

# Deciduous Dentition-Anchored Appliance for the Correction of Anterior Crossbite: Case Report

Paloma R Nguyen, DMD; Elsa Echeverri, DDS

## CASE REPORT

This case report details the interceptive orthodontic treatment rendered to patient who presented to the Graduate Pediatric Dentistry Clinic at the University of Texas Health Center Houston.

A 10-year-old male presented for initial visit with a chief complaint of anterior crossbite. An unremarkable medical history was reported, no medications or known allergies. Dental history significant for rehabilitation under general anesthesia at age 7 with extraction of carious # 3, 14, 19, and 30. Clinical exam revealed healthy gingival tissues, disproportionate gingival heights on the central incisors, maxillary midline shift, moderate mandibular dental crowding, unerupted microdont #7, facial attrition on #9, and anterior crossbite from #8-9 with #23-25.

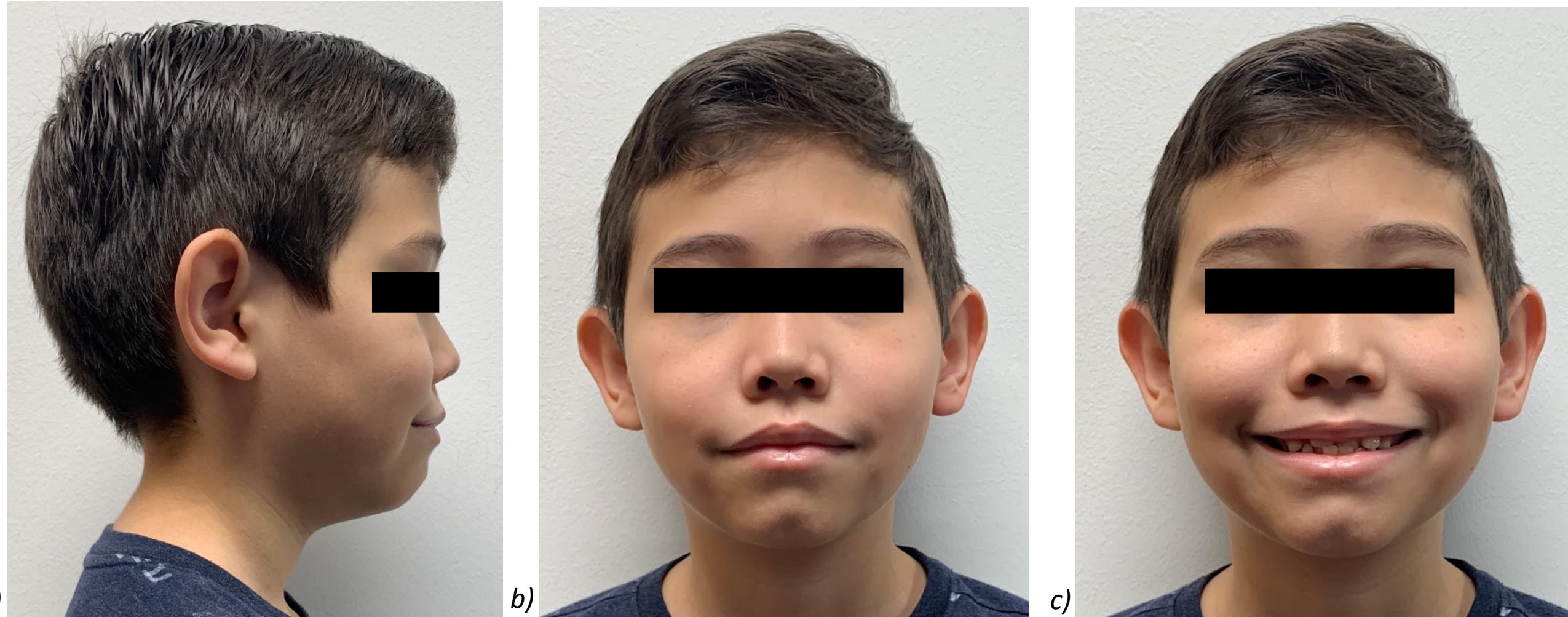


Figure 1. Initial extraoral photographs. a) Lateral view: Straight facial profile, nasolabial angle >90 degrees, competent lips, mental sulcus present; b) Anterior view: Square facial shape, symmetric, equal middle and lower thirds greater than the upper 1/3 of face; c) Anterior view-smile: low slime line, dark buccal corridors.



Figure 2. Initial intraoral photographs. a) Right: Flush terminal plane occlusion, Right Canine: Class I; b) Upper dental midline 3mm R of face, uneven gingival margins (apparent excess #9), lower dental midline coincident with face, anterior crossbite from # 8-9 and # 23-25; c) Left: Flush terminal plane occlusion, L Canine: Class I.

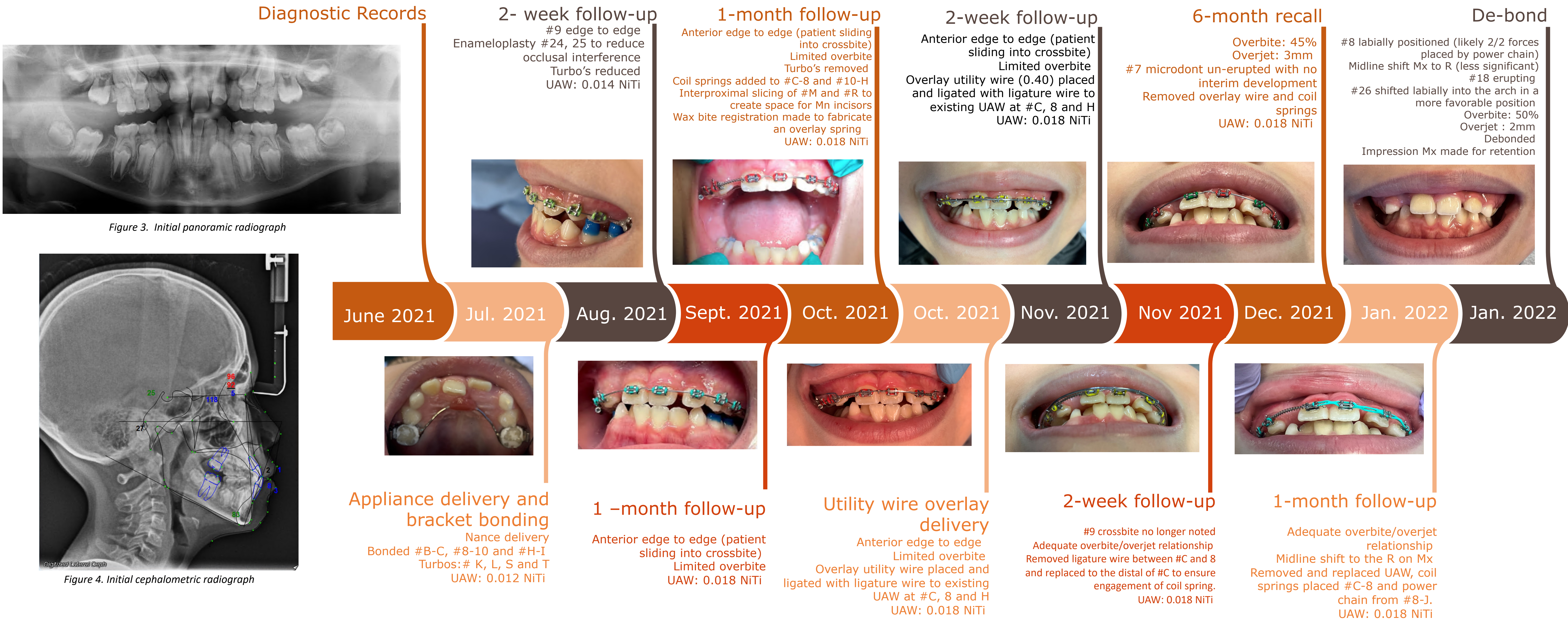
## DIAGNOSIS and OBJECTIVES

**Diagnosis:** crossbite of dental origin, maxillary midline deviation, moderate mandibular dental crowding, partial anodontia complicating bodily tooth movements, uneven gingival margins.

**Objective:** correct crossbite achieve adequate overbite/overjet relationship through interceptive orthodontics using of the following:

- Nance appliance with orthodontic bands on # A and # J for anchorage
- Brackets on all maxillary teeth to tip the incisors in labial direction
- Open bite with mandibular turbos to overcome anterior crossbite

## TIMELINE OF CARE



## DISCUSSION

- This report demonstrates the use of a deciduous dentition-anchored appliance to correct an anterior cross-bite in the setting of missing permanent first molars.
- Follow-up for this case includes active monitoring of the development and eruption of tooth #7, and mesialization of #2, 15, 18 and 31.
  - In the presence of a flush terminal plane, we expect that the patient will end in a Class I molar relationship with the forward growth of the mandible and a shift of his teeth.
- Treatment is indicated for anterior crossbites as soon as a diagnosis is made in order to avoid attrition, damage to the periodontium, tooth mobility, restricted skeletal growth, TMJ dysfunction and loss of esthetics.
  - Early correction of anterior crossbite allows for more harmonious and balanced muscular function and proper development of dental alveolar anatomy.
  - Intervention is also important to maintain a high level of self esteem at this critical age, avoid bullying by peers, and promote proper psychological health and social development.
- A high level of patient compliance is required when considering the use of orthodontic appliances and case selection is critical.
  - Patient and family cooperation played an important role in the success of this case.

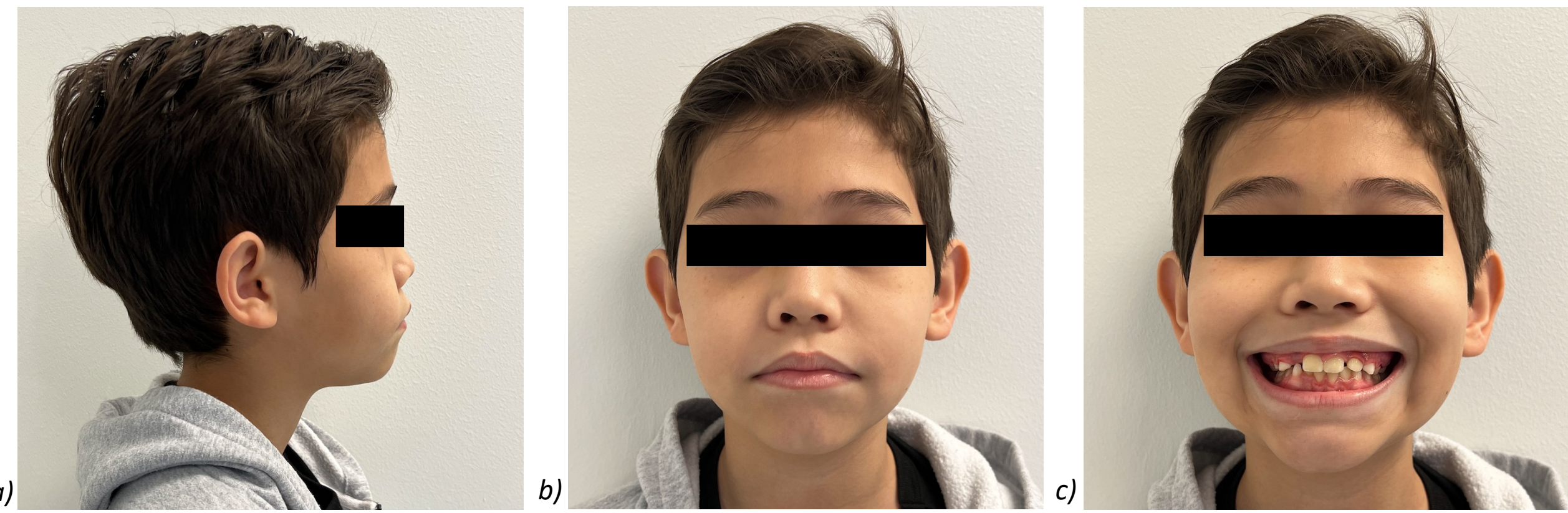


Figure 5. Final extraoral photographs noting changes. a) Lateral view: convex facial profile; b) Anterior view: square facial shape and symmetry remained consistent; c) Anterior view-smile: high slime line.



Figure 6. Final intraoral photographs. a) Right: Flush terminal plane occlusion, Right Canine: Class I; b) Upper dental midline 3mm right of face, uneven gingival margins (excess #9), lower dental midline coincident with face, 50% overbite, 3mm overjet; c) Left: Flush terminal plane occlusion, L Canine: Class I.