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CASE REPORT

Crowding correction through extraction of a lower incisor

Corrección del apiñamiento, con extracción del incisivo inferior

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ABSTRACT

Tooth-bone discrepancy, or crowding in the lower arch, is traditionally corrected by removing first or second premolars; the extraction of a lower incisor is an uncommon approach but presents another treatment alternative. Treatment goal: to present the case report of a patient who was given this alternative treatment. The patient had 15 years 4 months of age. The intraoral analysis revealed a normodivergent skeletal class I with bilateral molar class I, bilateral canine class I, decreased overbite, and increased overjet. She had lower moderate and mild upper crowding as well as a habit of digital suction. Treatment time was one year and four months.

RESUMEN

La discrepancia de longitud, o el apiñamiento en la arcada inferior, tradicionalmente se corrige por medio de la extracción de primeros o segundos premolares; la extracción de un incisivo inferior es un enfoque poco común pero es otra alternativa sobre todo en el arco mandibular. **Objetivo:** Presentar el tratamiento de una paciente de ortodoncia con estas características, a la cual se le da este tratamiento, de 15 años cuatro meses de edad. Al análisis intraoral, es clase I esquelética, normodivergente, con clase I molar bilateral, clase I canina bilateral, con el *overbite* disminuido, y *overjet* aumentado, tiene apiñamiento moderado inferior, y leve superior, presenta hábito de succión digital. El tiempo que duró el tratamiento fue de un año cuatro meses.

Key words: Extraction, lower incisor, class 1, normodivergent.
Palabras clave: Extracción, incisivo inferior, clase I, normodivergente.

INTRODUCTION

Jackson describes a case in which two lower incisors were extracted at different times to solve mandibular crowding.[1] Since then, a series of clinical cases have been treated with this option.[2,3] Authors such as: Canut, Bahreman, have listed specific criteria for the removal of a mandibular incisor such as: permanent dentition, minimum growth potential, class I molar relationship, a harmonious soft tissue profile, minimal to moderate overbite, little or no crowding in the upper arch, a Bolton discrepancy.[2,4] Agood diagnosis is highly recommended with this kind of treatment.[5,6] On the other hand, the removal of a mandibular incisor has several advantages over premolar extractions. First, treatment time may be reduced especially if the crowding is limited only to the anterior segment.[5] Second, it offers a stable result in the anterior region because the expansion is not necessary and canine width is not altered.[3] Finally, since it requires little retraction in comparison with the therapy of premolars removal, the anteroposterior position of the lower incisors is not changed which maintains a harmonious profile.[4] This treatment also offers us a series of disadvantages: if there is a Bolton discrepancy, space closure will result in a greater overjet, in addition to altering the interproximal papillae, which can cause black triangles.[7]

CASE REPORT

During clinical evaluation, the patient reported as reason for consultation «I have crooked teeth». In the initial radiographic studies, the lateral head film showed normodivergency and a mild proclination of the upper and lower incisors *(Figure 1)*. In the panoramic radiograph no pathological data were

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noted; the patient had 28 permanent teeth, formation of the lower third molars and agenesis of the upper *(Figure 2)*.

Initial records

In the facial analysis of the photographs of the patient, the profile was assessed, and it was found to be adequate. The dental midline was diverted 0.5 mm to the right in relation to the facial; facial fifths and thirds were proportional. All these were meaningful data in decision-making for the treatment plan *(Figure 3)*, facial midline *(Figure 4)*, and aesthetic line of Ricketts, E line.

When performing the intraoral analysis the objectives posed to cover were observed: elimination of upper mild and lower moderate anterior crowding, to correct the lack of coincidence between the upper and lower dental midlines. The patient was in canine and molar class I, which would be maintained. Another aspect to highlight was the 6 mm overjet caused by the habit and the upper and lower triangular arch form intraoral front *(Figure 5)*, in the intraoral photographs, right, and left side *(Figures 6 and 7)*.

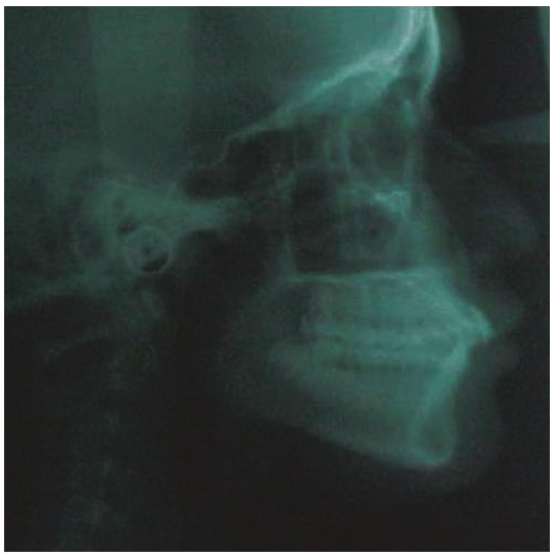

Figure 1. Initial lateral head film.

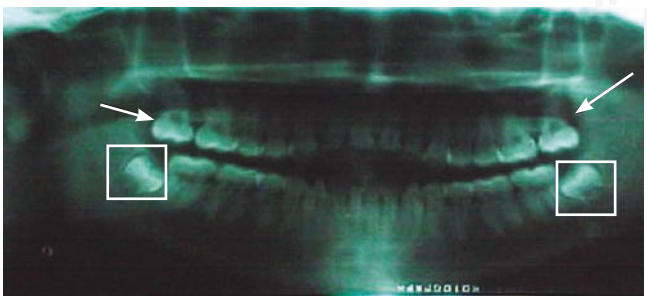

Figure 2. Initial panoramic radiograph.

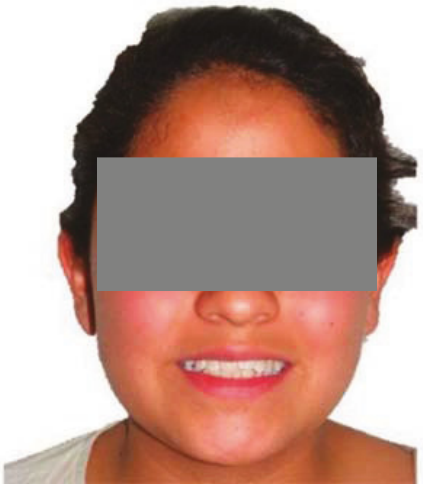

Figure 3. Facial midline.

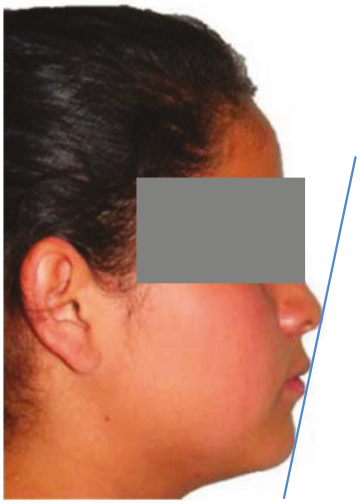

Figure 4. E line.

Treatment plan

To eradicate the habit of digital suction, a palatal grid was placed for two months. Afterwards, the appliance was withdrawn and Roth prescription brackets were placed giving instructions for the removal of the lower right lateral incisor.

Alignment and leveling was begun on both the upper and lower arches, with stripping sessions in the upper arch and closure of the extraction space in the lower arch. After the alignment and leveling *(Figure 8)*,