

# LETTERS

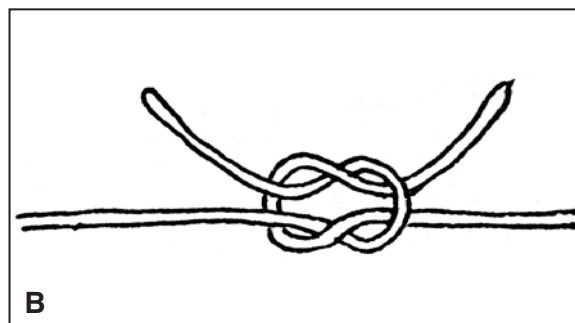
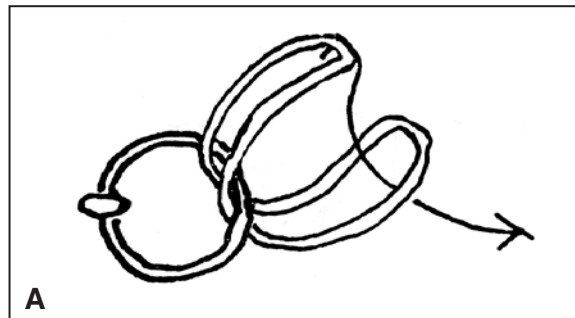
## To Unravel a Cinch

The innovative way advocated by Suzuki and Suzuki to attach a closed-coil spring to a mini-screw head by use of an elastomeric ligature (JCO, March 2007) seems a useful addition to the orthodontic armamentarium.<sup>1</sup> Still, the authors' terming their knot a "reef knot" needs correction to prevent further confusion, because the literature on tying is all knots and tangles as it is.

Rather than a reef knot, the flyped loop demonstrated by Suzuki and Suzuki is a "ring hitch" (A), "tag knot", or "bale sling hitch" that has been around for quite some years (Ashley No. 1859<sup>2</sup>). It is of the same geometry as the widely known "cow hitch" or "lark's head".<sup>2,3</sup> Still, even the cow hitch is not "the first suturing knot learned in basic surgery class", as Suzuki and Suzuki stated it, but rather a knot reserved for specialized surgical applications.<sup>4-8</sup>

By contrast, the reef knot (B) is indeed a simple and effective knot. Also known as the square, true, hard, flat, common, regular, or ordinary knot, it is usually employed to tie up bundles or other objects, or to tie the reef points in a sail.<sup>2</sup> Suzuki and Suzuki's implication that a reef knot is effective in rock climbing, however, also needs correction to prevent mishap. In his encyclopedic *Book of Knots*, Ashley even printed in italics that "under no circumstances should it ever be tied as a bend".<sup>2</sup> Ashley further added (again in italics) that "there have probably been more lives lost as a result of using a square knot as a bend (to tie two ropes together) than from the failure of all other knots combined".<sup>2</sup> Likewise, Graumont and Hensel warned that the reef knot "has two serious disadvantages: it does not hold if the ropes are of two different sizes or materials, and it jams very hard under great tension. Therefore, it should never be used to join two hawsers".<sup>3</sup> This warning obviously applies to climbing ropes.

In short, the knot presented by Suzuki and Suzuki would be better called by its proper name—"ring hitch"—and the true "reef knot" should never be used to tie two ropes together.



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### REFERENCES

1. Suzuki, E.Y. and Suzuki, B.: The Suzuki reef knot for attaching closed-coil springs to miniscrew heads, *J. Clin. Orthod.* 41:148-151, 2007.
2. Ashley, C.W.: *The Ashley Book of Knots*, Doubleday, New York, 1944.
3. Graumont, R. and Hensel, J.: *Encyclopedia of Knots and Fancy Rope Work*, 4th ed., Cornell Maritime Press, Centreville, MD, 1952.
4. Renwick, S.E.: Three traction knots for the orthopaedic surgeon, *Orthop. Rev.* 21:649-652, 1992.
5. Pier, A.; Thevissen, P.; Eikel, M.; and Götz, F.: Laparoskopische Naht- und Knüpftechniken, *Chirurg.* 65:473-483, 1994.
6. Swain, C.P.; Kadiramanathan, S.S.; Gong, F.; Lai, K.C.; Ratani, R.S.; Brown, G.J.; and Mills, T.N.: Knot tying at flexible endoscopy, *Gastrointest. Endosc.* 40:722-729, 1994.
7. Puñal Rodríguez, J.A.: Reliable double-component knots for laparoscopic surgery, *Br. J. Surg.* 85:16-19, 1998.
8. Hanemoto, T.; Ideta, H.; and Kawasaki, T.: Dislocated intraocular lens fixation using intraocular cowhitch knot, *Am. J. Ophthalmol.* 131:265-267, 2001.