Elastic Traction with Essix-Based Anchorage

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Sheridan and colleagues have developed the Essix* appliance as a passive retainer and as a device for active minor tooth movement.[1,2] Previously, we published clinical cases showing the use of Essix-based appliances for correction of anterior crossbite, bilateral posterior crossbite, and ectopic canines.[3] In this article, we will describe elastic traction with Essix-based anchorage.

Two key steps are involved:

1. Improving the retention of the Essix appliance so that intra- or interarch elastics can be attached without dislodging it.
2. Adapting the appliance for elastic attachment.

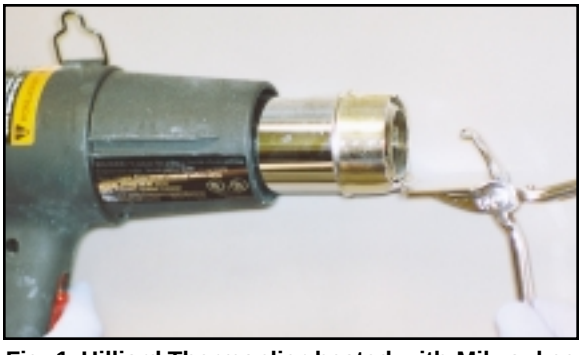

Fig. 1 Hilliard Thermoplier heated with Milwaukee Heat Gun.

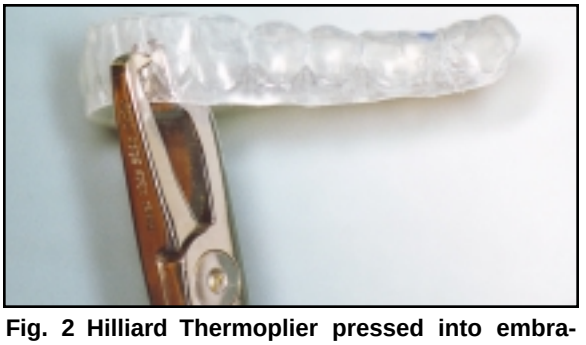

Fig. 2 Hilliard Thermoplier pressed into embrasure areas of Essix appliance.

Undercuts for Improved Retention

Adding undercuts in the Essix embrasure areas makes the appliance more tenacious. We use the Hilliard Undercut Enhancing Thermoplier** for this purpose. Alternatively, Sheridan prefers to create the undercuts in the dental cast before vacuum-forming to avoid stretching and weakening the Essix material with the plier.[4]

If the thermoplier is used, the Milwaukee Heat Gun*** is a quick and inexpensive device (about $30) that can be used to heat it (Fig. 1). The heat gun is directed at the beaked end of the Hilliard plier for 12-15 seconds, and the plier is then immediately pressed into the interproximal areas of the Essix appliance as needed for added retention (Fig. 2).

Fig. 3 "Rinchuse Slit" cut into Essix appliance with crown and bridge scissors.

Fig. 4 Class III elastics between maxillary and mandibular Essix appliances.

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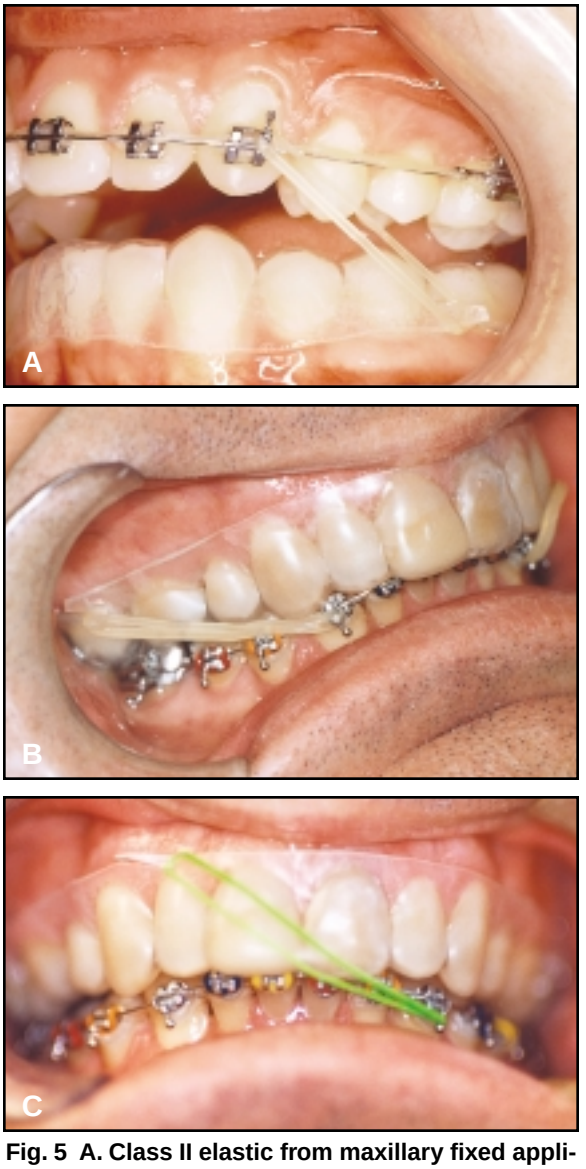

Fig. 5 A. Class II elastic from maxillary fixed appliance to mandibular Essix appliance. B. Class III elastic from maxillary Essix appliance to mandibular fixed appliance. Space from mandibular air-rotor stripping can be consolidated with Class III elastics to mandibular canines. C. Anterior "swing elastic" from maxillary Essix appliance to mandibular fixed appliance.

Attaching Elastics

We have tried various means for attachment of elastics, including the Hilliard Elastic Hook-Forming Thermoplier† and ball hooks vacuum-formed into the Essix material. The best method we have found, however, is one we call the "Rinchuse Slit". We use a scissor to cut a slit into the type C+ Essix appliance,‡ with the location and angle determined by the direction of the elastics (Fig. 3). The older type A material tends to tear when cut.

Any type of elastic traction can then be used—from maxillary to mandibular Essix appliances (Fig. 4), from an Essix appliance to fixed orthodontic appliances (Fig. 5), from an Essix

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**Part No. 82510, Raintree Essix, Inc., 1071 S. Jeff Davis Parkway, New Orleans, LA 70125; Part No. ODG326, GAC International, Inc. 185 Oval Drive, Islandia, NY 11749.

***Model 1220, Wagner Spray Tech. Corp., 1770 Fernbrook Lane, Minneapolis, MN 55447.

†Part No. 82550, Raintree Essix, Inc., 1071 S. Jeff Davis Parkway, New Orleans, LA 70125.

‡Essix C+ vacuum sheets, Part No. 1C500, Raintree Essix, Inc., 1071 S. Jeff Davis Parkway, New Orleans, LA 70125.

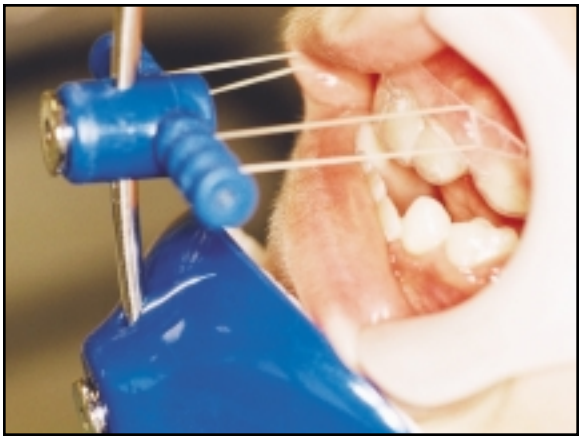

Fig. 6 Class I elastic from maxillary Essix appliance to face mask.

appliance to a face mask (Fig. 6), and others as desired by the clinician.

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4. Sheridan, J.J.: Personal communication.