Case Report n°2

Patient	
Age:	12.11
Diagnosis	Angle cl.II div.2
ANB	8
OJ	4.5
OB	5.5
Author:	**Dr.**

Case History

The patient is a thirteen year old girl who exhibits delayed development, both physically and dentally. Her medical history is non-contributory. Her aunt and some cousins have the same malocclusion which she has.

Current Status

She is rather small for her age and has a very slender body. Her face is round to oval with a profile that has a convex tendency.
The nose might be described as prominent and gives an impression of a rather retrognathic chin.
The overall face height, as well as the jaw angle inclination are normal.
The facial muscles have normal tissue tone and morphology. She breathes through her nose and there is neither a tongue thrust nor mentalis muscle contraction during swallowing.
The opening and closing movements of the mandible are in a straight line, and there is no midline deviation relative to the facial midline.

Intraoral Findings

Oral hygiene is good and the caries activity is low. The soft tissues including the tongue and frena are all within normal limits.

Intraoral Radiographs

The intraoral radiographs reveal a mixed dentition with a few carious lesions in the deciduous molars. All four third molar tooth buds are present.

Model Analysis

Lateral View

The molars on both sides are in Class II relationship, as are the deciduous canines. The overjet is 3 mm and the overbite is 4 mm with no impingment of the palatal gingivae. The Curve of Spee is moderate. The maxillary incisors are retroclined, while the mandibular incisors are upright.

Anterior View

The dental midlines are coincident with the facial midline.12 and 22 are mesially inclined.

Occlusal View

The following teeth are present:

6edc21	12cde6
6e4321	1234e6

The alveolar process breadth is normal. The upper arch form is U-shaped and the lower is parabolic. The mandibular inter-canine distance in the mandible is 25 mm and the intermolar distance is 48 mm. 12 and 22 are buccally and mesially protruded and inclined.

Space Analysis

Space analysis reveals 1 mm of crowding in the upper arch and 3 mm of spacing in the lower arch.
These values should be taken with caution however since measurements were taken from radiographs. A Bolton Analysis was not performed due to the mixed dentition.

Cephalometric Analysis

Cephalometric Analysis	Mean	Value
SNA	**82**	78.5
SNB	**80**	70
ANB	**2**	8.5
SNPg	**81**	71
NSBa	**130**	143
ML-NSL-1	**32**	36
NL-NSL	**8.5**	12.5
ML-NL	**23.5**	23.5
Gn-tgo-Ar	**126**	119
N-Sp' (mm)	**-**	49
Sp'-Gn(mm)	**-**	56
N-Sp'/Sp'-Gn x100%	**79**	87
Interincisiv	**131**	131
+1-NA	**22**	7
T-NB	**25**	35
+1-NA	**4**	-1
T-NB	**4**	6
Pg-NB mm	**-**	1
N-angle	**58**	67
UL-EL (mm)	**2**	-3
LL-EL (mm)	**0**	-1
H-angle	**8**	13

The SNA angle of 78.5 is the only value wich is orthognatic. The SNB and ANB angles show retrognathic mandible and distal basal sagittal relationship.
Both the mandibular and the nasal plane are posteriorly inclined (36 degrees) and the inclination of the maxilla is 12.5 degrees.
Therefore the intermaxillary angle shows a normal vertical skeletal relationship.
The mandibular angle and the face height ratio reveal an anterior growth pattern.
Despite the ideal interincisal angle value (131°) the position of the incisors is :
retruded in the maxilla (-1mm and 7°) and proclined in the mandible (6 mm and 35°). The pogonion distance is 1 mm.
The soft tissue profile shows retruded lips in relation to the EL: UL-EL=3 mm and LL-EL=1mm.

Growth Prognosis

The patient is in PP2 stage, and this means that she has still much growth left. All values indicate an anterior growth rotation.

Diagnosis

1. Round face, convex profile
2. Distal basal sagittal relation
3. Angle Class II division 2
4. Overjet of 3 mm and overbite of 4 mm
5. 1mm of crowding in the UA and 3 mm of spacing in the LA
6. Bucco-mesially protruded 12 and 22

Etiology

Following the fact that her aunt and cousins have the same malocclusion one may conclude that the malocclusion is hereditary in nature.

Treatment needs

The treatment need is mostly prophylactic and functional, concerning the further deepening of the bite and the "locked" distal position of the mandible; and cosmetic - related to the retroclined maxillary centrals and proclined maxillary laterals.

Treatment Objectives

1. Achieve Class I molar and canine relationship
2. Reduce the overjet
3. Reduce the overbite
4. Align and harmonize the arches

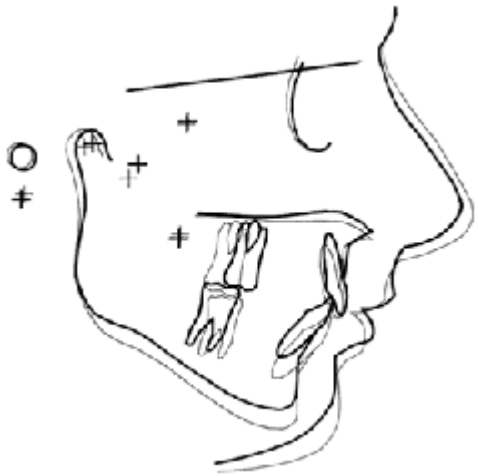
Treatment Procedures

OCT.92	Dental and medical history, clinical examination, intra- and extra-oral phtotographs, impressions for study models, and radiographs (cephalogram, hand-wrist, panorex) were taken.
JUN.93	Cemented bands and inserted a face bow.
SEP.93	Good use of the face bow. Almost cusp to cusp relation on both sides.
OKT. 93	Nice improvement. Almost Class I on the roght. Between Class II and Class I on the left.
JAN. 94	UA: Bonded from 15 to 25 0.016 Nitinol inserted
MAR. 94	The upper incisors have tipped forward.The molar relation is Class I. Bonded bracket on 25 and lingual botton on 24 and 15.Power chain on 15-16, 24-26 to de-rotate 15 and 24.

MAR.94	The upper incisors have tipped forward. The molar relation is Class I. Bonded bracket on 25 and lingual botton on 24 and 15.Power chain on 15-16, 24-26 to derotate 15 and 24.
MAY.94	LA: Cemented bands on 36,46.Bonded tubes on 37, and 47 inserted retroarch.
JUN.94	LA: 0.016 X 0.016
SEP.94	UA: Changed position of the bracket on 21-22. Intrusion step distal to the laterals.
NOV.94	Inserted a contraction arch lightly activated.
DEC.94	UA: It is difficult to close all the space with a contraction arch. 0.016 x 0.016 Nitinol with rubber wedge on 13 and 23.
JAN.95	UA 0.016 x 0.022 steel with intrusion steps distal to the laterals, sweep and torque. Power chain 12-22 to collect the front.LA : 0.016 X 0.022 with sweep in order to rise the bite.
MAR.95	Contraction arch.
APR.95	Harmonized arch in the UA and LA 0.016x0.016
MAY.95	Debonding UA and LA.

Evaluation of treatment results

Cephalometric Analysis	Mean	Value 10/92	Value 05/95
SNA	**82**	79	77
SNB	**80**	71	71
ANB	**2**	8	6
SNPg	**81**	71	72
NSBa	**130**	141	141
ML-NSL-1	**32**	36	36
NL-NSL	**8.5**	13	14
ML-NL	**23.5**	23.5	22
Gn-tgo-Ar	**126**	117	121
N-Sp' (mm)	**-**	47	55
Sp'-Gn(mm)	**-**	53	63



N-Sp'/Sp'-Gn x100%	**79**	89	87
Interincisiv	**131**	128	126
+1-NA	**22**	13	16
T-NB	**25**	31	32
+1-NA	**4**	-1	0.5
T-NB	**4**	6	7
Pg-NB mm	**-**	1	2
N-angle	**58**	65	60
UL-EL (mm)	**2**	-2	-9
LL-EL (mm)	**0**	-1	-6
H-angle	**8**	18.5	9

The main goals of treatment were:

1. Achieve a neutral basal sagittal relation
2. Achieve molar and canine Class I relationships
3. Correct the overjet and the overbite
4. Align and harmonize the arch

The treatment objectives were fulfilled.
The sagittal analisys shows a molar and canines Class I relation on both sides.
The interdigitation on the left side is very good with full Class I both on the canine and on the molars.
The interdigitation on the right side is not perfect but both the molars and the canines are in a full Class I relationship.
The overjet at the treatment start was 4.5mm and is now 1 mm.
The midlines on both arches coincide with the facial midline.

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