Integra®
Use of TenoGlide® Tendon Protector Sheet to Protect an Extensor Tendon Repair of the Thumb

CASE STUDY

INTEGRA
LIMIT UNCERTAINTY
Use of Integra® TenoGlide® Tendon Protector Sheet to Protect an Extensor Tendon Repair of the Thumb

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Introduction:

Tendon injury in the hand can frequently be complicated by scarring and adhesions that interfere with excursion and function of the repaired tendons. In addition, the overlying skin laceration can scar down to the underlying tissue further impeding recovery. Early-motion therapy protocols can help, but many patients are not candidates for various physical, psychological, or social reasons. Protecting tendon repairs, while simultaneously reducing the risk of adhesions, is an ongoing challenge in hand surgery.

The TenoGlide® Tendon Protector Sheet is a bio-absorbable collagen matrix that can act as a barrier to scarring between tendons and adjacent tissue or hardware. It is biocompatible and incorporates itself into surrounding tissue as if it were native collagen, thus precluding any inflammatory or foreign-body reaction. TenoGlide Tendon Protector Sheet is typically absorbed in less then a few months so long-term consequences are not an issue.

INDICATIONS — TenoGlide Tendon Protector Sheet is indicated for the management and protection of tendon injuries in which there has been no substantial loss of tendon tissue.

CONTRAINDICATIONS — TenoGlide Tendon Protector Sheet is contraindicated for patients with a known history of hypersensitivity to bovine derived or chondroitin materials. It is not indicated to replace or repair damaged tendon or to reinforce the strength of any tendon repair.
**Patient Profile:**

A 27 year old female presented 2 weeks after lacerating the dorsum of her right thumb and first web space with a piece of broken glass. The injury immediately resulted in an inability to actively extend the thumb interphalangeal joint (IPJ) and significantly reduced active extension at the metacarpophalangeal joint (MPJ). The patient was appropriately diagnosed with laceration of the Extensor Pollicis Longus (EPL) and was taken to surgery for wound exploration and attempted repair of the tendon.

**Surgical Procedure:**

The patient was taken to the O.R. where the wound was irrigated and debrided. Exploration confirmed complete laceration of the EPL tendon [Figure 1]. A primary repair was done using a four-core-suture technique combining modified Bunnell stitches of 3-0 braided polyester suture [Figure 2]. The repair was stable even with full passive flexion of all thumb joints. A portion of the extensor sheath and associated retinaculum was preserved to minimize the risk of tendon bow stringing; however, the repair site was in close proximity.

Risk of tendon adhesions was felt to be high because the patient was not a candidate for an early mobilization therapy protocol. She could not attend formal hand therapy due to limits of financial resources as well as her inability to take time off of work. It was determined that protection of the tendon repair was warranted. A 2”x 2” piece of TenoGlide Tendon Protector Sheet was brought onto the field and washed in saline [Figure 3].
A smaller section was cut from the 2” x 2” TenoGlide Tendon Protector Sheet and was placed in the extensor sheath under the retinaculum. A second section was cut and then wrapped completely around the EPL, covering the entire repair site [Figures 4 and 5]. The thumb was taken through a full range of passive motion and the TenoGlide Tendon Protector Sheet remained in stable position. The remaining TenoGlide Tendon Protector Sheet was placed on top of the extensor tendon and deep fascia to act as a barrier between it and the overlying skin and surgical incision [Figure 6]. The wound was closed and a sterile dressing, including plaster splint, was applied.
Postoperative Course:

Skin sutures were removed after 2 weeks; however, the patient was kept in a splint or cast for 6 weeks with only minimal wiggling of the thumb allowed. She was then allowed to do gentle range-of-motion exercises and use a removable thumb-spica splint for 2-3 more weeks. At 10 weeks postoperative, the patient had regained full functional IPJ and MPJ extension [Figure 7]. She could also lift her thumb off of the table top when the hand was placed on it palm down. The patient recovered excellent function without evidence of adhesions of the tendon or overlying skin despite the period of postoperative immobilization or lack of formal therapy.

Discussion:

In this case, TenoGlide Tendon Protector Sheet was successful in providing a protective interface around the repaired extensor tendon. If adhesions had occurred, this patient would have required prolonged formal therapy and may likely have needed another surgical procedure (i.e., tenolysis). This would have resulted in significantly increased medical costs as well as absence from work and other activities. TenoGlide Tendon Protector Sheet should be considered when an absorbable, biocompatible barrier is desired to protect tendon repairs in the injured hand.
About the Author:

Stephen J. Troum, MD, FACS is an attending Hand Surgeon at Texas Orthopedic Specialists, PA in Bedford, TX. He is a Clinical Associate Professor of Orthopedic Surgery at University of North Texas and is a Member of the American Society for Surgery of the Hand as well as a Fellow of the American College of Surgeons. Dr. Troum has published on a wide array of topics in hand surgery. Dr. Troum is a paid consultant to Integra LifeSciences and produced this case study to facilitate further discussion on TenoGlide Tendon Protector Sheet and the merits of collagen technology.

As the manufacturer of this device, Integra does not practice medicine and does not recommend this or any other surgical technique for use on a specific patient. The surgeon who performs any procedure is responsible for determining and using the appropriate techniques in each patient.
TenoGlide Tendon Protector Sheet

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<td>TG451</td>
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PRECAUTIONS — TenoGlide Tendon Protector Sheet should not be applied until bleeding and infection are controlled.

For more information or to place an order, please contact:
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877-444-1122 USA ● 609-936-5400 outside USA ● 866-800-7742 fax
integralife.com

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