

INTRODUCTION

Anterior crossbite is an obstacle in the child's facial growth. Early diagnosis ensures that the development of the maxilla and mandible is harmonious, and thus, ensures intermaxillary relationships within normality, preventing facial alterations. In this type of malocclusion, clinical examination shows the upper incisors occluding lingually from the lower incisors.

This malocclusion occurs in both primary and mixed dentition, being the result of an unbalance in the dental, functional and skeletal components of the child's stomatognathic system and it is observed more frequently in Asian countries in 50% of the population.

CASE PRESENTATION

A 9-year-old female patient showed up at UABC orthodontic clinic, with early mixed dentition, lower dental midline deviated to the left, class I molar relationship, cross-bite of tooth #21 and edge-to-edge anterior bite. She also presented a straight profile, facial asymmetry, and deviation of the lower facial third to the left.

Centric jaw relation presented a mandibular displacement to the left and a molar class II.

Tomographic exams showed dental germs in formation of upper and lower second molars, without alterations in the condylar position.

The cephalometric studies revealed an skeletal class I, brachyfacial biotype, and proinclination of the lower incisors.

The treatment plan consisted of the placement of a cemented bite-block, with acrylic splints for posterior teeth in centric relation (figure 1 and 2), and monthly appointments.

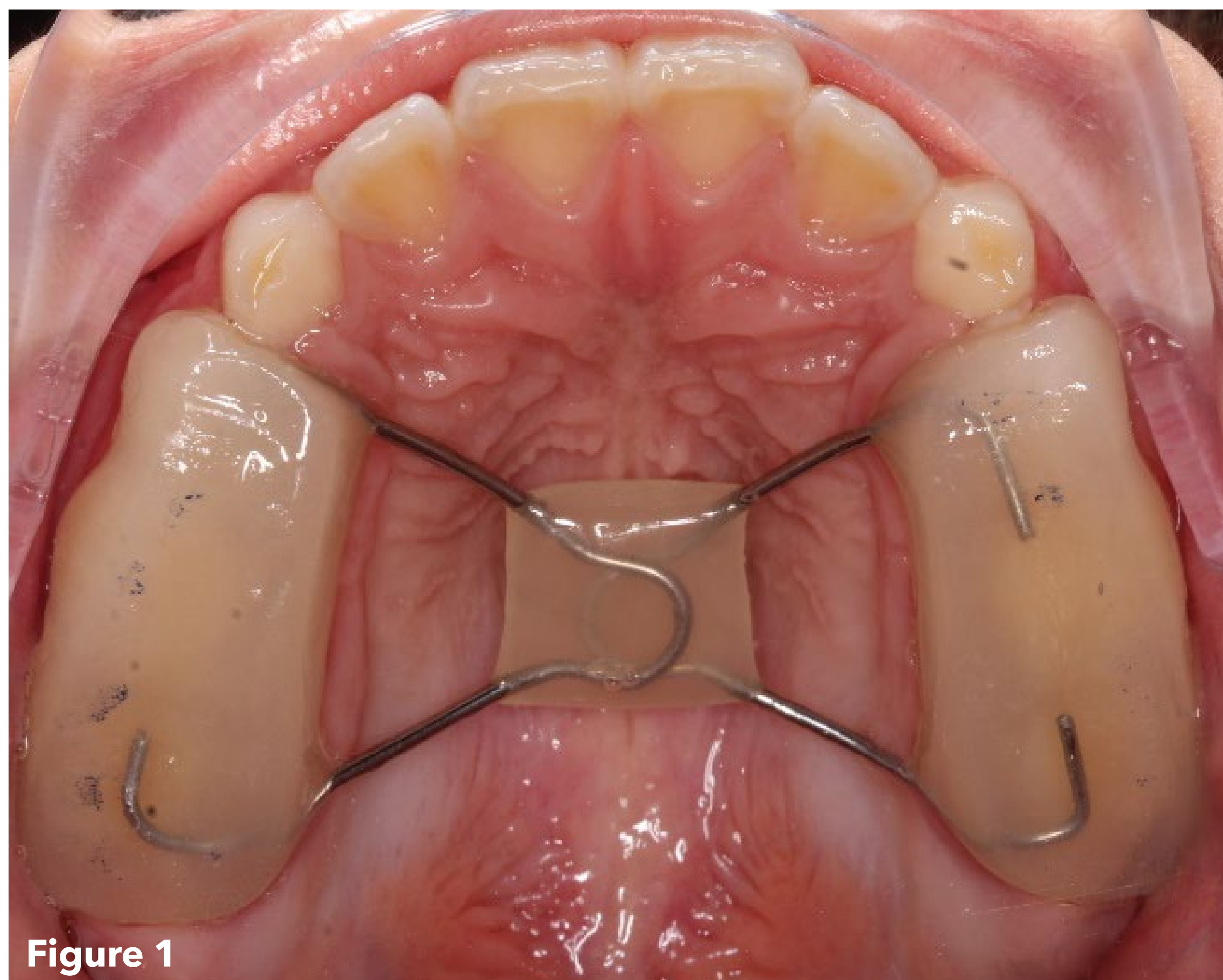


Figure 1



Figure 2

RESULTS

After 1 year of treatment with the use of a centric bite-block, dental and facial changes were achieved, including: the correction of tooth #21, alignment of the upper and lower dental midline, an overbite of 2mm and an overjet of 2mm (figure 3 and 4), correction of facial asymmetry (figure 5), and better position of the upper lip (figure 6).



Figure 3



Figure 4



Figure 5



Figure 6

CONCLUSION

The use of the centric bite-block is an effective alternative in the early treatment of anterior dental crossbites, having the advantage to correct the affected teeth, as well, the overbite and overjet.

Similar to occlusal splints, it favors the functional movements of the mandible in centric relation, making possible the correction of the deviation of the lower dental midline.

REFERENCES

1. Akkaya S, Haydar S, Bilir E. Effects of spring-loaded posterior bite-block appliance on masticatory muscles. *Am J Orthod Dentofacial Orthop.* 2000; 118 (2): 179-183.
2. Aliaga-Del Castillo A, Janson G, Vilanova L, et al. Three-dimensional dentoalveolar changes in open bite treatment in mixed dentition, spurs/posterior build-ups versus spurs alone: 1-year follow-up randomized clinical trial. *Sci Rep.* 2022; 12 (1): 12378.
3. Baccetti T, Franchi L, Ratner TL, McNamara JA. Treatment timing for Twin-block therapy. *Am J Orthod Dentofacial Orthop.* 2000; 118 (2): 159-170.
4. Hakami Z. Molar intrusion techniques in orthodontics: a review. *J Int Oral Health.* 2016; 8 (2): 302-306.
5. Isaacson JR, Isaacson RJ, Speidel TM, Worms FW. Extreme variation in vertical facial growth and associated variation in skeletal and dental relations. *Angle Orthod.* 1971; 41 (3): 219-229.
6. Iscan HN, Sarisoy L. Comparison of the effects of passive posterior bite-blocks with different construction bites on the craniofacial and dentoalveolar structures. *Am J Orthod Dentofacial Orthop.* 1997; 112 (2): 171-178.
7. Melsen, McNamara JA, Hoenie DC. The effect of bite-blocks with and without repelling magnets studied histomorphometrically in the rhesus monkey (*Macaca mulatta*). *Am J Orthod Dentofacial Orthop.* 1995; 108 (5): 500-509.
8. Owtad P, Park JH, Shen G, Potres Z, Darendeliler MA. The biology of TMJ growth modification: a review. *J Dent Res.* 2013; 92: 315-321.
9. Read EC. The early treatment of malocclusion. *Am J Orthod Dentofacial Orthop.* 1922; 1 (1): 175-181.
10. Urbaniak J. Bite-Blocks and Maturation. *Am J Orthod Dentofacial Orthop.* 1988; 97 (1): 91-100.