Dr. Schmidt
Extensor Tendon Repair Zones 5 & 6

Phase 1- Early Protective Phase 3 days – 4 weeks

Goals for phase 1

- Immobilize and protect repair
- Initiate ROM of uninvolved joints while protecting repair
- Minimize risk of scar adhesions
- Pain and edema control

Splint

- A volar-based splint is fabricated to be worn at all times with wrist in 20-30 degrees of extension and MP joints at 0 degrees of extension and IP joints free
- Repair of only the EIP or EDM requires immobilization of only the index finger or small finger metacarpal respectively
- If the EDC is repaired proximal to the juncturae tendinum, all metacarpals are splinted in extension.
- If the EDC is repaired distal to juncturae tendinum, only the metacarpal of the repaired tendon is splinted in extension, and the adjacent MP's can either be splinted in slight flexion or left free
- If unsure of the specific tendon repaired or location of repair relative to the juncturae tendinum, splint all MP's in 0 degrees of extension

Edema Management

Light compression with Coban, elevation and Manual Edema Mobilization (MEM) as needed

- Do not use tubular digital compression sleeves

Wound Care

Educate patient in dressing changes while adhering to surgical precautions

ROM

- Initiate AROM to IP joints of splinted digits as needed within constraints of the splint
- Allow unrestricted A/PROM to digits which are not splinted

Scar Management

- Two days after suture removal, initiate scar mobilization and educate patient in scar management
- Apply scar remodeling products as needed

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Phase 2 – Initiate ROM while Protecting Repair 4-6 weeks

Goals for phase 2

- Continue to protect healing repair while initiating gentle ROM
- Continue scar and edema management

Splint

Continue splint at all times except for home exercise program and hand hygiene

ROM

Initiate AROM to wrist and digits 10 minutes each hour:

- AROM to wrist in all planes of motion
- AROM to digits including flexor tendon glides, extension, abduction/adduction, intrinsic plus and opposition exercises
- Isolated EDC exercises taping IP joints in flexion as needed to isolate MP flexion/extension. Isolated EIP and EDM exercises when these digits are involved.
- Simultaneous wrist and digit flexion/extension to stretch extrinsics

Scar Management

- Aggressive scar mobilizations may be necessary to stretch adhesions including scar retraction with Dycem
- Continue with scar remodeling products as needed

Edema Management

- Edema glove may be issued for persistent edema
  - Do not use tubular digital compression sleeves
- Manual Edema Mobilization (MEM) and elevation as needed

Modalities

- Heat modalities may facilitate tendon excursion and joint mobility
- Ultrasound may be initiated to improve effects of scar mobilization, minimize adherence and facilitate tendon excursion
- NMES may be used to enhance tendon excursion (especially useful to isolate EDC while taping IP joints in flexion)

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Phase 3 – Restore ROM and Strength 6-10+ weeks

Goals for phase 3

- Restore full active range of motion while protecting the healing repair
- Prevent and reduce extensor lags if present
- Wean from splint and return to functional use of involved hand

Splint

- Continue splint between exercise sessions and at night until week 7.
- At 7 weeks, begin to gradually wean from splint so it is completely discontinued by week 8.
- If there is an extensor lag, continue splint at night. If the lag is greater than 15 degrees, continue splint during the day between exercise sessions until resolved.
- May consider taping or dynamic flexion splint to increase passive flexion if there is no extensor lag

ROM

- Initiate PROM to wrist and digits to resolve any extrinsic extensor tightness
- If there is an extensor lag, modify exercise program to emphasize active extension

Functional Activity

- At 7 weeks, begin light use of hand and return to all functional activity by 8-10 weeks

Strengthening

- Week 8 –Initiate wrist and hand strengthening

Work Conditioning

- After 10 weeks a comprehensive work conditioning program for patients with work duties that require repetitive gripping or heavy manual labor is sometimes necessary

References

Cannon, Nancy M. et. al. Diagnosis and Treatment Manual for Physicians and Therapists, 4th Ed. The Hand Rehabilitation Center of Indiana. Indianapolis, Indiana. 2001.

Skirven ,T. M.,Ostermans, A. L., Fedorczyk, J . M., & Amadio, P. C. (2011). *Rehabilitation of the Hand and Upper Extremity* (Vol. 1). Philadelphia, PA: Elsevier.

This protocol was reviewed and updated by Misty Carriveau, OTR, CHT and Steven C. Schmidt, MD March 2017.