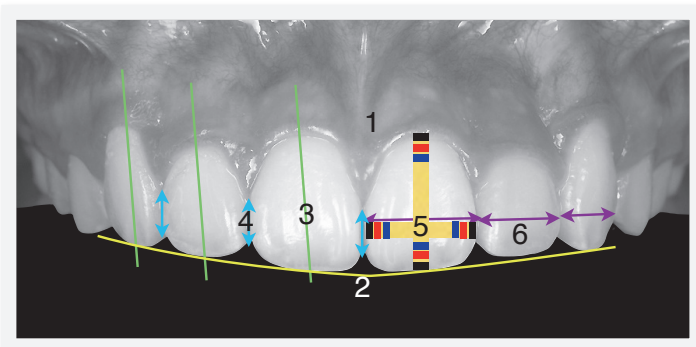


1. M & D Papillae	0	1	2
2. Keratinized Gingiva	0	1	2
3. Curvature of Gingival Margin	0	1	2
4. Level of Gingival Margin	0	1	2
5. Root Convexity ( Torque )	0	1	2
6. Scar Formation	0	1	2

Total = 1

1. M & D Papilla	<span style="border: 1px solid red; border-radius: 50%; padding: 2px;">0</span>	1	2
2. Keratinized Gingiva	<span style="border: 1px solid red; border-radius: 50%; padding: 2px;">0</span>	1	2
3. Curvature of Gingival Margin	<span style="border: 1px solid red; border-radius: 50%; padding: 2px;">0</span>	1	2
4. Level of Gingival Margin	0	<span style="border: 1px solid red; border-radius: 50%; padding: 2px;">1</span>	2
5. Root Convexity ( Torque )	<span style="border: 1px solid red; border-radius: 50%; padding: 2px;">0</span>	1	2
6. Scar Formation	<span style="border: 1px solid red; border-radius: 50%; padding: 2px;">0</span>	1	2

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



1. Midline	0	1	2
2. Incisor Curve	0	1	2
3. Axial Inclination (5°, 8°, 10°)	0	1	2
4. Contact Area (50%, 40%, 30%)	0	1	2
5. Tooth Proportion (1:0.8)	0	1	2
6. Tooth to Tooth Proportion	0	1	2

Total = 1

1. Midline	<span style="border: 1px solid red; border-radius: 50%; padding: 2px;">0</span>	1	2
2. Incisor Curve	<span style="border: 1px solid red; border-radius: 50%; padding: 2px;">0</span>	1	2
3. Axial Inclination (5°, 8°, 10°)	<span style="border: 1px solid red; border-radius: 50%; padding: 2px;">0</span>	1	2
4. Contact Area (50%, 40%, 30%)	<span style="border: 1px solid red; border-radius: 50%; padding: 2px;">0</span>	1	2
5. Tooth Proportion (1:0.8)	<span style="border: 1px solid red; border-radius: 50%; padding: 2px;">0</span>	1	2
6. Tooth to Tooth Proportion	0	<span style="border: 1px solid red; border-radius: 50%; padding: 2px;">1</span>	2