Research Paper Medical Science

Orthodontic and orthognathic surgery: change in the quality of life of a patient with limited resources.

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ABSTRACT

Female adult patient carrying a severe skeletal Class III caused for mandibular excess development and maxillary hypoplasia, partial toothless upper. Patient presents low socioeconomic status, with bad access to a comprehensive dental treatment. In Chile orthodontic and orthognathic surgery have an elevate cost. It was decided an orthodontic treatment with triple orthognathic surgery (maxillary, mandibular and chin). An important aesthetic, functional and quality of life change was achieved.

KEYWORDS skeletal Class III, orthodontic, orthognathic surgery, adult, self esteem.

INTRODUCTION

Skeletal Class III corresponds to a dento maxillo facial malformation characterized by a concave profile. It may be due to excessive development of the mandible, a lack of sagittal growth of the maxilla or a combination of both, which favors a disharmony in the jaws, causing a distortion in the masticatory function and facial aesthetics *(López Rodríguez et al., 2004; Ngan & Moon, 2015)*. Familial aggregation studies suggest that family environmental factors or hereditary may play a role in the etiology of Class III malocclusions. *(Ngan PW, Deguchi T, & Roberts E, 2014, p. 3.24)*.

In most skeletal Class III patients can find a wide range of problems, ranging from alterations in the function of the stomatognathic system, such as chewing and respiratory disorders and speech problems, to aesthetic and psychosocial disorders *(Cunningham & Johal, 2015)*. This type of skeletal alteration is considered as one of problems most difficult and complex to treat in orthodontic *(Birbe Foraster & Serra Serrat, 2006)*, furthermore, the early loss of permanent teeth makes a more difficult treatment.

Orthognathic surgery enables correct the position of the jaws for a harmonious relationship of the maxilla, mandibular and the teeth, and thus a correct function, with consequent improvement in the quality of life of patients. *(López Rodríguez et al., 2004)*. So that, achieving a normal chewing function through orthodontics and orthognathic surgery is a major health goal *(Kubota, Yagi, Tomonari, Ikemori, & Miyawaki, 2015)*, which consequently bring aesthetic and psychosocial benefits.

Case Report

Female Patient, 20 years old, maid, goes to the Craniofacial Malformation Unit of the Faculty of Dentistry at the University of Chile, her complaint was to have straight teeth and to eating better because she have the bite backwards. The diagnosis was a skeletal Class III with mandibular greater development, severe canine and molar mesioclusion, a negative overjet -10mm., bilateral crossbite, lack of transverse and sagittal maxillary development.

Four maxillary premolars loss due to caries, with almost total loss of space. Second and third lower left molars were in a mesial position, severe retro inclined lower incisors.

After orthodontic and kinesic study (Table 1), it was decided to perform orthodontic surgical treatment: Le Fort I osteotomy for maxillar advancement, sagittal split ramus osteotomy for mandibular setback and plasty of the chin, to restore adequate sagittal relationship, a positive overjet and aesthetic profile that patient seeks. All the treatment with preferential price.

Table 1. Kinesic Maxillofacial exam

Kinesic Maxillofacial exam	
Anathomic	
Upper lip	Functional
Lower lip	Everted
Palate	Arched
Lingual frenulum	Functional
Neuromuscular	
Tongue	Functional
Orbicular	Functional
Oral functions	
Lip closure at rest	Forced
Lingual resting position	Lower
Bad habits	(-)

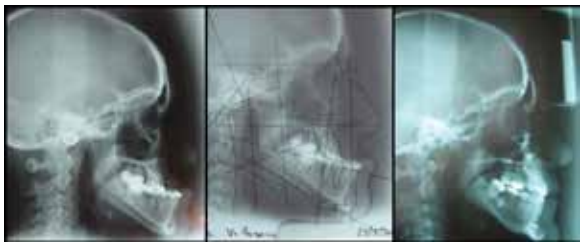

Fig. 1-2-3: prior lateral teleradiography, cephalometric diagnostic study and the post surgery teleradiography note the great maxillary advancement achieved.

Fig. 4-5-6. Initial photos: occlusal view of the maxilla and mandible, the absence of premolars is observed. And a view of the patient into occlusion, severe negative overjet is observed. Fig. 7-8-9. Intraoral view in the beginning of the fixed appliances, with which it seeks to level, align and prepare the occlusion for orthognathic surgery. Fig. 10-11-12-13. Casts, note the negative overjet of -10mm. Fig. 14-15. Intraoral photos with fixed appliances after orthognathic surgery. Fig. 16: Displayed the patient completed orthodontic treatment and with upper containment appliance.

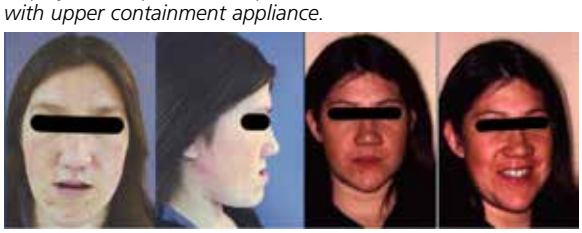

Fig. 17-18-19-20. Facial photography: front and profile, before and after surgical orthodontic treatment.

CONCLUSSION

Improve facial aesthetics has been considered the primary motivating factor for patients with facial deformities seeking surgical orthodontic treatment *(Soh & Narayanan, 2013)*, although some studies report that the chief complaint would rather improve the masticatory function rather than changes in appearance *(Stirling et al., 2007)*. In both cases orthognathic surgery in combination with orthodontics is the most suitable option for patients with facial deformities treatment, since surgical repositioning of jaws can achieve a good functional outcome in conjunction with facial harmony and aesthetics required *(Ghassemi et al., 2014; Miguel, Palomares, & Feu, 2014)"page":"157-160","volume":"5","issue":"2","source":"-PubMed Central","abstract":"Aims:\nThe aim of this study was to evaluate hard and soft tissue change after bimaxillary surgery in class III patients by focusing on sella, nasion, A point (SNA.*

Patients also seek treatment with the expectation of psychosocial benefits, including improvements in interpersonal relationships and psychological well-being improving their self-esteem. *(Miguel et al., 2014)*

According to the evidence available, patients with dentofacial alterations present significant improvements in self-image after surgical orthodontic treatment. *(Rivera, Hatch, & Rugh, 2000).* In a recent systematic review, we highlight the high levels of satisfaction post to orthognathic surgery. A variety of improvements in their psychological well-being, as self-concept, it is reflected in increased confidence, self-esteem and/or perception of facial attractiveness. These changes also contribute to improve interpersonal relationships and social interaction at work and family environments. *(Pachêco-Pereira et al., 2015).*

The recently case report shows the great change in self-image given to a patient with a very low self-esteem, with poor access to comprehensive dental care because of the low socioeconomic status and low income for her job, her quality of life has been diminished. The change allowed her to have an active social life, and improve the relationship with their peers.

Treatment of patients with severe prognatism is highly complex, especially if there premature tooth loss. it must make a detailed analysis together with a coordinated and strengthened team to achieve complete rehabilitation.

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