Minor tooth correction with the “Essix System”– A Case Report

Abstract
Adult orthodontics is one of the most challenging aspects of orthodontic treatment modality due to the high expectations and esthetic consideration. In the present scenario, the adult patients demand for aesthetic alternatives other than casual orthodontic treatment is increasing. This case report presents the management of an adult patient with vacuum formed clear aligners.

Key Words: Essix, Aligners; Positioners; Crowding

Introduction
The increase in the awareness and demand of adult patients seeking orthodontic treatment increased the demand for aesthetic alternatives to conventional fixed stainless-steel appliances. Lingual fixed appliances, ceramic brackets and removable appliances are the aesthetic alternatives offered by the profession. (1) There are a number of removal appliances which can be used for treating minor malocclusions, but their range of action is not very wide. (2) The two contemporary system for moving teeth with plastic appliances are the invisalign system and Essix systems. (3, 4) The Essix system is based on an in course adjustment of what is essentially a single appliance to achieve treatment goals. (5) This paper report the management of an adult patient using the concept of the Essix system.

Case Report
A 20 year old female patient reported to the department of orthodontics and Dentofacial Orthopedics, Coorg Institute of Dental Science complaining of crowding of her maxillary incisors (Figure 1). Her extraoral examination showed proper horizontal and vertical proportions with competent lips. The intraoral examination showed class 1 molar and canine relationship on both sides. The overjet equals 3mm and the overbite is 3mm. The cephalometric analysis shows the presence of a mildly prognatic maxilla and a normo-divergent pattern with retroclined maxillary incisors and upright mandibular incisors. The panoramic showed normal anatomic structures, missing maxillary third molars missing lower central incisor. Two treatment options were considered for the patient: a) Full maxillary and mandibular fixed appliances for the purpose of aligning and leveling and up righting the mandibular right second molar, b) Correct the crowding on the maxillary incisors using Essix system of plastic aligners.

It was decided to treat the patient with the Essix system of plastic aligners. Impressions of the patient were made with alginate and casts were poured. Once the cast was retrieved, the areas to be loaded and released were marked. 2 mm thick plaster was then added on the labial side and scraped on the palatal side. Plastic aligner was then fabricated using the vacuum pressure technique. Once the plastic aligner was ready it was delivered to the patient and checked for fit (Figure 2).

The patient was recalled after a month and mild changes were seen in the form of mild relief in crowding. To be cost effective and save time, it was now decided to add composite directly onto the palatal side intraorally and the same appliance was continued for another two months. Second recall was done after two months and a good amount of relief in crowding was observed. At this visit we decided to give new plastic aligners as the old one had worn out. It took us a period of around four and half months to achieve the desired results (Figure 3).

Discussion
The option of treatment presented through this case report offered many advantages for the patient than the fixed bimaxillary appliances. First the treatment was aesthetic and less cumbersome, second the treatment time was less and third the cost of treatment was much more less and in terms of stability the post retention records showed a great stability even after nine months following treatment. The preferred way to align teeth is with fixed appliances. (1-5) When for any reason this is not possible, modified Essix appliances offer several advantages over other removable appliances: a) because the appliance is practically invisible, patient acceptance is usually enthusiastic, b) a variety of biomechanical forces can be achieved, c) tooth movement is rapid and precise, d) fabrication costs a fraction of that of other
appliances, d) chair side modifications can be made quickly and precisely.(1-5) Thermo sealing, a unique modification of Essix retention technology, is a reasonable alternative to conventional appliance fabrication that can serve both the clinician and the patient well.(3)  

**Conclusion**  
This case report offers a simple, aesthetic and inexpensive alternative to fixed appliances for the treatment of minor malocclusions. Even though fixed orthodontic therapy is the method of choice for correcting malocclusions, fixed appliances are often a frustrating option to adult patients complaining of minor crowding. A clear alternative for the adult patient is treatment with the essix system for the treatment of minor malocclusions.  

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