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AGpO Board Case Evaluation

Candidate # _____

to be assigned by AGpO Executive Director

Case Number AF08111982

(patient first initial, last initial, date of birth mm/dd/yyyy)

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All radiographs can be found at the back of this binder.

Cover Sheet

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Patient Information

Age at Start:	15y. 1mo.
Age at Finish:	17y. 0mo.
Start Treatment Date:	8/27/03
End Treatment Date:	6/21/05
Total Treatment Time:	23 mo.
Chief Complaint:	Crooked Teeth

Case Summary

This case presents a class III malocclusion limited to the molars with a slight skeletal class III prognathic mandible and retrognathic maxilla. She has a strong skeletal vertical growth pattern, bilateral posterior mild crossbite with a strong chin button, and mild mandibular and maxillary crowding.

Preliminary Orthodontic Evaluation

Health History

Medical: Seasonal Allergies, no med's

Dental: 6 mo. recall, no restorative work, excellent oral hygiene, no recession

Clinical Findings

Visual Exam:

Facial symmetry

Lips are competent

7mm of gingival display when smiling

Straight profile

Patient reports no trauma to the head/neck and no oral habits

TMJ Analysis:

No symptoms or abnormal findings upon clinical examination

Dx: WNL

Etiology:

Patient reports prolonged thumb sucking habit

Intraoral Exam:

All dental work is completed

Periodontal condition is good

Normal overjet

30% overbite

Maxillary midline is shifted left 1mm

Class III molars and Class I canines on both right and left

Bilateral mild posterior crossbite

Model Analysis

Slight crowding on Mx/Mn arches: -1.7mm on Mx/ -1.4mm on Mn (*Tanaka-Johnston estimation was used to determine the maxillary crowding*)

Curve of Spee: 0.0 mm

No Bolton discrepancy

Radiographic Findings

Cephalometric Analysis:

Dental: L1 to MP 80.3°: Retruded (but has a high MP angle)

L1 to APo 0.0mm: Retruded (but has a strong chin button)

Dx: Dentally retruded in the mandibular arch

Skeletal: SN 65.8mm: Shorter than normal(75.0mm)

SNA 76.5: ° Retruded

SNB 75.5: ° Retruded

Por-N/A/B 88.9mm/83.1mm/102.1mm: Retruded Mx/Prognathic Mn

Dx: Skeletal Class III Retruded Maxilla/Prognathic Mandible

Growth: Inferior border +12.5mm: CW growth

Y-Axis 71.5: ° CW growth

MP angle 40.8°: CW growth

Dx: Strong CW growth pattern

Soft Tissue: Pog - NB +6.5mm: Strong chin button

Lower lip thickness: 11.2mm Thin lower lip tissue

Dx: Normal, but with a strong chin button

Panorex Analysis:

All third molars are present but not erupted

Roots are normal in length and shape

Dx: WNL

Orthodontic Analysis and Diagnosis

This case presents a class III malocclusion limited to the molars with a slight skeletal class III prognathic mandible and retrognathic maxilla. She has a strong skeletal vertical growth pattern, bilateral posterior mild crossbite with a strong chin button, and mild mandibular and maxillary crowding.

Summary of Treatment Objectives

Correction of the crossbite should be ideal dependant upon her tissues ability to tolerate the expansion without any recession. Occlusion correction is largely dependant upon tolerance to the RPE and patient cooperation with box elastic wear.

Treatment Plan

With a total discrepancy of +2.6mm, AF's case will be treated non-extraction. I feel the L1 to APo measurement of +0.0 mm is an understated figure due to the prominent chin button, therefore I do not feel the total discrepancy is as large as the calculation states. Rapid palatal expansion will be utilized to correct the crossbite on the maxillary arch. It was understood prior to commencement of treatment that correction of the crossbite would depend up on her maxillary tissues being able to tolerate the expansion treatment modality. Overbite correction and the correction of the Class III molar relationship will be corrected with intermaxillary elastics.

Stage I: Rapid palatal expander will be cemented and turned once per day until either negative signs/symptoms present or over-correction(1/3 of the occlusal table) of the crossbite is achieved. During this time, NiTi .014 mx/.016 ss mn flat wires will begin to align the anterior six teeth. No intermaxillary elastics will be utilized during this time. We will advance to a mx .016 ss wire once the canines are better aligned.

Stage Pre-III: Bond all premolars, level with .016 wires, advance to .022 wires. Utilize intermaxillary elastics as needed to correct the posterior malocclusion.

Stage III: Take progress cephalometric radiograph and panoramic radiograph to monitor tip and torque. Utilize .025 x .028 rectangular wires if needed with sidewinders to achieve ideal tip and torque.

Finishing: Braided .025 x .028 wire and box elastics to idealize occlusion.

Retention: Essix A+ anterior retainers the same day as deband. Hawley or spring aligners as permanent retention.

Treatment History

(Significant appointments are listed, the rest are summarized)

8/20/03 Spacers placed mesial and distal to all permanent first molars

8/27/03 Braces on/RPE cemented .014 NiTi Mx/.016 ss Mn flat wires. Full bumper sleeves were placed on the upper and lower arches. Six anterior teeth bracketed, bands on all first molars. Instructions given for proper appliance care and oral hygiene. Amy was instructed to turn the appliance one turn per day, with a re-check in ten days and to notify me if problems arose. Cavity shield placed around all of the brackets.

Stage I summary:

A.F. tolerated the RPE very well, active movement was ceased after 5 weeks. Mx .016 was inserted at that appointment in the .036 tube, and a chain was placed from 7-10 to help close the diastema and bring the canines in to their ideal position. 7 and 10 had distal ss tie-downs to prevent distofacial rotation from the elastomeric chain force. After six weeks in the mx .016, the anterior teeth were aligned and the premolars were bracketed.

11/18/03 All premolars bracketed except the maxillary first premolars due to the expansion appliance. Flat wires .016 wires were placed in the .022 x .028 tube. Midlines are on.

01/06/04 RPE removed, first mx premolars were bonded and engaged in the wire.

02/18/04 U/L .022 expanded placed in .022 x .028 tube SW on 6,7,8,10,11,23,24,25,26. Class III 2 oz. elastics 100% wear on the left, Class II 2 oz. elastics with 100% wear on the right to shift the lower midline to the right.

Stage pre-III summary:

Intermaxillary elastics were utilized to correct the midlines, #11 and #12 were re-cemented to idealize their alignment.

05/05/04 Mx /Mn.0215 x .025 placed, right side occlusion still needs improvement of the class III relationship, left side looks good

07/13/04 Panoramic radiograph reveals need for more sidewinding on 13 and 28(mesial tipping), .2 mm of stripping on distal of #27 to better align.

09/21/04 Reproximated mx anteriors to allow better esthetics; when all space was closed, the incisal embrasures were large and a black triangle space was present between 8 and 9.

Stage III Summary:

This stage was lengthened due to continuing issues with midlines. I don't believe the patient was properly wearing her elastics. Various elastic combinations were utilized to maintain the overjet and midline correction. The progress ceph was taken on 2/10/05 and revealed that no more torque was necessary.

Finishing began 3/29/05: Lower woven 8-strand braided wire with power pins was utilized with blue 4 oz. 1/4" elastics in a box pattern to perfect the occlusion. Green 5/16" elastics 2.5 oz. were used from the right and left lower first molars over the upper canines and down to the lower first premolars to maintain the class two correction. 4/28/05 it was determined that the mx overjet would benefit from slightly more torque so a 4-spur was added. **Debanding occurred on 6/21/05**, any chipping of the incisal edges was smoothed, the enamel was polished, full records were taken and essix A+ anterior retainers were inserted. The wear instructions were full time for the first week, then part time until the permanent retainers arrive. 7/20/05 Mx/Mn spring aligners were inserted with no reproximation needed. The wear schedule was full time for three months, part time for three months, then while sleeping only. The patient was seen on 08/18/05 for a retention check and compliance appears excellent with no relapse.

Analysis of Treatment

I am pleased overall with the outcome of this treatment, but disappointed in the length of time it took to accomplish my final results. I feel a nice balance in profile and torque was achieved in the presence of the prominent chin button.

I do feel that teeth 7 and 10 need more mesial crown tipping which would have been accomplished by better bracket positioning.

The patient was overall compliant with the exception of intermittent elastic wear.

A.F. and her family are very pleased with this treatment outcome.