

TIPS FROM OUR READERS

Midline diastema closure using a vacuum-formed retainer



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A midline diastema, especially in the maxillary arch, commonly compromises anterior esthetics. Etiologic factors include the location of the insertion of the labial frenum, supernumerary teeth, missing adjacent teeth, peg laterals, anterior tongue posture, excessive arch width, and relapse after orthodontics.^{1,2}

A midline diastema of up to 2 mm can be completely closed or reduced in size using a vacuum-formed retainer in combination with elastics. A larger diastema should be evaluated by an orthodontist for a more comprehensive treatment approach. This article presents a limited treatment where minor movement was required for diastema closure. The patient had a healthy periodontal condition with no caries. The procedure is straightforward and can be done by a general dentist. Restorative

treatment may be needed to correct the dimensions of the anterior teeth.

PROCEDURE

1. Make an impression or perform digital scanning of the maxillary arch. Make a cast and fabricate a vacuum-formed retainer (Essix ACE Plastic .030", .75 mm; Dentsply Sirona).
2. Build 2 acrylic resin buttons (Orthocryl Clear Acrylic Resin Powder; Dentaurum) on the distal third of lateral incisors without removing the retainer from the cast.
3. Cut the appliance at the midline using a disk. Remove the amount of space requiring closure from

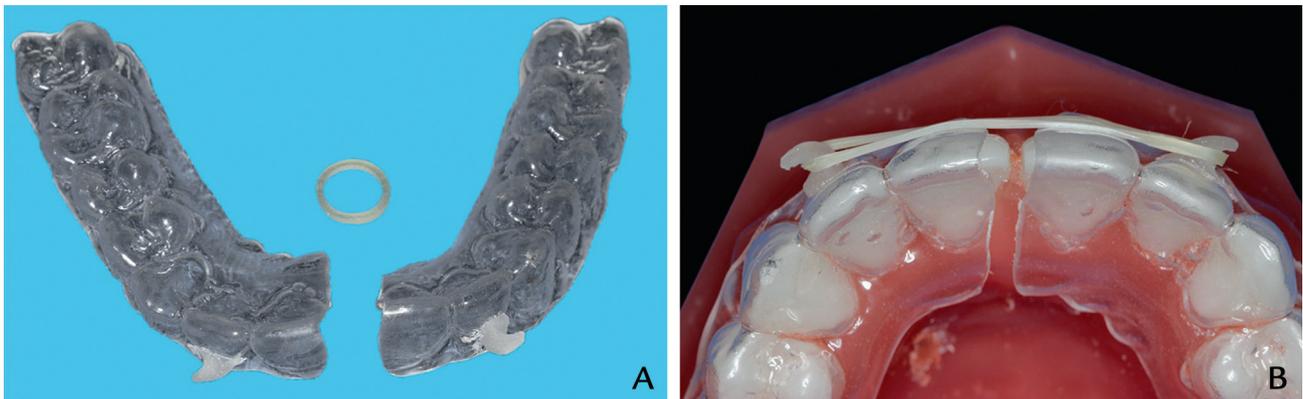


Figure 1. A, Vacuum-formed retainer sectioned at midline, with 2 acrylic resin buttons. B, Space between both sections of appliance showing amount of space requiring closure. Acrylic resin buttons and orthodontic elastic in place.

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Figure 2. Frontal view of 2-mm midline diastema using vacuum-formed retainer activated with elastics from maxillary right lateral incisor to maxillary left lateral incisor.

the mesial aspects. Round the borders to avoid tissue irritation. (Fig. 1).

4. Evaluate both halves of the appliance and confirm patient comfort.
5. Use 3/16 inch, 4-ounce elastics (orthodontic elastics; GAC), full time until the space is closed. (Fig. 2).
6. Depending on the tooth morphology, modify the interproximal enamel to avoid a black triangle.
7. Schedule weekly visits for the patient until the space is closed (2-4 weeks). The amount of closure can be measured with a periodontal probe at each visit.
8. Once the space has been closed, insert a fixed lingual retainer to prevent relapse. (Fig. 3).

Using a vacuum-formed retainer is an effective method of closing or reducing a maxillary midline diastema, including in patients with anterior coupling, because the technique allows movement of the segments mesially without anteroposterior changes. Clear aligner therapy uses a series of aligners to achieve the desired



Figure 3. Total space closure after 3 weeks by using vacuum-formed retainer with elastics.

movement (0.1-0.25 mm of movement with each aligner). Although it is more complex and expensive, several orthodontic problems can be corrected at the same time.

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