ORTHOPEDICS & SPORTS MEDICINE
BAYCARE CLINIC

DR. BRIAN KLIKA & DR. ANDREW KIRKPATRICK
TENDON TRANSFER EIP TO EPL POST-OP THERAPY PROTOCOL

Closed ruptures of the EPL typically occur in closed fractures of the wrist and rheumatoid arthritis. These ruptures are not amenable to direct repair. Successful rehabilitation following EIP to EPL tendon transfers requires the guidance of a highly trained hand therapist. The therapist promotes motor retraining of the transferred tendon and treatment to control scarring and edema to regain normal function of the thumb.

Phase 1 – Protect Transfer, Motor Retraining (0-6 weeks)
(continued on next page)

Goals for Phase 1	Precautions for Phase 1
• Protect healing tendon transfer • Facilitate transfer motion for motor retraining of tendon • Gradually resolve extrinsic extensor tightness through active exercise	• When initiating active composite wrist and thumb flexion, do no overstretch the repair. Monitor for extensor lag at thumb IP joint. If extensor lag develops, decrease active stretch to the thumb and wrist extensors

Other Considerations
- When activating the tendon transfer, start with 5 reps x3 sets spaced out throughout a therapy session, being careful not to over- fatigue the muscle
- When activating the repair, the following techniques may be helpful: Gravity eliminated plane, place and holds, prevent old substitution patterns, perform desired motion on uninvolved side with involved arm simultaneously, visualization, motor imagery with mirror box, biofeedback, NMES, vibration, water or fluidotherapy for buoyancy effects

Orthosis
- Custom forearm-based wrist and thumb extension splint for continual wear
- Wrist positioned in 30° extension, thumb midway between radial and palmer abduction; thumb MP full extension, IP full extension to 10° of hyperextension.
- **3-1/2 weeks**: remove for therapy and home exercises

ROM
- **10-14 days**: AROM to uninvolved joints
- **3-1/2 weeks**:
  - Isolated wrist & digit active ROM for at least the first week
  - Activate the tendon transfer:
    - Simultaneous extension of IF/thumb
- **4-1/2 weeks**:
  - Initiate composite active flexion of wrist & thumb
  - Reverse blocking: hold passive flexion of wrist & thumb MP joint, then ask patient to actively extend thumb IP joint; progress by gradually bringing wrist into increased extension, but keep MP joint flexed as patient attempts active extension of IP joint

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Phase 1 – Protect Transfer, Motor Retraining (0-6 weeks)

Manual Therapy

- Begin scar massage no sooner than 2 days after suture removal after scar is fully closed and no scabbing is present. Begin with light massage using lotion.
- Scar remodeling products as needed
- Desensitization as needed to SBRN
- Manual Edema Mobilization (MEM) as needed for swelling

Edema Management

- Light compression with Coban or compression sleeve to thumb, index, hand, forearm

Wound Care

- Sterile dressing changes as needed

Modalities

- NMES at 3-1/2 weeks if needed to facilitate tendon excursion

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Phase 2 – Restore ROM, Strength, and Hand Function (6-10 weeks)

Goals for Phase 2	Precautions for Phase 2
• Regain full active motion • Restore original function of EPL • Restore hand function	• When initiating passive composite wrist and thumb flexion, do no overstretch the repair. Monitor for extensor lag at thumb IP joint. If extensor lag develops, avoid passive stretch to the thumb and wrist extensors and prolonged splinting may be necessary.

Orthosis
- Reduce to gutter splint holding thumb IP joint in full extension to 10° hyperextension for additional 1-2 weeks
    - Gutter splint is discontinued with an extensor lag of 10° or less
- For significant scarring and deficits in composite thumb flexion, taping or dynamic flexion splinting may be initiated

ROM
- Continue AROM to wrist and thumb
- Initiate PROM to wrist & thumb (for first week perform isolated wrist & thumb motion then gradually progress to composite wrist and thumb flexion)
- May include taping to facilitate ROM
- Discharge to HEP full time when patient has full, smooth wrist and thumb ROM without hesitation

Modalities
- Ultrasound for scar/tendon excursion
- Continue NMES as needed to facilitate tendon excursion

Strengthening
- **7 weeks**: initiate strengthening to wrist and hand
- **8 weeks**: initiate weight bearing
- No limitations at 12 weeks
- After 8-10 weeks and with physician consent, a comprehensive work conditioning program for patients with high demand/heavy manual labor occupations may be appropriate

Expected Return to Work
- Sedentary 3-4 days
- Medium Labor 6 weeks
- Heavy Labor 8-10 weeks

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