

16/4. Case: Le, young girl. Age 6

Sucking habit (fingers) with tongue interposition in the open bite.



LN AGE 6.9



AGE 8.9



Premature loss of primary lateral (52) ◆

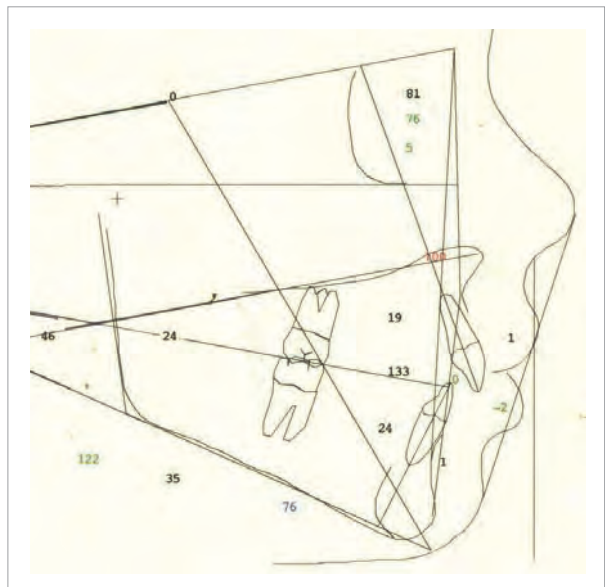
AGE 10.2



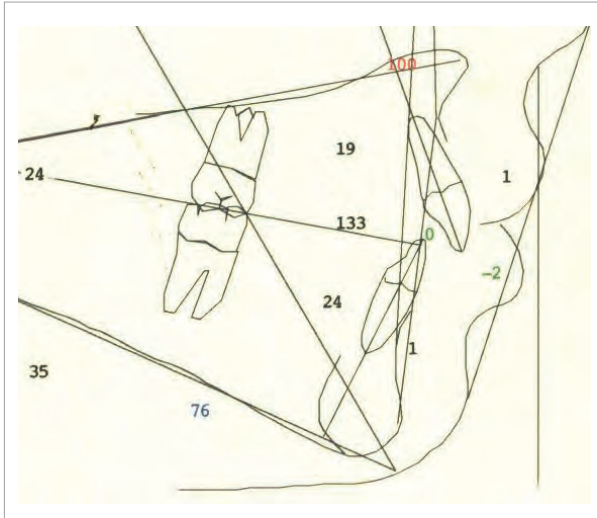
Space needed: 8 mm for 13 and 5 mm for 23. 11 years dental age. ♥



CLI skeletal and CLI profile with open bite tendency. ■



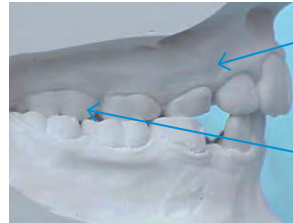
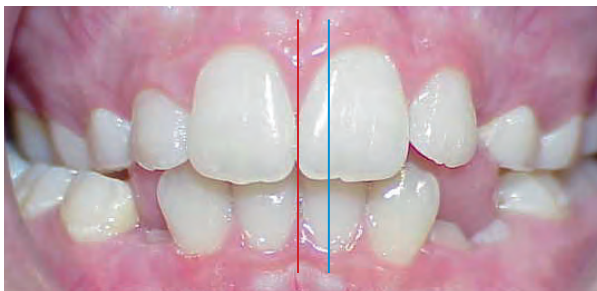
SNA 81°
 SNB 76°
 ANB 5°
 +I to NA 4 mm & 19°
 -I to NB 4 mm & 24°
 -I to A-pog 0 mm
 Wits 0
 MPA 35°



Open bite tendency. Patient still has a dysfunctional tongue action.

MAX and MAND M-Ls are shifted to the right side (Red). Blue line is skeletal M-L.

Dental CLII div I with a dental open bite tendency. X-bite right side with a lateral (right) mandibular shift.



No space for 13.
 X-bite w/ MAND slide to the right.
 MAX: M1 and primary molar are full CLII.



Left side: 1/2 CLII.

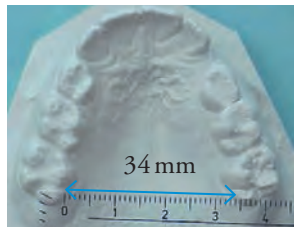
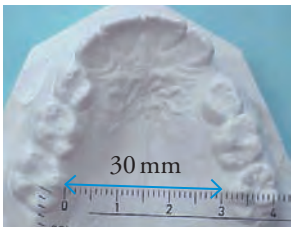
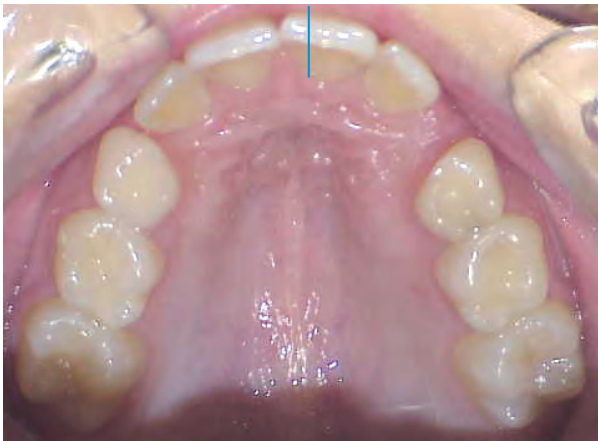
Missing 5 mm of space for 23.



V shaped MAX with ML rotated molars.

Actual lack of space = ~13 mm.

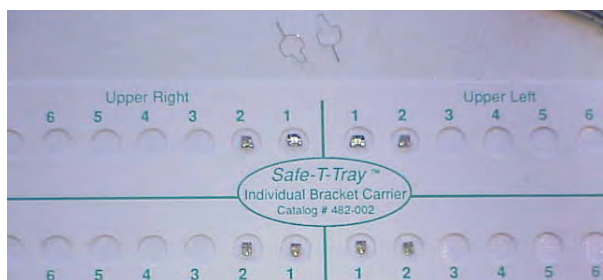
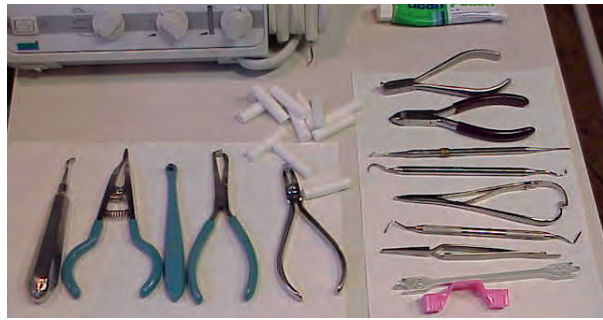
M-L deviated 2 mm to the right.



MAND M-L is shifted to the right due to a mandibular slide to the right caused by dental interferences.

10.3 YEARS OLD

Start treatment.



i. Separators placed 5 days before. ♡



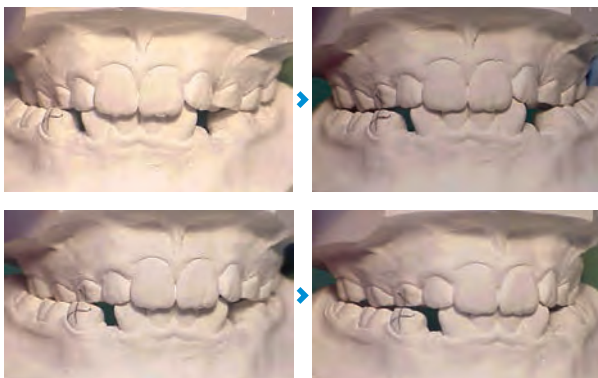
2. Fit MAX bands. ▼



Case Ln: The use of the HA NiTi transpalatal Expander / Rotator is indicated because:

1. There is a CLII situation where the molars are in $\frac{3}{4}$ to Full CLII relationship. The molars have shifted forward and need to be pushed back into a CLI position.
2. The palate is narrowed, V-shaped and with a ML rotation of the MIs.
3. The “regaining” of significant space is indicated.
4. There is a significant dental X-bite, caused by a unilateral mandibular slide, that needs to be corrected. The MAND needs to be able to re-center in a neutral condylar position with the M-L on the skeletal M-L.

How to choose a “size” for a NiTi Transpalatal Expander for a case such as this:



Actual Bite ▲

The “bite” when the X-bite is “divided-up on both sides”. ▲

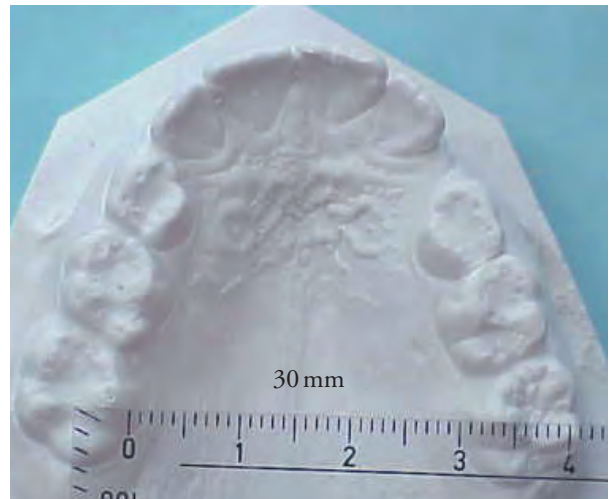


Actual Bite ▲

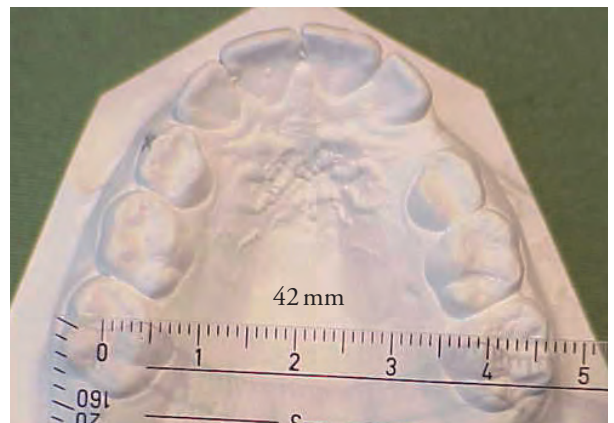
The “bite” when the X-bite is “divided-up on both sides”. ▲

When holding the models as shown, one can visually estimate how much total expansion would be needed to have a normal MAX posterior, bilateral buccal OJ. In this case only about 2 mm expansion per side is needed which could be accomplished using wires only. However, when using only wires, the molars cannot be distalized into a CLI position as can be done using the HA NiTi Expander.

1. Measure the “inter-molar distance” between the MAX 1st molars, $\frac{1}{2}$ way up the lingual walls in the area of the Cup of Carabelli (30 mm). ▼



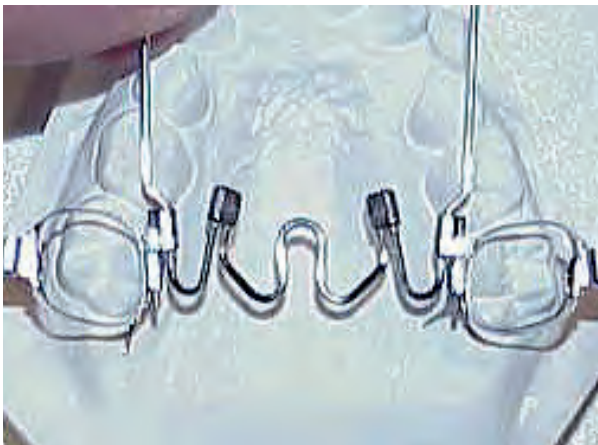
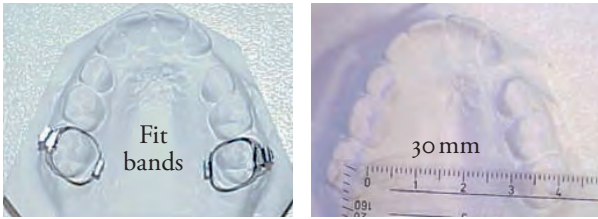
2. Measure the distance between central fossae of MAX 1st molars (42 mm). ▼



3. Measure the distance between the distal-buccal cusps of the MAND 1st molars (48 mm).
4. The buccal cusps of the MAND molars have to occlude in the central fossae of the MAX molars. Subtract the difference $48\text{ mm} - 42\text{ mm} = 6\text{ mm}$ of expansion needed.



If 6 mm of expansion is needed, then an Expander with a “size” 2 mm larger than the “inter-molar distance” is chosen. Add the thickness of the bands and lingual sheaths (2 mm per side = 4 mm) to the 2 mm larger Expander “size” and that gives the total of 6 mm. If in doubt, take a larger size. Ex: if 7 mm is needed, then choose a “size” 4 mm larger.



About 6 mm total expansion with DB rotation



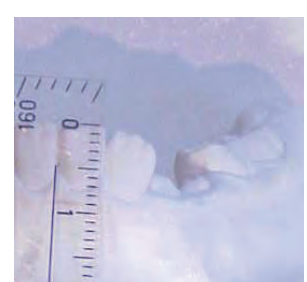
Cut length of lingual arms

Tie-in using metal ligature ties



Above: Passive appliance ready to place. It is compressed 6 mm when cemented, thus it expands 6 mm.

The HA NiTi part of the Expander is “cold sprayed” and then cemented in place using light-cure, dual-cure or chemical cure cements.



Open-bite tendency: use bracketing scheme 2. 2x4 set-up with a passive UAW.

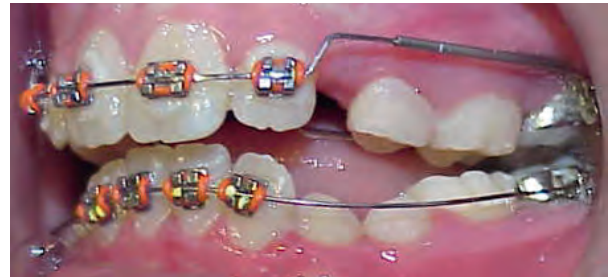


...1 WEEK LATER

Dumbbell separators are placed at this time and they will separate the molars during the 30 minutes it takes to bracket the MAND incisors.

MAX: 2x4, 16x16 passive UAW (passive = no adjustments).

MAND: bracketing 2x4 set-up, 16 HA NiTi with BBs to control the incisor position.

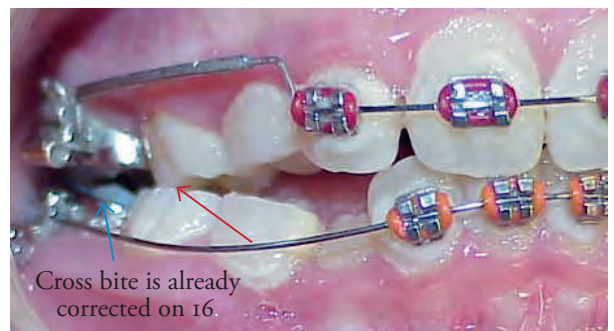


3RD MONTH

MAND: 16x16 UAW, passive with BBs.



Cusps are ground down flat (red arrow) on the primary molars to remove the x-bite and any other interferences.



Cross bite is already corrected on 16.



22ND MONTH

MAX: same 21x25 HA NiTi.

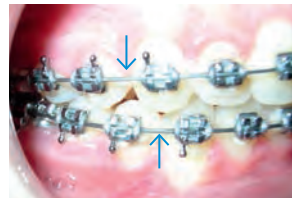
MAND: same 21x25 HA NiTi. Bite is settling-in.



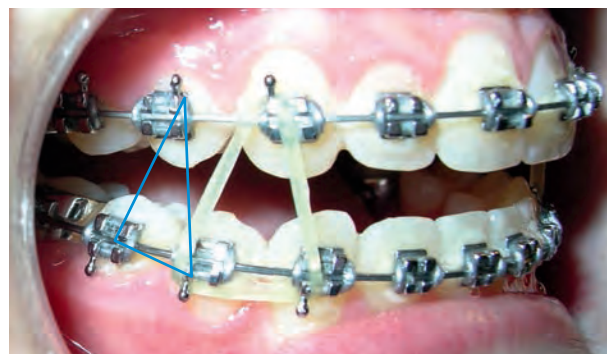
2 MONTHS LATER... 24TH MONTH

After 4 months of 21x25 HA NiTi.

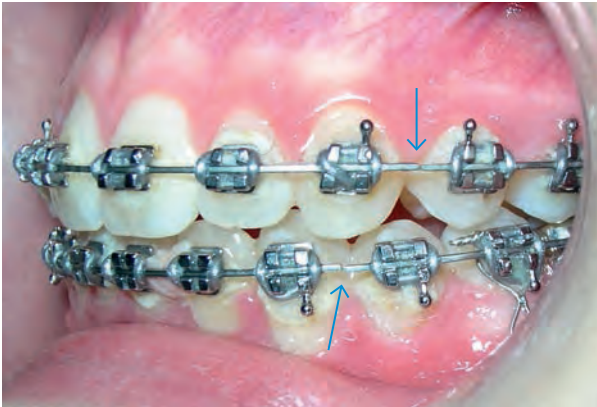
MAX & MAND: removed 21x25 HA NiTi and placed previous 19x25 HA NiTi for final finishing.



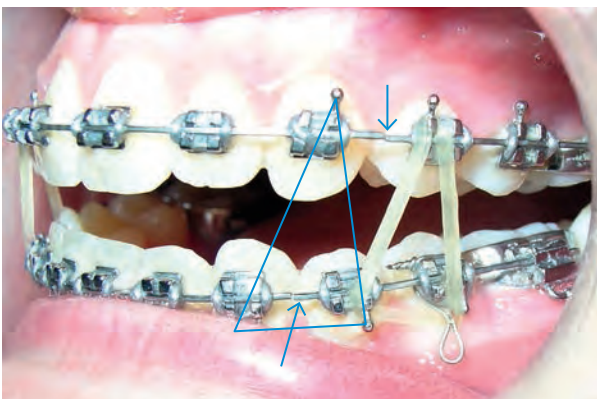
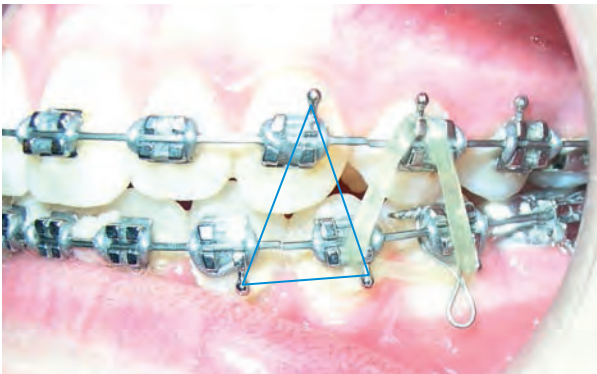
Need to settle-in premolars and cuspids. Wires are cut / segmented to allow the segments to settle-in separately. Delta elastics are used to close down the bite.



4mm delta elastics worn full-time. Check in 2 weeks.



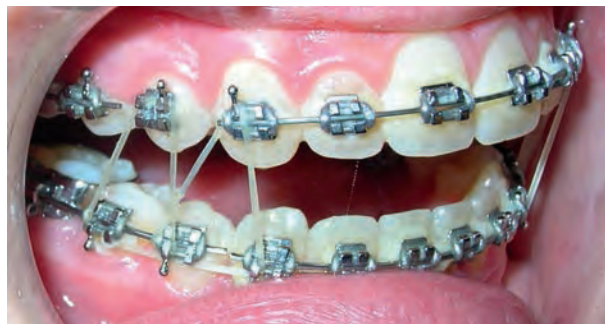
Need to settle-in the premolars and cuspids.



4 mm delta elastics worn full-time. Check in 2 weeks.

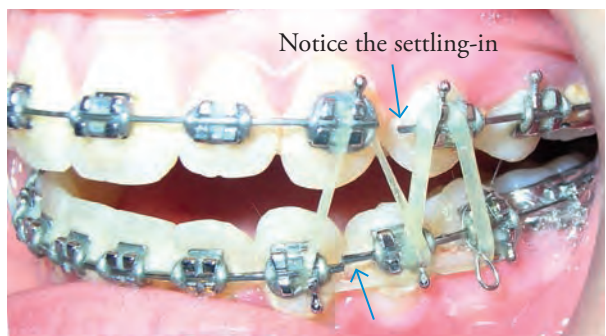
2 WEEKS LATER...

4 mm delta combination: **Right side:** Continue, but to be worn only 8/24 (night). Check in **one week**.



Left side: same elastics 24/24.

Check in **one week**.



1 WEEK LATER...

Patient came in like this with all premolars and cuspids settled-in.



Remove braces



Lower lingual retention wire from 33 to 43 is fixed/bonded with permanent composite.



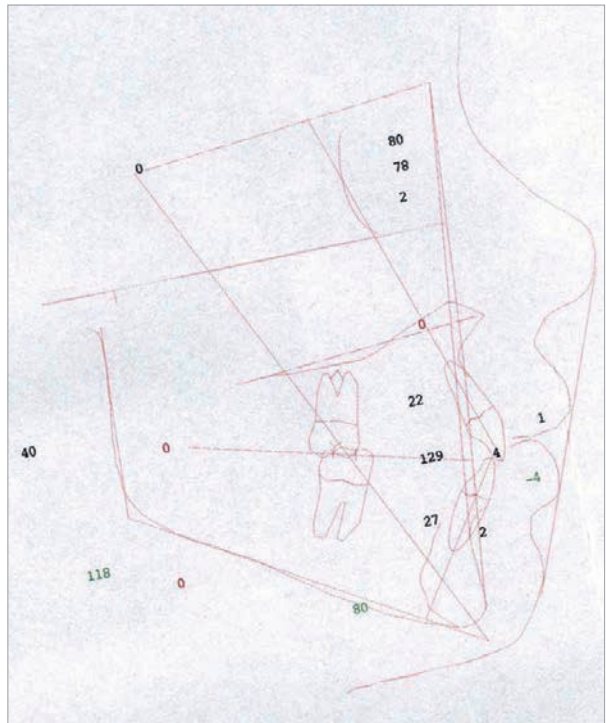


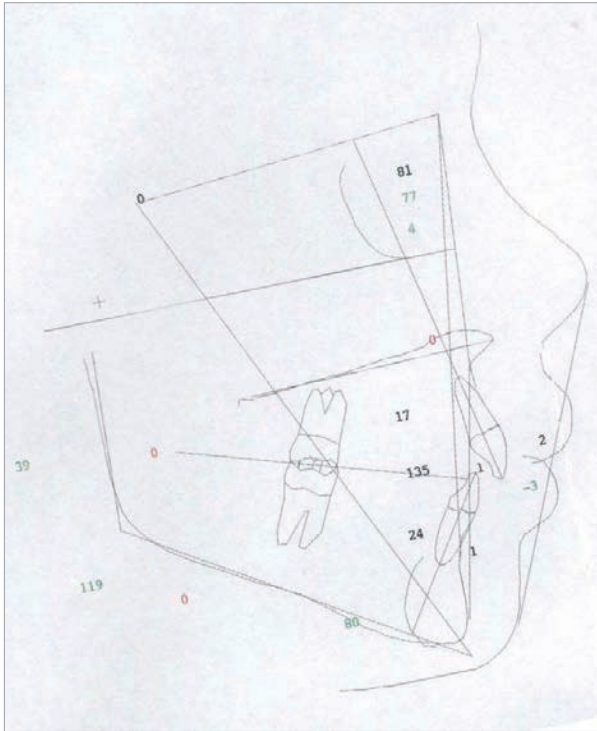
Upper & lower Hawley Wrap-around retainers.



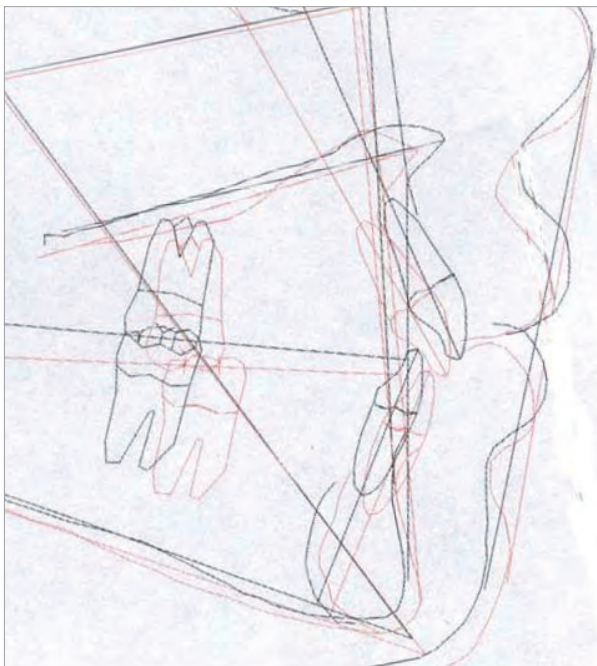
Final Ceph x-ray ▲

Final Tracing: RED ▼





Beginning Tracing: Black ▲



Details of the Cranial Base Superimposition:

- OJ and open-bite are corrected.
- Incisors started CLII, finished CLI.
- Molars started CLII, finished CLI.
- MAND horizontal growth.
- MPA remains the same.

REVIEW



Beginning ▲

3rd month ▲6.5th month ▲8.5th month ▲

10th month [▶](#)11th month [▶](#)15th month [▶](#)17th month [▶](#)22nd month [▶](#)24th month [▶](#)