

# Non-Surgical and Non-Extraction Orthodontic Treatment for Severe Skeletal Class III Malocclusion with Negative Overjet

## Abstract

**History:** A 30-year-old male presented for orthodontic consultation with a severe Class III malocclusion, negative overjet, and decreased facial height. The chief complaints were poor masticatory function and compromised dento-facial esthetics.

**Diagnosis & Etiology:** A decreased vertical dimension of occlusion (VDO) was associated with a deep underbite (-7mm), a generalized lingual crossbite on both sides, a deviated mandibular dental midline (1.5mm to the left), and a skeletal Class III malocclusion (ANB -5.5°). The probable etiology for the anterior crossbite was functional displacement of the mandible, which led to over-eruption of lower anterior teeth, and developed into a generalized crossbite. The patient was a good candidate for a non-surgical treatment because the facial profile was almost straight with protrusive lower lip despite the reduced VDO which was due to the underbite.

**Treatment:** A non-surgical, non-extraction orthodontic approach with temporary skeletal anchorage devices (TSADs) was planned. A full fixed appliance was bonded on all permanent teeth in both arches. The anterior crossbite and the VDO were corrected by bonding bite turbos, firstly on the lower premolars and later on the lower anterior teeth, so the profile and the facial height of the patient were improved from the beginning, which led to increased patient confidence and cooperation. Early light Class III elastics were introduced from the early stage of treatment, and different patterns of elastics were used during treatment to facilitate palatal expansion in transverse and sagittal planes. Two TSADs were inserted in the buccal shelves to facilitate the A-P plane correction of Class III. The treatment duration was 24 months when all fixed appliances were removed. Retention was with lower and upper fixed 3-3 lingual retainers, and clear overlay retainers on both arches.

**Outcomes:** Following a very conservative orthodontic treatment plan of 24 months this severe Class III malocclusion, with a Discrepancy Index of 72 points, was treated to a Cast-Radiograph Evaluation score of 12 points and a Pink and White esthetic score of 3 points. Both the patient and the clinician were very pleased with the treatment outcome. (*J Digital Orthod* 2021;63:60-74)

**Key words:**

Skeletal Class III malocclusion, Class III molar relationship, curve of Spee, VDO, crossbite, TSADs, Bite turbos, Class III elastics, early light elastics

## Introduction

A 30-year-old male presented with chief complaints of reduced facial height, anterior underbite, and a prognathic mandible. He was previously told by three orthodontists that only surgery could solve his problem. Oral soft tissues, periodontium, frena, and gingival health were all within normal limits. Oral hygiene was very good. No significant medical or dental histories were noted.

The dental nomenclature for this report is a modified Palmer notation. Upper (U) and lower (L) arches, as well as the right (R) and left (L) sides, define four oral quadrants: UR, UL, LR, and LL. Teeth are numbered 1-8 from the midline in each quadrant, e.g., a lower right first molar is LR6.

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## Diagnosis and Etiology

Pre-treatment facial and intraoral photographs (Fig. 1) showed a straight profile with protrusive lower lip. The pretreatment intraoral photographs (Fig. 2) and study models (Fig. 3) revealed bilateral Class III molar relationships. The lower dental midline was shifted 1.5mm to the left of the facial midline. A

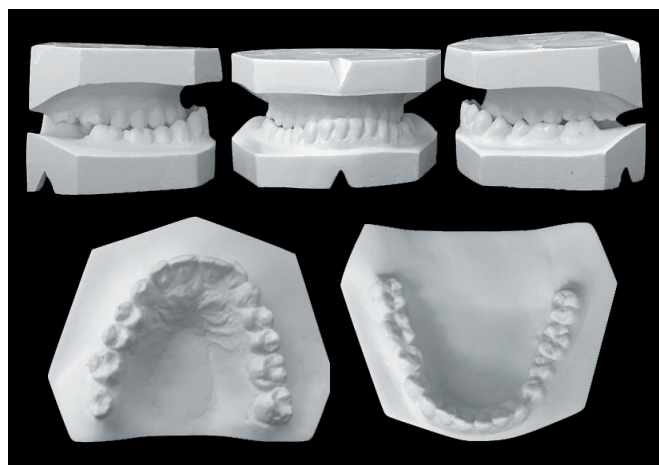
lingual crossbite of the whole upper arch extended from UR7 to UL7. The UR6 was missing, and the UR7 rotated mesial in. The UR8 was mesially positioned into the UR7 space. In the lower arch, minor crowding of anterior teeth was noted, and the UL2 was rotated. Except for a tiny isolated UR8, all other 3<sup>rd</sup> molars were missing.



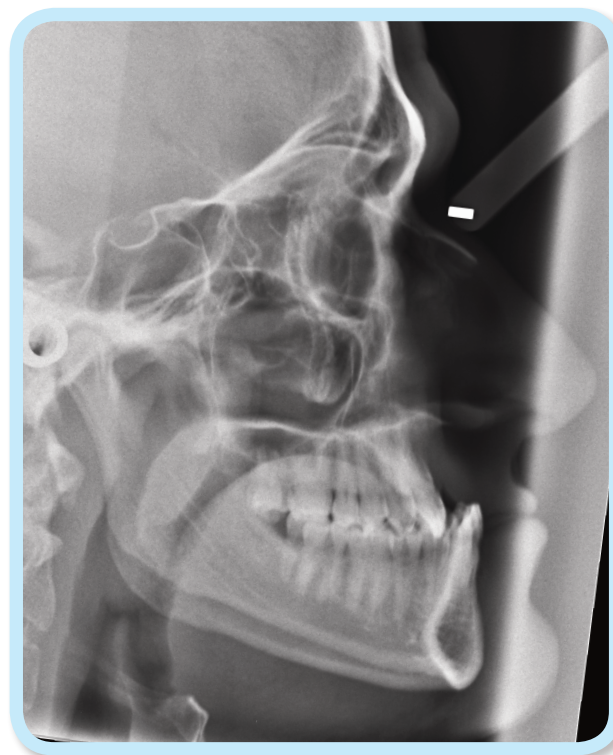
■ Fig. 1: Pre-treatment facial and intraoral photographs



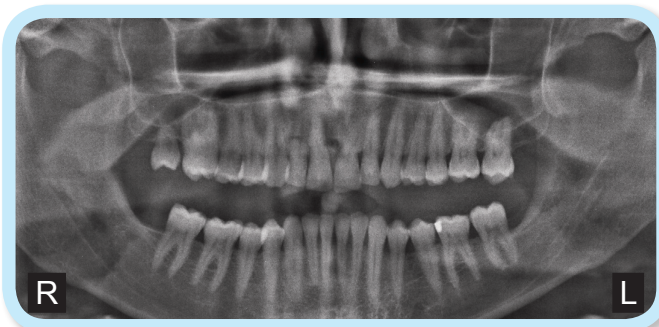
■ Fig. 2: Generalized anterior and posterior crossbite with 11mm of Class III molar discrepancy was noted.



■ Fig. 3: Pre-treatment dental models (casts)



■ Fig. 5: Pre-treatment cephalometric radiograph



■ Fig. 4:  
Pre-treatment panoramic radiograph shows unusual root shapes for the maxillary central incisors, which might be related to dilaceration. There were no signs or symptoms.

No contributing habits were reported. Pre-treatment panoramic and cephalometric radiographs are shown in Figs. 4 and 5 respectively. Cephalometric analysis showed a skeletal Class III pattern due to a prognathic mandible that was manifest as a -7mm anterior crossbite. The ANB angle was  $-5.5^\circ$ , the SN-MP angle was  $29^\circ$ , and the lower incisors were inclined  $76.5^\circ$  to the mandibular plane. The

The patient complained about occasional pain and discomfort in the temporomandibular joints (TMJs).



CEPHALOMETRIC SUMMARY			
SKELETAL ANALYSIS			
	PRE-Tx	POST-Tx	DIFF.
SNA° (82°)	85.5°	87°	1.5°
SNB° (80°)	91°	89°	2°
ANB° (2°)	-5.5°	-2°	3.5°
SN-MP° (32°)	29°	32°	3°
FMA° (25°)	22°	25°	3°
DENTAL ANALYSIS			
U1 To NAm (4mm)	4	6	2
U1 To SN° (104°)	102.5°	118°	15.5°
L1 To NBmm (4mm)	2	1	1
L1 To MP° (90°)	76.5°	66.5°	10°
FACIAL ANALYSIS			
E-LINE UL (-1mm)	-10	-10	0
E-LINE LL (0mm)	-6	-8	2
%FH: Na-ANS-Gn (53%)	53%	56%	3%
Convexity: G-Sn-Pg' (13°)	-2.5°	4°	6.5°

■ Table 1: Cephalometric summary

cephalometric values are summarized in Table 1. The American Board of Orthodontics (ABO) Discrepancy Index (DI) was 72, as documented in Worksheet 1. The patient was successfully treated with a conservative, non-surgical and non-extraction Class III protocol, with the use of early Class III elastics, anterior bite turbos, and temporary skeletal anchorage devices (TSADs) in the buccal shelves. The total treatment period was 24 months. The final result is documented in the post-treatment records (Figs. 6-10).

## Treatment Objectives

The overall objectives of the current treatment were to improve the vertical dimension of occlusion

(VDO), intrude the over erupted lower anteriors by retracting the segment and correcting the curve of Spee. Dentoalveolar correction was designed to compensate for the prognathic mandible and to achieve Class I molar and canine relationships with ideal overjet and overbite. The specific treatment objectives were to:

- Maintain the A-P position of the maxilla.
- Maintain the position of the maxillary incisors and molars.
- Retract the mandibular incisors and molars relative to the apical base of bone.
- Correct the anterior and posterior crossbite and align the midlines.
- Establish a normal overjet and overbite in a mutually protected, Class I occlusion.
- Increase the axial inclination of upper incisors to support upper lips for improved facial balance.

## Treatment Alternatives

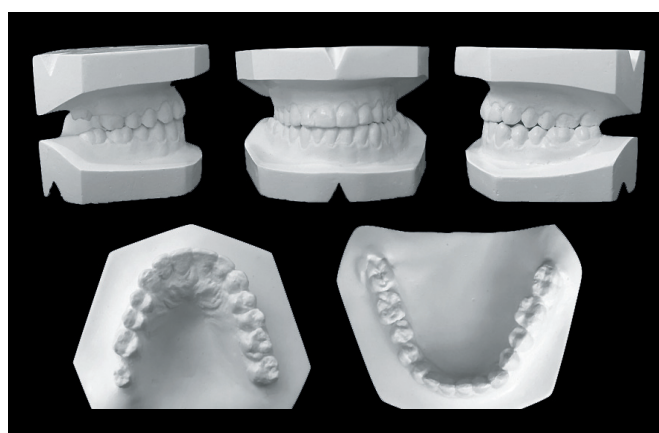
The patient's chief concerns were the anterior crossbite and difficulty in incising food. Because of the protrusive lower lip and the extreme negative overjet (Figs. 1 and 2), an orthognathic surgical option was previously suggested by three other orthodontists, but the patient declined that option because it was too aggressive for him. Thus a non-surgical treatment plan was devised to meet the patient's needs:

1. A non-extraction treatment

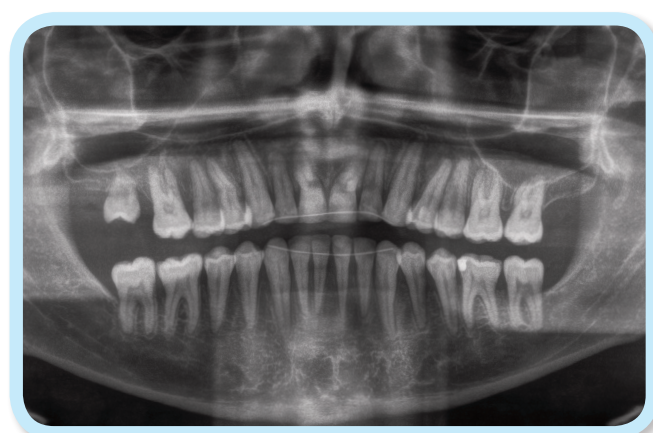




■ Fig. 6: Post-treatment facial and intraoral photographs



■ Fig. 7: Post-treatment dental models (casts)



■ Fig. 8:  
Post-treatment panoramic radiograph shows the same abnormal root shapes for the maxillary central incisors. There were no signs or symptoms so the unusual morphology was deemed clinically insignificant.



■ Fig. 9: Post-treatment cephalometric radiograph



■ Fig. 10: Post- treatment smile of the patient

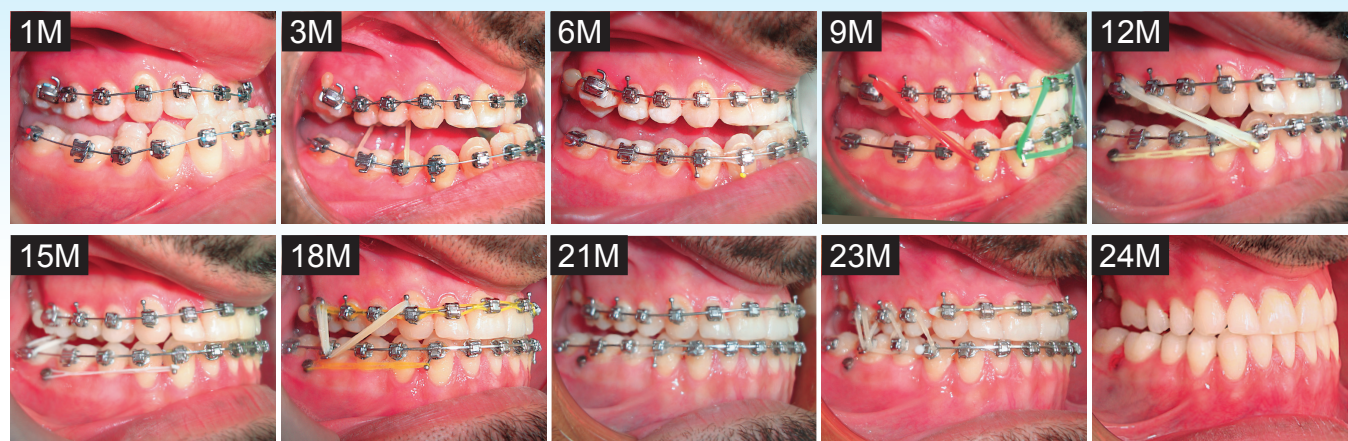
2. Place bite turbos to raise the vertical dimension.
3. Use early short light Class III elastics from the 1<sup>st</sup> month.
4. Place bilateral bone screws in mandibular buccal shelves to ensure maximal retraction of whole mandibular dentition.

5. Remove appliances and retain with upper and lower fixed retainers, as well as clear overlay retainers.

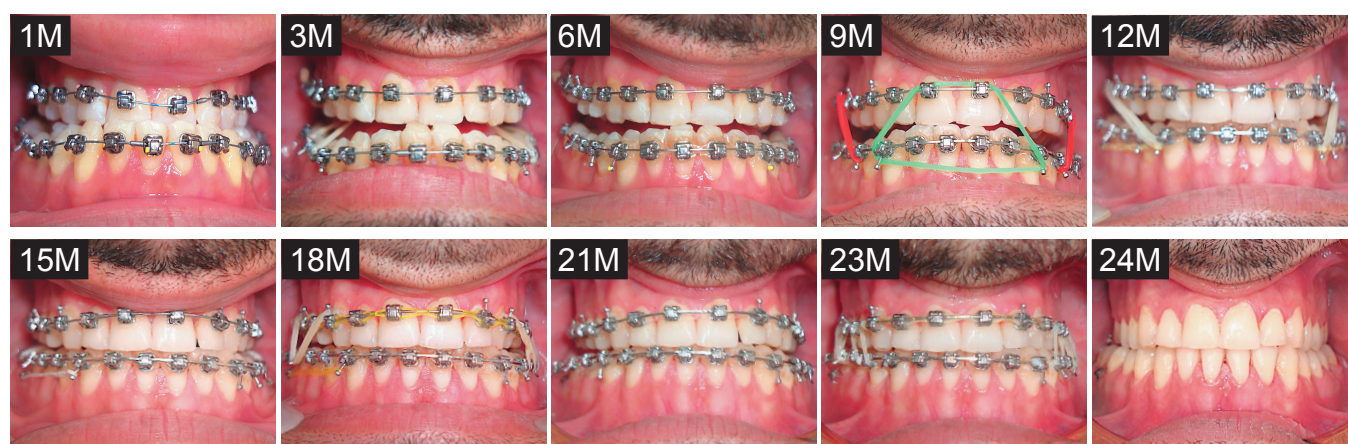
### Treatment Progress

0.022-in Damon Q® brackets with standard torque (*Ormco, Brea, Calif*) were used in both arches. All archwires and elastics were supplied by the same company. After the brackets were bonded, 0.014 CuNiTi archwires were applied to start aligning and leveling teeth. The UR7 was rotated mesial out to functionally replace the missing UR6. Bite turbos (BTs) were placed on the occlusal surfaces of LR5 and LL5 to open the bite and increase the VDO. After one month, they were moved to the incisal surfaces of LR1 and LL1. Early light elastics (*Quail 3/16-in 2-oz*) were applied from UR4 and UL4 to LR3 and LL3, respectively. Lingual buttons were bonded on the palatal surfaces of the upper posterior teeth on both sides, and cross elastics were applied to expand the palate and correct the crossbite. The patient was kept on close follow-up intervals to ensure compliance and to assess any pain or complaints related to the TMJs. At three months (3M) into treatment, 0.018-in CuNiTi archwires were inserted. Box buccal elastics were also used. At five months into treatment (5M), 0.014x0.025-in CuNiTi archwires were placed in both arches. In the lower arch, a power chain was applied to close minor interdental spaces running from LR6 to LL6. The expansion of the upper jaw was due to the cross elastics and the MEAW (*multiloop edgewise arch wire*) effect of Damon wires.<sup>1</sup> The use of elastics was documented in the right buccal and frontal views in Figs. 11a and 11b respectively. In the 7<sup>th</sup> month, 0.018x0.025-in CuNiTi archwires were used. Elastics (*Moose 5/16-*





■ Fig. 11a: The right lateral views show treatment progress over 24 months.



■ Fig. 11b: The frontal views show treatment progress over 24 months.

in 6-oz) were applied in a full Class III pattern. In the 9<sup>th</sup> month, the anterior bite was edge-to-edge, and an anterior box elastic was implemented to augment the jump of the bite. In the 10<sup>th</sup> month, a 0.019x0.025-in SS wire was inserted in the lower arch, and buccal shelf bone screws were installed on both sides to anchor retraction of the whole mandibular dentition (Fig. 12). In the 12<sup>th</sup> month of treatment, the anterior crossbite was completely corrected (Fig. 13). In the 15<sup>th</sup> month of treatment, the upper archwire was changed to 0.019x0.025-in SS. Expansion of the

upper archwire was performed to assist in correction of the bilateral posterior lingual crossbite.

In the 18<sup>th</sup> month of treatment, the lingual crossbite was corrected on the left side, while the right side still remained in crossbite. Buccal spaces were closed on both sides with the aid of elastics (Moose 5/16-in 6-oz) applied in a V shape pattern (Fig. 14). Cross elastics from UR7 and UL6 to the buccal shelf screws on both sides were introduced to establish adequate transverse relation. The stiff archwire was

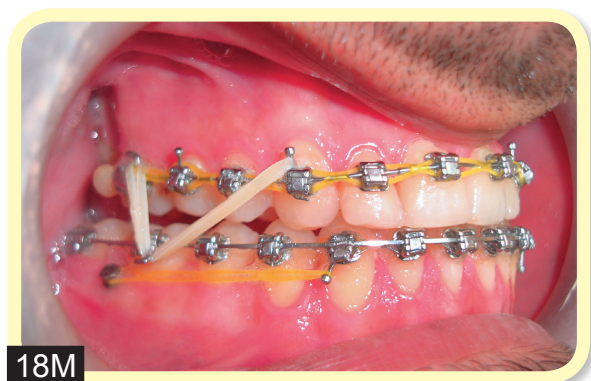




**Fig. 12:**  
In the 10<sup>th</sup> month of treatment, TSADs were inserted in the mandibular buccal shelves bilaterally.



**Fig. 13:**  
In the 12<sup>th</sup> month of treatment, the anterior crossbite was corrected.



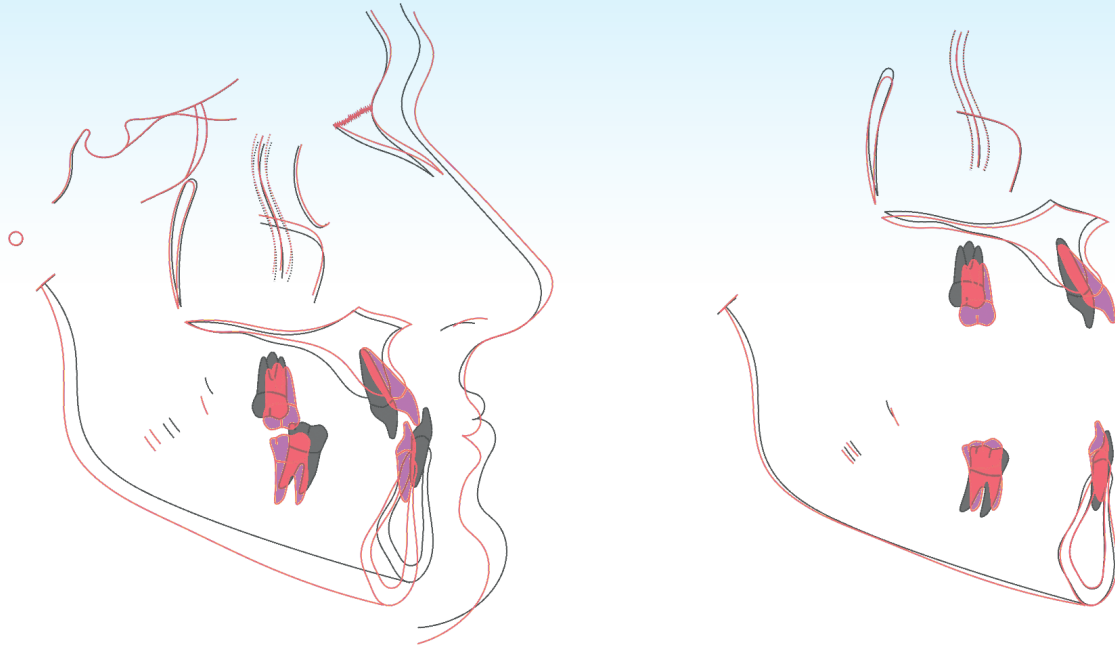
**Fig. 14:**  
V shape elastics (Moose 5/16-in 6-oz) were applied to close the buccal spaces.

not compatible with space closure in the buccal segments. Brackets on the posterior teeth were repositioned more to the gingiva to accelerate extrusion, and 0.018-in CuNiTi archwire was inserted. After 4 weeks, a 0.018x0.024-in CuNiTi archwire was inserted in the upper arch. At 20 months, 0.018x0.025-in SS was inserted in the upper arch to maintain the axial inclination and torque of upper anterior teeth. The wires were sectioned distal to the canines, and elastics (*Chipmunk* 3.5-oz, 1/8-in) were used as two triangles on each side to close the minor buccal spaces for maximum intercuspation and for final settling of the occlusion. All appliances were removed in the 24<sup>th</sup> month of treatment. Fixed lingual retainers were applied from 3 to 3 in both arches, and clear overlay retainers were also prescribed. The biomechanics associated with the rotation and the retraction of the entire mandibular dentition is displayed in Fig. 12.

## Results Achieved

The overall results were pleasing to both the clinician and the patient. Facial harmony and lower lip protrusion were improved (Fig. 6). Post-treatment intraoral photographs (Fig. 6) and study models (Fig. 7) show a Class I relationship bilaterally. Dental midlines were aligned with the facial midline, and ideal overjet and overbite were achieved.

Cephalometric analysis and superimposed cephalometric tracings (Table 1; Fig. 15) showed maximal retraction of the whole mandibular dentition with clockwise rotation of the mandible. Inferior movement, as well as rotation of the mandibular occlusal plane caused the opening of



■ Fig. 15:

Superimposed cephalometric tracings show the dentofacial changes after 24 months of treatment (red) compared to the pre-treatment position (black).

the mandibular plane angle and increased FMA from  $22^\circ$  to  $25^\circ$ , which led to the biggest change in the profile. Post-treatment L1-to-MP angle is  $66^\circ$ , indicating retroclination in post-treatment cephalograms. No flaring or retroclination of lower incisors was noted in the post-treatment cephalogram. The U1-to-SN angle increased from  $102.5^\circ$  to  $118^\circ$  as the maxillary arch expanded (Fig. 15). This inclination was necessary in order to support the upper lip. Critical assessment of this case with a DI of 72 was Cast-Radiograph Evaluation (CRE) and Pink & White scores of 12 and 3 points respectively, as documented in Worksheets 2 and 3 appearing later in this report.

The following discrepancies in the finish were noted:

1. Distal-in rotation of the right maxillary 2<sup>nd</sup> molar.
2. Marginal ridge discrepancies existed between LR6-LR7 and LL6.
3. Lack of occlusal contact was noted on the right side between the upper disto-buccal cusps of maxillary and mandibular 2<sup>nd</sup> molars and palatal cusps of maxillary 2<sup>nd</sup> premolars.
4. Buccolingual inclination of LR5, LL6, and UR7.
5. Inadequate root parallelism existed between UR4, UR5, UL4, and UL5.
6. The gingival margins were uneven for the UR1 and UL1 due to natural enamel defects persisted after treatment.

## Discussion

Conservative treatment for a Class III skeletal malocclusion with marked negative overjet and deep bite using a non-surgical, non-extraction protocol has long been challenging to orthodontists. The strategy for treating a Class III malocclusion usually involves proclination of the maxillary incisors and retroclination of the mandibular incisors to improve the dental occlusion, but that approach may not correct the underlying skeletal problem or facial profile. Clinical studies have shown an increase in the ANB angle, little or no change in the vertical dimension, and decreased concavity of the facial profile in such treatments.<sup>2-6</sup> However, little information is available in the literature regarding the possible tooth movements in this type of skeletal malocclusion. In most non-surgical Class III treatment, retraction of the lower incisors is helpful. McLaughlin and Bennet<sup>7</sup> advised not to retract beyond 80° to prevent the risk of dehiscence and lack of bone support. Retraction of the lower incisors to achieve Class I molar relationship can be obtained with the assistance of Class III elastics and/or with bone screw anchorage. With bone screw anchorage, the dental discrepancy can often be effectively treated within limits. Compared to Class III elastics, use of osseous anchorage can avoid proclination of upper incisors, which contributes to more favorable naso-labial angle. In the present case, maximal retraction of the entire mandibular dentition was attained with bilateral bone screws inserted into the mandibular buccal shelves. There were no major unwanted side effects.

The principal limitation for how much the lower arch can be retracted depends on the distance between

LR7 and LL7 and the ascending ramus. However, little information is available regarding this problem. In the present case, the patient presented with a relatively low FMA mandibular angle of 22°. The main strategy was to open and rotate the mandible with the aid of bite turbos on the incisal-lingual surfaces of lower central incisors, as well as Class III elastics. The finished FMA angle was 25°, which is within the standard range. Thus, it is possible to correct the current malocclusion because the 7mm negative overjet was decompensated after 9 months.

In summary, the indications of successful correction of a skeletal Class III malocclusion are:

1. a good profile
2. normal A-P position in the maxilla,
3. a U1-to-SN angle within 120°,
4. slightly acute naso-labial angle, and
5. negative overjet after decompensation of mandibular incisors within 11mm (*average M-D width of mandibular 1<sup>st</sup> molar*).

Another concern in treating Class III negative deep bite (*underbite*) cases is smile arc enhancement. Class III cases usually have a flat occlusal plane. In this case, the negative deep bite was associated with extruded lower anterior teeth and a deep curve of Spee. When correcting this type of malocclusion with long Class III elastics, extrusion of maxillary molars as well as flaring of maxillary incisors contributes to counterclockwise rotation of the functional occlusal plane, which led to flattening of smile arc. In the present case, Class III, box, and other triangular



elastics were used to close the buccal spaces which resulted from an increase in the vertical dimension of the occlusal plane (VDO). That effect helped in the extrusion of the mandibular posterior teeth, intrusion of the mandibular anterior teeth, and flattening of the curve of Spee, which resulted in a flattened smile arc. From a biomechanical aspect, the downward rotation and retraction of the entire mandibular dentition contributed to the correction of underbite. Usually, orthodontic treatment for malocclusion is performed in sequences of transverse, vertical, and anteroposterior relationships. In the present case, due to an elevation of the VDO with the help of bite turbos, all the above relationships were intended for the correction from the beginning. The correction occurred in the following sequence. Firstly, the vertical relation in the anterior segment was corrected by jumping the bite. Secondly, A-P relation of Class III was corrected to Class I. Thirdly, the transverse relation was improved by correcting the posterior crossbite, and finally, vertical relation of posterior segment was corrected with triangular elastics after sectioning of the wire distal to the canines. Thus, it was necessary for the patient to return every week in the last month of active treatment for adjustments before the appliances were removed. Both the patient and clinician were satisfied with the treatment results. The patient's confidence increased from the first month of treatment with the improvement in the profile due to an increase in the VDO from bite turbos. The patient's motivation and cooperation were also an important factor because the treatment plan involved heavy use of elastics of different sizes and patterns, as well as frequent appointments for close follow-up.

It should be noted that the mandibular arch alignment was similar to the Tweed philosophy of orthodontic finishing. In the denture completion stage of Tweed-Merrifield philosophy,<sup>8</sup> the distal cusps of the 1<sup>st</sup> and the 2<sup>nd</sup> molars should be slightly out of occlusion. If the canines and premolars are treated to solid Class I relationships, the ideal occlusion will occur after all treatment mechanics are discontinued. Normal function and other environmental influences active in the post-treatment period will stabilize and finalize the position of the occlusion. In conclusion, significant dental and soft-tissue improvement can be expected in young adult Class III patients treated with non-surgical orthodontics. A wide range of skeletal dysplasias can be corrected with camouflage treatment that involves tooth movement, which is minimally invasive for hard and soft tissues. This approach is capable of solving a wide variety of malocclusions in different age groups.

Intercuspalation between upper and lower posteriors was achieved. However, to avoid distally tipped mandibular molars, it is always better to retract the mandibular dentition with a stiffer archwire such as a 0.019x0.025-in SS wire to help prevent rotation of the occlusal plane and tipping back of molars. It was helpful to have progressive panoramic radiographs to identify the early stages of periodontium. However, proper diagnosis, realistic treatment objectives, and efficient mechanics are necessary to prevent undesirable sequelae.

Superimposed tracings of the mandible revealed maximal retraction of anterior teeth and extrusion of molars. These treatment effects contributed to the

correction of the anterior crossbite and opening of the vertical dimension.

## Conclusions

For decades, similar cases of Class III skeletal and dental malocclusion were treated with a combination of orthodontic and orthognathic surgical approaches, with or without extraction or in the form of camouflage treatment. In this case report, a non-surgical, non-extraction orthodontic protocol was implemented to treat a severe skeletal Class III malocclusion with a negative overjet in an adult male. Three major factors contributed to the success of this case: the use of early light elastics, bite turbos, and TSADs in the buccal shelves. These factors play a major role in the treatment protocols for different classes of malocclusion. Modern approaches for orthodontics are promising not only in solving complicated malocclusion in a minimally invasive manner, but also in achieving favorable results with less treatment time.

## References

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## Cast-Radiograph Evaluation

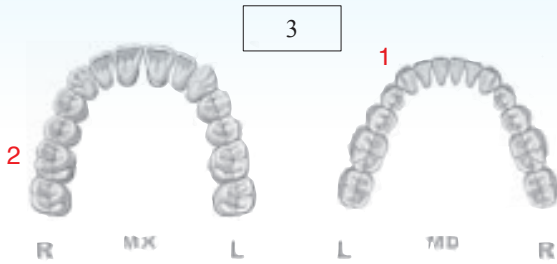
Case #

Patient

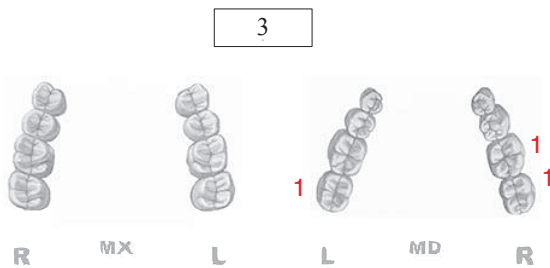
Total Score:

12

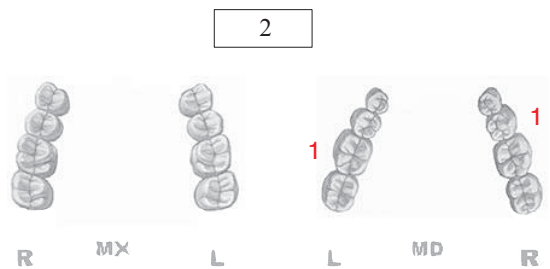
Alignment/Rotations



Marginal Ridges



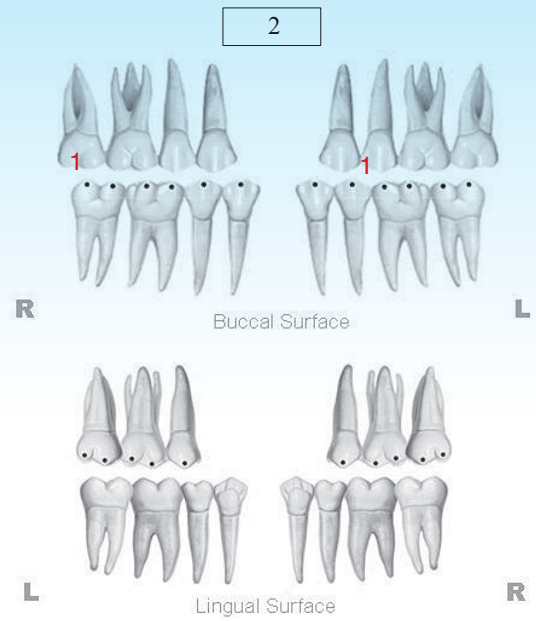
Buccolingual Inclination



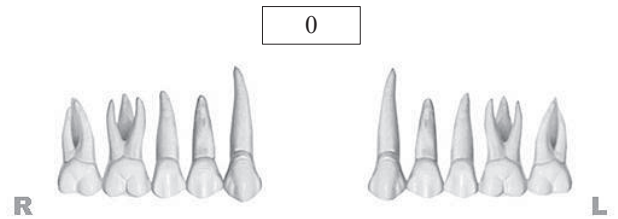
Overjet



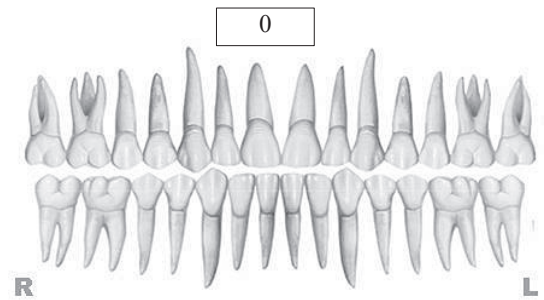
Occlusal Contacts



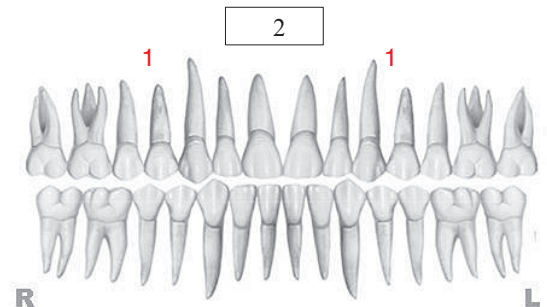
Occlusal Relationships



Interproximal Contacts



Root Angulation

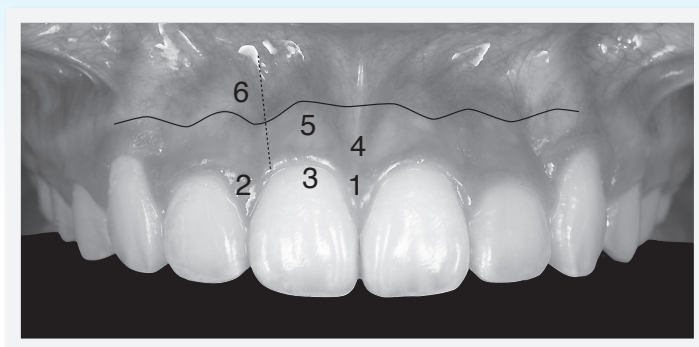


**INSTRUCTIONS:** Place score beside each deficient tooth and enter total score for each parameter in the white box. Mark extracted teeth with "X". Second molars should be in occlusion.

## IBOI Pink & White Esthetic Score (Before Surgical Crown Lengthening)

Total Score: = **3**

### 1. Pink Esthetic Score

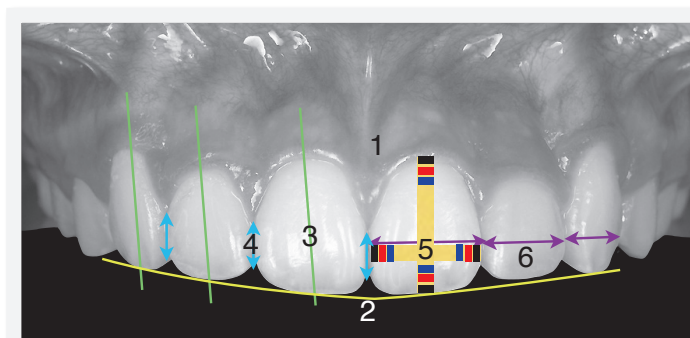


1. M & D Papillae	0	1	2
2. Keratinized Gingiva	0	1	2
3. Curvature of Gingival Margin	0	1	2
4. Level of Gingival Margin	0	1	2
5. Root Convexity ( Torque )	0	1	2
6. Scar Formation	0	1	2

Total = **1**

1. M & D Papilla	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 )



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

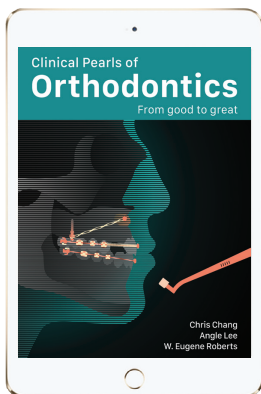
Total = **2**

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

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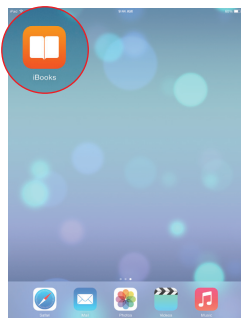
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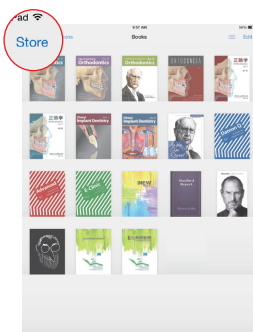
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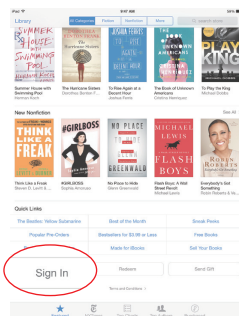
## Step-by-step Instructions



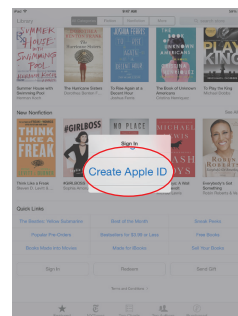
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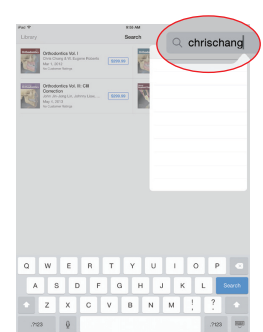
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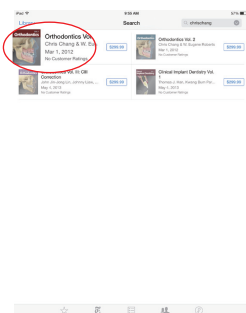
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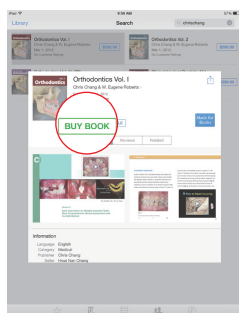
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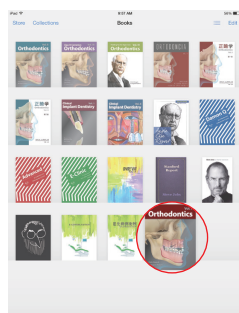
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# 2021 Implant Forum

5-8月課程因疫情 延至明年度開課，  
9月之後課程若有異動將另行公告。

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新竹市建中一路25號2樓  
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時間：

星期五上午 9:00-12:00  
(每月一次)

報名專線：

03-5735676#203  
clinton@newtonsa.com.tw  
陳建名

日期	專題演講 9:00 - 10:30	植牙案例報告 10:45 - 12:00 (30 分鐘 / 人)
1 3/19	<b>陳明時 醫師</b> (美國 Ohio State University 牙醫學院·碩士、美國德州 M.D. Anderson Cancer Hospital 專科醫師) <b>主題：</b> Part I : "Occlusal Scheme" ? "Organic Occlusion"! Part II : Comprehensive Treatment Plan Part III : Treatment Planning、Design、Option、Execution Part IV : Claspless RPD replacing Conventional Clasp RPD	
2 4/9	<b>黃裕新 醫師</b> (裕見美牙醫診所院長、台灣大學牙醫學系第一名畢業、美國賓州大學學術交流、美國南加大植牙美學專科訓練、美國華盛頓大學全口重建訓練、「裕見。新美學」瓷牙美學講師、2016 Dentsply 牙體復形競賽全球第三、2015 Dentsply 牙體復形競賽台灣冠軍、Nobel Biocare 產品發表會客座講師、台灣植體醫學學會會員) <b>主題：</b> 前牙美學 軟組織的究極進化	
3 5/28	<b>邱上珍 醫師</b> (美國明尼蘇達大學牙周病學碩士、美國牙周病學會院士) <b>題目：</b> Implants in Esthetic Zone	<b>蕭浩宜 醫師</b> (美國南加州大學植牙研究所進修、新綠牙醫診所院長) <b>張慧男 醫師</b> (美國印第安那普渡大學齒顎矯正研究所博士)
4 6/18	<b>王巍穆 醫師</b> (基督教安息會台安醫院復牙科主任、台北醫學大學牙醫學院兼任講師暨牙科部主治醫師、佛教慈濟綜合醫院台北分院牙科部復牙科主治醫師、德國法蘭克福大學牙醫學院口腔植體學碩士、國立陽明大學口腔復牙碩士、台北榮民總醫院牙科部兼任主治醫師) <b>題目：</b> Prosthetic Driven Concept to Create Zero Bone Loss	
5 7/23	<b>蘇笠璋 醫師</b> (高雄醫學大學牙周病學碩士、國際矯正植牙學會理事長) <b>主題：</b> 垂直前庭切線骨膜下隧道法	
6 8/20	<b>林涵威 醫師</b> (台大醫學院臨床牙醫研究所碩士、台北醫學大學牙醫學士、衛福部定口腔顎面外科專科醫師、德國 Steigmann Institute 進階植牙訓練、第58屆日本口腔顎面外科大會傑出論文獎) <b>題目：</b> All-on-4 Basic Concept	
7 9/17	<b>陳健誌 醫師</b> (台北醫學大學牙醫學士、臺大牙醫專業學院臨床牙醫學研究所碩士暨博士、臺大牙醫專業學院牙醫學系兼任講師、台北醫學大學牙醫學院牙醫學系兼任助理教授) <b>題目：</b> The Modern Concept of Implant Location and Occlusion in Digital Dentistry	<b>林森田 醫師</b> (中山醫學大學學士、國際矯正植牙學會院士、美國南加州大學植牙研究所進修) <b>翁蔚任 醫師</b> (中華民國植牙醫學會專科醫師、中華民國家庭牙醫學會專科醫師、高雄醫學大學牙醫學士)
8 10/22	<b>郭博仁 醫師</b> (臺灣牙周病醫學會專科醫師、中華審美牙醫學會專科醫師、中華植體美學醫學會專科醫師、日本審美牙科學會認定醫師、高雄醫學大學牙醫學士、國防醫學院牙科臨床研究所牙周病學碩士、國防醫學院醫學科學研究所博士、國防醫學院牙醫學系兼任助理教授、林錦榮齒列矯正中心牙周病醫師) <b>題目：</b> Another Tool in Your Toolbox: Alveolar Ridge Preservation (巧取補骨先機：齒槽嵴保存術)	
9 11/19	<b>李頌平 醫師</b> (台北醫學大學牙醫學系畢業、中華民國植體學會會員、台灣口腔矯正學會會員、中華民國口腔植體學會會員) <b>題目：</b> Daily Practice with Total Digital Dental Solution	
10 12/24	<b>蘇裕隆 醫師</b> (陽明大學牙醫學士、FB 前牙美學達人) <b>題目：</b> 前牙美學	<b>黃育新 醫師</b> (國際矯正植牙學會院士、台北醫學大學牙醫學系、台灣植牙醫學會專科醫師) <b>張慧男 醫師</b> (美國印第安那普渡大學齒顎矯正研究所博士)

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