Revista Mexicana de Ortodoncia

Vol. 5, No. 3 • July-September 2017
pp e170–e177

CASE REPORT

Management of a class III malocclusion with facemask therapy anchoraged with TADs and orthodontic treatment. Case report

Tratamiento de una maloclusión CIII tratada con máscara facial, tracción maxilar anclada a miniimplantes y tratamiento ortodóntico. Reporte de un caso

Lisette Ramos Zúñiga,* Enrique Grageda Núñez§

ABSTRACT

Excessive mandibular growth, an underdeveloped maxilla or the combination of both may cause class III malocclusions. Treatment success in this kind of cases depends largely on the age of the patient since if not treated timely, the only alternative is a surgical-orthodontic treatment. Hereunder, the case of a 12-year-old patient, skeletal CIII with anterior crossbite treated with a facemask anchored to mini-implants is presented.

RESUMEN

La maloclusión clase III puede ser causada por un crecimiento mandibular excesivo, un maxilar poco desarrollado o ambos. El éxito del tratamiento para este tipo de casos, depende en gran parte de la edad del paciente, ya que al no ser tratado a tiempo, la única alternativa es un tratamiento ortodóntico-quirúrgico. A continuación, se presenta el caso de un paciente de 12 años de edad CIII esquelética con mordida cruzada anterior tratado con máscara facial anclada a miniimplantes.

Key words: Class III, facemask, mini-implants, compensation, anchorage.
Palabras clave: Clase III, máscara facial, miniimplantes, compensaciones dentales, anclaje.

INTRODUCTION

Maxillary protraction with use of facemask has favorable orthopedic results. Previously it was thought that it was impossible to perform a pure maxillary advancement until Delaire used the facemask in patients from an early age. Prior to this, only upper incisor proclination was accomplished as a result. Today, it is established that it is possible to obtain a maxillary advancement with the use of the facemask in patients aged 8 years or younger.[1] The age limit to obtain favorable outcomes is 10 years.[2]

In older patients the result is almost null, obtaining only tooth movement and a rotation down and rearward of the mandible that may cause an increase in the vertical dimension. Hyperdivergency may also be increased if the dental anchorage causes undesirable movements such as extrusion. The use of mini-implants as a basis for anchorage with the facemask could favor achieving an orthopedic movement of the maxilla in patients with permanent dentition.

CASE REPORT

Male patient of 12 years and nine months of age attended the orthodontics clinic with the following reason for consultation: «my upper teeth are inward and my lower teeth are outward». The medical history showed no apparent pathological data. Upon the facial examination, the patient presented a convex profile, with an increased lower third, positive smile as well as coincident dental and facial midlines *(Figure 1)*.

* Student of the Orthodontics Specialty.
§ Teacher at the Orthodontics Department.

National Autonomous University of Mexico, Mexico City.

See related content at doi: http://dx.doi.org/10.1016/j.rmo.2017.12.008

The intraoral inspection showed the upper dental arch with mixed dentition, an occlusal relationship with anterior crossbite, canines in supraoclusion, bilateral class III molar, severe crowding in the upper arch and coincident upper and lower dental midlines *(Figures 2 and 3)*.

The panoramic radiograph shows the presence of deciduous teeth 5.5 and 6.5, retained upper second premolars and erupting lower second premolars. Dental germs from teeth 1.8, 2.8, 3.8 and 4.8 were also observed, as well as a: 2:1 crown-root ratio in a generalized form as well as a homogeneous trabecular bone *(Figure 4)*.

The cephalometric analysis performed in the lateral headfilm showed a skeletal CIII patient due to maxillary retrusion, anterior crossbite with negative overjet, upper incisor retroclination and a relative protrusion of the lower incisor. Vertically the patient had a dolichofacial pattern *(Figure 5 and Table I)*.

Treatment objectives

The main objective was the correction of the skeletal CIII using a facemask anchored to mini-implants to achieve a pure maxillary orthopedic advancement and correct the crossbite considering the possibility that the patient may still have remaining mandibular growth. Dental objectives were: to correct incisor inclination, improve the profile, maintain stability and condylar health as well as to achieve bilateral molar and canine class I, eliminate crowding and obtain a functional occlusion.

Treatment alternatives

A possibility of treatment was decompensation of dental inclinations through orthodontic treatment to subsequently perform a surgical treatment once growth had completed. Within the disadvantages

Figure 1.

Initial facial photographs.

Figure 2.

Initial intraoral photographs.