The Quick Fix device for pseudo-Class III

Resolving anterior crossbites with the Quick Fix device

By S. Jay Bowman, DMD, MSD

(This is Part 2 of a two-part series)

The Quick Fix’ device is based on a typical 2 x 4 edgewise appliance and was designed for effective and efficient advancement of the maxillary incisors. The appliance consists of a rectangular stainless-steel arch wire, open coil springs, arch locks and Side Swipe auxiliaries.

Installation of the Quick Fix

Correction of a pseudo-Class III malocclusion in the transitional dentition is initiated by placement of an upper 2 x 4 appliance (e.g., two banded or bonded first molar tubes and pre-adjusted Butterfly Bracket** brackets on the central and lateral incisors).

Leveling and alignment of the incisors using round superelastic wire typically requires two to five months before placing the rectangular wire of the Quick Fix device.

Next, Side Swipe auxiliaries are inserted into the molar tubes and may be tied back (Fig. 5). The Side Swipe will permit an additional arch wire length of 4–5 mm without that extra wire extending distal to the molar tube and poking the buccal mucosa of the cheek.

Universal arch locks are placed about 16–17 mm from the midline mark on the right and left side of a .0175-inch x .025-inch stainless-steel arch (Fig. 6).

Illustrations of the quick-fix device. (Photos/Provided by Dr. S. Jay Bowman)
We are who we choose to be

By Dennis J. Tartakover, DMD, MSD, Editor, Editor in Chief

with the 21st Century well into its second decade, new scientific technology, industrial integration and greater knowledge and skills are essential in order to move forward. Even with all elements and factors already in place, IT and administrative staff members, faculty members and orthodontic educators must develop new skills as technology advances.

For those individuals who are in, or have moved into, new careers in education, it is never without need for change, modification, training or learning new job skills. Career changes, such as from clinician to educator, must include reflection and reconsideration of attitudes and behaviors.

It’s a new ball game with new rules, policies and conditions. We must glean greater understanding in order to assess the requirements and develop a plan for greater educational growth. This requires a strategic development plan that includes many essential factors, i.e. critical decisions for future growth, development, expansion of institutions, supportive companies, etc.

The "renaissance orthodontists" involved might greater thought and consideration to experience future success in such a career change. In the educational milieu, this strategic development plan might serve as a tool for (a) exploration of goals, (b) determination of skill levels requiring different faculty expertise and (c) appreciation of faculty needs that have exploded since the computer age commenced.

Setting direction and planning are two separated activities. A necessary function of leadership is to produce change and set a new direction of that change. We must devote time and interest to such a strategic plan in order to (a) syn-chronize visions and aspirations, (b) provide a blueprint for a viable future to anticipate change and (c) hold constant the reason for being — the education of our students.

An assessment of strengths, weaknesses, opportunities and threats are also important in order to develop a strategic development plan. Such assessments could provide valuable reflections and analyses for yielding priorities that will be essential and critical for future success; such priorities will allow progression to the next or higher level.

Historically, reduced recruitment and retention and increased faculty vacancies have been becoming emergent problems in orthodontic education since the early 1990s, impacting people, communities and society. These issues have led to a daunting outlook for the future of orthodontic education.

“There is no doubt that dedicated orthodontic educators have been critical to the development of the specialty. The question is whether the faculty will be there in the future to continue this history of strong education” (Larson, 1998, p. 122). This is the essence of a force for change that is necessary in our specialty.

Our responsibilities as educators are to educate our students to be professional and the best orthodontists they can be; teach them how to be experts; prepare them to speak before groups of individuals or to address a judge and jury in the courtroom; and most important — impress upon them the importance to write precisely, accurately and legibly.

Writing is one of the most important methods of communicating our thoughts, especially regarding treatment plans and projected patient outcomes, which can make a big difference years later when we are asked to defend ourselves and we cannot even remember the patient’s name, let alone how we treated them.

Ask any malpractice attorney about how well orthodontists communicate his or her thoughts on a patient chart. Many do not write adequate notes in his or her patient’s treatment chart to explain problems or elaborate treatment issues, and much writing is so poor that whatever is written makes little or no sense.

As educators, this is a poor reflection on us personally. Not only are most notations illegible, using short-cuts, abbreviations and hieroglyphics that are difficult to decipher, but most chart entries are way too short, incomplete and unacceptably inadequate. These are egregious situations and occur too often.

Orthodontic education is in need of fresh blood; this dilemma of full-time faculty member reduction resonates with inadequacies and consequences for today and tomorrow.

Ultimately the financial obligation made it difficult, if not impossible, to attract young doctors to consider a career in postgraduate orthodontic education.

As a social justice concern, there may be a huge impact on the survival of the profession, especially the ability to serve the individual and address community needs. The price tag most likely may prohibit low-income students from pursuing the degree and also may have a negative impact on serving society as a whole.

As clinicians, researchers or educators must be responsible and accountable for helping our present and future residents benefit from our armamentarium of skills, proficiency and expertise. Whether it be through the Socratic method, a form of inquiry and debate between individuals possibly with opposing viewpoints based on asking and answering questions to stimulate...
Are kids taking unnecessary risks?

In a matter of seconds, a sports injury can occur to the face or the mouth. Young children ages 5 to 14 are especially vulnerable, accounting for more than 80 percent of all sports-related emergency room visits, according to the Centers for Disease Control. Because many sports injuries can be prevented by wearing the proper protective gear, why aren’t more parents, coaches and kids getting the message?

Each April during National Facial Protection Month, the American Association of Orthodontists urges athletes to “play it safe” by wearing mouth guards and other appropriate protective gear when participating in many sports and activities. According to a survey* taken by the AAO:

- 67 percent of parents surveyed said their child does not wear a mouth guard. 52 percent said that it was because their child “doesn’t need that level of protection.”
- 96 percent of parents surveyed believed their child’s coaches’ role on the use/promotion of protective sports gear was “important,” “very important” or “extremely important,” yet parents surveyed reported that only 56 percent of coaches actually recommended mouth guards during competitions while 36 percent recommend them during practice.
- According to parents surveyed, the most popular sports that children wear mouth guards while playing include football (42 percent), ice hockey (32 percent) and martial arts (13 percent).
- Of the parents surveyed, the most popular protective sports gear for children participating in organized sports include shoes/cleats (67 percent), helmet/headgear (51 percent), shin guards (48 percent) and knee pads (34 percent).

“Are kids taking unnecessary risks?” Mouth guards are one of the least expensive pieces of protective equipment available. An orthodontist can recommend the best mouth guard for an athlete who wears braces.

(* The AAO commissioned Impulse Research Corp. to conduct the AAO 2008 Protective Sports Gear Survey. The survey was conducted in February 2008 online with a random sample of 1,049 men and women, ages 18 years old or older, from the United States and Canada. Survey participants are representative of American and Canadian men and women 18 years old or older who have children between the ages of 8 and 18 who participate in organized sports.)
This position will permit seating of the arch wire into the incisor brackets with the arch locks distal to the lateral incisors. Sections of open coil spring are slid onto the wire, up to the arch locks. These parts are pre-assembled and stored in anticipation of their future use.

In the instance of the Side Swipes, the arch wire of the Quick Fix assembly is inserted into the edgewise tubes of the Side Swive, not in the molar or headgear tube (Fig. 5). The excess wire now lays adjacent to the molar tube. The arch wire is then seated into the incisor bracket slots and a stainless-steel ligature is laced, e.g., “figure-8,” (Fig. 5) across to consolidate the incisors together so as to prevent opening space between the teeth. The arch locks are loosened with the wrench, and they are slid distally along the wire to compress the open coil spring (Fig. 7).

Once the locks are positioned between the first and second primary molar, compression is typically sufficient, and the locks are tightened. A distal end cutting pliers are used to cut the arch wire flush to the end of the molar tube, not the Side Swive tube (Fig. 8). This will leave about 4–5 mm of wire distal to the Side Swive next to the molar tube to provide for advancement of the incisors; a process that requires about two to three months.

The Quick Fix device is self-limiting. In other words, should a patient not return within four to five weeks after installation, incisor advancement would only progress until the distal portion of the arch wire slips out of the Side Swive tube (Fig. 5).

Simple case reports demonstrate the progression of treatment and correction of typical pseudo-Class III anterior crossbites using the Quick Fix device (Figs. 9–15). Other appliances and devices may be combined with the Quick Fix device such as palatal expanders, e.g., MIA Quad Helix,26,27 (Fig. 15), reverse pull facemask, lower 2 x 4 and Class III elastics.

After the desired amount of advancement is achieved, the appliances may be removed and retention initiated as desired.

Class II correction with the Quick Fix device

Molar distalization: Class II elastics If anchorage is applied to the Quick Fix mechanism to prevent “flaring” of the incisors, then distal movement of the molars can be achieved. Because this device is not inserted into a headgear tube (in contrast to the bimetric arch),30 there is cervical headgear.31,32 Mini-screws can be inserted into the upper alveolus between the roots of the first molar and second molar,33,34 with a steel ligature tied from the TAD to a button bonded on the lingual of the upper first premolar.

Once the molars have been overcorrected into a super-Class I (half-step Class III) relationship, then the mini-screws may need to be removed, and possibly re-positioned, if they are needed to provide anchorage support for retraction of the remaining maxillary teeth.

Molar distalization: mini-screw supported

As an alternative distalization method for Class II patients, mini-screw anchorage can be added to provide indirect anchorage to the Quick Fix. Mini-screws can be inserted into the buccal alveolus, between the upper first molars and second premolars or on the infra-molar ridge.35,36 Stainless-steel ligature is then tied from the mini-screws to the incisors to support the distal-driving force from the Quick Fix. An alternative miniscrew insertion location would be on the palatal alveolus between the roots of the first molar and second molar with a steel ligature tied from the TAD to a button bonded on the lingual of the upper first premolar.

Fig. 9: Resolution of an anterior crossbite in the transitory dentition for an 8-year old female. Leveling with 2X4 appliances required three months, followed by four months incisor advancement with the Quick Fix appliance.
Conclusions

Ismail and Bader have suggested that, “In developing appropriate treatment plans, dentists should combine the patient’s treatment needs and preferences with the best available scientific evidence, in conjunction with the dentist’s clinical expertise.”

Early correction of pseudo-Class III malocclusion has been demonstrated to provide simple, rapid (about six to eight months), efficient, reliable and stable resolution of anterior crossbite. In addition, this treatment reduces the risk of development of skeletal Class III malocclusions and may diminish the difficulty of, or occasionally eliminate the need for, any later comprehensive treatment.

The Quick Fix device is a simple, predictable, and effective mechanism for achieving this correction for pseudo-Class IIIIs, and it can also be used for Class II patients to provide molar distalization using Class II elastic or mini-screw support.

Steps for inserting the Quick Fix Device

1. Placement of a maxillary 2 x 4 pre-adjusted appliance.
2. Initial alignment and leveling with .016 superelastic arch wire for two to five months.
3. Place appropriate right and left Side Swipes into the maxillary molar tubes: the segment of wire is inserted from the mesial into the molar tube with the Side Swipe tube positioned mesial and buccal to the molar tube.
4. Trim the excess wire of the Side Swipe just flush to the molar tube and tie back with an elastic or stainless-steel ligature tie (optional).
5. Place universal arch locks 36 mm apart (to fit distal to the maxillary lateral incisors) on a .0175-inch by .025-inch stainless-steel arch wire.
6. Slide two 20 mm open-coil springs on the arch wire up to each arch lock.
7. Insert this Quick Fix wire assembly into the tube of the Side Swipes and seat the wire in the brackets on the incisors.

8. Consolidate the incisors with stainless-steel laced ligature to prevent unintended anterior space opening.

9. Slide the arch wire distally along the arch wire to compress the molar tube, as the twist of the arch wire is adjacent to the molar tube and provides sufficient wire for incisor advancement.

10. Cut the distal end of the arch wire flush to the distal end of the molar tube, not the Side Swipes tube. In this manner, about 4-5 mm of arch wire is adjacent to the molar tube and provides sufficient wire for incisor advancement.

(EDITOR’S NOTE: Bowman has a financial interest in the Butterfly System and Quick Fix Kit.)

“Quick Fix Kit” with Side Swipes® Bef #852-781, American Orthodontics, Inc., 1714 Cambridge Ave., Sheboygan, Wis, 53082-1048.

*MIA Quad Helix, AOA Laboratories, 15391 Spring St., Steventown, Wis. 53317.

**Butterfly Bracket System, American Orthodontics. 1714 Cambridge Ave., Sheboygan, Wis, 53082-1048.

References


12. McDonald T.: Seasoned Practitioner’s Corner: Interview with Dr. Patrick Turley, Pac. Coast Soc. Orthodontists Foundation. He developed and teaches the Straightwire course at the University of Michigan and is a clinical assistant professor at Saint Louis University and is an adjunct member of the World Federation of Orthodontists and is a regent of the American Association of Orthodontists Foundation. He developed and teaches the Straightwire course at the University of Michigan, is an adjunct clinical assistant professor at Case Western Reserve University. Contact him at drjwyred@aol.com.