

AUSTRALASIAN ORTHODONTIC BOARD



CASE IDENTIFICATION 18 – ST



AUSTRALASIAN ORTHODONTIC BOARD

CASE DETAILS (Form 2)

After you have received your AOB Number, you must submit to your **State Convenor**¹:

- **Form 2 - Case Details** (one copy for each of your two Board Cases)
- **Pre-treatment records**² for each of the **two Board Cases**
- **Radiographs** (OPG and Lat Ceph) for each of the **Back-up Cases**

The radiographs for your back-up cases will be noted and returned to you immediately. When AOB-appointed peers have assessed your two Board Cases, the case records and an evaluation report will be returned to you. **Assessment will be anonymous and non-graded.** You will be notified when you have received AOB First Stage.

Case ID	18 - ST	Date Submitted	01-07-2005	
Gender	Female	Date of Birth	04-01-1991	
Medical History	Nil relevant			
Dental History	Congenitally missing upper left lateral incisor			
Oral Health Status	Satisfactory			
Angle Classification	<input type="checkbox"/> Class I <input checked="" type="checkbox"/> Class II Div 1 <input type="checkbox"/> Class II Div 2 <input type="checkbox"/> Class III			
Molar Relationship	Right	Half tooth Class II	Left	Whole tooth Class
Anterior Relationship	Overjet	4 mm	Overbite	4 mm
Centrelines	Upper	4 mm to right	Lower	1 mm to left
Arch length discrepancy	Upper	0	Lower	0
Additional comments	Diastema between upper central incisors associated with a low frenal attachment.			

Treatment Plan

Extractions	Nil
Appliance(s)	Fixed appliances - Roth prescription (018" slot)
Treatment mechanics	Align, level and coordinate the arches. Create space for prosthetic replacement of missing lateral incisor. Use headgear and/or inter-maxillary elastics to establish Class I occlusion.
Proposed retention	Upper and lower removable retainers
Additional comments	Use prosthetic tooth on archwire. Consider frenectomy and pericision of rotated upper left lateral incisor. Check for presence and status of third molars.

¹ Contact details of State Convenors are listed on the AOB website at www.aso.org.au/aob.

² Stipulated requirements for records are listed on the AOB website at www.aso.org.au/aob.

Case ID 18 - ST
DOB 04 01 1991
Age 11.10 years
Sex Female

Status Pre-treatment
Date 02 12 2002

Extra-oral and intra-oral photographs



Case ID 18 - ST
DOB 04 01 1991
Age 11.10 years
Sex Female

Status Pre-treatment
Date 02 12 2002

Study Models



Case ID 18 - ST
DOB 04 01 1991
Age 11.10 years
Sex Female

Status Pre-treatment
Date 02 12 2002

Lateral Cephalogram



Case ID 18 - ST
DOB 04 01 1991
Age 11.10 years
Sex Female

Status Pre-treatment
Date 02 12 2002

Orthopantogram

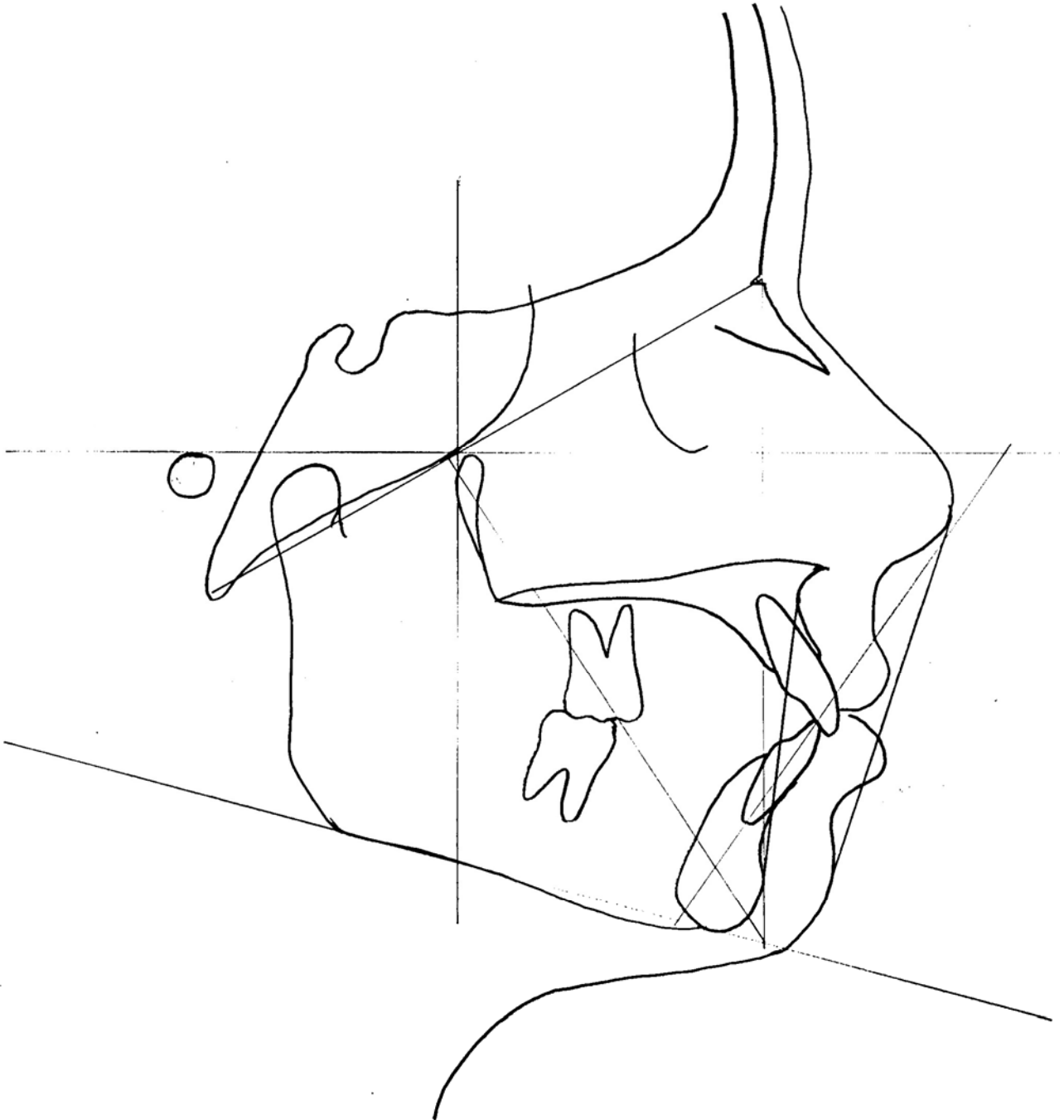


Congenitally missing upper right lateral incisor.

Case ID 18 - ST
DOB 04 01 1991
Age 11.10 years
Sex Female

Status Pre-treatment
Date 02 12 2002

Cephalometric Tracing



Case ID 18 - ST
DOB 04 01 1991
Age 11.10 years
Sex Female

Status Pre-treatment
Date 02 12 2002

Cephalometric Analysis

Ricketts Analysis

Parameter	Mean	Adjusted Mean	Measurement	Notable Difference
Chin in Space				
Facial Axis	90 ° ± 3.5 °	No adjustment	92 °	
Facial Depth	87 ° ± 3.0 °	+ 1 ° every 3 years	88 °	
Mandibular Plane	26 ° ± 4.5 °	- 1 ° every 3 years	17 °	**
Convexity				
Convexity of A Point	2 mm ± 2 mm	- 1 mm every 3 years	+ 6 mm	**
Teeth				
Lower Incisor to A-Pog	1 mm ± 2 mm	No adjustment	+ 6 mm	***
Lower Incisor Inclination	22 ° ± 4.0 °	No adjustment	30 °	**
Upper Molar to PtV	Age + 3 mm	+ 1 mm per year	16 mm	
Profile				
Lower Lip to E Plane	- 2 mm ± 2 mm	Reduces with growth	+ 2 mm	**

Summary of Findings

1. Class II skeletal pattern - maxilla protrusive
2. Brachyfacial
3. Dentition protrusive
4. Lower lip protrusive

Name 18 - ST
DOB 04 01 1991

Treatment Summary

1. Pre-torqued, pre-angulated, Edgewise brackets were bonded to all teeth.
2. The arches were aligned leveled and coordinated with a succession of Nickel Titanium archwires.
3. A prosthetic tooth was attached to the archwire to improve the dental appearance during treatment.
4. Residual spaces were closed with elastic chain modules on a Cobalt Chrome Alloy archwire using the "straight wire" technique.
5. The antero-posterior dental disharmony was corrected with inter-maxillary elastics.

Case Notes

Date	Treatment
Dec 2002	Consultation
Dec 2002	Records collected - Study models - Intra-oral and extra-oral photographs - OPG and Lateral Cephalogram
Jan 2003	Treatment plan presented to patient and parents
Mar 2003	Fixed appliances bonded to all teeth in upper arch Upper arch alignment commenced



Mar 2003



Jun 2003

Jul 2003	First molars banded Cervical pull headgear fitted Prosthetic tooth fitted to archwire.
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Date

Treatment



Jul 2003

Sep 2003

Fixed appliances bonded to all teeth in lower arch
Fixed appliances bonded to upper second molars
Lower arch alignment commenced
Upper arch alignment continued

Aug 2004

Class II intermaxillary elastics commenced

Dec 2004

Limited interproximal stripping of lower anterior segment

Mar 2005

Fixed appliances removed
Post-treatment records collected
- Study models
- Intra-oral and extra-oral photographs
- OPG and Lateral Cephalogram x-rays
Upper removable retainer with prosthetic tooth fabricated and fitted
Lower removable retainer fabricated and fitted
Fixed palatal retainer bonded to central incisors



Upper retention

Case ID 18 - ST
DOB 04 01 1991
Age 14.3 years
Sex Female

Status Post-treatment
Date 11 04 2005

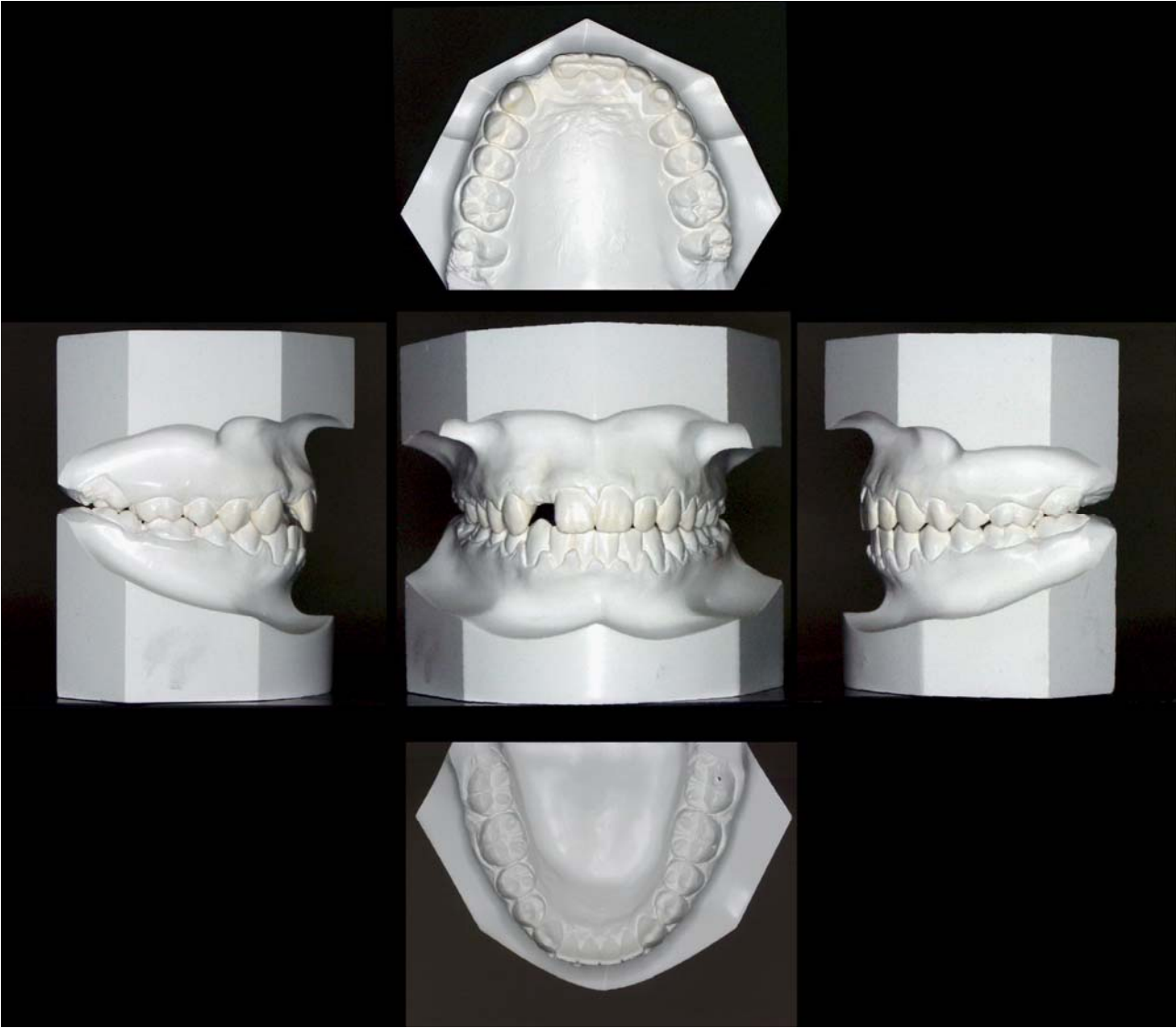
Extra- and Intra-oral photographs



Case ID 18 - ST
DOB 04 01 1991
Age 14.3 years
Sex Female

Status Post-treatment
Date 11 04 2005

Study Models



Case ID 18 - ST
DOB 04 01 1991
Age 14.3 years
Sex Female

Status Post-treatment
Date 11 04 2005

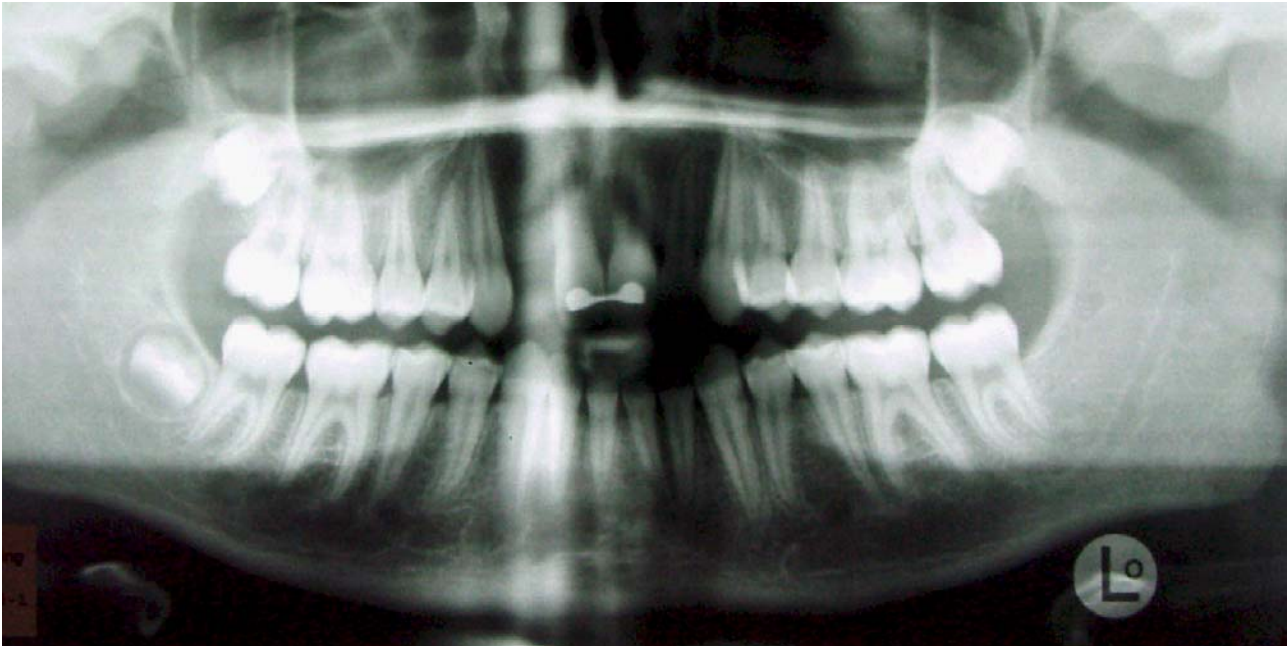
Lateral cephalogram



Case ID 18 - ST
DOB 04 01 1991
Age 14.3 years
Sex Female

Status Post-treatment
Date 11 04 2005

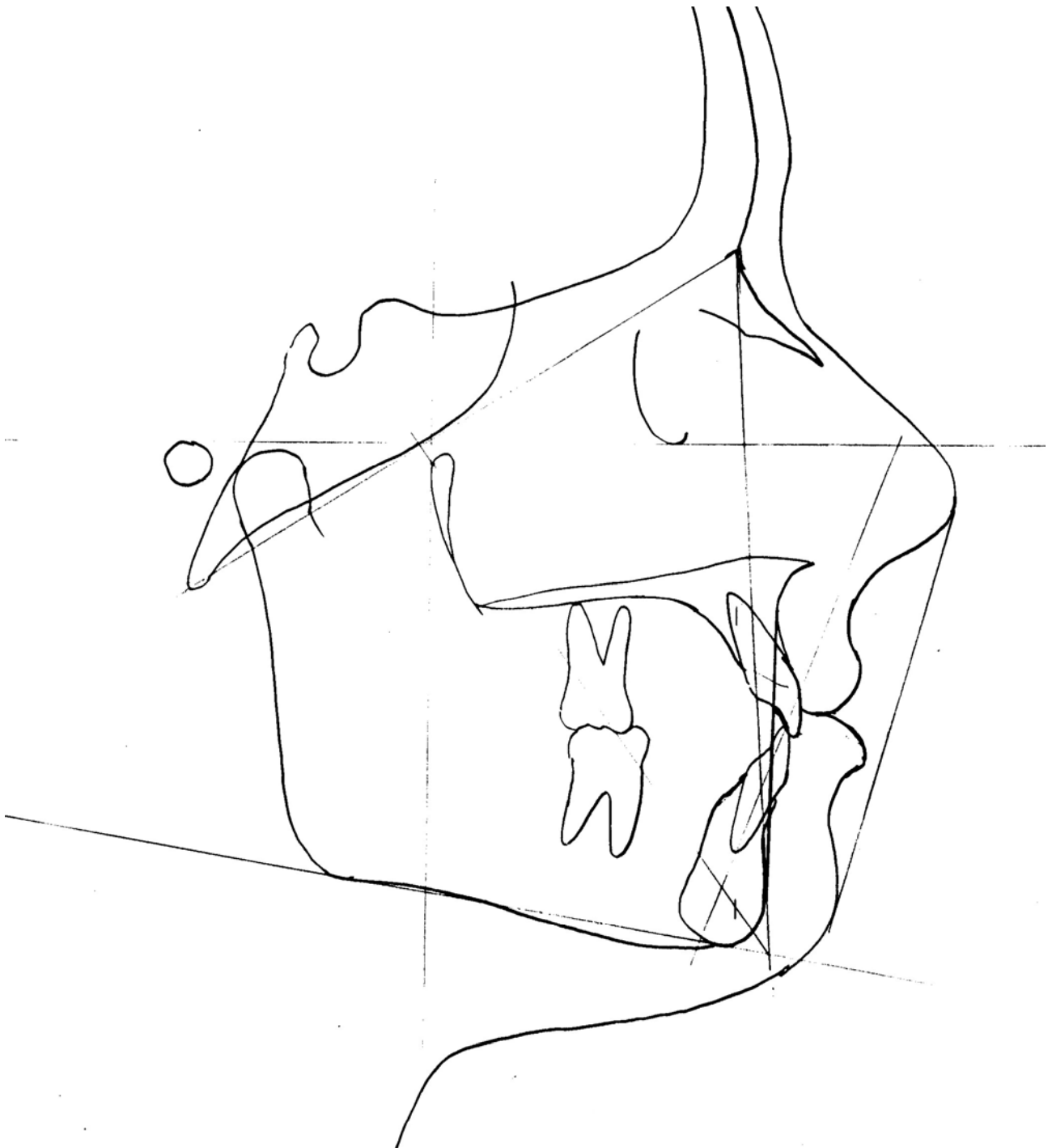
Orthopantogram



Case ID 18 - ST
DOB 04 01 1991
Age 14.3 years
Sex Female

Status Post-treatment
Date 11 04 2005

Cephalometric tracing



Case ID 18 - ST
DOB 04 01 1991
Age 14.3 years
Sex Female

Status Post-treatment
Date 11 04 2005

Cephalometric Analysis

Ricketts Analysis

Parameter	Mean	Adjusted Mean	Measurement	Notable Difference
Chin in Space				
Facial Axis	90 ° ± 3.5 °	No adjustment	92 °	
Facial Depth	87 ° ± 3.0 °	+ 1 ° every 3 years	93 °	*
Mandibular Plane	26 ° ± 4.5 °	- 1 ° every 3 years	11 °	***
Convexity				
Convexity of A Point	2 mm ± 2 mm	- 1 mm every 3 years	+ 4 mm	**
Teeth				
Lower Incisor to A-Pog	1 mm ± 2 mm	No adjustment	+ 2 mm	
Lower Incisor Inclination	22 ° ± 4.0 °	No adjustment	20 °	
Upper Molar to PtV	Age + 3 mm	+ 1 mm per year	22 mm	
Profile				
Lower Lip to E Plane	- 2 mm ± 2 mm	Reduces with growth	- 2 mm	

Summary of Findings

1. Class II skeletal pattern - maxilla protrusive
2. Brachyfacial
3. Dentition well positioned
4. Lower lip well positioned

Case ID 18 - ST
DOB 04 01 1991
Age 14.3 years
Sex Female

Status Post-treatment
Date 11 04 2005

Treatment Evaluation

Active treatment time was 24 months.

Patient Cooperation

The patient cooperated satisfactorily throughout treatment. She maintained excellent oral hygiene and wore headgear and intermaxillary elastics as prescribed. Almost all scheduled appointments were kept and appliance breakage was minimal.

Tooth Position

Factor	Pre-treatment	Post-treatment	Change
Molar relation	Class II	Class I	
Canine relation	Class II	Class I	
Overbite	+ 4.0 mm	+ 2.5 mm	- 1.5 mm
Overjet	+ 4.0 mm	+ 2.0 mm	- 2.0 mm
Intercanine width			
Maxillary	31 mm	32 mm	+ 1 mm
Mandibular	27 mm	23 mm	- 4 mm
Intermolar width			
Maxillary	50 mm	51 mm	+ 1 mm
Mandibular	44 mm	43 mm	- 1 mm

OPG X-ray

The post-treatment OPG x-ray revealed a lack of parallelism of the roots of the lower left canine and first premolar teeth.

There is sufficient space for the placement of an implant in the site of the missing upper right lateral incisor.

Root resorption is not evident.

Three third molars are present (18, 28 and 48). These teeth are positioned to erupt if sufficient space is available. The third molars will be reassessed at periodic review visits and will be removed if they do not erupt into a functional position or if they are not surrounded by a healthy cuff of attached gingival.

Cephalometric changes

The post-treatment cephalogram was traced. Growth and treatment changes were evaluated using Ricketts' five point superimposition technique. Cephalometric changes are listed in the table below.

Parameter	Mean	Pre-treatment	Post-treatment	Change
Chin in Space				
Facial Axis	90 ° ± 3.5 °	93 °	92 °	- 1 °
Facial Depth	87 ° ± 3.0 °	90 °	93 °	+ 3 °
Mandibular Plane	26 ° ± 4.5 °	15 °	11 °	- 4 °
Convexity				
Convexity of A Point	2 mm ± 2 mm	+ 6 mm	+ 6 mm	- 2 mm
Teeth				
Lower Incisor to A-Pog	1 mm ± 2 mm	+ 5 mm	+ 2 mm	- 3 mm
Lower Incisor Inclination	22 ° ± 4.0 °	27 °	20 °	- 7 °
Upper Molar to PtV	Age + 3 mm	17 mm	22 mm	+ 5 mm
Profile				
Lower Lip to E Plane	- 2 mm ± 2 mm	+ 2 mm	- 2 mm	- 4 mm

Summary of Findings

1. No clinically significant treatment changes to the facial skeleton.
2. The lower incisor has been retracted by 3 mm to a position closer to the accepted ideal.
3. The lower lip has been retracted by 4 mm to a position closer to the accepted ideal.

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DOB 04 01 1991

Evaluation of facial axis change and chin change

Superimposition #1 (Ba-N at CC point)



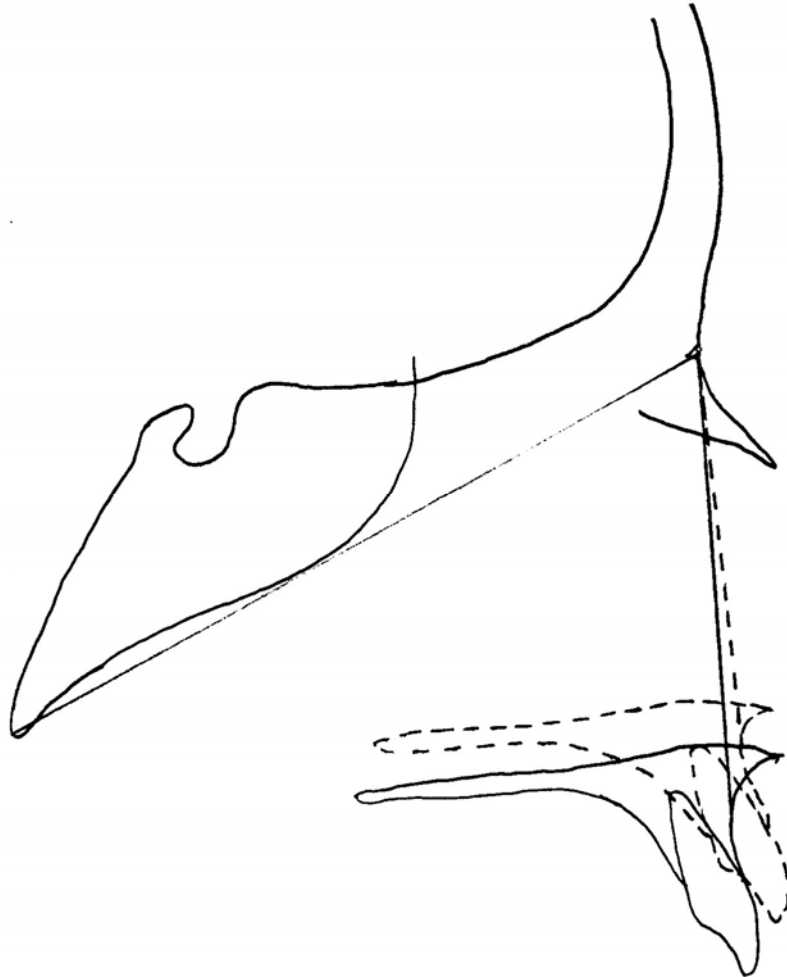
————— Pre-treatment
- - - - - Post-treatment

1. There has been no significant change to the Facial Axis as a result of treatment.
2. The chin has grown approximately 13 mm along the Facial Axis during treatment.

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DOB 04 01 1991

Evaluation of maxillary change

Superimposition #2 (Ba-N at N)



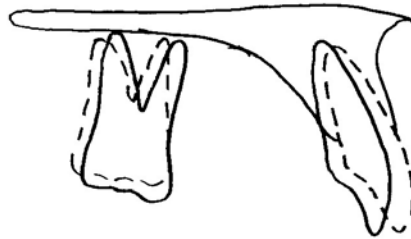
————— Pre-treatment
- - - - - Post-treatment

1. The maxilla has grown downwards approximately 6 mm (with insignificant rotation).
2. It has been held from growing forward during this time.

Case ID 18 - ST
DOB 04 01 1991

Evaluation of maxillary dentition

Superimposition #3 (ANS-PNS at ANS)



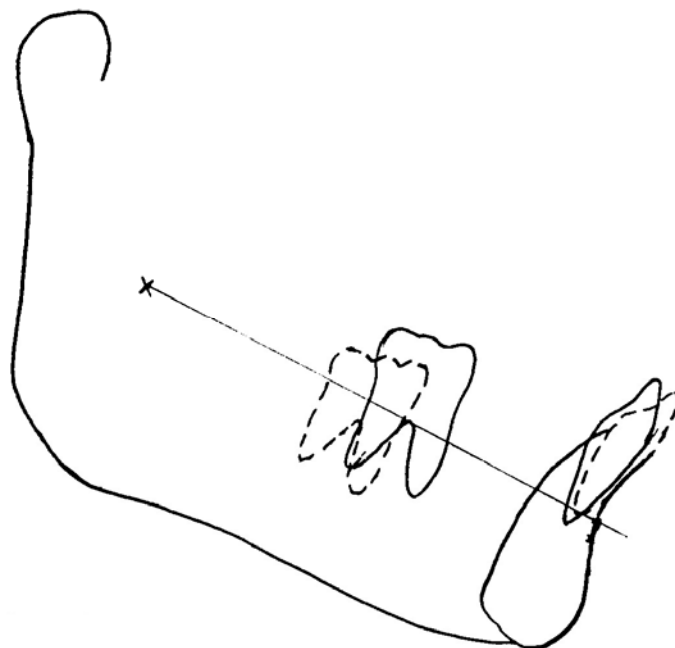
————— Pre-treatment
- - - - - Post-treatment

1. The upper incisor has been retracted 2.5 mm with minimal tipping..
2. The upper first molar has moved forward a fraction.

Case ID 18 - ST
DOB 04 01 1991

Evaluation of mandibular dentition

Superimposition #4 (Corpus axis at Pm)



————— Pre-treatment
- - - - - Post-treatment

1. The lower incisor has been tipped lingually (approximately 2.5 mm at the incisal edge).
2. The lower first molar has moved forward approximately 5 mm and upwards 3 mm.

Case ID 18 - ST
DOB 04 01 1991

Evaluation of soft tissue changes

Superimposition #5 (E-plane at Occlusal Plane)



————— Pre-treatment
- - - - - Post-treatment

1. There has loss of lip support and an increase in lower facial concavity.

Evaluation of soft tissue changes

The soft tissue profile change is less apparent in the following pre- and post-treatment photographs.

This inconsistency highlights the need to take photographs and radiographs with the soft tissues in an unstrained position of rest.

