

## INTRODUCTION



Fig 1. Initial Anterior Open Bite

Anterior open bite (AOB) (Fig 1.) is a specific type of malocclusion caused primarily by local or environmental factors. The most common etiology is correlated with habits or trauma but, when a skeletal component is present, the etiology can be inherit and other health conditions like allergies, enlarged lymphatic tissues, muscular hypotonicity, syndromes, and neurologic problems.

The main habits related with this malocclusion are mouth breathing, tongue thrusting, and digit-sucking, which must be resolved at an early age to prevent worsening of the occlusion and facial features.

Tongue dynamics are highly associated with maxillofacial morphology and maintenance of occlusion.

An abnormal tongue dynamics (Fig 2.), such as tongue thrusting during swallowing can lead to malocclusion specifically an AOB



Fig 2. Anterior Open Bite with abnormal tongue dynamics

## METHODS & MATERIAL

A 47 year-old female patient with a chief complaint of anterior open-bite was treated with incompetent lips, convex profile, retrusive chin and tongue thrust habit. Intraoral examination showed that the buccal segments were in Class III relationship, and there was AOB (overbite - 5 mm), Overjet 8mm, left posterior crossbite and midline discrepancy. Centric relation showed Class I Canine and AOB (overbite - 3 mm) (Fig 3).

The cephalometric analysis showed Class II skeletal relationship, ANB 5°, FMA 31°, IMPA 93° Interincisal angle 128°. Vert Dolic (Fig 4.)

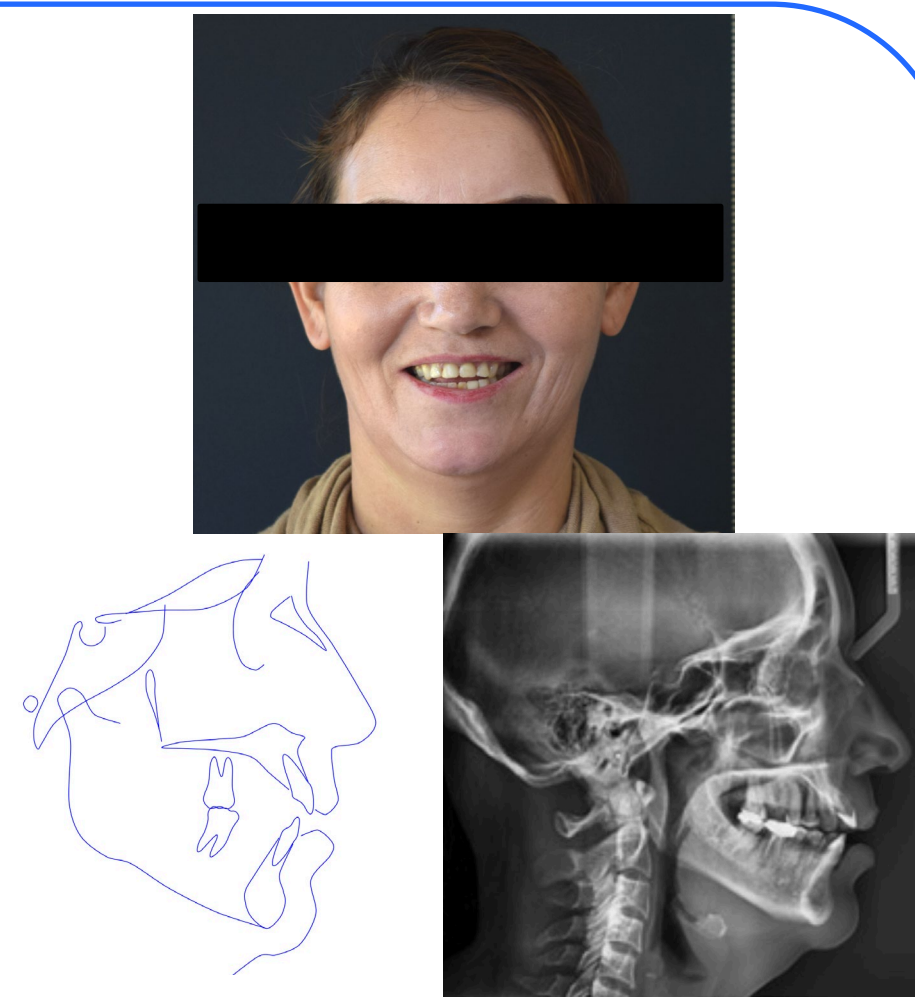


Fig 4. Initial records



Fig 3. Initial centric relation mounted cast



Fig 5. Tongue crib

The treatment plan was extrusion of maxillary anterior teeth using fixed orthodontic appliances Roth slot 0.022 with more gingival bracket positioning, tongue crib (Fig 5). was used to discourage tongue-thrust habit and to adapt normal tongue position.

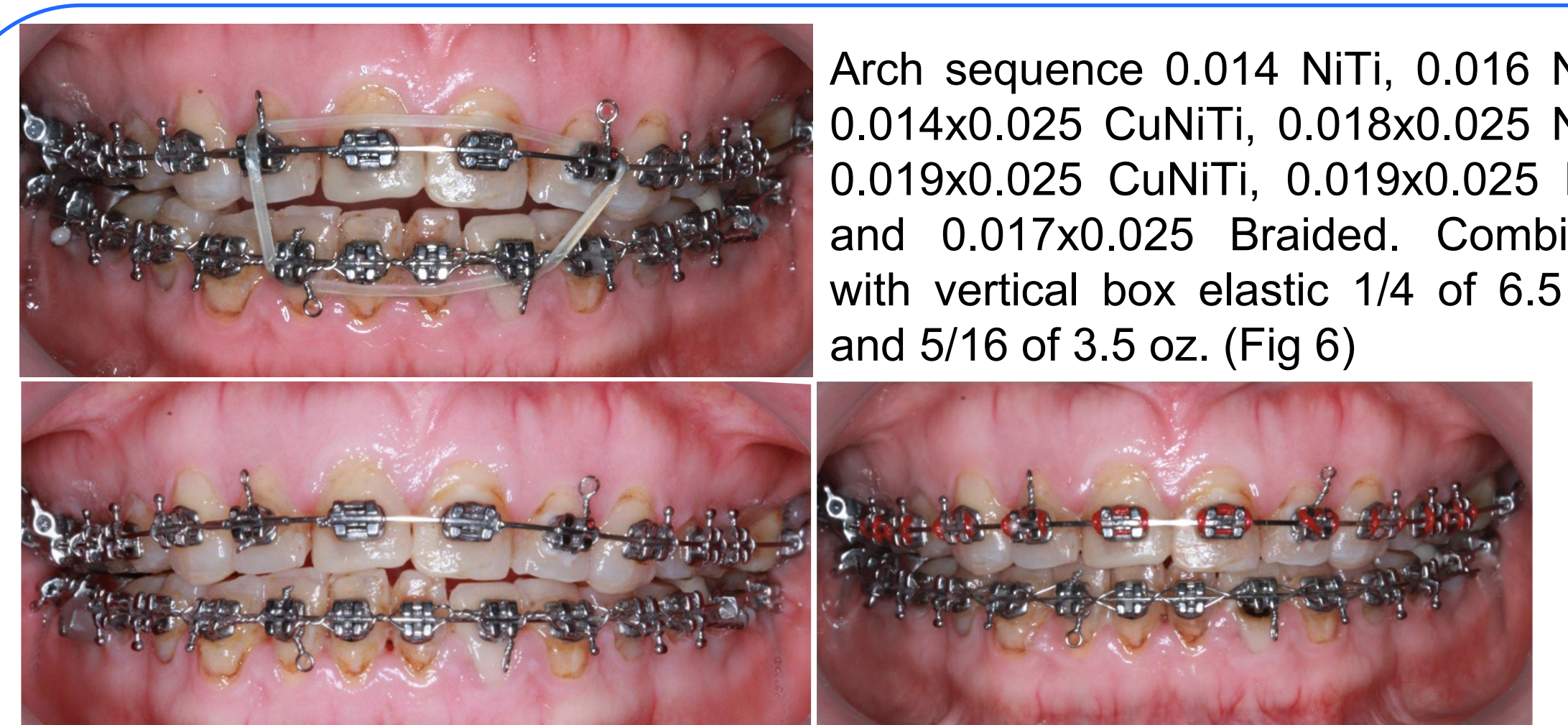


Fig 6. AOB closed with vertical elastics

Arch sequence 0.014 NiTi, 0.016 NiTi, 0.014x0.025 CuNiTi, 0.018x0.025 NiTi, 0.019x0.025 CuNiTi, 0.019x0.025 NiTi and 0.017x0.025 Braided. Combined with vertical box elastic 1/4 of 6.5 oz. and 5/16 of 3.5 oz. (Fig 6)

## RESULTS

At the end of treatment centric occlusion and centric relation showed Class I canine relationships (Fig. 7), AOB was corrected, satisfactory overbite 3mm, adequate overjet 3 mm (Fig 8).

Facial changes showed lip competence and normal smile line was obtained.

Final cephalometric analysis showed Class I skeletal relationship, ANB 3°, FMA 29°, IMPA 91° Interincisal angle 136°. Vert Dolic (Fig. 9)



Fig. 8 Satisfactory overbite and overjet



Fig.7 Final centric relation mounted cast

## CONCLUSION

The orthodontic treatment objectives were to close the AOB, correct the left posterior crossbite and dental midline deviations, achieve Class I canine and functional molar relationships as well as ideal overbite and overjet, improve facial esthetics, and obtain passive lip competence.

The skeletal changes included an increase in mandibular position and interincisal angle, decrease in facial convexity and reduction of overbite. (Fig. 9)

After orthodontic treatment the patient received prosthodontic bioesthetics. (Fig. 10)

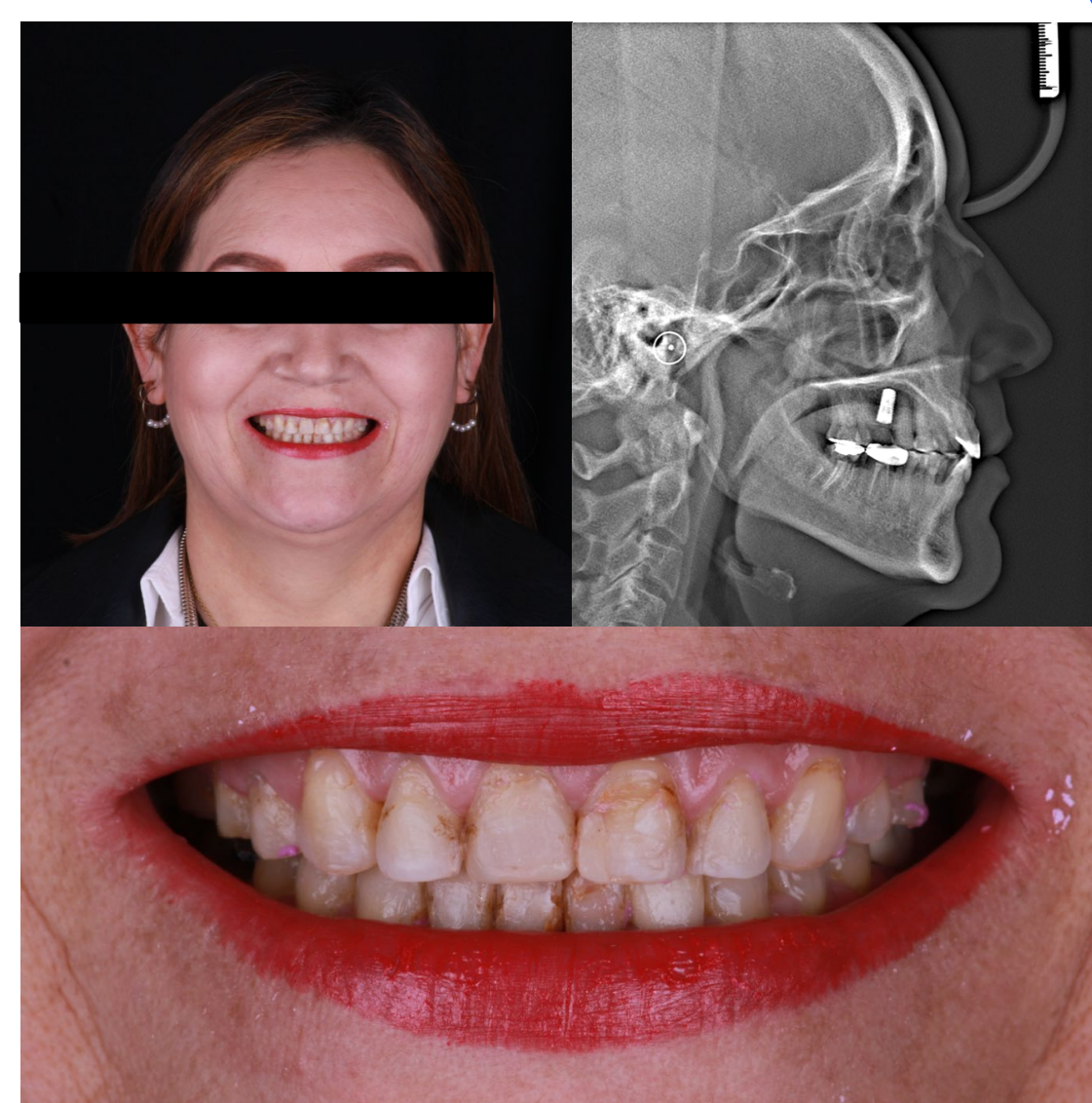


Fig 9. Final records post orthodontic treatment



Fig 10 Final Mock up  
Courtesy of Prostodontics Department  
Julio César Rascon, DDS

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