Nonsurgical Treatment of a Class III Patient with Bilateral Open Bite Malocclusion

History And Etiology

A 25-year-9-month-old young lady, with an unremarkable medical history, presented for orthodontic consultation (*Figs. 1-3*). Her chief concerns were "*my underbite and my side teeth don't touch.*" Clinical examination indicated Class III dental malocclusion, an end-to-end incisal relationship, bilateral posterior open bite, dental crowding in both arches, poor lip balance, and a slightly concave facial profile. There was a slight chin deviation to the right, but facial asymmetry was within normal limits.

Orthognathic surgery is indicated in adult patients with severe open bite combined Class III malocclusion and unesthetic facial proportions. However, the patient was adamantly opposed to surgery, and so a camouflage treatment plan was prescribed. A near ideal result was achieved as documented in Figs. 4-6. Pre- and post-treatment radiographs are presented in Figs. 7-8, respectively. Cephalometric documentation is shown in Fig. 8.

Diagnosis

Study models, cephalometric and panoramic radiographs (*Fig. 7*) document the complexity of the malocclusion.

Fig. 1: Pretreatment facial photographs

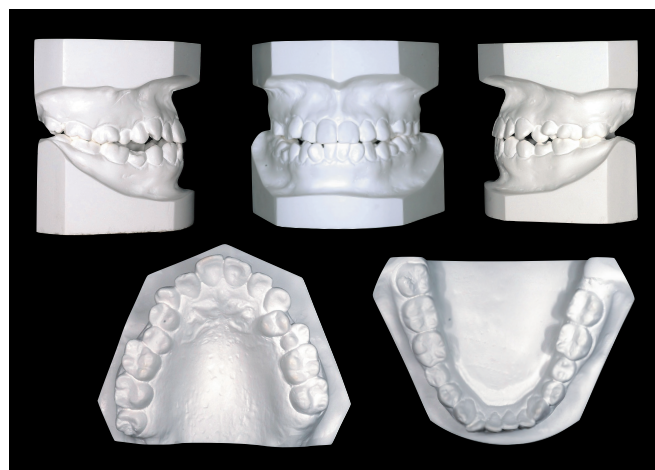Fig. 2: Pretreatment intraoral photographs

Fig. 3: Pretreatment study models

Dr. Chin Lung Hsieh, Lecturer, Beethoven Orthodontic Course (right)
Dr. Chris HN Chang, Director, Beethoven Orthodontic Center (middle)
Dr. Eugene W. Roberts, Consultant,
International Journal of Orthodontics & Implantology (left)

■ *Fig. 4: Posttreatment facial photographs*

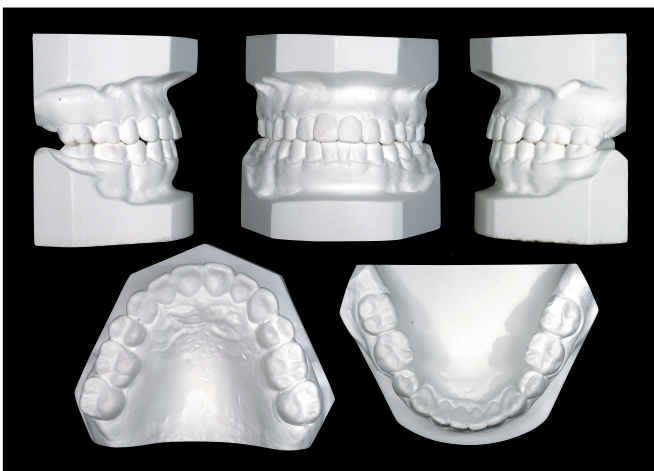■ *Fig. 5: Posttreatment intraoral photographs*

■ *Fig. 6: Posttreatment study models*

Skeletal:

- Skeletal Class III (*SNA 74°, SNB 78°, ANB -4°*)
- Mandibular plane angle (*SN-MP 37°, FMA 30°*)

Dental:

- Bilateral Class III malocclusion End-to-end incisal relationship
- Lingual cross bite UR4, UR5, and UL4Severe crowding of about 10mm in upper arch, moderate crowding of about 4mm in the lower arch
- Bilateral posterior open bite was up to 4mm on the right side and up to 3mm on the left side
- Both lower 2nd bicuspids were rotated mesially 90° and blocked out of occlusion, due to insufficient space There was an insignificant midline discrepancy of ~1mm.
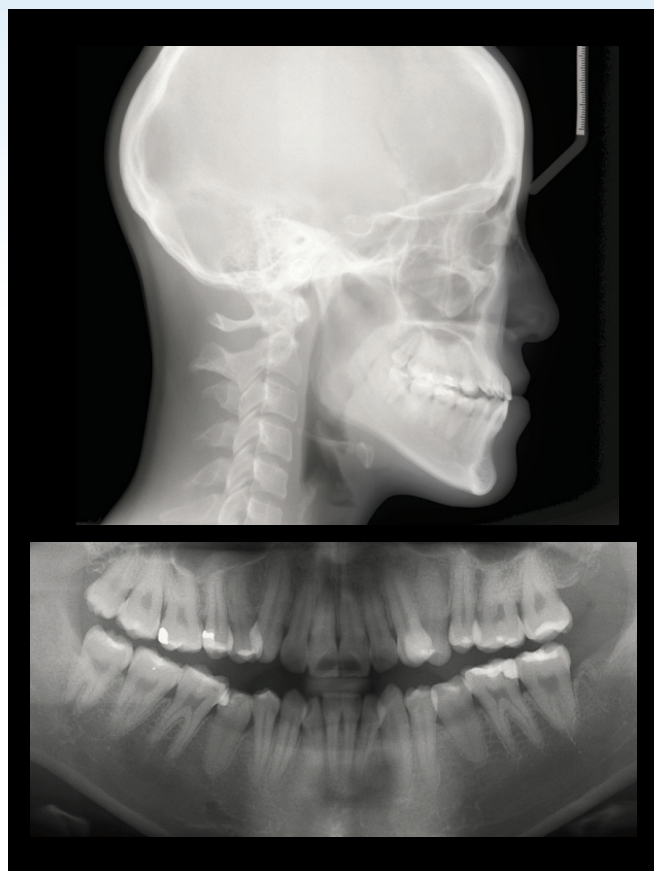
Facial:

Slightly concave profile due to midface insufficiency. Slight deviation of the chin to the right side.

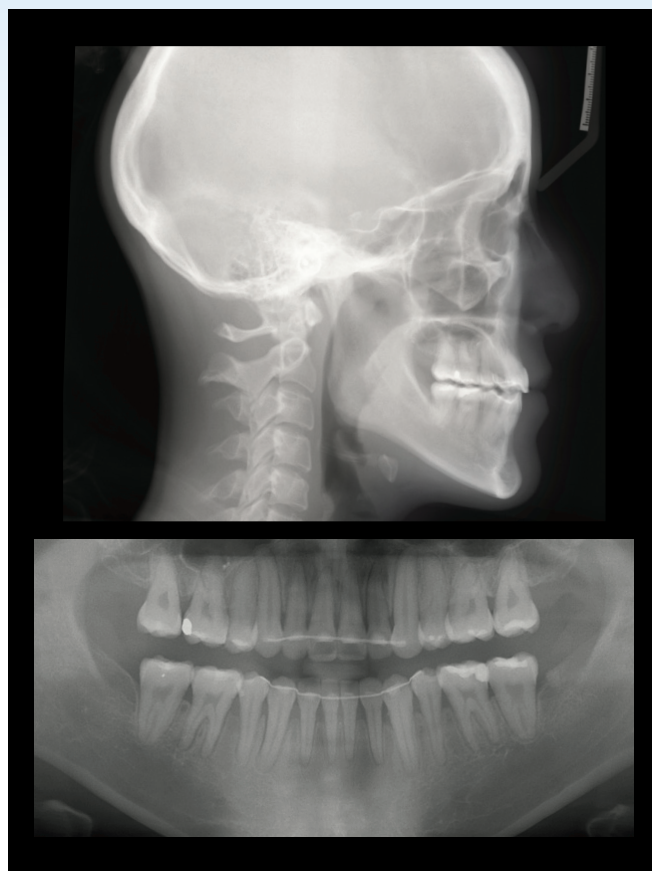The Discrepancy Index (*DI*) was 49 as shown in the subsequent worksheet.

Specific Objectives Of Treatment

Maxilla (*all three planes*):

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

Fig. 7. Pretreatment pano and ceph radiographs

Fig. 8. Posttreatment pano and ceph radiographs

Fig. 9:

Superimposed tracings, the downward and mesial eruption of maxillary molar as well as the backward and distal movement of lower molar and ant. teeth (slight upward) facilitate Class III correction after Class III elastic traction.

Indicator	Ext.	Non-Ext.
1. Profile	Protrusion	Straight
2. Md. angle	High	Low
3. Bite	Open	Deep
4. Anterior inclination	Flaring	Flat
5. Crowding	>7mm	None
6. Decay/missing	Present	????
7. P't perception	OK	No

■ Table 1. Chang's "Extraction Decision-making table[1]". The first column lists indicators corresponding to the choice of extraction or non-extraction therapy in the second and third column. Since the patient had high mandibular angle, bilateral open bite, and crowding on both arches, four bicuspids extraction was recommended.

Mandible (*all three planes*):
- A - P: Retraction
- Vertical: Increase 1-2 mm
- Transverse: Maintain

Maxillary Dentition
- A - P: Slight retraction of the incisors
- Vertical: Maintain
- Inter-molar / Inter-canine Width: Maintain

Mandibular Dentition
- A - P: Retract molars and incisors
- Vertical: Extrude incisors
- Inter-molar / Inter-canine Width: Maintain

Facial Esthetics: Reduce the prominence of lower jaw

The treatment objectives were to (*i*) improve the facial profile, (*ii*) obtain normal canine and incisal guidance, (*iii*) correct the lateral open bite and cross bite, (*iv*) correct the Class III dental relationship, and (*v*) coincident facial and dental midlines.

■ *Fig. 10:*

Lingual buttons were bonded on the canines and 2nd premolars to rotate the direction of 2nd premolars. Open coil springs were also placed between1st premolar and 1st molars to create spaces.
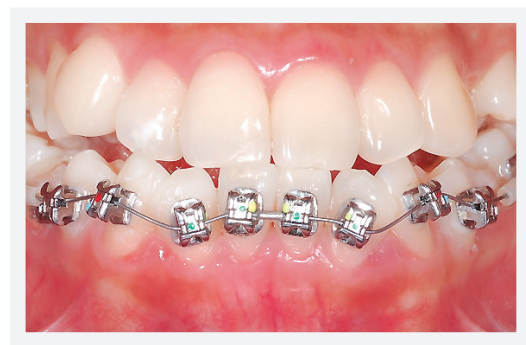
■ *Fig. 11:*

Used high torque brackets (placed the low torque brackets upside down) to prevent lingual tipping during retraction.

Treatment Plan

Chang's "*Extraction Decision-Making Table*" (*Table 1*) was used to assess space requirements.[1] Since the patient had high mandibular angle, bilateral open bite, and crowding on both arches, four bicuspids extraction was recommended to relieve crowding and upright the maxillary incisors over basal bone. Fixed orthodontic appliances were indicated to align and level the dentition. To enhance the osseous development of the alveolar ridge and to facilitate extraction of the lower second bicuspids, spaces will be opened so that the teeth can be extruded and rotated into normal position (*Fig. 10*).

Early light and short Class III elastics will be used to correct the Class III relationship and improve the E-line (*Fig. 12*). Considering the effects of Class III elastics, high torque brackets will be used on the lower anterior teeth to prevent lingual tipping when the lower anterior teeth are retracted. (*Fig. 11*)

Appliances And Treatment Progress

A .022" slot Damon D3MX bracket system (*Ormco*) was used. The mandibular arch was bonded with high torque brackets on mandibular incisors and canines, and two open coil springs were placed both sides between the first premolar and first molar to open a pathway for the extraction of the blocked out 2nd premolars. Concurrently, lingual buttons were bonded on both sides of the canines and 2nd premolars to rotate the teeth distally and create space for the subsequent extraction of 2nd premolars. Since high torque brackets for lower incisors were not available in the local market, low torque brackets

■ *Fig. 12:*
   Cl III elastics were applied on both sides, from upper 1st molar to lower 1st premolar.

■ *Fig. 13:*
   Arch wires, drop in hooks and elastics were changed in the 5th month of treatment.

(-6˚) were placed upside down to express high torque (+6˚) for lingual root movement (*Fig. 11*).

One month after extracting all four second bicuspids, the upper arch was bonded, and Class III elastics (*2 oz Quail, Ormco*) were applied from upper 1st molar to lower 1st premolar bilaterally (*Fig. 12*). In the 5th month of treatment, arch wires were changed to .014x.025 NiTi and brackets with gingival hooks were used on the lower canines. Class III elastics were changed to 3.5 oz (*Fox, Ormco*)(*Fig. 13*).

To control lingual tipping of lower anterior teeth, a .016x.025 pre-torque CuNiTi wire was inserted in the 7th month and then switched to .019x.025 in the 9th month. After 9 months of treatment, the Class

Fig. 14: Drop-in hooks were inserted in #1323 and changed the direction of elastics (Class II elastics).

Fig.15: The pre- torque .019x.025 wire was applied on the upper arch to de-torque the crown root torque of anterior teeth in the 13th month.

III relationship was corrected and positive anterior overjet was produced. To protract the mandibular molars and close the posterior open bite, Class II elastics extended from the upper canines to lower 1st molars for four months, and they were then extended to 2nd molars (*Fig. 14*). A .019x.025 pre-torqued wire was inserted in the 13th month to correct the lingual tipping of the mandibular incisors, due to space closing mechanics (*Fig. 15*). After relieving the severe crowding of anterior teeth, black triangles were noted in both arches. Interpromximal enamel reduction was performed on all incisors, and the space created was closed with power chains or elastic tubes in the 22nd and 23rd month of treatment (*Fig. 16*). A torquing spring was used on the UL3 to tip the root lingually (*Fig. 16 left*). Vertical, triangular elastics (*Kangaroo, Ormco*) were used to improve the occlusion and close the residual posterior open bite. After 26 months of active treatment, all appliances were removed. Upper clear overlay and fixed anterior (*Mx 3-3, Md 4-4*) retainers were delivered for both arches.

Results Achieved

The post-treatment facial photographs (*Fig. 4*) illustrate the change in the patient's profile. Her midlines are coincident in the center of her face. The posttreatment dental casts (*Fig. 6*) and intraoral photos (*Fig. 5*) show a Class I canine and molar occlusion with normal overjet, overbite. Examination of the range of motion demonstrated optimal canine and incisal guidance.

■ *Fig.16:*

Correcting the black triangles of upper and lower anterior teeth by slicing the proximal area and closing the spaces with power chains.

Maxilla (*all three planes*):
- A - P: A point moved anteriorly 1 degree as the incisors were retracted slightly
- Vertical: Maintained
- Transverse: Maintained

Mandible (*all three planes*):
- A - P: Moved posteriorly slightly with posterior mandibular rotation
- Vertical: Increased
- Transverse: Maintained

Maxillary Dentition
- A - P: retracted incisors ~ 1mm
- Vertical: Maintained
- Inter-molar / Inter-canine Width: Maintained

Mandibular Dentition
- A - P: Retracted incisors ~3mm, first molar crowns moved distally as they were uprighted
- Vertical: Maintained
- Inter-molar / Inter-canine Width: Increased

Facial Esthetics: upper and lower lip balance was improved

Retention

Fixed retention (*Mx 3-3, Md 4-4*) was used and an upper clear overlay retainer was delivered. The patient was instructed to wear the overlay full time for the first 6 months and nights only thereafter. The patient was instructed in the home care and maintenance of the retainers.

Final Evaluation Of Treatment

The ABO Cast-Radiograph Evaluation score was 24 points. The major discrepancies were in the occlusal contact (*-7*), marginal ridges (*-5*), occlusal relationships (*-4*), overjet (*-3*), bucco-lingual inclination (*-2*), alignment/rotation (*-2*), and root angulation (*-1*). The use of Class III elastics and space closure contributed to the lingual tipping of the lower anterior teeth despite the application of high torque brackets and pre-torqued arch wires.

Discussion

Angle described a Class III malocclusion as a condition in which the maxillary first molar is positioned distally to the mandibular first molar.[2] This relationship could indicate a skeletally recessive maxillary and a normal mandible, a prognathic mandible and a normal maxilla, or a combination of both. The primary treatment option is to correct the faulty skeletal component and the dental malrelationship. A pseudo-Class III occlusion might be the result of a forward shift of the mandible to avoid incisal interferences.[3] In the United States, true (*skeletal*) Class III malocclusions are found in less than 1% of the general population.[4,5] However, according to Lin's study, the prevalence of pseudo Class III in Taiwan is roughly 2.31% for all age groups, and true (*skeletal*) Class III malocclusions comprise ~1.65% of the population.[6]

Open bite is believed to result from a complex etiology.[7,8] Etiologic factors include vertical maxillary excess, skeletal patterns, abnormalities in dental eruption, and tongue-thrust problems. In some patients, lateral open bite is due to a disturbance of the passive eruption mechanism, including an abnormal growth pattern, finger sucking, airway obstruction, or abnormal tongue posture and function, which prevents non-ankylosed teeth from erupting into occlusion.[9] Most lateral open bite cases reported in the literature involve ankylosed teeth or primary failure of eruption. Routine tongue and cheek posture problems are rarely addressed.

An open bite with any malocclusion classification is often considered a difficult and complex anomaly. Open bite is particularly troublesome with a Class III

malocclusion, because it is often associated with an increased vertical dimension of occlusion.

The etiology of open bite in this case is probably the result of severe crowding, early loss of primary molars and a mesial shift of 1st permanent molars. The succedaneous permanent teeth in the buccal segments had inadequate space for eruption. The second bicuspids, the last teeth to erupt, were blocked out and failed to fully erupt to occlusal table. To seal the open bite areas during swallowing, the patient developed an aberrant tongue posture, which prevented occlusal contact in the buccal segments. Extraction of all four 2nd bicuspids was recommend for crowding relief as well as to promote open bite correction.

■ *Fig.17 Ivory separator*

■ *Fig.18: An pleasing looking and satisfactory result.*

CEPHALOMETRIC			
SKELETAL ANALYSIS			
	PRE-Tx	POST-Tx	DIFF.
SNA°	74°	75°	1°
SNB°	78°	78°	0°
ANB°	-4°	-3°	1°
SN-MP°	37°	39°	2°
FMA°	30°	32°	2°
DENTAL ANALYSIS			
U1 TO NA mm	8 mm	7 mm	1 mm
U1 TO SN°	112°	107°	5°
L1 TO NB mm	4 mm	1 mm	3 mm
L1 TO MP°	88°	80°	8°
FACIAL ANALYSIS			
E-LINE UL	-4 mm	-4.5 mm	0.5 mm
E-LINE LL	-1 mm	-3 mm	2 mm

■ Table. 2: Cephalometric summary

When treating adult Class III patients without orthognathic surgery, various methods have been proposed, including multi-brackets with Class III elastics, extraction treatment, and multi-loop edgewise therapy.[10,11] These techniques facilitate acceptable interincisal relationships and stable occlusions, but usually require intraoral or extraoral anchorage to retract the mandibular incisors.[12] The quality of treatment result often depends on the patient's cooperation.

In this present case, the patient was diligent in wearing her elastics, so a satisfactory camouflage result was achieved following extraction of all 4 second bicuspids. It was not necessary to use more complex procedures such as a face mask or miniscrew anchorage.[13] For adult patients with an orthognathic or acceptable mild prognathic profile, the light force of the Damon system, combined with buccal shelf mini-screws, can provide satisfactory camouflage treatment results without orthognatic surgery.[13] The profile of the present patient may have benefited from a nonextraction approach using four quadrants of extra-alveolar anchorage, but that approach would have required a more complex and expensive treatment plan.

The mesial and vertical eruption of the maxillary molars, as well as distal movement of mandibular molars, facilitated the Class III correction. Class III elastics allowed the maxillary molars to erupt and move mesially while holding the mandibular molars in place, vertically and anteroposteriorly. In addition, the Class III elastics facilitated facial tipping of the maxillary and retraction the mandibular incisors. This pattern of tooth movement improved the molar relationships, from Class III to Class I, by flattening the occlusal plane (*Fig. 9*).

To prevent excessive lingual tipping of mandibular incisors during space closure and retraction, the use of high torque brackets is emphasized. Furthermore, application of pre-torqued arch wires (*.016x.025 and .019x.025 pre-torque CuNiTi*) also helped maintain torque control. The risk of dehiscence and lack of bone support should be considered when the angle of retraction of anterior teeth is beyond 80°.[14] In this present case, the final result of lower anterior teeth was precisely 80° and the tissue texture and mobility

appeared to be ideal. The light force of the Damon D3mx system appears to be effective in preventing these common side effects. Cone beam computed tomography (*CBCT*) is planned for follow up visits to rule out alveolar dehiscence.

Open gingival embrasures, also known as black triangles, are commonly noted in anterior teeth after relief of crowding.[14] Possible causes include the followings: 1) the dimensional change in the dental papilla during alignment of incisors as it is stretched and blunted, 2) decreased height of the alveolar crest relative to the interproximal contact, 3) location and the size of the interproximal contact, 4) divergent root angulation, and/or 5) triangular-shaped crown form. The prevalence of post-treatment open gingival embrasures in an average adult orthodontic population is about 38%.[15] The deficient papilla, in some situations, can be improved with orthodontic treatment. By closing open contacts, the interproximal gingiva can be squeezed and moved incisally. However, the interproximal alveolar bone level should be carefully monitored. If crestal bone loss has occurred, an incisor can be extruded after the incial edge is adjusted gingivally.

Black triangles often present an esthetic challenge to clinicians. Patients should be informed of this possible complication and the potential treatment options. Radiographic films should be exposed prior to slicing (*reducing*) the interproximal area of anterior teeth to verify the location of the long axis of the anterior teeth (*Fig. 17*). An Ivory Separator is recommended for separating the teeth prior to

reducing the contact area with a diamond fissure bur (*N221-010*). Caution should be exercised not to expose the dentin. The linear crown to root ratio must be maintained from 0.7-1.0. The sliced (*reduced*) surfaces should be thoroughly finished and polished, with a fine diamond bur. A surface fluoride treatment is helpful for preventing subsequent caries.

The ABO CRE score of 24 was deemed to be an excellent occlusal result. Most of the points deducted were reflecting problems in occlusal contacts of the molars. Occlusal contacts could have been improved if sectioning of the arch wire distal to right 2nd premolar, was performed earlier to provide a longer period for vertical box elastics wear to settle the buccal occlusal contacts.

Conclusion

It is always a challenge to treat Class III malocclusion, complicated by severe crowding and bilateral posterior open bite, with conservative, non-surgical treatment. An accurate diagnosis and treatment plan are critical to the success of therapy. Efficient mechanics consisting of early light short elastic and a bracket system with light forces can prevent undesirable side effects. In addition to optimal intra-oral esthetics and function, the improved facial result was due to good lip balance and occlusal alignment (*Fig. 18*).

Acknowledgment

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

References

1. Chang CH. Advanced Course No.1: Extraction Decision-making Tree. Beethoven Podcast Encyclopedia in Orthodontics 2011, Newton's A Ltd. Taiwan.

2. Angle EH. Treatment of malocclusion of the teeth and fractures of the maxillae, Angle's system. 6th ed. Philadelphia: S. S. White Dental Manufacturing; 1900. p. 5-15.

3. Proffit WR. Contemporary orthodontics. St Louis: C. V. Mosby; 2007. p. 175.

4. Kelly JE, Sanchez M, Van Kirk LE. An assessment of the occlusion of the teeth of children. Washington DC: National Center for Health Statistics, US Public Health Service; 1973. Publication No.: (HRA) 74-1612.

5. Kelly J, Harvey C. An assessment of the teeth of youths 12-17 years. Washington DC: National Center for Health Statistics, US Public Health Service; 1977. Publication no. (HRA) 74-1644.

6. Lin JJ. Prevalence of malocculsion in Taiwan children age 9-15. Clin dent 1984;4:227-34.

7. Nielsen IL. Vertical malocclusions: etiology, development, diagnosis and some aspects of treatment. Angle Orthod 1991;61:247-60.

8. Dung DJ, Smith RJ. Cephalometric and clinical diagnoses of open bite. Am J Orthod Dentofacial Orthop 1988;94:484-90.

9. Proffit WR, Vig KW. Primary failure of eruption: a possible cause of posterior open-bite. Am J Orthod 1981;80:173-90.

10. Lin J, Gu Y. Preliminary investigation of nonsurgical treatment of severe skeletal Class III malocclusion in the permanent dentition. Angle Orthod 2003;73:401-10.

11. Kim YH, Han UK, Lim DD, Serraon ML. Stability of anterior openbite correction with multiloop edgewise archwire therapy: a cephalometric follow-up study. Am J Orthod Dentofacial Orthop 2000;118:43-54.

12. Roberts WE, Nelson CL, Goodacre CJ. Rigid implant anchorage to close a mandibular first molar extraction site. J Clin Orthod 1994;28:693-704.

13. Lin JJ. Case report review: Treatment of Class III with RME/ FM and /or skeletal anchorage. Int J Orthod Implantol 2012;26:4-16.

14. Bennett J, Mclaughlin RP, Trevisi HJ. Systemized orthodontic treatment mechanics. London: Mosby Inc. 2001

15. Kurth J, Kokich V. Open gingival embrasures after orthodontic treatment in adults: Prevalence and etiology. Am J Orthod Dentofacial Orthop 2001;120:116-23.

Discrepancy Index Worksheet

TOTAL D.I. SCORE   49

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   =   4

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   =   4

LATERAL OPEN BITE

2 pts. per mm. per tooth

Total   =   18

CROWDING (only one arch)

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

Total   =   7

OCCLUSION

Class I to end on	=	0 pts.
End on Class II or III	=	2 pts. per side ____ pts.
Full Class II or III	=	4 pts. per side 8 pts.
Beyond Class II or III	=	1 pt. per mm. ____ pts. additional

Total   =   8

LINGUAL POSTERIOR X-BITE

1 pt. per tooth   Total   =   3

BUCCAL POSTERIOR X-BITE

2 pts. per tooth   Total   =   0

CEPHALOMETRICS   (See Instructions)

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

Each degree < -2°   1   x 1 pt. = 1

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° _____ x 1 pt. = _____

1 to MP $\geq$ 99°   =   1 pt.
Each degree > 99° _____ x 1 pt. = _____

Total   =   5

OTHER   (See Instructions)

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

Identify:

Total   =   0

IMPLANT SITE

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

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

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

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

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

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

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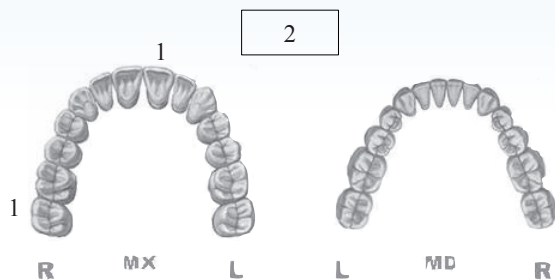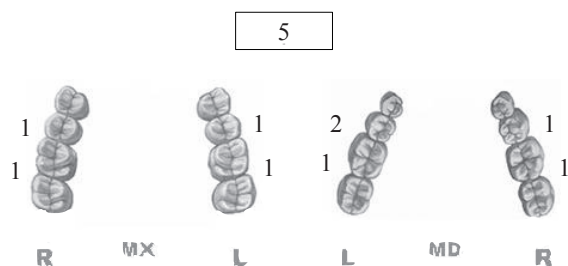
Total   =   0

Cast-Radiograph Evaluation

Occlusal Contacts

8

R   2   1   1   L
Buccal Surface

1 1 1 1
Lingual Surface
L   R

Case #   1   **Patient**

Total Score: **24**

Alignment/Rotations
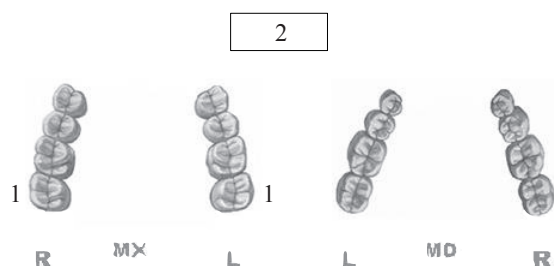
2

1

1

1

R   MX   L   L   MD   R

Marginal Ridges

5

1   1   2   1
1   1   1   1

R   MX   L   L   MD   R

Occlusal Relationships

3

R   1   1   1   L

Buccolingual Inclination

2

1   1

R   MX   L   L   MD   R

Interproximal Contacts

0

R   L

Overjet

3

1   1   1

R   MX   L

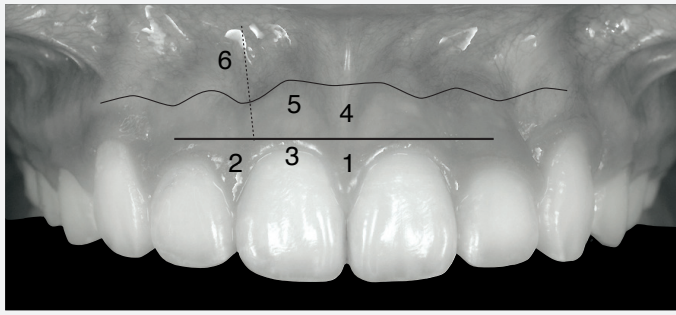## Root Angulation

1

R   1 L
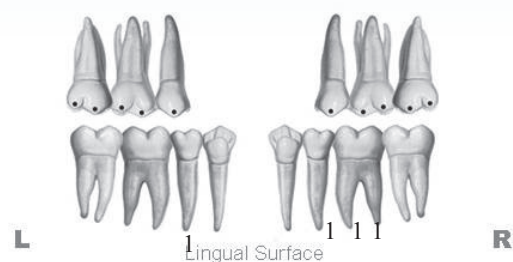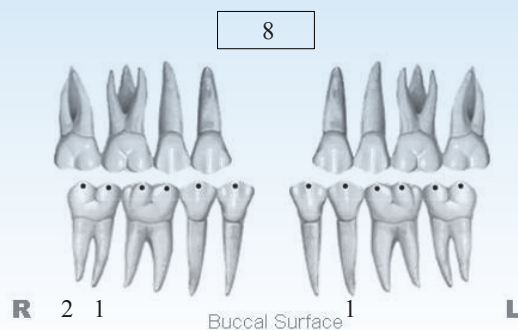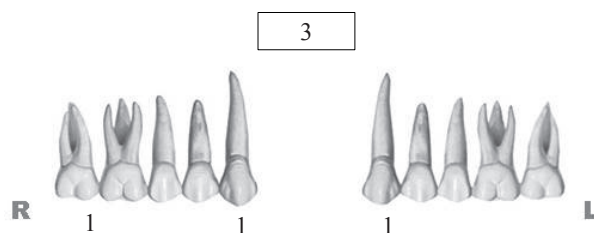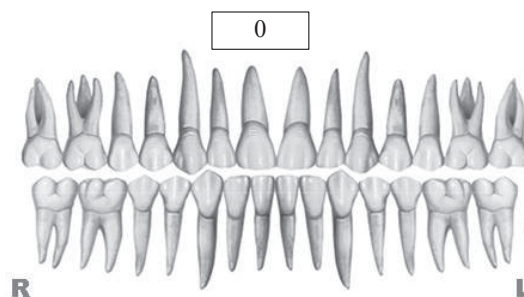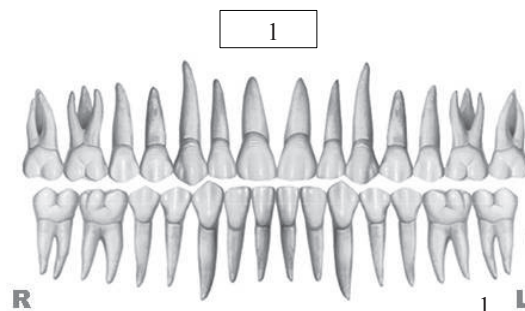
INSTRUCTIONS: Place score beside each deficient tooth and enter total score for each parameter in the white box. Mark extracted teeth with "X". Second molars should be in occlusion.

IBOI Pink & White Esthetic Score

Total Score: = 7

1. Pink Esthetic Score

Total = 1

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

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

2. White Esthetic Score (for Micro-esthetics)
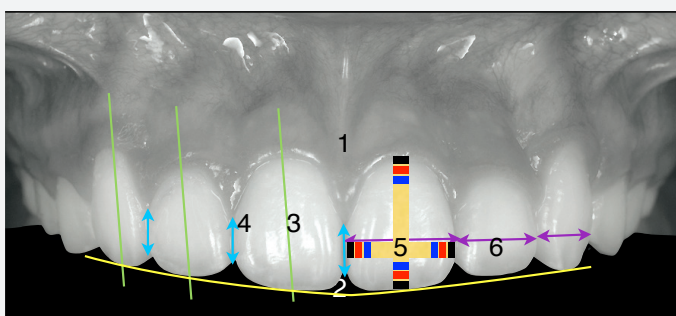
Total = 6

	0	1	2
1. Tooth Form	0	1	2
2. Mesial & Distal Outline	0	1	2
3. Crown Margin	0	1	2
4. Translucency (Incisal thrid)	0	1	2
5. Hue & Value (Middle third)	0	1	2
6. Tooth Proportion	0	1	2

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