



Orthodontic treatment in a periodontally compromised class III patient: case report

Tratamiento ortodóncico en paciente clase III, periodontalmente comprometida: reporte de un caso

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ABSTRACT

Nowadays periodontal patients are not doomed to not be treated orthodontically. Once periodontal disease is under control, certain orthodontic movements can enhance periodontal health while also improving function and esthetics. This case reports presents a female patient, 28 years of age, skeletal class III with controlled periodontal disease who was referred by the Periodontics Department.

RESUMEN

En la actualidad, el paciente con enfermedad periodontal no está condenado a no recibir tratamiento ortodóncico; una vez controlada la enfermedad periodontal puede verse beneficiada con determinados movimientos dentarios específicos que pueden ser favorables para el periodonto contribuyendo a una función y estética adecuada. El presente artículo muestra el reporte de un caso clínico en paciente femenina de 28 años de edad, clase III esquelética con enfermedad periodontal controlada, referida de la Clínica de Periodoncia.

Key words: Skeletal class III, chronic periodontitis, crossbite, interdisciplinary treatment.

Palabras clave: Clase III esquelética, periodontitis crónica, mordida cruzada, tratamiento interdisciplinario.

INTRODUCTION

Class III malocclusion is the result of the morphology or lack of position harmony between the maxilla and the mandible during the growth period. Malocclusion and the abnormal position of the teeth are recognized as potential causes of periodontal disease when they are producing occlusal trauma. This is due to the excessive functional stress that may onset inflammatory changes in the periodontium and therefore trigger a destructive bacterial process.^{1,2} Periodontally compromised patients are treated in an interdisciplinary fashion with the objective of not only improving oral function and aesthetics but also to prevent future problems.³

At present, the orthodontist faces new challenges such as treating periodontally compromised patients whose conditions are often not the most favorable because there may be reduced elements of periodontal support. These conditions are considered to be prevailing in the adult patient but even so it is common belief that they will be more cooperative. Previously it was not considered possible to treat them orthodontically since periodontitis could progress more rapidly. Nowadays, however, these patients are still

considered to be at risk of developing a periodontal failure during orthodontic treatment.⁴⁻⁹

When the patient's oral health is good the common objective of both the orthodontist and the periodontist is to preserve it and if possible, improve the longevity and aesthetics of the stomatognathicsystem.^{3,7-9} Likewise, the periodontally compromised patient can benefit from orthodontic treatment because certain dental movements may be favorable to are duced periodontium.⁷⁻⁹

The characteristics of a class III malocclusion are: mesial position of the mandibular dental arch with respect to the maxilla which produces an anomaly in the incisor relationship (anterior crossbite), presence of a dento-skeletal malocclusion which results from a maxillary hypoplasia, a mandibular prognathism or combination of both.⁶

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Among many considerations, an important point is that dental hygiene is the key factor for treatment success in periodontally compromised patients. The presence of plaque along with orthodontic movement may cause angular defects and significant bone loss but it should be noted that in patients with advanced periodontal disease and good hygiene, orthodontic treatment does not have significant effects on the periodontium or bone level in the long run.^{10,11} Therefore, before beginning orthodontic treatment it is important that the orthodontist identifies periodontal problems, determines the correct treatment plan and correctly establishes the sequence for orthodontic and periodontal treatment to improve the patient's periodontal health.^{3,12}

The periodontist and the orthodontist must work together to make sure that inflammation and occlusal trauma are not present during the treatment of periodontally compromised patients, since these factors may lead to an increase in the insertion loss.^{3,5} Likewise, interdisciplinary orthodontic treatment may improve the gingival and bony level, the occlusal trauma and infrabony defects.³

This article presents the case report of a female patient of 28 years of age, skeletal class III with controlled periodontal disease who was referred from the Periodontics Clinic for the purpose of improving her periodontal health and aesthetics.

CASE REPORT

Female patient, 28 years of age, with controlled periodontal disease, who was admitted to the Orthodontics Department Clinic at the Division of Post-Graduate Studies and Research (DEPeI) of the National Autonomous University of Mexico (UNAM), referred from the Periodontics Department.

In the cephalometric analysis she was a skeletal class III, mesocephalic, with a concave profile, neutral growth and lower lip protrusion (*Figure 1*). In the panoramic radiograph she presented 28 erupted permanent teeth, loss of alveolar crests and a root-crown ratio of 3:1 (*Figure 2*).

Facially, she presents a concave profile, mesofacial pattern, decreased upper facial third, asymmetry, neutral smile, lip competence and a slightly everted lower lip. Upon clinical examination and intraoral analysis, it was observed bilateral molar class III, a canine class III, a 3 mm overbite, -2 mm overjet, moderate lower dental crowding,

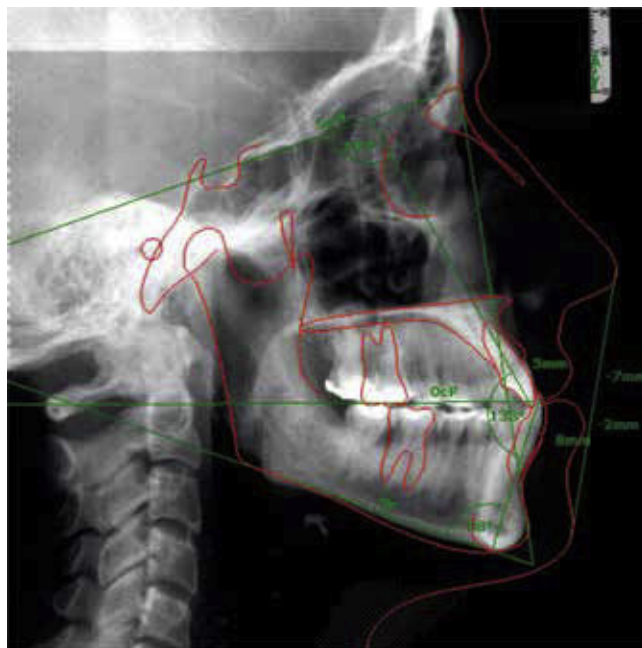


Figure 1. Initial cephalometry.



Figure 2. Initial panoramic radiograph.

dental midline deviation, ovoid upper and lower arch form, unilateral anterior and posterior crossbite and controlled generalized chronic periodontitis (*Figures 3 at 5*).

TREATMENT OBJECTIVES

The treatment objectives were: to improve the occlusal relationships in order to promote the conditions of periodontal health and aesthetics of the patient, to maintain the skeletal class or correct it surgically depending on the case evolution, to maintain the vertical dimension, to improve as much as possible the profile, correct the crossbites, achieve a molar and canine class I, obtain anterior and canine guidance, to align and correct the

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