The fabrication of a unilateral device to treat microstomia after trauma is presented. Maximum opening was recorded before treatment. A dual arch impression that captured the dentition and commissure on the affected side was made with vinyl polysiloxane (VPS) impression material. A 1 mm vacuum formed template (VFT) was fabricated over the maxillary dentition, and a 2 mm VFT was fabricated around the commissure. A 0.9 mm (0.036”) stainless steel wire was attached with acrylic resin to both templates in order to apply a constant force to the commissure. The use of a helix in the wire allowed for flexibility and adjustment of the retractor. The patient was instructed to wear the retractor for 6 hours per day, and, during a 10-week period, the maximum opening increased from 30 mm to 45 mm. (J Prosthet Dent 2012;108:398-400)

Scar contracture resulting from trauma, burns, or surgery can present frustrating esthetic and functional insufficiencies. Numerous devices have been fabricated and reported to increase function and reduce the amount of scar contracture.1 These techniques and clinical reports describe treatment options that apply force to both commissures2-7 and in a vertical3,4 or horizontal5,7 direction. The purpose of this article was to describe the fabrication and use of a unilateral commissure retractor with a horizontal force.

The patient presented with a defect to the right commissure and was referred to a dental clinic for commissure splint therapy after seeking surgical options (Fig. 1). The scarring was secondary to trauma received from an improvised explosive device, and initial wound debridement and closure in a field hospital was the only treatment he had received. The evaluating surgeon recommended that splint therapy be attempted before surgical intervention. The patient’s chief com-
plaint was that his food choices were limited by the size of his oral opening. His initial opening measured approximately 30 mm (Fig. 2). The patient also stated that he was hoping for a more esthetic outcome.

**TECHNIQUE**

1. Make an impression with a dual-arch tray (Check-Bite Triple Function Disposable Plastic Tray; GC America, Alsip, Ill) and a vinyl polysiloxane (VPS) impression material (Reprosil Quixx Putty; Dentsply Caulk, Milford, Del) to record the maxillary teeth and the affected commissure both intraorally and extraorally.

2. After the impression material has polymerized, support the commissure area and extraoral segment of the impression with a rigid VPS occlusal registration material (Vanilla Bite; Discus Dental, Culver City, Calif) (Figs. 3, 4).

3. Pour the impression in dental stone (Prima Rock; Whip Mix, Louisville, Ky) capturing the maxillary teeth and commissure (Fig. 5). Make a second pour of the maxillary teeth and a second pour of the commissure for vacuum-formed template fabrication.

4. Vacuum-form splint material (Clear Splint Biocryl; Great Lakes Orthodontics, Tonawanda, NY) over the maxillary teeth by using 1-mm-thick splint material and around the commissure by using 2-mm-thick splint material. Trim the splint material over the teeth so that the splint extends past the heights of contour of the teeth and is retentive. Trim the splint material around the commissure so that it will fit comfortably over the scarred area.

5. With the maxillary splint in place over the teeth on the cast, bend a 0.9 mm (0.036”) stainless steel wire (Nubrite Wire; GAC Intl, Bohemia, NY) to follow the curvature of the teeth, and incorporate a helix as the wire approaches the commissure. Bend the wire so that it contacts the splint material over the commissure both intraorally and extraorally.

6. Attach the wire to the splint material with acrylic resin (GC Pattern Resin; GC America) over the teeth so that the wire follows the curvature of the teeth and contacts the commissure (Fig. 6). Complete the connection to the commissure segment of the device while the patient has the splint in place over the maxillary teeth and the second splint in place over the commissure (Fig. 7).
DISCUSSION

The use of a helix or central loop was first described by Bedard et al. The helix was added to increase the adjustability. The use of a dual-arch tray was helpful in orienting the commissure at rest to the teeth. The patient wore the retractor (Fig. 8) for at least 6 hours a day, and the helix was adjusted weekly as treatment progressed. After 10 weeks of treatment, the patient's opening had increased approximately 50% (Fig. 9), and he was satisfied with the result (Fig. 10). The outcome was consistent with other reported techniques.

SUMMARY

This article describes an economical technique for fabricating a unilateral commissure retractor with commonly available dental materials. The use of a helix provides for repeated adjustment and allows for control of the amount of force applied to the commissure.

REFERENCES


Corresponding author:
Dr Stephen G. Alfano
Dental Department
Naval Medical Center
34800 Bob Wilson Dr
San Diego, Calif 92134
Fax: 619-532-5500
E-mail: stephen.alfano@med.navy.mil

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