

Crossbite correction made easier – A case report

Konwar SK¹, Saxena A², Singla A³, Chandna AK⁴

ABSTRACT

^{1,2}PG Student, ³Reader, ⁴Professor and Head, Dept. of Orthodontics, I.T.S. Dental College Hospital and Research Centre, Greater Noida.

Received: 05-02-2015
Accepted: 26-03-2015

Anterior crossbite is an abnormal labiolingual relation in which maxillary anterior teeth are locked behind the mandibular anterior teeth. Many methods are used to raise the bite to correct anterior crossbite. Here, a new method is described which will retain the bite blocks in place for easier correction of anterior crossbite.

Keywords: Anterior crossbite, acrylic bite blocks.

INTRODUCTION

Anterior crossbite is an abnormal labiolingual relationship between one or more maxillary and mandibular incisor teeth.¹ Cross bite correction is highly recommended as this kind of malocclusion does not diminish with age. Cross bites that are not corrected may lead to abnormal wear of lower anteriors and cuspal interference, mandibular shift resulting in mandibular asymmetry and temporomandibular joint dysfunction syndrome.² There are several methods for treating this type of malocclusion. Traditionally acrylic bite blocks are fabricated which are cemented to the posterior occlusal plane with glass ionomer cement (GIC) but it is not stable as it becomes loose or breaks for which the treatment time is delayed.^{3,4} GIC bite blocks are also preferred by some clinicians but it wears off easily and also it causes supra eruption and intrusion of the molars. A clinical innovation was published by Ahmad N et al in JIOS (2015) regarding the use of posterior bite blocks with steel tubes underneath for retention to the teeth with the help of steel ligatures.⁵ This innovation was used for the fabrication of bite blocks in a patient with cross bite and was found to be quite effective and comfortable for the patient.

CASE REPORT

This is a case report of a 15 year old female patient who reported to the department of orthodontics with the chief complaint of irregularly placed upper front teeth. Patient had a skeletal class I relationship with average mandibular growth pattern. Intraorally, crossbite was present with respect to upper left lateral incisor. Molars and canines were present in class I relationship bilaterally.(Fig. 1-4)

Treatment progress

Fixed orthodontic treatment was started by placement of pre-adjusted edgewise appliance (MBT 0.022 inch slot). Arch alignment with 0.014 inch NiTi wires was carried out and the space for upper left lateral incisor was maintained with passive open coil spring in 0.018 inch AJ wilcock orthodontic australian wire. After, the arches were aligned to 0.019 x 0.025 inch SS wire, GIC bite blocks were placed on the lower posterior teeth to open the bite. However, there was repeated wearing of GIC bite blocks. So, they were replaced with acrylic bite blocks cemented with glass ionomer cement (GIC) on the posterior teeth. However, repeated decementation and loosening of the bite blocks made treatment progression difficult. Patient was reluctant to wear removable posterior bite plane as she found it uncomfortable. Thus, a different technique was used to retain the bite blocks on the posterior teeth. Acrylic bite blocks were fabricated by incorporating steel tubes (14-gauge needle) beneath the acrylic bite blocks (Fig 2,3). Braided steel ligatures were inserted through the tubes and secured to the interdental contact area between the second premolar and first molar and one between the both the first and second molars. Thus, mechanical retention is obtained by tying the bite blocks to the teeth without the use of GIC (Fig 5). After, 1 month the anterior cross bite was corrected by piggy backed 0.014 inch NiTi that was engaged to the upper left lateral incisor over a AJ wilcock orthodontic australian wire 0.018 inch wire (Fig 6) and after the crossbite was corrected, the lower arch was bonded (Fig 7). This new method of retention of the acrylic bite blocks to the occlusal surface is quite simple to fabricate and comfortable for the patient as compared to traditional bite blocks.

Address for Correspondence:

Dr. Siddhartha Kaustav Konwar, PG Student, Department of Orthodontics, I.T.S. Dental College Hospital and Research Centre, Greater Noida
Email: siddharthkonwar12@gmail.com



Fig 1: Pre-treatment photographs (Extra oral)



Fig 2: Steel tubes cut to the required length



Fig 3: Bite block with incorporated steel tubes for braided steel ligature wires



Fig 4: Pre-treatment photograph (Intra oral)



Fig 5: Bite blocks attached to the posterior teeth.



Fig 6: Space maintained with open coil spring and piggy back wire



Fig 7: Bonding of lower arch after cross bite correction and removal of bite blocks

DISCUSSION

Different techniques have been used to correct anterior dental crossbite. The use of removable acrylic appliances with posterior bite opening platforms and anterior finger springs for labial tipping of maxillary teeth also requires patient cooperation.⁵ The use of GIC bite blocks is also advocated in some cases but it wears off easily and also causes supraeruption. Coloured composite blocks are also preferred by some clinicians but at the end of treatment it becomes difficult to remove the blocks. Guray bite raiser⁶, a fixed auxiliary that is used in opening bites, can also be used however it has a drawback that it can cause supraeruption of molars. Because of the disadvantages of the methods mentioned above, the case reported here was treated using a new method to retain the bite blocks. This method represents a quick, easy and esthetically acceptable alternative for the correction of anterior dental crossbite. The procedure is low-cost, involves no discomfort, and it can be completed in one single visit to the clinic. Treatment time is shortened, since retention of the bite blocks is achieved and the anterior crossbite can be corrected easily.

CONCLUSION

This new technique is found to be very reliable and effective. Loosening and breakage of bite block is infrequent, so, treatment duration is altered minimally. As it covers the occlusal surfaces of all the posterior teeth it avoids the supraeruption.

GIC is not used for its retention, so, it can be easily removed. Moreover, the patient compliance with the bite block is excellent.

REFERENCES:

1. Bayrak S, Sen Tunc E. Treatment of anterior dental crossbite using bonded resin-composite slopes. *Eur J Dent* 2008;2:303-306.
2. Agarwal Anirudh, Mathur Rinku. Segmental orthodontics for the crossbite correction. *Int J Clin Pediatr Dent* 2011;4(1):43-47
3. Vadiakas G, Viaziz AD. Anterior crossbite correction in the early deciduous dentition. *Am J Orthod Dentofac Orthop* 1992;102:160-162.
4. Kiyak HA. Patient's and parent's expectations from early treatment. *Am J Orthod Dentofac Orthop* 2006;129:S50-54
5. Ahmad N, Ansari A, Gera A, Kaur G. A new method to retain the posterior bite blocks for anterior crossbite correction. *J Ind Orthod Soc* 2014;48(2):139-140
6. Tse CS. Correction of single-tooth anterior crossbite. *J Clin Orthod* 1997;31:188.
7. Doruk Cenk, Bicakci Altug A., Babacan Hasan. Bite raiser treatment with class II div 2 malocclusion. *Orthod Cyber J*. 2001

How to cite this Article: Konwar SK, Saxena A, Singla A, Chandna AK. Crossbite correction made easier – A case report. *J Dent Specialities*, 2015;3(1):120-122

Source of Support: NIL

Conflict of Interest: None Declared