

# CASE REPORT

## Early Treatment of Anterior Crossbite with an Essix-Based Appliance

ALDO GIANCOTTI, DDS, MS  
GAIA ROMANINI, DDS  
RAFFAELLA DOCIMO, MD, DDS

**T**he Essix appliance\* is an esthetic removable device thermofomed from plastic copolyester material and retained without clasps by the natural undercuts of the contact points. Two sheets of plastic material are thermally bonded with a rigid composite between them, reducing the thickness of the sheets from .030" to .015". This thermofoming process increases the anterior flexibility of the appliance while maintaining posterior stability, so that the appliance is both light and strong and does not interfere with speech.

The Essix appliance was developed by Sheridan for long-

term retention<sup>1,2</sup> and as an alternative to spring retainers for minor tooth movements. Other applications of the appliance include as a temporary bridge, a pontic holder for a single missing anterior tooth,<sup>3</sup> a habit-correction appliance, a molar up-righting device, a space maintainer, a palatal expansion retainer, and a biteplane.<sup>4</sup> Modified Essix retainers have been used for anchorage reinforcement in the correction of mandibular crowding,<sup>5,6</sup> anterior crossbite, posterior crossbite, ectopic canines,<sup>7</sup> and Class II malocclusion,<sup>8</sup> and for attachment of elastic traction.<sup>9</sup>

This article describes early treatment with an Essix-based appliance to correct a single-tooth crossbite.

### Case Report

An 8-year-old male in the mixed dentition presented with a Class I malocclusion, a crowded mandibular arch, and the maxillary right central incisor in crossbite (Fig. 1).

A full-arch Essix-based appliance was constructed on the setup cast, with the maxillary right central incisor advanced .3mm and slightly rotated to the distal (Fig. 2). To improve mechanical retention, acrylic buttons were bonded to the buccal surfaces of the maxillary deciduous canines and the first permanent molars (Figs. 2D,E, 3). No finger springs were attached. The patient was instructed to wear the appliance full-time, except for eating and cleaning.

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Dr. Giancotti is an Assistant Professor and Dr. Romanini is a post-graduate resident, Department of Orthodontics, and Dr. Docimo is Professor and Chief, Department of Pediatric Dentistry, University of Rome "Tor Vergata", Fatebenefratelli Hospital, Isola Tiberina, Via Ponte Quattro Capi 38, 00183 Rome, Italy. E-mail Dr. Giancotti at [giancotti@uniroma2.it](mailto:giancotti@uniroma2.it).



Dr. Giancotti



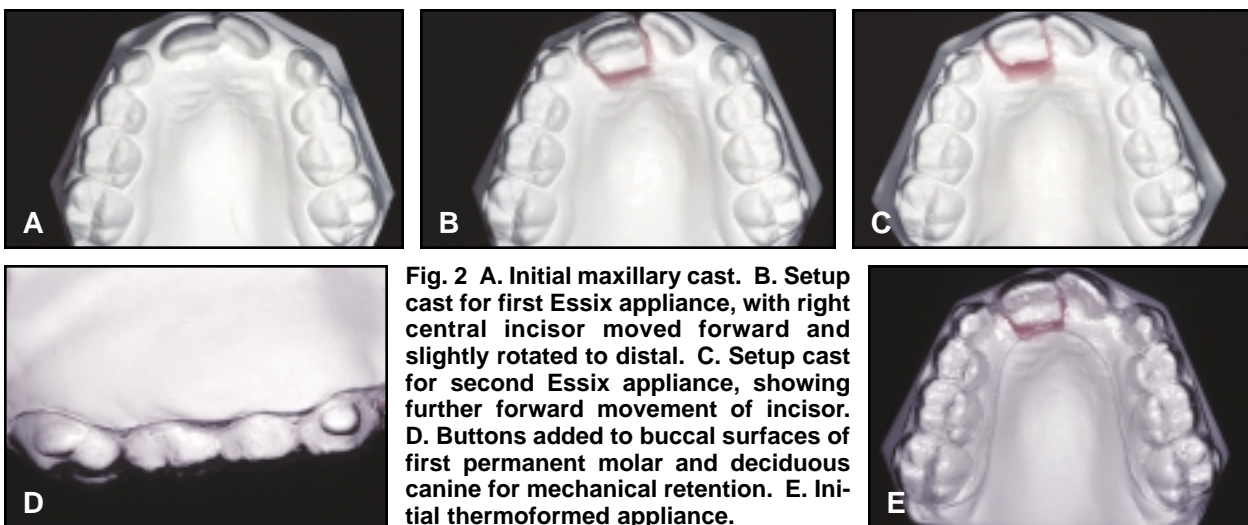
Dr. Romanini



Dr. Docimo



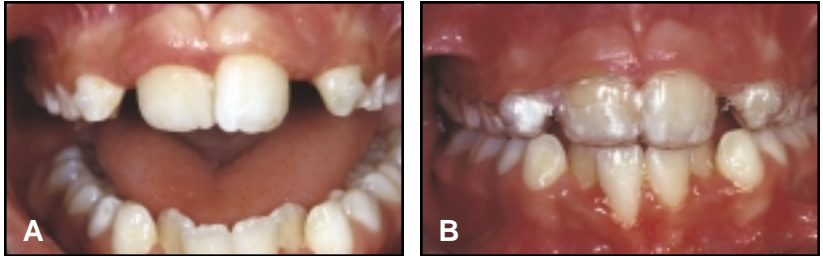
**Fig. 1** 8-year-old male patient with maxillary right central incisor in crossbite before treatment.



**Fig. 2** A. Initial maxillary cast. B. Setup cast for first Essix appliance, with right central incisor moved forward and slightly rotated to distal. C. Setup cast for second Essix appliance, showing further forward movement of incisor. D. Buttons added to buccal surfaces of first permanent molar and deciduous canine for mechanical retention. E. Initial thermoformed appliance.

After eight weeks of treatment, a second Essix appliance, constructed with an additional advancement of the incisor, was delivered (Fig. 4). The patient reported no problems wearing either appliance.

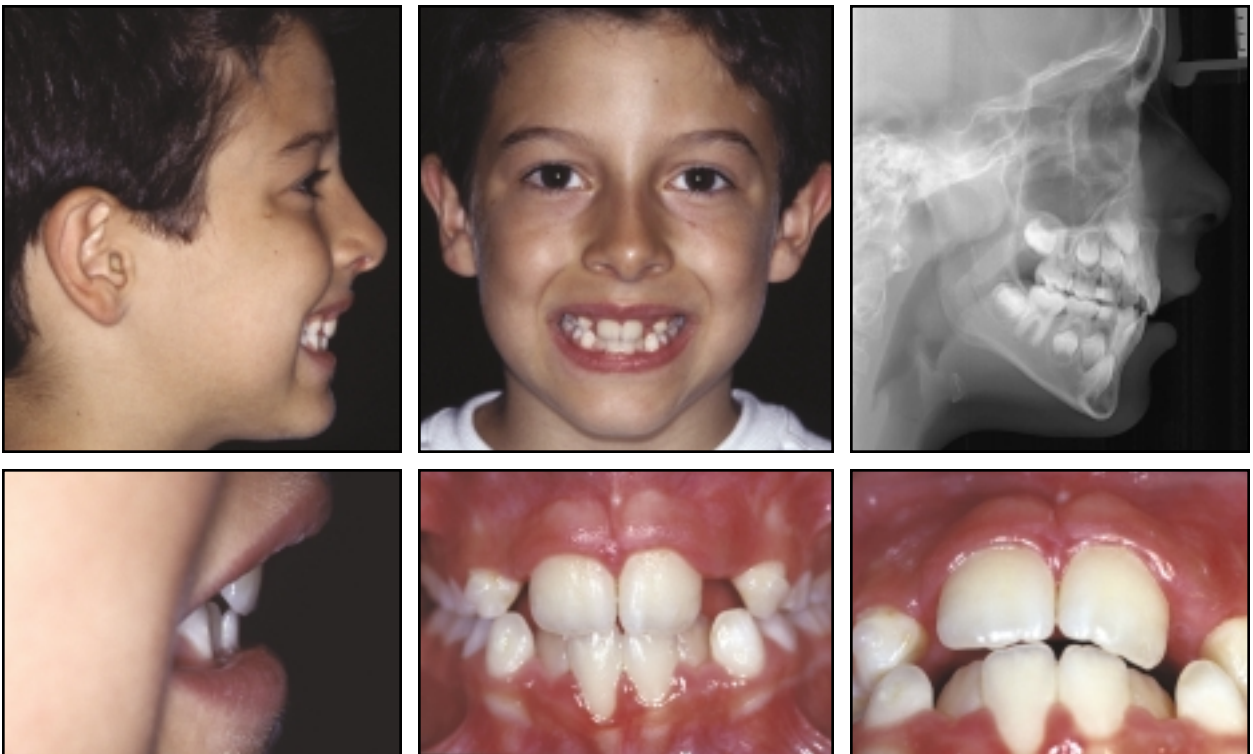
The crossbite was completely corrected in 15 weeks (Fig. 5). The patient was in-



**Fig. 3 A.** Acrylic buttons bonded to maxillary deciduous canines and first permanent molars. **B.** Placement of first Essix appliance.



**Fig. 4** Patient after eight weeks of treatment, before delivery of second Essix appliance.



**Fig. 5** Crossbite correction after 15 weeks of treatment.



Fig. 6 Patient eight months after treatment.

structed to wear the appliance full-time as a retainer for four weeks, then at night only. No further treatment was planned until the exfoliation of the deciduous teeth (Fig. 6).

## Conclusion

Essix appliances are an esthetic and comfortable alternative to traditional removable orthodontic devices. Our report shows that an Essix-based appliance can be used to correct a single-tooth crossbite in a short period of treatment.

## REFERENCES

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