

K.H.

Age: 11 Years – 7 months

Diagnosis: Class II, Division I Extraction – Youth (bimaxillary protrusive)

Background:

This case was selected to demonstrate how the face determines treatment planning and that there is a time to extract. This patient was severely deficient in the mandible along with petite features of the face. Her genetic growth potential was limited, with the father being 5' 4" and the mother 5' 1". Both parents have very refined features. The treatment plan was to place a Herbst appliance and see how it could impact the profile of this very slow growing patient (*see Flip-Lock Herbst*).

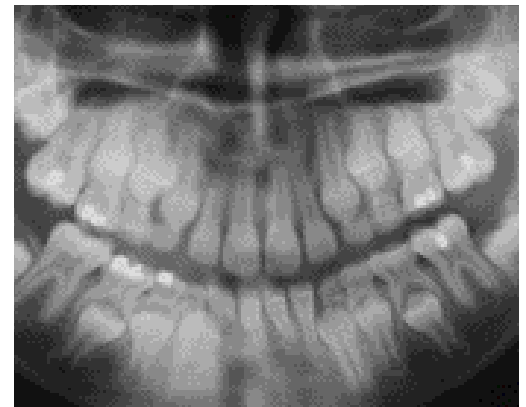
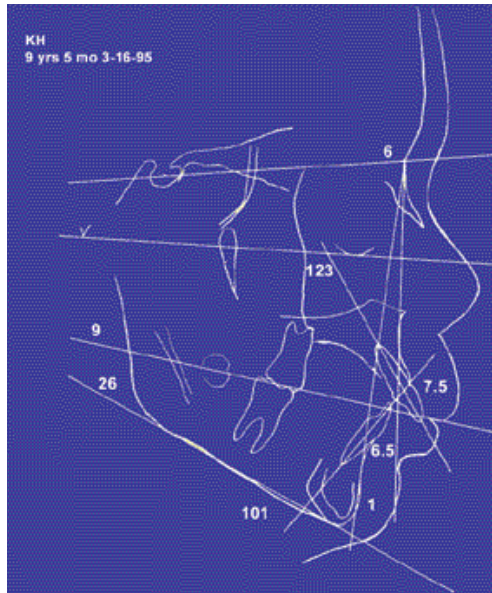
The Herbst was left in place for 18 months. Tomograms and head films were taken and traced showing an ANB change of 3°. Even though the chin position improved, this little girl was still very protrusive. It was a challenge for her to fit her lips over her teeth. In view of genetic potential of this patient and the refined features of her parents, this case was scheduled for four first bicuspid extractions.

Facial Evaluation:

- 1. Severely deficient mandible with severely protrusive maxilla.
- 2. Poor genetic growth potential (parents 5' 4" and 5' 1" tall).
- 3. Lack of lip seal (protrusive upper lip).
- 4. Disproportionate lower facial height.

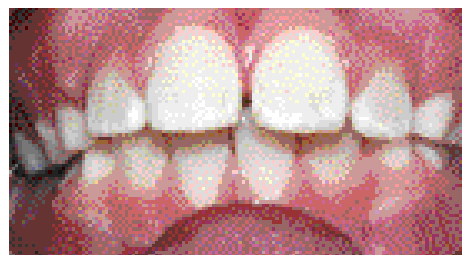
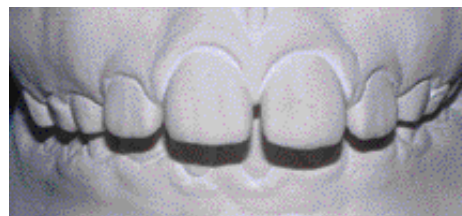
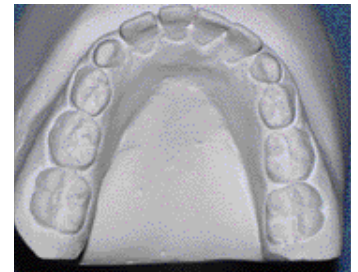


Pretreatment Radiographic Survey:



Dentition Evaluation:

- 1. Class II molar relationship right side only.
- 2. Generalized spacing in maxillary arch.
- 3. Upper incisors labially inclined.
- 4. Large central incisors.
- 5. Significant overjet.
- 6. Normal overbite.



Treatment Objectives:

Goal:

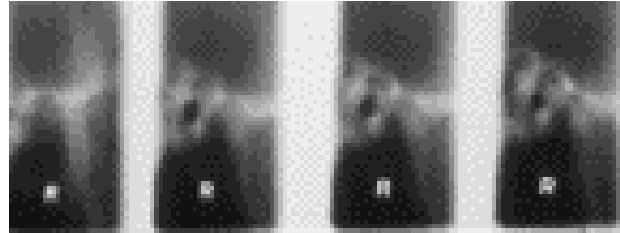
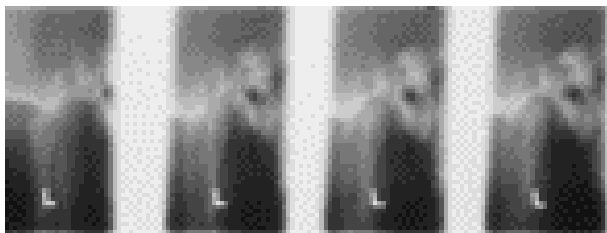
To achieve a Class I face – then reevaluate protrusion and profile. Desire to achieve facial balance and symmetry.

1. Anticipate treatment impact on patient's maturing profile.
2. Leave Herbst on at least 16 to 18 months due to severity of the Class II and the very petite size of the patient (slow growing).

Phase I – Herbst Treatment

Treatment Sequence:

- Fabricated Herbst (see Flip-Lock Herbst).
- Took tomograms prior to starting treatment.



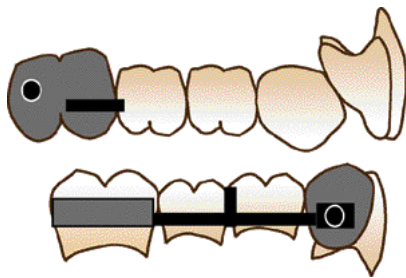
Start

1. Advanced Herbst 4 to 4.5 mm. Do not advance again for at least 5 to 6 months.

Appt. 1

2 months – 2 weeks:

- Checked Herbst.



Appt. 2

5 months:

- Advanced Herbst 3 mm.

Appt. 3

7 months – 2 weeks:

- Checked Herbst.

Appt. 4

10 months – 2 weeks:

- Checked Herbst – added 1 mm shim.

Appt. 5

13 months:

- Checked Herbst.

Appt. 6

15 months:

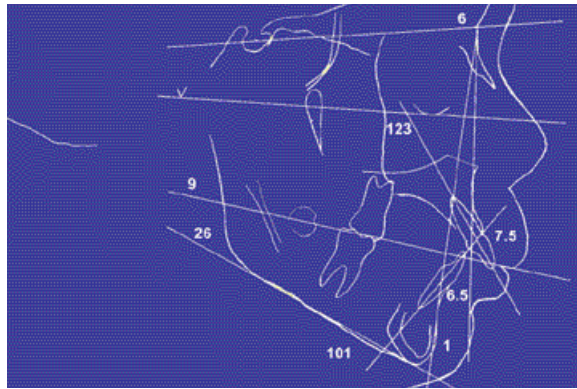
- Checked Herbst.
- Took tomograms.

Appt. 7
18 months:

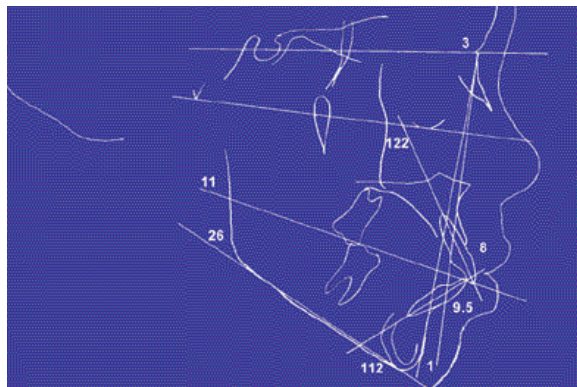


- Removed Herbst.
- Took progress records.
- Scheduled full bonding.

Pre-Herbst Treatment



Post-Herbst Treatment



Phase II – Post-Herbst Treatment

Treatment Sequence:

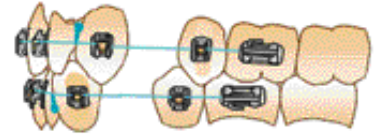
Special torques selected.

- Upper and lower cuspids +7°. This cuspid prescription was used to prevent the lingual tipping of the clinical crowns.

Start

Patient waited 5 months before starting second phase of treatment

1. Upper and lower first bicuspid were extracted.
2. Bonded upper and lower arches 6 to 6 (second molars not erupted).
3. Placed .014 NiTi SE (see *Initial archwire*) on maxillary and mandibular arches.



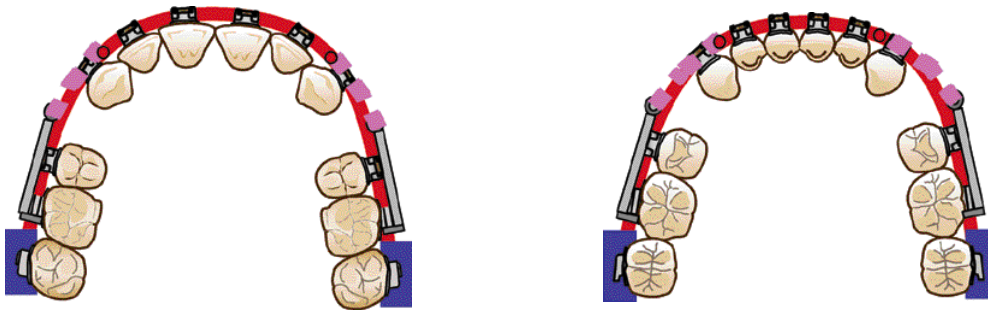
Appt. 1

2 months – 2 weeks:

- Placed maxillary and mandibular .016 x .025 NiTi SE (see *Working Archwire*).

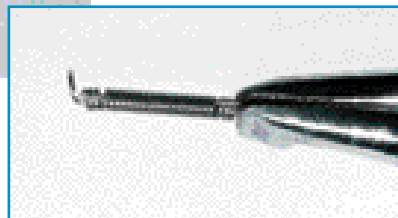
Appt. 2

5 months:



Note: Distal eyelet bent 90° prior to placing over distal end of cut archwire.

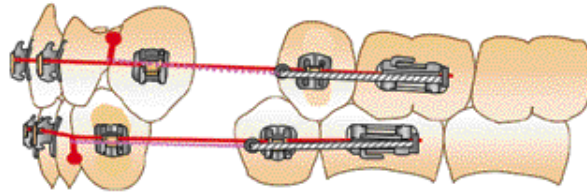
- Placed maxillary and mandibular preposted .019 x .025 SS with NiTi closing springs hooked on archwire distal of the first molars. Do not attach springs to the hook of the second molars. It will flare the molars to the buccal (see *Final Archwire and NiTi coil springs*).



Appt. 3

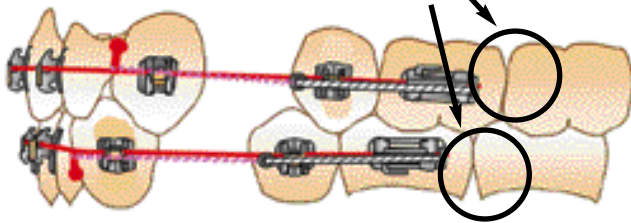
7 months – 1 week:

- Activated NiTi springs (see NiTi coil springs).
- Clipped maxillary and mandibular .019 x .025 preposted archwires distal to first molars.



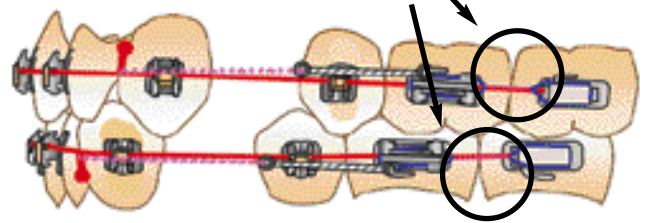
Minimum Anchorage:

Note wire cut



Maximum Anchorage:

Note ligation



In minimum anchorage retraction cases, it is recommended to cut the archwire distal to the first molar and attach the spring to the distal end of the first molar tube.

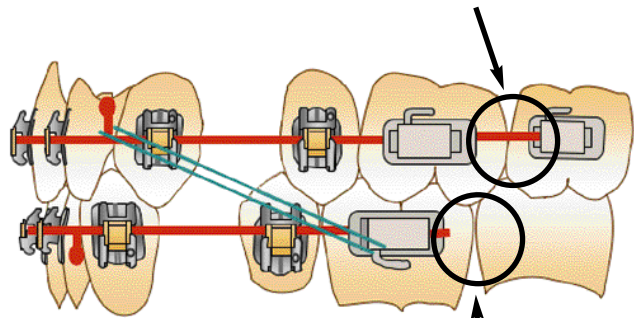
In maximum anchorage retraction cases, it is recommended to ligate the first and second molars together while attaching the spring to the hook of the first molar.

Appt. 4

9 months – 3 weeks:

- Activated NiTi springs (see NiTi coil springs).
- Started Class II elastics (see Class II elastics).

Note continuous wire



Note wire cut

Appt. 5

12 months:

- Bonded upper and lower second molars.
- Placed .016 NiTi SE overlay archwire (see Overlay archwire), allowing Class II elastic wear to continue with edgewise SS still in place. The .016 NiTi SE overlay wire allows the late-erupting second molars to be brought in line and at the same time maintains elastic use.

Appt. 6

14 months – 2 weeks:

- Adjusted maxillary archwire.
- Continued Class II elastics (night only), including anterior trapezoid.

Appt. 7

16 months:

- Adjusted maxillary and mandibular archwires.
- Started nighttime V-elastics (see *V-elastics*) and anterior trapezoid elastics.

Appt. 8

17 months – 2 weeks:

- Adjusted maxillary archwire.
- Continued V-elastics and anterior trapezoid elastics full time.

Appt. 9

19 months:

- Adjusted maxillary and mandibular archwire.
- Continued V-elastics and anterior trapezoid elastics (see *V-elastics and Anterior trapezoid elastics*).

Appt. 10

20 months – 2 weeks:

- Adjusted maxillary archwire.
- Continued V-elastics and anterior trapezoid elastics.
- Scheduled debonding.

Finals:

21 months – 2 weeks: Debonded upper and lower.



Pretreatment



Posttreatment



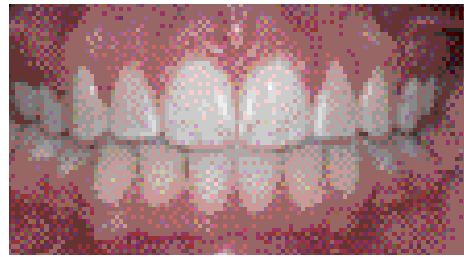
Pretreatment



Posttreatment



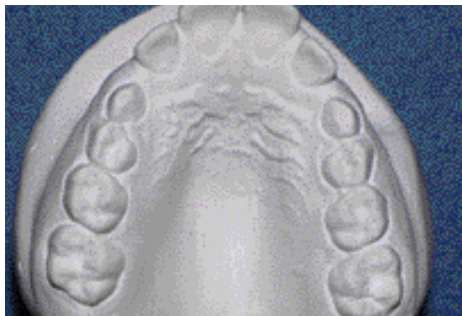
Final



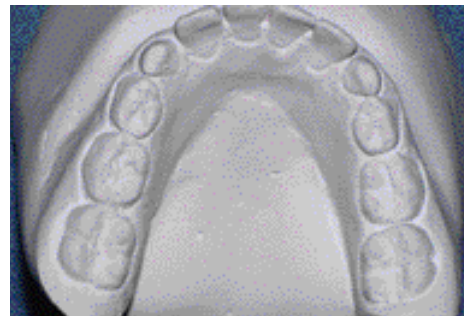
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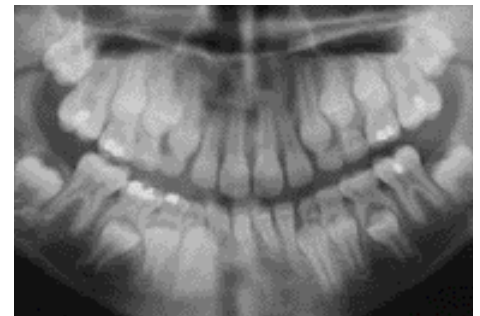
Final



Pretreatment



Pretreatment



Initial



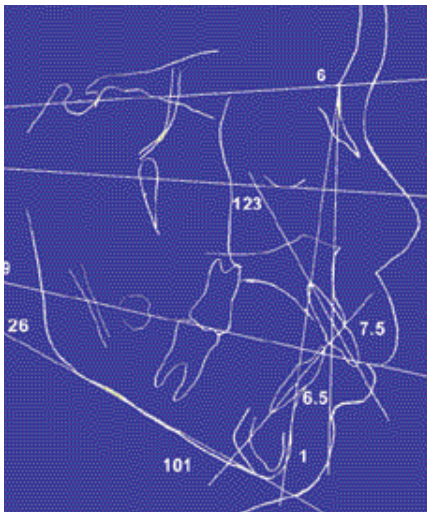
Posttreatment



Posttreatment



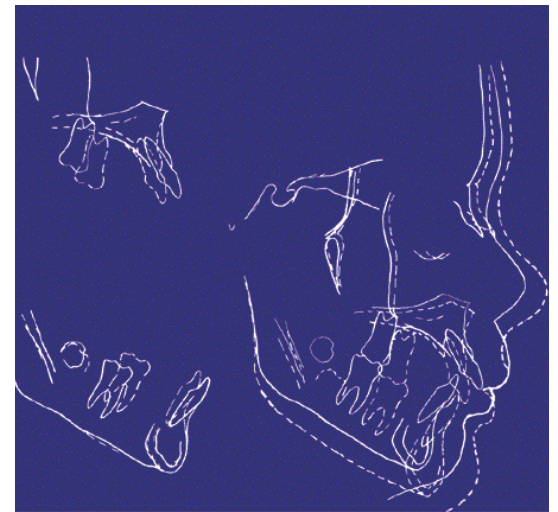
Final



Initial

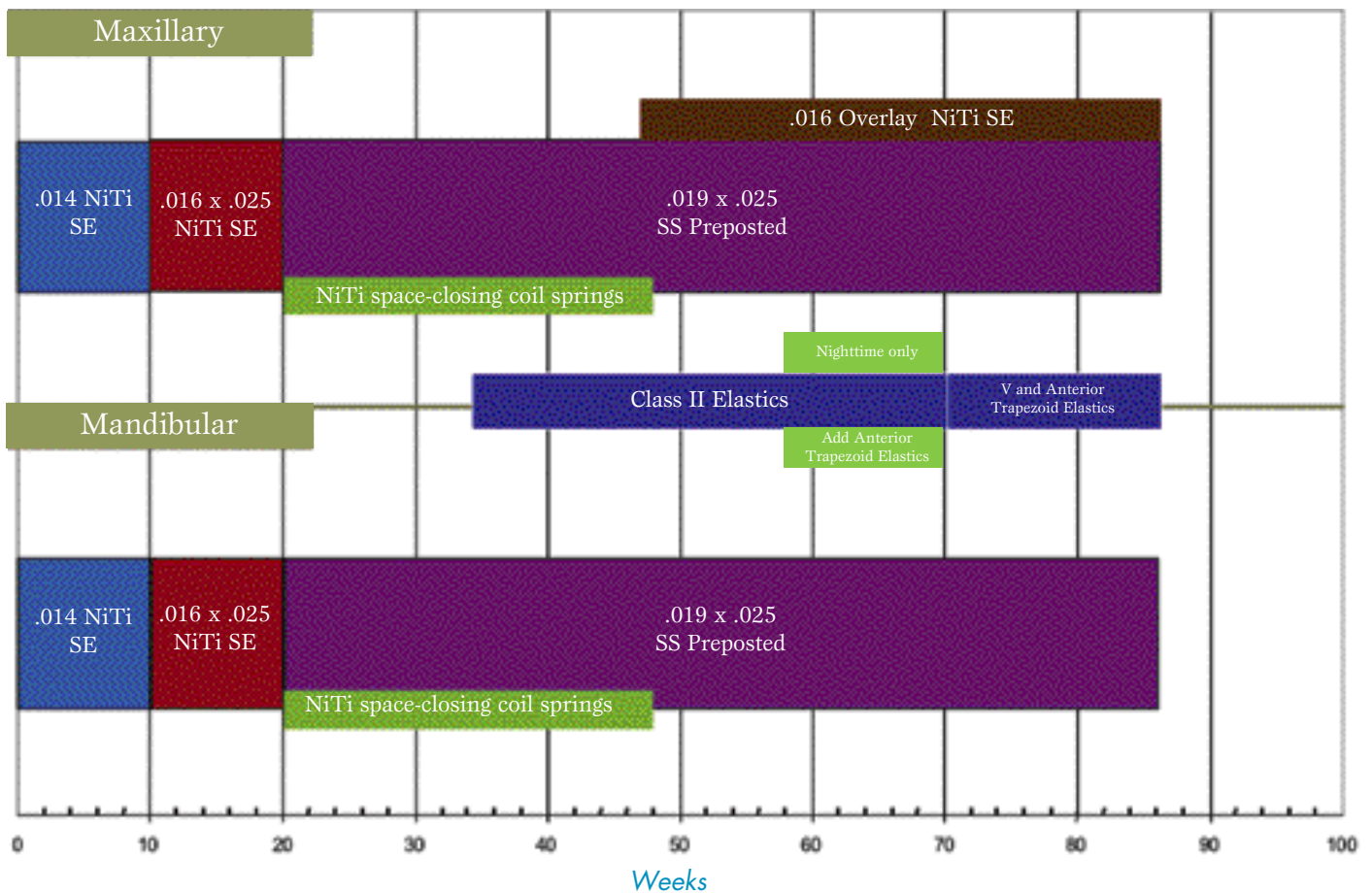


Final



Composite

K.H. Post Herbst Case Summary



K.H.



Retention:

1. Maxillary .016 x .022 Bond-a-Braid archwire bonded lateral to lateral.
2. Mandibular .026 steel round bonded to all teeth cuspid to cuspid due to the severity of crowding.
3. Clear-plastic overlay retainers made for upper and lower arches.
4. Damon Splint made for night retention to retain Class II correction. Splint to be worn for approximately one year, then changed to slip covers.