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Flexor Tendon Repair Protocol (Zones I-III)

St. John Protocol

3 Days Postop

- "You can move it but you can't use it!" is the key important hand and finger movement rule emphasized to patients at least 3 times during the flexor repair surgery and at each visit.
- The bulky compressive dressing is removed. A light compressive dressing Is applied to the hand and forearm along with digital level edema control utilizing fingersocks or 1" Coban

Note: It has been documented in the literature that 3 days postop is the ideal time frame to Initiate early motion. Work by Manske and others have shown that the force demands on the flexor tendons is less when therapy Is initiated at 3 days. The edema is better controlled by this time frame. Waiting 3 to 5 days before moving lets the swelling, work of flexion, and friction decrease to minimize the risk of rupture. Collagen formation does not start until day 3, so detrimental immediate movement is not necessary.

- Fabricate Dorsal Blocking Orthosis:
    - o wrist 15° extension
    - o MPs 30° flexion
    - o IPs full extension.
- Instruct in passive flexion-extension (warm-up) exercises while in orthosis 5-10 reps every hour.
- Once edema is down, begin true active finger flexion up to 1/4 to 1/3 of a fist while in orthosis 10 reps every hour.
- If edema is not down, instruct in edema management techniques.

4 -14 Days Postop

- You can move it but you can't use it!" is the key important hand and finger movement rule emphasized to patients at least 3 times during the flexor repair surgery and at each visit.
- Edema control through elevation of hand and gentle finger compression wrap (Coban, 3M, Hartford City, Ind. or Co-Flex, Andover Healthcare Inc., Salisbury, Mass.).
- Within dorsal blocking splint involving the wrist, patients are taught passive flexion of all digits as a "warm up" before active flexion.
- Active IP joint extension with MP joint blocked in flexion to prevent interphalangeal joint flexion contractures.
- True active flexion up to one third to half of a fist; initiating movement at the distal interphalangeal joint (active hook fist).
- No tension, painful or forceful movement. We encourage our patients to be off all pain medicine and follow pain guided hand therapy before starting true active movement.

2 – 4 Weeks Postop

- Dorsal block splint is shortened to Manchester short splint.
- Active synergistic exercise program in the Manchester short splint.
- Patients work toward half to full active fist position and up to 45 degrees of wrist extension.
- Continue full IP joint extension with MP in full flexion.
- Work toward achieving full fist position by 6 weeks.

6 Weeks Postop

- Manchester short splint discontinued.
- Patients can start to use the hand for light activity.
- Start palm-based or digit extension splints at night if needed to correct IPJ flexion contractures. Relative motion flexion orthoses during daytime activity are also helpful.

8 Weeks Postop

- Gentle, progressive strengthening may be initiated beginning with a nerf ball, putty and a hand exerciser.

10-12 Weeks Postop

- The patient is encouraged to resume normal use of the hand in all AOL activities and to refrain from heavy lifting and/or a tight sustained grip for a period or 14 to 16 weeks.

CONSIDERATIONS

As the early active motion program is initiated, if edema is significant it is recommended to delay the early active flexion. The edema may add significant resistance to the flexor tendons and risk rupture. The best results are achieved when the edema is brought under control during the initial 5 to 7 days following surgery. Significant edema can often be managed with night-time compression glove and digital level light compressive dressings on a periodic basis during the day and/or at night.

If the patient has the tendency to make a tight grip with the initial place and hold exercise, consideration can be given to utilization or an EMG biofeedback unit. This can allow the patient to demonstrate a light active muscle contraction with the opposite hand. Once this had been done the patient can be educated in how to perform a light active muscle contraction with the involved hand.

It is critical that the patient achieves excellent flexion within the initial 10 to 14 days postop. To consider the therapy much like a tenolysis is appropriate. To achieve good tendon excursion in the early postop days will make it easy to maintain the excursion through the final weeks of therapy.

Reference:
Lalonde et al. Plast Reconstr Surg Glob Open. 2016 Nov 23;4(11):e1134
https://pmc.ncbi.nlm.nih.gov/articles/PMC5142498/#:~:text=The%20Saint%20John%20Protocol%20describes,full%20fist%20place%20and%20hold.