

INTRODUCTION

Obstructive sleep apnea syndrome (OSAS) is a sleep-related breathing disorder characterized by episodes of partial (hypopnea) or complete (apnea) obstruction of the upper airway with a duration of at least 10 seconds.^{1,2} It is estimated that OSAS affects 5%-20% of the adult population, being three times more common in males than in females.² OSAS influences the patient's health and quality of life, namely: daily sleepiness, fatigue, cognitive deficit and increased risk of cardiovascular disease.¹ OSAS treatment includes preventive methods, the use of devices that improve breathing and surgery, including orthognathic surgery.³ The objective of this paper is to present a clinical case with OSAS successfully treated through orthognathic surgery.

MATERIAL AND METHODS

Anamnesis

- Patient sent by the Maxillofacial Surgery service for surgical planning and preparation of surgical occlusal splints
- Male patient, 43 years and 3 months old
- Moderate OSAS with na apnea-hypopnea index of 22

Cephalometric analysis

- < ANB 3° - Skeletal Class I
- < SNA 77° - Moderate setback in the position of the point A in relation to the skull base
- < SNB 74° - Moderate setback in the position of the point B in relation to the skull base

Model analysis

- Class I molar on the right side
- Classe I canine
- Overbite and Overjet of 3 mm

Treatment plan

- Bimaxillary orthognathic surgery by the Surgery First technique: Le Fort I maxillary advancement of 7 mm and impaction of 2 mm and BSSO with mandibular advancement of 7 mm
- The patient refused conventional fixed multibracket treatment but is considering aligners



Fig. 1: Initial extraoral photographs at rest: front (A), 3/4 (B) and profile (C)



Fig. 2: Initial intraoral photographs: right side (A), front (B) and left side (C)

RESULTS

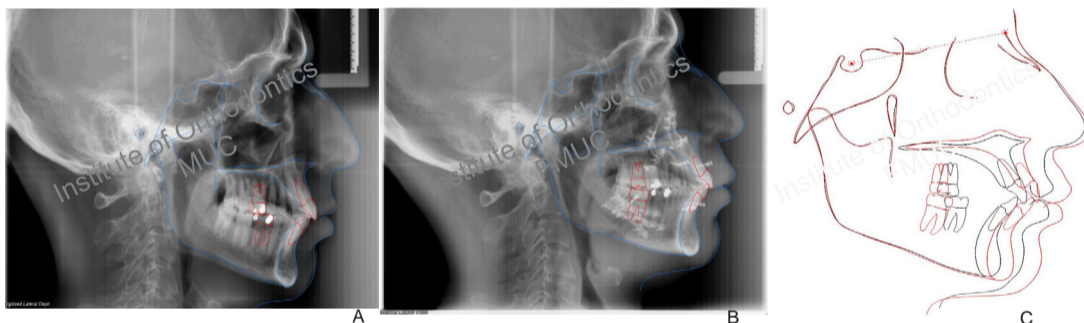


Fig. 3: Cephalometric tracing: pre-surgical (A), post-surgical (B) and overlapping cephalometric tracings (C)

Measures	Standard	Pre-surgical values	Post-surgical values
< SNA	82°±2°	77°	84°
< SNB	80°±2°	74°	80°
< ANB	2°±2°	3°	4°

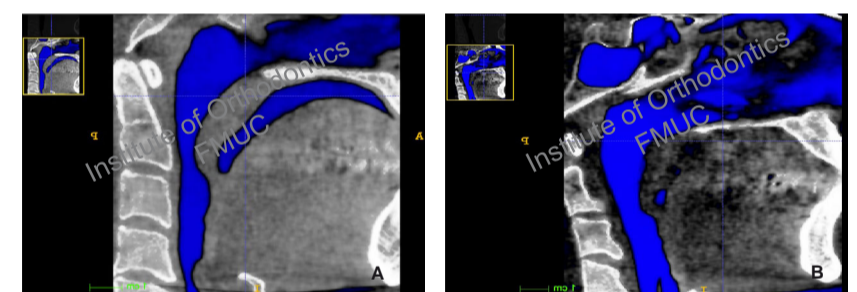


Fig. 4: Three-dimensional cone-beam computed tomography images before (A) and after (B) Surgery First: upper airway represented in blue



Fig. 5: Final extraoral photographs at rest: front (A), 3/4 (B) and profile (C)



Fig. 6: Final intraoral photographs: right side (A), front (B) and left side (C)

DISCUSSION

Continuous positive pressure is considered the gold-standard treatment for OSAS.^{2,4} However, rates of 40-86% of failure in therapeutic adherence have been reported.² Since Guilleminault *et al.*, in 1976, described bimaxillary advancement surgery as an effective treatment for patients with retrusive facial profile and OSAS, several studies have demonstrated its benefits. This surgical movement allows the anterior pharyngeal wall to move forward, resulting in the enlargement of the pharyngeal airway and, consequently, a decrease in the apnea-hypopnea index.² Taking into account the normal dental inclination in relation to the skeletal bases, the Surgery First technique was chosen, which minimizes the treatment time, allowing immediate improvement in the volume and minimum axial dimension of the upper airways.⁵ Two months after surgery, there were no post-surgical complications, the patient reported an improvement in symptoms associated with OSAS and in the assessment of radiographic examinations was observed an increase in the volume and the minimum axial dimension of the upper airway.

CONCLUSIONS

The Surgery First technique allowed for immediate surgery and the consequent improvement of OSAS. Bimaxillary advancement movement increased the volume and minimum axial dimension of the upper airway.

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