Extensor Tendon Repair
Zones II, III, IV
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Indications

- Lacerations to the central slip, lateral bends and/or triangular ligament
- Rupture of the central slip in association with a PIP joint volar dislocation
- Avulsion of the central slip insertion that includes a bony fragment of the middle phalanx

Postoperative Rehabilitation

3 DAYS POSTOP

- The bulky compressive dressing is removed. A light compressive dressing is applied to the hand and forearm, along with digital level edema control.
- A gutter splint is fitted positioning the PIP and DIP joints in full extension for continual wear.

10-14 DAYS POSTOP

- Within 48 hours following suture removal, scar mobilization techniques are initiated. This may include scar massage with lotion, along with Elastomer™, Rolyan 50/50™ or Otoform K™.

4 WEEKS POSTOP

- AROM exercises are initiated with emphasis on blocking to the PIP and DIP joints, composite ROM exercise, and isolated IP extension with the MP joint blocked in flexion. Exercises should be performed 6-8 times a day for 10 minutes sessions.
- The gutter splint is continued between exercise sessions and at night.

6 WEEKS POSTOP

- PROM exercises are initiated to the digit assuming the extensor lag is less than 10°.
- The extension gutter splint is continued between exercise sessions and at night.
7 WEEKS POSTOP

- Taping and/or dynamic flexion splinting may be initiated as needed to increase PROM. It is important to watch for the development of an extensor lag and reduce the dynamic splinting if a lag develops.
- The wearing time in the gutter splint should gradually be reduced. To reduce the wearing time one hour each day should effectively discontinue the splint within 7-10 days, during the day.

8 WEEKS POSTOP

- The gutter splint is discontinued during the day, assuming the extensor lag is 10° or less.
- Gentle strengthening may be initiated as necessary.

9 WEEKS POSTOP

- The extension gutter splint is discontinued for night wear.

Considerations

- For older patients or those individuals who form dense scars, it is well advised to progressively decrease the splint wearing time as early as the 5th week to avoid a residual limitation in passive flexion.
- Longitudinal lacerations of the extensor tendons in Zones II, III, and IV that have been repaired can begin AROM exercise upon suture removal. An extension gutter splint is recommended between exercise sessions.
- To ensure the patient maintains the MP joint in flexion while attempting the IP joint extension exercise, a MP blocking splint in flexion may be fabricated to isolate active IP joint extension.

Extensor Tendon Repair

Zones V & VI

4 WEEKS POSTOP

- AROM exercises are initiated to the wrist and digits 10 minutes each hour. Isolated EDC exercises are emphasized along with using Velcro™ trappers to assist with isolating MP joint flexion and extension. It is equally important to emphasize composite flexion and
extension of the digits and wrist, along with simultaneous wrist and finger flexion to resolve or prevent extrinsic extensor tightness. And finally, it is important to isolate the EIP and EDOM when the index and small fingers are involved.

- NMES may be initiated as necessary to enhance tendon excursion. It is particularly effective when isolating the EDC with the IP joints taped in flexion.
- Scar retraction is initiated to minimize adherence of the dorsal scar to the underlying soft tissue structures. A piece of Dycem may be used to stabilize the skin proximal to the area of adherence. As the patient attempts to isolate the MP joints, scar mobilization can be performed to the adhered area.
- Ultrasound may be initiated as a deep heat to facilitate tendon excursion and to minimize scar adherence.
- For persistent edema, and edema glove such as an Isotoner™ may be beneficial for resolving the remaining edema.
- The wrist immobilization splint with MP block is continued between exercise sessions and at night.

6 Weeks Postop

- PROM exercises are initiated to the wrist and digits. It is critical to ensure that any residual extrinsic extensor tightness is resolved at this time. It is equally important to monitor for an extensor lag and to modify the exercise program accordingly.
- Taping and/or dynamic flexion splinting may be initiated as necessary to increase passive flexion. Wearing a dynamic flexion splint 3-4 times a day for 45 minute sessions should prove adequate for recapturing passive program accordingly.
- The wrist and MP extension splint is continued between exercise sessions and at night.

7 Weeks Postop

- The wearing time in the wrist and MP extension splint may be gradually decreased. To decrease the wearing time by one hour each day should result in discontinuing the splint during the day within 7-10 days. NOTE: If an extensor lag is present beyond 15°, the splint should be continued between exercise sessions.
- Gentle progressive strengthening may be initiated to the hand and wrist.
Extensor Tendon Repair
Zones VII & VIII
Postoperative Rehabilitation

3-5 DAYS POSTOP

- The bulky compressive dressing is removed. A light compressive dressing is applied to the hand and forearm along with digital level edema control consisting of fingersocks or Coban™
- A wrist immobilization splint with MP block is fitted, positioning the wrist in 30° of extension and the MP joints in full extension for continual wear.
- Active and PROM exercises are initiated to the PIP and DIP joints within the restraints of the splint.

10-14 DAYS POSTOP

- Within 48 hours following suture removal, scar mobilization techniques may be initiated. This includes scar massage with lotion, as well as Rolyan 50/50™, Otoform K™ or Elastomer™.

4 WEEKS POSTOP

- AROM exercises are initiated to the wrist and digits 10 minutes each hour. Should an extensor lag beyond 30° develop during the initial week of exercise, the exercise sessions should simply be reduced to every other hour.
- Specific exercises to emphasize during this time frame include:
  - Positioning the wrist in varying degrees of flexion and extension while attempting full digital extension and flexion.
  - Active flexion of the digits followed by active wrist flexion – for extrinsic tightness.
  - Radial and ulnar deviation of the wrist in flexion and extension with the forearm positioned in both supination and pronation to maximize the excursion of the extensor tendons.
  - Isolated EDC exercises with the IP joints taped into flexion to maximize excursion of the EDC.
  - Composite active flexion and extension of the digits.
- NMES may be initiated as necessary to enhance tendon excursion. It is particularly beneficial to tape the IP joints into flexion and isolate MP extension while using NMES.
• Ultrasound may be added to the therapy regimen as a deep heating modality to enhance the elasticity of the underlying adhesions and scar. Ultrasound has proven to be particularly beneficial for the dense adhesions along the dorsum of the wrist and hand.

6 WEEKS POSTOP

• Passive flexion exercises are initiated to the wrist and digits.
• Taping and/or dynamic flexion splinting is initiated to increase the composite passive flexion of the digits
• As dynamic flexion is initiated, it is not unusual to wear the dynamic flexion splint approximately 6 hours a day.
• The wrist and MP block splint is continued between exercise sessions and at night.

7 WEEKS POSTOP

• The wearing time in the wrist and MP block splint is gradually decreased. To gradually decrease the wearing time one hour each day has proven effective. By decreasing the splint one hour each day, the patient discontinues the static extension splint by 9 weeks.
  NOTE: if an extensor lag greater than 25° is present, it is not recommended to discontinue that static extension splint.
• Progressive strengthening may be initiated to the hand and wrist.