# Surgical correction of maxillary bone hyperplasia - case report

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## 1 INTRODUCTION

Orthognathic surgery is indicated for patients with bimaxillary dentoalveolar protrusion and may involve maxillary Le Fort I (LFI) osteotomy with segmentation, mandibular anterior subapical osteotomy, allowing reduction of labial prominence, closure of the spaces between the dentoalveolar segments, and leveling of a curve of Spee.

The characteristics of retrognathic cases include: mandibular growth deficiency; direction of mandibular growth predominantly downward and backward and convexity angle greater than 10 degrees or ANB greater than 4.5 degrees, combined with a tendency toward open bite [1,2].

The maxilla is a segment that can be repositioned in the sagittal plane, impacted to correct the relationship with the vertical plane, and can be rotated, depending on the clinical situation.

Among the osteotomy techniques for maxilla, the Le Fort I osteotomy is the most used due to its versatility, safety and possibility to be used to correct discrepancies in the three planes of space. In situations where the Le Fort I osteotomy in only one block is not enough to allow an adequate occlusion gearing, the segmentation of the maxilla is a plausible technique. The most common sites for maxillary segmentation are the alveolar region between the lateral incisors and canines, or between the canines and premolars. It is indicated for correction of transverse maxillary deficiency, correction of anterior open bite and correction of severe vertical maxillary deficiencies or excesses [2].

Mentoplasty, on the other hand, is a versatile procedure that can correct the full range of chin deformities in all three planes, including sagittal (retrogenia, prognathia), vertical (microgenia, macrogenia) and transverse (asymmetry). Adjusting the plane and extent of mandibular osteotomy, along with the appropriate addition (bone grafting) or removal (reduction genoplasty) of bone allows the surgeon to achieve a wide range of changes in symphyseal anatomy to achieve the desired result [3].

## 2 OBJECTIVE

To perform a case report of a bimaxillary setback and forward mentoplasty in a class II patient.

## 3 METHODOLOGY

A 43-year-old female patient, normosystemic, leucoderma, presented to the dental office complaining of myofascial pain and facial asymmetry (Figure 1)

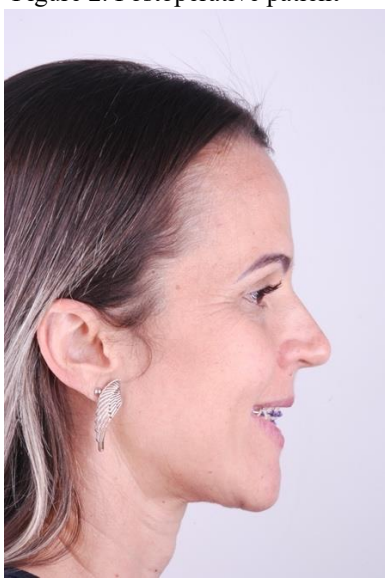
Pre-surgical examinations and surgical planning were performed for the patient, after the decision of concomitant surgical treatment with orthodontic treatment.

The proposed surgical planning decision was; 8mm bimaxillary setback, 6mm maxillary impaction and 6mm mentoplasty advancement.

The patient was referred to the operating room for surgery under general anesthesia, oral intubation, infiltration with lidocaine and epinephrine (5 ml), intra and extra-oral antisepsis with 2% aqueous chlorhexidine, apposition of the fields and installation of the oropharyngeal plug; mucoperiosteal incision and detachment, bilateral sagittal osteotomy and maxillary mandibular block with intermediate guide and fixation with plates and screws, Le Fort I osteotomy with segmentation (between upper lateral incisor and upper canine), maxillary mandibular block and fixation with plates and screws and forward mentoplasty in 6mm. Access sutures with 4-0 vicryl, cleaning with saline solution, removal of the oropharyngeal plug, reversal of general anesthesia, extubation, and referral to the post-anesthesia recovery room. The patient was oriented about the postoperative period (Figure 2).

Figure 1. Preoperative patient

Figure 2. Postoperative patient



## 4 DISCUSSION

Le Fort I (L-1) osteotomy is necessary to treat vertical maxillary excess. [1] In the clinical case mentioned above, the Le Fort I osteotomy was used for maxillary retraction and proved to be effective in correcting the malocclusion presented by the patient, and her dissatisfaction with the aesthetics. The changes observed in the patient's case point to a reduction in the exposure of the anterior teeth at rest, which is a result of the elimination of vertical excess. Consequently, labial competence is favored.

In Arnett et. Al's analysis it is recommended that the tip of the upper central incisor be 8-10 mm behind the vertical line. Andrews et. Al on incisor position and the values reported by Arnett et. Al for incisor position, the prescribed position of the upper incisors for both analyses is similar. The interlabial space is the most important measurement when considering the treatment of anterior vertical [7].

The patient reported that she felt myofascial pain prior to surgery. Dentofacial deformities determine specific myofunctional characteristics that vary according to the disproportion presented. These muscle modifications represent adaptations of the stomatognathic system to enable the performance of phonoarticulation, mastication, swallowing, and breathing functions. It was solved after surgical correction.

The bimaxillary surgery technique described here avoids isolated mandibular movement, bringing as benefits of the approach a better balance of muscles and facial tissues[6]. It is determined as class II, cases in which the patient has dental discrepancy being visually noticeable because the maxilla is protruding from the mandible, thus giving the impression of a "small chin"[8]. In the mandible, bilateral sagittal osteotomy was performed to advance enough for a stable occlusion and forward mentoplasty of 6 mm.

Ferri et. Al[9] in a study on complications in orthognathic surgery reported that complications are rare, but should not be ignored.

## 5 FINAL CONSIDERATIONS

It is well known that orthognathic surgery is an excellent treatment for patients who have vertical maxillary excess, concomitant with bilateral sagittal osteotomy and mentoplasty.

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