Integra®

Use of TenoGlide® Tendon Protector Sheet as an Interface to Protect Extensor Tendons after Removal of Hardware from Multiple Metacarpal Fractures
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STEPHEN J. TROUM, MD, FACS
TEXAS ORTHOPEDIC SPECIALISTS, PA
BEDFORD, TX

Introduction:

Trauma and surgery to the hand can frequently have complications that may adversely affect healing and prolong recovery complications such as scarring and adhesions that interfere with excursion and function of the tendons. In addition, attritional rupture of a tendon can occur due to irregularities of the fracture or presence of hardware. Adequate soft tissue may not be available to protect the tendons at risk.

The TenoGlide® Tendon Protector Sheet is a bioabsorbable collagen matrix that can act as a protective interface 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 than 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 43 year old female presented years after undergoing ORIF of her left 3rd, 4th, and 5th metacarpals at an outside facility. She complained of prominent hardware on the back of her hand that was painful and interfered with finger motion. X-rays and exam confirmed fairly large, tender plates, and screws in metacarpals 3-5 with loss of excursion of the extrinsic extensor tendons [Figure 1].

Figure 1. X-ray of hand preop showing large, prominent hardware in 3rd-5th metacarpals
Surgical Procedure:

The patient was taken to the O.R. and underwent removal of the plates and screws from her left 3rd, 4th, and 5th metacarpals with extensive tenolysis of the extensor tendons through a single dorsal incision [Figure 2]. Once the hardware was removed and the scar debrided, it was determined that there was inadequate soft tissue to cover the exposed raw bony surfaces of the metacarpals [Figure 3]. A 4"x 5" piece of TenoGlide Tendon Protector Sheet was brought onto the sterile field and appropriately soaked in saline.
A section was cut from the TenoGlide Tendon Protector Sheet, which was then placed over the metacarpals, interposing it between the extensor tendons and underlying raw bone, thus creating a soft-tissue barrier [Figure 4]. The wound accommodated the TenoGlide Tendon Protector Sheet such that sutures to secure it in place were not necessary in this case. The remaining TenoGlide Tendon Protector Sheet was placed on top of the extensor tendons to act as a barrier between them and the overlying skin and surgical incision [Figure 5]. The wound was closed and a sterile dressing applied.
Postoperative Course:

The patient was allowed early motion of the fingers to try and minimize tendon adhesions, but she still required occasional splinting for postoperative discomfort and to protect the wound. She was then allowed to do more aggressive range-of-motion exercises after sutures were removed. The patient was able to recover full motion of the fingers with no evidence of tendon adhesions to the skin or underlying bone [Figures 6 and 7].

Discussion:

The TenoGlide Tendon Protector Sheet was associated with minimal scarring of the extensor tendons in this high-risk scenario. If adhesions had occurred, this patient would have required prolonged 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.

The TenoGlide Tendon Protector Sheet should be considered when an absorbable, biocompatible interface is desired to shield and protect tendons 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.
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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:
Integra  ■  311 Enterprise Drive, Plainsboro, NJ 08536
877-444-1122 USA  ■  609-936-5400 outside USA  ■  866-800-7742 fax
integralife.com

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