

Hassan Hatem:

Age: 17 Years – 2 weeks

Diagnosis: Class I Nonextraction – Youth (openbite with posterior crossbite – very narrow deep palate)

Background:

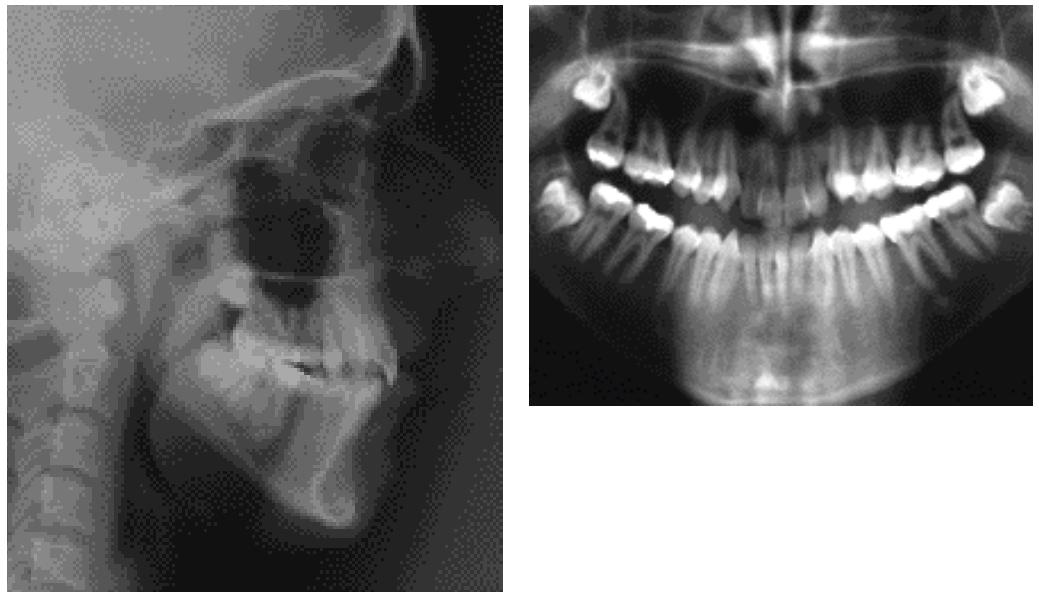
This case demonstrates that this new technology totally changes treatment planning. These types of cases were so challenging to treat with conventional mechanics. It is amazing to think of the high force systems I used to use, the discomfort I put patients through, and the kind of results achieved. It is exciting to think that such a challenging case can be treated in 18 months – 2 weeks in 11 total appointments with so little effort. Please observe the amazing palatal changes created by simply applying a force system that tries to mimic the natural force systems of the body. (Upper second bicuspids increased in width by 13 mm and the molars 11 mm with minimal tipping.) What is astounding is that these results are not age specific. Note these palatal changes are not just in the area of the teeth, but extend into the depth of the palate. This patient has a vertical growth pattern with obvious airway problems. The tongue position has significantly impacted his growth and development through lack of arch width, bilateral openbite, and impacting articulation of sound. Parents and patient were not concerned about the vertical maxillary excess. (No desire for surgical correction.) Father was treated with system in 11 months in spite of extensive crowding. He expressed great confidence in the system and was willing to accept the long lower face height. Note the health of the bone and tissue in spite of the significant changes in the width of the maxillary arch.

Facial Evaluation:

1. Strong vertical growth.
2. Long narrow face.
3. Lack of lateral facial support.
4. Very steep mandibular plane.
5. Airway problems.
6. Lip incompetence.
7. Prominent nose.
8. Low tongue posture – lateral tongue thruster.



Pretreatment Radiographic Survey:



Dentition Evaluation:

1. Bilateral posterior openbite.
2. Severe collapse of maxillary arch creating bilateral posterior crossbite.
3. Exceptionally deep narrow palate.
4. Moderate crowding of maxillary arch.
5. Upper incisors over-erupted.
6. Thin bone and tissue over upper and lower cuspids.
7. Watch third molars – extract when convenient for patient.



Note depth of palate.



Treatment Objectives:

Goal: With low-force treatment mechanics, try to establish a new balance of forces of the orofacial muscular complex. The key with this force system is NOT to overpower the biologic system. The closer the clinician comes to matching the force system of the body the more positive the impact on bone and tissue. Let the high-technology archwires work.

1. Design treatment mechanics to eliminate need for higher-force rapid palatal expansion.
2. Increase maxillary arch width.
3. Improve facial support.
4. Create a new balance of muscular forces by establishing a new "physiologic tooth position."
5. Create treatment impact airway and articulation of sound.

Treatment Sequence

Special Torques

- Low-torque $+3^\circ$ upper left lateral used to prevent uprighting.
- High-torque $+7^\circ$ lower left and right cuspids used to improve root position.

Start:

1. Bonded maxillary and mandibular arches 7 to 7. Placed 1/2 bracket on rotated lower left bicuspid.
2. Placed .014 NiTi SE in maxillary and mandibular arches.
3. Attached C-chain from left bicuspid to molar hook to correct severe rotation.



Appt. 1
2 months – 2 weeks:



- Rebonded lower right bicuspid.
- Replaced 1/2 bracket on lower left second bicuspid.
- Placed maxillary .014 x .025 NiTi SE – Desire to keep low force on upper arch; let the system work.
- Placed mandibular .016 NiTi SE due to rebonding of lower right second bicuspid.



Appt. 2
5 months:

- Rebonded lower left and right laterals and lower right first bicuspid.
- Placed maxillary .018 x .025 NiTi SE. Objective is to continue to let low-force high-tech archwires impact width of maxillary arch.
- Placed mandibular .014 x .025 NiTi SE.

Appt. 3
7 months 2 weeks:

- Took Panorex: Maxillary arch: Continue to let .018 x .025 NiTi SE work.
- Placed mandibular .018 x .025 NiTi SE.

Appt. 4
9 months – 3 weeks:

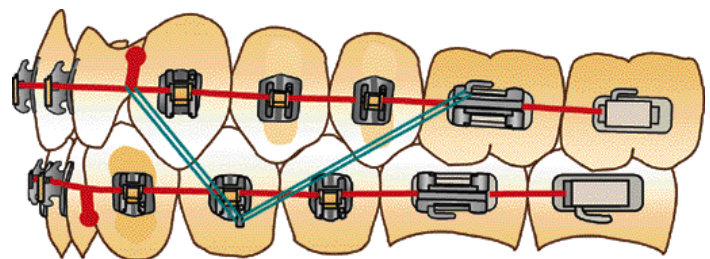
- Placed maxillary and mandibular .019 x .025 preposted SS archwire.

Appt. 5
12 months:

- Adjusted maxillary archwire, lightly expanded.
- Began V-elastics full time.

Appt. 6
14 months – 2 weeks:

- Adjusted maxillary and mandibular archwires.
- Continued V-elastics full time.



V-elastics

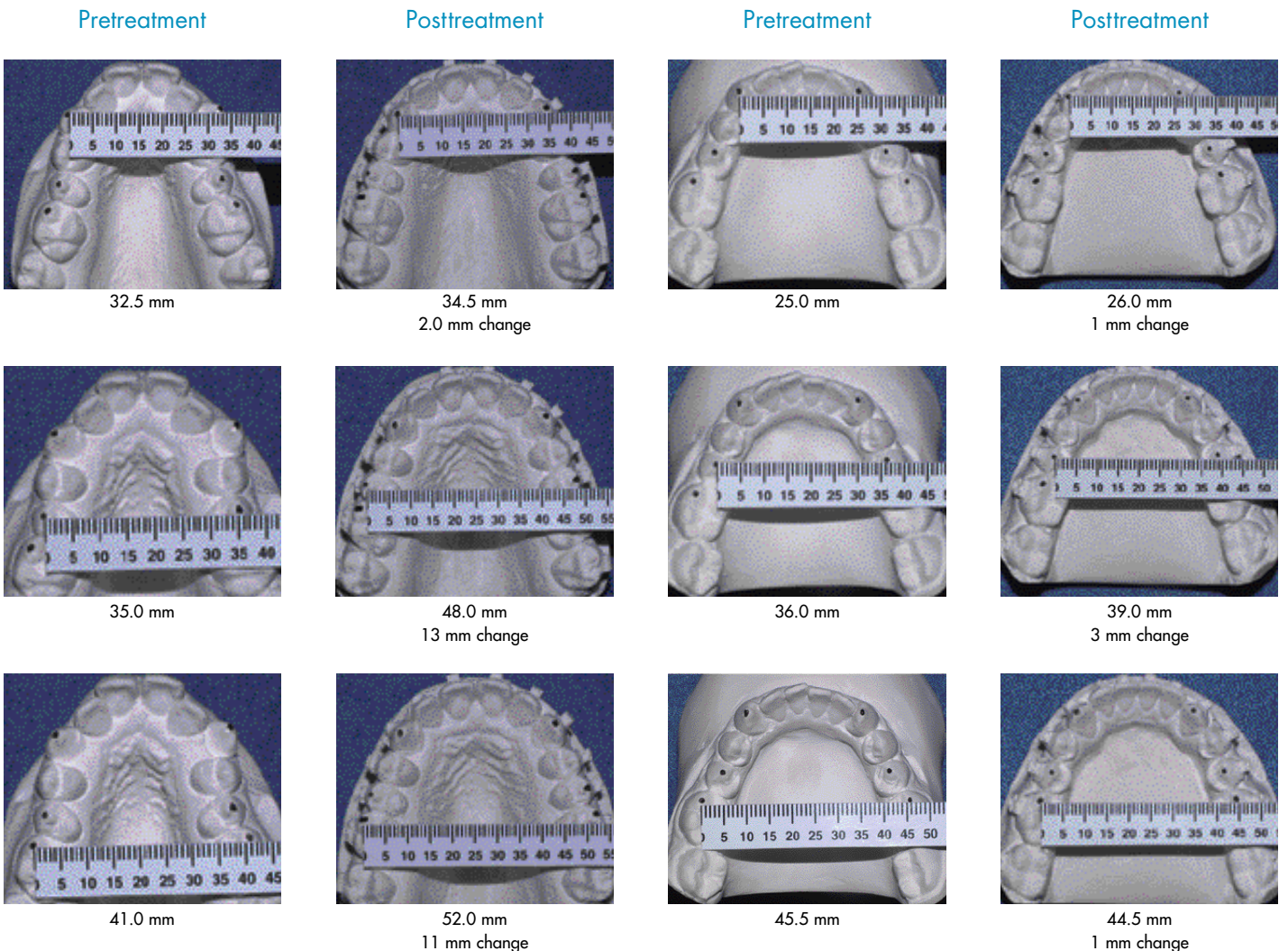
Appt. 7
15 months – 2 weeks:



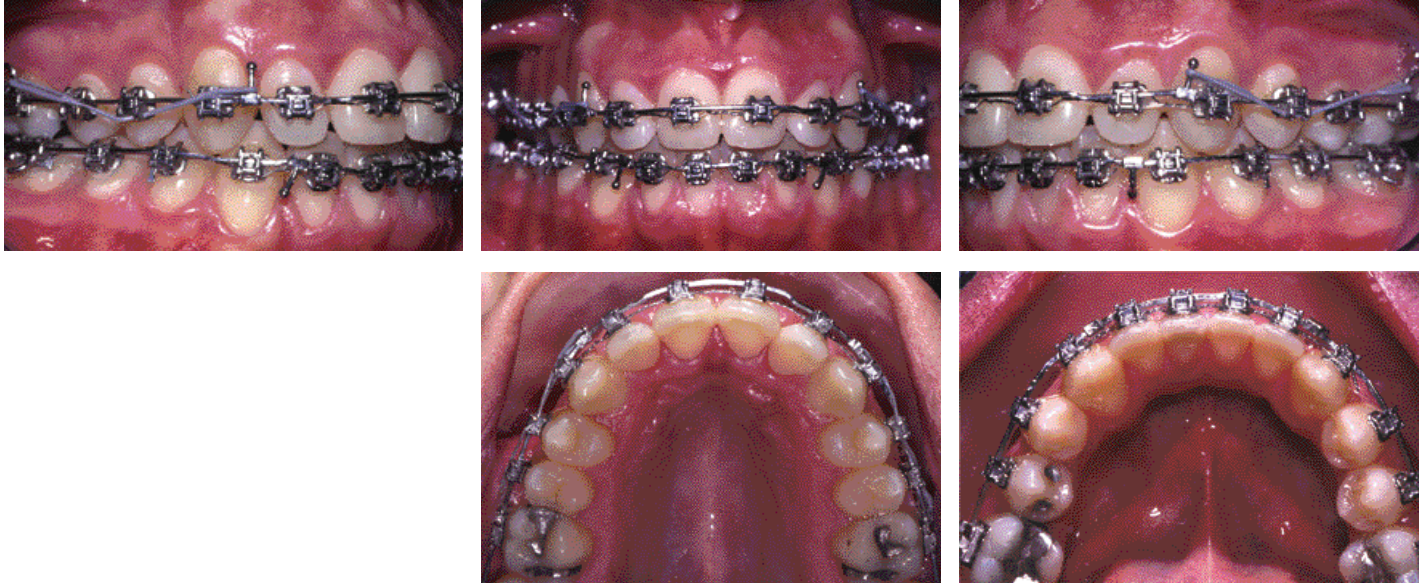
- Adjusted maxillary and mandibular archwires.
- Began Class II elastics full time.
- Added V-elastics night time only.
- Add tiebacks to prevent space from opening



Mid-treatment – 15 months – 2 weeks
Occlusal Cast Transverse Measurement Comparisons
Note: No transverse elastics or palatal expanders were used in this case.



Appt. 8
16 months – 2 weeks:



- Adjusted maxillary and mandibular archwires.
- Began bilateral V-elastics and box elastics worn on right side including upper and lower first and second molars. Both worn nighttime only.

Appt. 9
17 months – 2 weeks:

- Checked occlusion.
- Continued same elastics.

Finals

18 months – 2 weeks: Deband upper and lower.



Pretreatment



Posttreatment



Pretreatment



Posttreatment



Final



Final



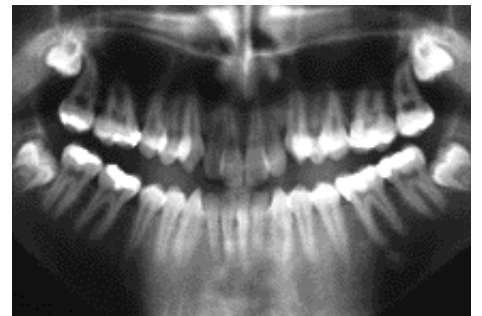
Final



Initial Bonding



Initial Bonding



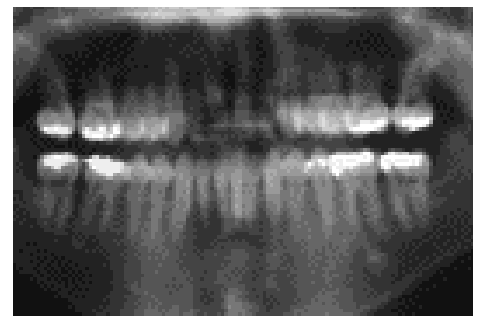
Initial



Posttreatment



Posttreatment

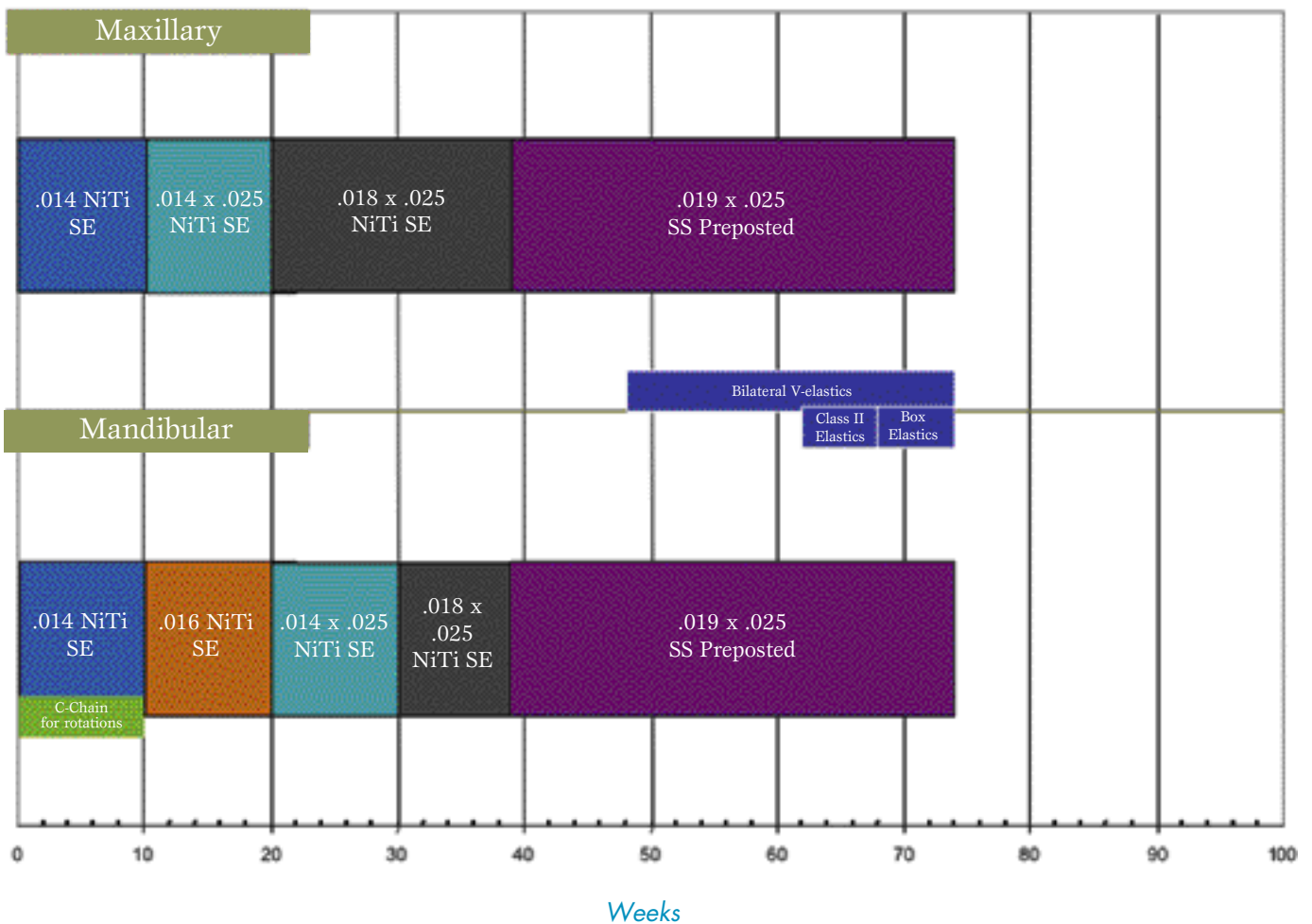


Final

Retention:

- Maxillary .016 x .022
- Hilgers braided wire bonded maxillary lateral to lateral.
- Mandibular .026 steel round bonded to cuspids.
- Splint made to orient the maxillary and mandibular arches at night and also to maintain the torque.
- Slip-cover retainers made for upper and lower arches – will eventually be worn when the splint is retired.

Hassan H. Case Summary



H.H.



6 months retention



- 11 mm maxillary bicuspid width increase.
- Evaluate positive bone and tissue response.