The Orthopaedic & Fracture Clinic

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Flexor Tendon Repair Protocol (Zones I-III)

Early Active, Modified Duran Program

Patient Name:_____ **Date:** _____

Diagnosis:_____

Surgery: _____**Surgery Date:** _____

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.

- A dorsal blocking splint (DBS) is fitted to be worn at all times except during the active place and hold exercises. While In the DBS the Modified Duran exercise program Is performed. The dorsal blocking splint positions the wrist in 20° of palmar flexion, the MP joints In 65° - 70° of flexion and the IP joints in neutral.
- A tenodesls splint is fitted. A dynamic hinge serves as the wrist component The hinge allows full wrist flexion and limits wrist extension to a maximum of 30° of extension. The MP joints are positioned in 70° of flexion and the IP joints at neutral.
- Following the PROM exercises outlined in the Modified Duran Program, the active place and hold exercises are performed. The tenodesis exercise consists of passively flexing the digits in a composite fashion while simultaneously bringing the wrist into extension. Once in this position, the patient actively attempts to maintain a fist with a gentle muscle contraction, for 5 seconds. This is followed by relaxing the wrist and letting it drop into flexion. [Refer to patient handout].
- Edema control through elevation of hand and gentle finger compression wrap (Coban or Co-Flex).

10 -14 Days Postop

- Within 48 hours following suture removal, assuming the wound is fully healed, scar massage with lotion along with Rolyan 50/50™, Otoform KN, or Elastomer™ may be initiated.
- The PROM Duran exercises are continued within the DBS. The tenodesis exercises are continued within the confines of the tenodesis splint ·

3 – 3.5 Weeks Postop

- NMES may be added to the therapy program to maximize the active excursion of the FDS and FOP. NMES would be used after the patient has performed the PROM exercises and tenodesis exercises.
- Ultrasound may be added to the therapy should it become apparent the long flexors are becoming somewhat adherent

4 Weeks Postop

- The tenodesis splint is discontinued. No splint is worn during AROM exercises.
- The patient continues the Modified Duran Exercise Program within the dorsal blocking splint
- The following AROM exercises are performed without a splint
    - 25 repetitions are performed every 2 hours, out of the tenodesls splint
        - Place and hold exercises
        - Actively making a fist followed by straightening the fingers with the wrist in neutral
        - Actively making a fist at the PIP ioints then straightening fully with the wrist in neutral
        - Actively making a fist. followed by allowing the MP joints to go Into extension while maintaining the IP joints in flexion. This Is followed by fully straightening the fingers.
        - AROM of the wrist in flexlon and extension

5 Weeks Postop

- The Modified Duran Exercises and AROM exercises are continued. One additional active exercise is added whereby the patient actively makes a fist followed by actively extending the wrist and digits simultaneously.

6 Weeeks Postop

- The dorsal blocking splint Is discontinued.
- If active extension is limited, a night resting pan splint may be fabricated in the amount of extension the patient can achieve actively. Efforts should not be made to maximize full passive extension, which may make it difficult to recapture the flexion.
- Buddy taping ls initiated between the Involved digit and an adjacent digit This Is done simply to remind the patient not to use the hand in heavy lifting.
- Blocking exercises may be initiated to the PIP ·and DIP joints as needed. If excellent range of motion has been achieved (i.e., 80-85% of normal motion) then blocking is *not* recommended. In addition, blocking is *not* permitted to the small finger as it may risk rupture.

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 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.