Dorsal Suspension Stitch: An Alternative Stabilization After Flexor Tenotomy for Flexible Hammer Digit Syndrome

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The focus of this communication is to share an alternative form of positional maintenance for use after correction of flexible hammer digits via flexor tenotomy. The toe is maintained in a corrected position by means of a wide, horizontal mattress stitch with the suture passing through the extensor apparatus both proximal and distal to the interphalangeal joints. This suture prevents recurrence of plantarflexion contracture of the toe during the postoperative period without the use of Kirschner wire fixation. We have noted satisfactory maintenance and healing with this technique. (The Journal of Foot & Ankle Surgery 48(5):602–605, 2009)

Key Words: fixation, foot, hammertoe, phalanx, surgery, suture

Hammer digit syndrome is a pathological condition that is frequently encountered by the foot surgeon. Whether presenting as a source of pain (Figures 1–4), ulceration, the site of hyperkeratosis (Figures 5–10), or as a cosmetic concern, this form of pathology can be addressed with a wide range of treatment options. Surgical intervention may be indicated for those toes with rigid contracture, which require osseous correction and internal fixation. In the case of flexible hammer digit syndrome, some deformities can be resolved with flexor tendon release. In an attempt to accomplish splinting of flexible, contracted toes after soft tissue release, the authors have routinely used, over the last 5 years, a “dorsal
suspension stitch” to stabilize the digit during the early postoperative period. It is the authors’ belief that this technique has not been described before for flexible hammer digit syndrome. An Ovid and Pubmed search did not reveal any relevant manuscripts with searches performed for “suture splinting,” “suture fixation,” “suture toes,” and “suture fingers.” Additionally, the technique was not described in seven orthopedic or podiatric surgery textbooks. Therefore, this technique is presented as an alternative to the classic, internal fixation more commonly employed in the treatment of hammer digit syndrome.

**Surgical Technique**

The initial decision to use this technique is predicated on the fact that the deformity is indeed a flexible one, because...
tension of the suture intraoperatively. Next, the tenotomy incision is closed with a smaller, nonabsorbable suture, and a light bandage is applied in a standard fashion. The suture is left intact for 3 to 4 weeks, after which time it is removed in the usual fashion. In our practice, bandaging is discontinued and the patient is allowed to shower the toe after the third postoperative day and should avoid soaking or submersion of the operative site.

Discussion

The authors have been very pleased with this form of positional maintenance of the toe after soft tissue release and realignment of the flexible deformity. In our practice, we have rarely encountered postoperative complications when this technique is used for the correction of flexible hammertoe. We have also used the dorsal suspension stitch in conjunction with resection arthroplasty of the proximal interphalangeal joint, and thereby avoided the use of a temporary Kirschner wire for digital stabilization. In our experience, patients are generally happier during the early postoperative period if they can avoid having an axial Kirschner wire protruding from the end of their toe, or toes (Figure 11). Moreover, we have not encountered any wound problems related to dehiscence or infection, or
loss of correction, even when bathing of the foot and discontinuation of the surgical bandage are instituted as early as 3 days postoperative. In conclusion, in our experience, use of the dorsal suspension stitch allows simple and effective stabilization of the digit after surgical repair of the flexible hammertoe, and obviates the need for Kirschner wire stabilization.

FIGURE 10 Appearance at 8 weeks postoperative. Notice the improved appearance of the toes, especially of the fourth toe.

FIGURE 11 Patient with both rigid and flexible contracted toes, postoperatively. Many patients have been pleased with the less invasive appearance and nature of the dorsal suspension stitch.