

RAPID BITE RAISER FOR ANTERIOR CROSSBITE' (RBRAC) APPLIANCE FOR RAPID CORRECTION OF ANTERIOR CROSSBITE - A NEW APPLIANCE DESIGN

¹ Preeti Bhardwaj
² Lakshmayya Naidu D
³ Anupam Agarwal

¹ Assistant Professor
² Professor
³ post Graduate student

^{1,2,3} Department of Orthodontics and Dentofacial Orthopaedics, Kothiwal Dental College and Research Centre, Mora Mustaqueem, Kanth Road, Moradabad,(U.P.) India.

ABSTRACT

Correction of anterior cross bite by jumping over the bite is challenging to an orthodontist. This new technique describes a rapid bite raiser for intrusion of anterior teeth in crossbite

KEY WORDS: : rapid bite raiser, cross bite anterior teeth

INTRODUCTION:

Anterior crossbite is defined as a malocclusion resulting from the lingual position of the maxillary anterior teeth in relationship with the mandibular anterior teeth.¹ Correction of anterior single-tooth crossbite, although it involves a limited portion of the dental arch, can be difficult. The tooth in cross-bite must be intruded and moved labially.² Once the correction is made, the occlusion will prevent a reversion of the crossbite.³ Many modalities aiding in the correction of anterior cross-bite have been implicated in literature, namely, removable posterior bite plates, fixed anterior bite ramps, lingual bonded buttons, Occlusal Build-Ups, Essix-Based Appliances, Bonded Compomer Biteplanes and Güray Bite Raisers⁴⁻⁷. This article proposes a new appliance for rapid correction of anterior cross-bite, efficiently and with minimal laboratory work.

Case Report

A female patient aged 16yrs 5months reported with chief complaint of crowded upper anterior teeth. On examination it was observed that the molars were in class II relationship. The upper right lateral incisor was completely palatally blocked out and in crossbite (**Fig.1**). The upper right central incisor was also in cross bite and was mesio-palatally rotated. A moderate amount of anterior crowding was present in the lower arch. Midline in the upper arch was shifted to right by 2mm. The enamel was mottled and presented intrinsic staining which was planned to be dealt with later.

Treatment plan: After analysing the case thoroughly, it was planned for the extractions of upper 1st premolars and lower 2nd premolars to meet out the impending space requirement. The treatment goal was to correct the crossbite and rotation of upper right central incisor,

palatally blocked out lateral incisor which was in crossbite, correction of midline, and also to correct the class II molar relationship.

Treatment Progress: Upper 1st premolars and lower 2nd premolars extractions were done and .022" x .028" slot Roth prescription PEA appliance was used. A major concern was to raise the bite anteriorly to allow unrestricted movement of the lateral incisor 'through the occlusion'. A removable posterior acrylic bite plate was fabricated for the patient but the patient did not comply to it and there was no improvement seen for 2 months. Later the authors developed a new appliance and named it '**Rapid bite raiser for anterior crossbite**' (**RBRAC**) appliance which consisted of the following components a) A wire frame work; b) An acrylic bite plane; c) Lingual sheath on molar bands. (**Fig.2**)

Construction of the appliance: The wire framework was fabricated from a 19 gauge hard round stainless steel wire that had a 'lingual horizontal limb' that was inserted into the lingual sheath on 1st molar band. Near the mesial surface of mandibular 1st permanent molar the wire was bent to form a 'box' in the vertical plane. The free arm of the 'box' was extended onto the occlusal surface of the 1st molar to form the 'occlusal horizontal limb'. The wire framework was then embedded into an acrylic block. The wire framework of RBRAC was inserted into lingual sheath and acrylic bite block was cemented onto the occlusal surface of the teeth (**Fig.3**). The 'Rapid bite raiser for anterior crossbite' (RBRAC) appliance aided by stable bite raising and led to rapid correction of anterior crossbite within two months. It also minimized the dependence on patient compliance for wearing of the removable bite plate (**Fig.4**).

Advantages of " (RBRAC) "Appliance

1. Patient compliance was not needed.
2. Compatible alongwith fixed mechanotherapy.

3. Removal of the appliance after correction of crossbite is easy, even without removing the band
4. Rapid correction of crossbite within a month.



Fig. 1. Anterior cross bite of 21 and 22

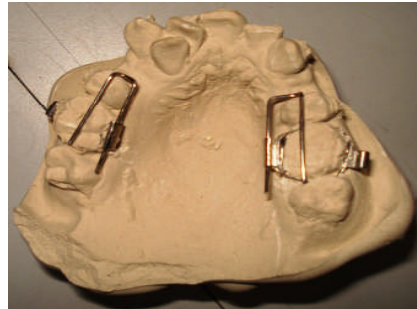


Fig.2. Component parts of the appliance



Fig.3. Treatment is progress

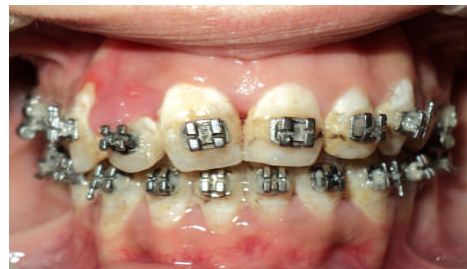


Fig.4. Correction of anterior crossbite

Finishing: The final finishing and individual tooth detailing is being carried on thereafter.

CONCLUSION:

The 'Rapid bite raiser for anterior crossbite' (RBRAC) appliance proved to be fast and efficient for correction of anterior crossbite. The strength of the appliance seems to be the minimization of dependence on patient compliance.

References

1. Vadiakas, Viazis. Anterior crossbite correction in the early deciduous dentition. Am Journal of Orthodontics and Dentofac Orthop 1992; 102:160-162. doi:10.1016/0889-5406(92)70029-A
2. Nakamura S et al. Correction of Single-Tooth Crossbite. Journal Of Clinical Orthodontics 1995;29:257-262. PMID:7673436
3. Denamur T.J. Technique Clinic: Anterior Crossbite Correction. Journal Of Clinical Orthodontics 1984;18:575.
4. Tzatzakis V, Gidarakou I. Correction of Anterior Crossbite Using Occlusal Build-Ups. Journal Of Clinical Orthodontics 2007;41:393. PMID:17652876
5. Giacotti A et al. Early Treatment of Anterior Crossbite with an Essix-Based Appliance. Journal Of

Clinical Orthodontics 2004; 38:161. PMID:15075489

6. Croll T.P,Helpin L. Simplified Anterior Crossbite Correction Using a Bonded Compomer Biteplane. Journal Of Clinical Orthodontics 2002; 36:356. PMID:12101547
7. Gokalp H, Uslu O. Treatment of Class III Anterior Crossbite Using Güray Bite Raisers. Journal Of Clinical Orthodontics 2008; 42:297. PMID:18771124

Corresponding Author

Dr. Preeti Bhardwaj. M.D.S.
 Assistant Professor.
 Department of Orthodontics and Dentofacial Orthopaedics.
 Kothiwal Dental College and Research Centre.
 Mora Mustaqueem, Kanth Road,
 Moradabad,(U.P.) India.
 Ph no.-09411405205.
 E mail id – prety.dr@gmail.com