Integra®

Use of TenoGlide® Tendon Protector Sheet to Protect Extensor Tendon Repairs in the Hand

CASE STUDY
Use of Integra® TenoGlide® Tendon Protector Sheet to Protect Extensor Tendon Repairs in the Hand

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Patient Profile:

The patient is a 52 year old male who presented with large crush/laceration to his right hand from a scissor-lift mechanical elevator. The patient’s hand suffered a severe crush/laceration to palmar and dorsal structures, which included metacarpal fractures, tendon lacerations, and skin subcutaneous avulsion/laceration at the focus of the scissoring metal.

Surgical Procedure:

Patient treatment was staged and consisted of two surgeries. The first procedure was debridement and fracture stabilization with metacarpal plating and midcarpal fusion. Twenty-four hours after the initial surgery, the patient returned to the operating room for inspection and re-debridement and soft tissue repairs [Figure 1].

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.
With a clean wound, soft tissue repairs, including several tendon repairs, were performed. Integra® Flowable Wound Matrix [Figure 2] was used to fill the deep soft tissue voids around the metal implants. A layer of TenoGlide® Tendon Protector Sheet was placed deep to the tendons to protect the tendons by covering the roughened bone and contoured edges of the plate [Figure 3].
Tendon repairs were performed on top of the deep TenoGlide Tendon Protector Sheet layer [Figure 4]. A second layer of TenoGlide Tendon Protector Sheet was then placed over the tendon repairs to both protect and separate from the closure tissues [Figure 5]. The wound was closed using flap and graft coverage [Figure 6].
The patient recovered with uneventful wound healing, but experienced range of motion deficits due to the size and complexity of the injury. At three months post injury, the patient was brought back to the operating room for hardware removal, which was felt to restrict motion, and tenolysis. Intraoperative findings showed that the TenoGlide Tendon Protector Sheet had compartmentalized the tendon layer where applied. Intraoperative photographs show the regenerated connective tissue fascia, which covered the plate [Figure 7]. In this same picture, one can view the smooth surface of the tendons indicating the paucity of adhesions where the TenoGlide Tendon Protector Sheet was placed. The tissue was incised to expose the hardware for removal [Figure 8].
The patient healed and returned to work with satisfactory digital motion. Digital motion per his Occupational Therapist at month 3 postop was as follows:

<table>
<thead>
<tr>
<th>MCP</th>
<th>PIP</th>
<th>DIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF</td>
<td>-10/65</td>
<td>0/105</td>
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<tr>
<td>MF</td>
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<td>0/105</td>
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<tr>
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<td>0/105</td>
</tr>
<tr>
<td>LF</td>
<td>0/55</td>
<td>0/99</td>
</tr>
</tbody>
</table>

**Discussion:**

TenoGlide Tendon Protector Sheet was considered in this case due to the significance and complexity of the injury as it relates to tendon gliding. In this type of case, with bone, tendon, subcutaneous, and skin injury, the expectation is poor range of motion. TenoGlide Tendon Protector Sheet was used to protect the tendon environment.
About the Author:

Lloyd Champagne, MD is an attending hand surgeon and reconstructive microsurgeon at the Arizona Center for Hand Surgery, PC in Phoenix, AZ. He is a member of the American Society for Surgery of the Hand and the American Society of Plastic Surgeons. Dr. Champagne has completed several publications on various topics and produced this case study to facilitate further discussions 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

<table>
<thead>
<tr>
<th>Reference</th>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>TG221</td>
<td>2 inch x 2 inch (5cm x 5cm)</td>
<td>1 unit/box</td>
</tr>
<tr>
<td>TG451</td>
<td>4 inch x 5 inch (10cm x 12.5cm)</td>
<td>1 unit/box</td>
</tr>
</tbody>
</table>

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### PRECAUTIONS — TenoGlide Tendon Protector Sheet should not be applied until bleeding and infection are controlled.