Goals for phase 1
- Immobilize and protect repair
- Initiate distal ROM while protecting repair
- Minimize risk of scar adhesions
- Pain and edema control

Other considerations
- Dressings to be removed for ROM exercises to ensure tight composite passive flexion to maximize tendon excursion

Dr. Schmidt
Flexor Tendon Repair Zones 4-5

Phase 1 – Maximum Protection with Controlled Motion 3 days - 3 weeks

Splint
Dorsal blocking splint is fitted for continual wear in the following position:
- Wrist: neutral, MP’s: 70° flexion, IP’s: full extension
- apply gutter splints as needed to maintain full extension unless there is a concomitant nerve repair
- If there is a concomitant median or ulnar nerve repair, position the wrist in 30° of flexion or per nerve repair protocol

PROM
- Composite digit PROM exercises to be performed 4-5x/day, 25 repetitions, within the constraints of the splint

Edema Management
- Light compression with Coban or edema glove
  - Do not use tubular digital compression sleeves
- Elevation
- Manual Edema Mobilization (MEM)

Wound Care
- Educate patient in dressing changes

Scar Management
- Begin scar massage no sooner than 2 days after suture removal and after scar is fully closed with no scabbing present. Begin with light massage using lotion.
- Educate patient in scar management
- Apply scar remodeling products as needed
Phase 2 – Protect Repair with Controlled ROM 3 - 6 weeks

Goals for phase 2

• Continue to protect healing repair while achieving adequate tendon excursion to prevent scar adhesions
• Continue scar and edema control

Other Considerations

• If there is a concomitant wrist level nerve repair it is important to continue ROM within the restraints of the splint until 5 weeks for median nerve repairs and 6 weeks for ulnar nerve repairs

Splint

• Continue dorsal blocking splint at all times
• For nerve repairs that were initially splinted in 30 degrees of wrist flexion: Week 4 modify splint to 20 degrees of wrist flexion, Week 5 modify splint to 10 degrees of wrist flexion
• A wrist and MP block splint may be fitted on the volar side of the DBS to isolate the IP joints with active flexion

ROM

• Continue Phase 1 digit exercises
• 3 weeks – initiate AROM within the restraints of the DBS (Tendon gliding, intrinsic plus, abduction/adduction), initiate gentle pain-free tenodesis exercises outside of the splint (wrist flexion allowing slight digit extension, wrist extension with digits flexed)
• 4 weeks – gentle PIP and DIP blocking exercises may be initiated
• 4½ weeks – allow full active extension outside of the splint, emphasize differential tendon gliding and blocked PIP and DIP motion for maximum FDS and FDP tendon excursion

Scar Management

• Aggressive scar mobilizations may be necessary to stretch adhesions and promote tendon excursion
Phase 3 – Restore Full ROM and Progress to Strengthening 6 – 12+ weeks

**Goals for phase**
- Restore full active and passive range of motion while protecting the healing repair
- Initiate strengthening
- Return to functional activity

**Other considerations**
- Educate patient that a tight sustained grip with or without resistance greatly increases risk of tendon rupture. The patient should be using the hand for light activity only at home until 8-10 weeks

**Splint**
- Discontinue dorsal blocking splint
- For flexor tightness, a full extension resting splint may be added at night or dynamic extension splint during the day
- For median nerve repairs it may be necessary to fabricate a c-bar web spacer splint for night wear to prevent web space contracture
- For ulnar nerve repairs it may be necessary to fabricate a RF/SF dorsal block splint to prevent clawing
- For both median and ulnar nerve repairs a dorsal MP block splint will be necessary to prevent clawing of all digits

**ROM**
- Initiate composite PROM to wrist and digits
- Continue phase 2 active exercises with emphasis on differential tendon gliding

**Strengthening**
- Week 8 – begin progressive strengthening

**Functional Activity**
- Patient educated in resuming functional activities at home beginning with light use and over several weeks working up to heavier tasks

**Work Conditioning**
- After 12+ weeks and with MD consent a comprehensive work conditioning program for patients with high demand / heavy manual labor occupations may be appropriate
References


Suggested Reading:


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