



ANTERIOR CROSSBITE. CASE REPORT

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ABSTRACT Dentomaxillary anomalies are the third most prevalent oral disease, after caries and periodontal disease, according to the World Health Organization, affect the aesthetics and function of the stomatognathic system and are progressive over time, which determines the importance of acting as early as possible in order to obtain optimal results with the therapies used. Interceptive treatment is focused on taking actions that eliminate the cause and correct the early manifestations of a malocclusion, with the aim of preventing its course and progression. A clinical case of a 9-year-11-month-old patient with a simple anterior inverted bite is described. An interceptive treatment was performed with the use of a removable upper appliance, achieving the unclogging of the teeth involved.

KEYWORDS : Interceptive orthodontics, removable orthodontic appliances, malocclusion, case report.

INTRODUCTION

According to the Modified Bonn Biogenetic Classification, the simple anterior crossbite, also called the simple prognic form, is a sagittal intermaxillary dentomaxillary anomaly. It corresponds to a local alteration in which one or two incisors, primary or permanent, deviate their eruptive path towards the palatine and occlude behind the lower incisors⁽¹⁾.

There are no alterations in the soft profile and in the functional examination of maximum retrusive, the patient easily reaches the position from edge to edge⁽²⁾.

It can be the result of a variety of factors, such as a deviation in the eruptive path of the dental germ: by the presence of a periapical process; supernumerary teeth or odontomas, or newly formed hard or fibrous gingival bone tissue caused by premature loss of primary incisors. A vestibule position of the lower incisors or palatal eruption of the upper incisors may also be the cause of these malocclusions^(3,4).

If these malocclusions are not treated, they can cause wear of the teeth involved, excessive proclination of the lower incisors, which would lead to a loss of alveolar support or gingival recessions, over compression of the orofacial structures causing adverse effects on the temporomandibular joints and the orofacial system. Furthermore, if they are not intercepted and the damage is not limited, they can progress to compromise the basal bone, that is, reach skeletal compromise^(5,6).

A clinical case of a simple anterior inverted bite is reported, describing the process from the clinical diagnosis, treatment plan and results obtained.

Case description

Patient 9 years and 11 months old, male, systemically healthy, attended at the Preventive and Interceptive Orthodontics Clinic of the Universidad Mayor.

On the extraoral examination, he presented a straight middle profile, an increased lower third and an incompetent lip closure.

Clinically, first phase mixed dentition was evidenced in right class I and left class III molar relationship; 5.0mm overbite, 2.5mm overjet on tooth 1.1 and -1.5mm on tooth 2.1. When analyzing the upper jaw in a transverse direction, a more marked dentoalveolar maxillary compression was observed in the anterior sector with spaced protrusion. Sagittally, the patient presented anterior crossbite between teeth 2.1 and 3.1 and lack of sagittal development of the maxilla in a diminished anterosuperior apical base.

Occlusal trauma of teeth 2.1 and 3.1 with positive thrill; overturned

palatal cusps of teeth 1.6 and 2.6 and group V gingival margins at different heights.

Tooth 1.3 was not palpated vestibularly and tooth 2.3 was palpated in the fundus. On examination of the retrusive maximum, the patient easily reached the edge to edge position.



FIGURE 2: Initial intraoral photos.

A panoramic radiograph was requested where a diminished apical bone base was observed in the upper jaw. Teeth 1.3 and 2.3 in intraosseous development in high position with almost 2/3 of root formation, tooth 1.3 eruptive trajectory inclined mesially. Teeth 1.4 and 2.4 in intraosseous evolution, in gyroversion, with a widened pericorony sac. Teeth 1.6 and 2.6 compatible with taurodontism.



FIGURE 3: Initial panoramic radiograph.

Treatment plan

In order to achieve a normal, morphologically stable, long-term, functional and aesthetically acceptable occlusion, an upper removable plate was made, with central screw and lateral height planes, "S" springs with free end mesially in teeth 1.1 and 2.1, with the aim of eliminating the occlusal trauma of the teeth, uncrossing teeth 2.1 and 3.1 and expanding the maxilla in a transverse direction. Individual arrow type retainers 0.7 mm Federhart (FH) were selected for the

interproximal area between primary and permanent molars and 0.6 mm FH for the interproximal area between primary teeth.

The treatment objectives were achieved after two months, for this, the activation of the spring of tooth 2.1 was performed on three occasions, every 15 days, achieving uncrossing the compromised incisors. In addition, the central screw was activated four times with a ¼ turn (0.25 mm) once a week for 4 weeks. The patient maintained the use of the removable appliance for 2 months as a containment, without activating any element.



FIGURE 4: Final intraoral photos

DISCUSSION

Early treatment by interceptive orthodontics in mixed dentition aims to optimize dentofacial growth and development, preventing the progress of malocclusion and therefore improving the functioning of the stomatognathic system⁽⁷⁾. Early diagnosis and adequate treatment are vitally important to prevent skeletal malocclusion developing.

Different techniques have been used to correct anterior inverted bites that include removable, cemented, functional and fixed appliances⁽⁵⁾. The most appropriate method to treat the anterior inverted bite will depend on the etiology of the Dentomaxillary Anomaly, the age, the number of teeth involved, the state of tooth eruption, the available space, the compliance and motivation of both the patient and their parents and affordability of treatment⁽⁸⁾.

The appliance used in the treatment of this case was a removable one and it turned out to be an effective, safe, easy and aesthetically acceptable alternative for the patient. The uncrossing of the teeth was achieved in a short time, this due to the fact that the malocclusion was dentoalveolar and it was investigated in a timely manner. In addition, among the factors that contributed to the successful results, the cooperation of the patient and the attorney-in-fact was essential.

Without a doubt, we must mention that among the disadvantages of the therapy, the fracture of one of the retainers stands out. However, the latter did not affect the fit, retention and stability of the apparatus. This appliance did not manage to resolve the overbite that the patient presented, so an orthodontic consultation was carried out. However, the uncrossing of the teeth that were in the anterior inverted bite, allowed to resolve the urgency that was to eliminate the occlusal trauma of the teeth involved; avoiding a possible gingival recession with thinning of the alveolar bone, mobility of the mandibular teeth and occlusal instability caused by unwanted anterior premature contact^(8,9).

CONCLUSIONS

- The prevention and early interception of Dentomaxillary Anomalies avoid perpetuating the malocclusion and therefore improve the functioning of the stomatognathic system.
- The removable upper appliance with protrusion springs is effective in correcting simple anterior inverted bite malocclusions.
- The selection of the appropriate device must be evaluated individually in each patient through a correct analysis and diagnosis.

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