Off the Hook

Attaching orthodontic elastics to canines with clear aligners

by Drs. Christopher Cetta and Justin Hughes

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Orthodontists have been using elastic bands with clear aligners to correct malocclusions throughout the past decade.

The earliest attempts to attach elastics to aligners often involved manually cutting windows in the plastic to circumvent bonded brackets or buttons. To streamline the process, orthodontists began requesting their Invisalign ClinCheck setups to raise the simulated gingiva so the trimmed plastic would not extend fully to the cementoenamel junction.

Align Technology began offering prefabricated cuts in its Invisalign aligners in 2010. These cuts took the form of notches or slits in the plastic, called "hooks" or "cutout windows," that allowed for an auxiliary to be directly bonded to the tooth.

It's now routine for orthodontists to incorporate elastic bands with aligner therapy. Scenarios where the orthodontist would want to attach elastic bands in the anterior canine region include Class II, Class III, triangle or box elastic patterns. Many orthodontists will routinely set up their aligner cases in a similar fashion, but what factors should be considered when selecting a hook versus a button for elastic wear?

On the hook

The main advantage to choosing an aligner hook is simplicity. Not only does it save chair time at the delivery appointment by not having anything to bond, but it also avoids the dreaded debond emergency. Hooks may also be ideal for situations where no additional extrusion of the teeth is desired, such as while intruding canines to level a deep Curve of Spee.

On the downside, hooks can be challenging for patients to secure the elastics at the outset. Also, heavier elastic bands can potentially unseat the aligners when using hooks. Depending on the rigidity of the plastic, the dovetail created by the notch may bow outward and irritate the cheeks or lips.

Elastic hooks are an option offered with Invisalign, 3M Clarity, Henry Schein SLX and Ormco Spark aligners. They are not currently available from Dentsply SureSmile or Straumann ClearCorrect aligners, but they are anticipated with future updates.

Aside from crown and bridge scissors, there are instruments that can manually form hooks, such as Dr. Jay Bowman's Tear Drop plier from the Hu-Friedy Clear Collection (Fig. 1).

Buttoned up

Bondable buttons can prove effective in a variety of clinical situations:

- They're advantageous in situations when extrusion of the attached tooth is desired, such as an anterior open bite.
- If a patient has an ectopic maxillary canine, buttons are an effective way to simultaneously extrude and provide AP correction.
- For patients with retroclined maxillary incisors—such as Class II, Division 2 patients—directly anchoring to the canine with a button is a better biomechanical approach, because a hook provides a lingual force vector in the anterior that counters the plastic's ability to procline the teeth.

In general, buttons will reliably transmit the desired force vector directly to the attached teeth, whereas the force will be dispersed over a variety of teeth with hooks.

Prefabricated cutout windows for buttons are offered for Invisalign, Clarity, Spark and SLX aligners. The Hole Punch plier in Hu-Friedy's Clear Collection (Fig. 2) will also create cutouts by hand.

Aesthetic bondable buttons are often made of composite resin or ceramic materials. Conventional clear buttons can be obtained from most orthodontic suppliers, while mini mold kits can be purchased for forming buttons out of composite. G&H Orthodontics offers the Freddy, which is either a flat circular button or bondable hook with a curved base.

Clear Precision Aligner Buttons from DynaFlex are made of a translucent ceramic/composite hybrid. These buttons have a maximized surface area to avoid debonds and are contoured to be bonded at the gingival margin of canines and premolars. A recent re-treatment case utilizing Precision Aligner Buttons and Clarity aligners is illustrated in Figs. 3–5.


Fig. 1


Fig. 2

Fig. 3


Fig. 4

Fig. 5

The potential downside of all bondable auxiliaries is the risk of debonding, whether because of elastic pull or the patient biting hard foods, such as ice. Additionally, buttons have the potential to cause rotation of canines unless an attachment is placed to compensate for the rotational moment of the elastic force.

Orthodontists should select hooks or buttons for their aligner cases on an individual basis, weighing biomechanical considerations with ease of use and comfort for the patient. ■