Dr. Klika

Flexor Tendon Repair Zones 4-5

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

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

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

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

Edema Management
- Light compression with coban or compression sleeves to digits, hand and forearm
- Elevation
- Manual Edema Mobilization (MEM)

Wound Care
- Educate patient in dressing changes

Scar Management
- After 2 days of suture removal, initiate scar mobilization
- 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

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

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

ROM

- Continue Phase 1 digit exercises
- 3 weeks - AROM exercises are initiated within the restraints of the DBS (Tendon gliding, intrinsic plus, abduction/adduction)
- 4 weeks – gentle PIP and DIP blocking exercises may be initiated
- 4 ½ 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 - 10 weeks

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

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 webspace 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

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

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

Strengthening
- Week 7 – 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 10 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: