



Dr. Klika & Dr. Kirkpatrick
Elbow Percutaneous Tenotomy

A minimally invasive procedure using ultrasound guidance and a specialized needle which specifically breaks down and removes unhealthy and painful scar tissue without disturbing the surrounding healthy tendon tissue.

Phase 1 – Immediate Post-Surgical 0-3 Weeks

Goals for phase 1

- Protect weakened tendon
- Minimize pain and edema
- Educate patient in home program, importance of wearing splint at all times and avoiding all painful activities

Other considerations:

Ice and use of NSAID's may be contraindicated as the full desired effects of the procedure is to utilize and enhance the body's natural healing abilities through the inflammatory response

Splint

- Wrist Hand Orthosis (WHO) with wrist in neutral at all times except for hygiene
- An elbow pad may be fitted to protect the lateral elbow

Edema Management

- Light compressive dressing or sleeve may be applied to elbow, forearm, and wrist
- Elevation and Manual Edema Mobilization (MEM) as needed

Scar Management

- Begin scar massage no sooner than 2 days after suture removal after scar is fully closed with no scabbing present. Begin with light massage using lotion.
- Apply scar remodeling products as needed

AROM

- Initiate gentle AROM to elbow, forearm, wrist, and hand in all planes of motion
- Begin with isolated single joint pain-free ROM for first 2 weeks and progress to composite elbow, forearm and wrist stretching as tolerated

Strengthening

- At 2 weeks, initiate sub-maximal pain-free elbow, forearm, and wrist isometric strengthening (patient should have full pain-free AROM prior to initiating isometrics)
- Patient may begin prone scapular strengthening if pain-free



Phase 2 –Early Strengthening 3 - 6 weeks

Goals for phase 2

- Continue pain and edema control
- Continue scar management
- Restore full AROM
- Initiate gentle pain-free isometric strengthening

Other Considerations

Educate patient in importance of pain-free exercises and daily activities. Patient should stop any exercise or activity that produces pain immediately as flare-ups are common with this type of injury.

Splint

- Gradually wean from wrist hand orthosis reducing orthosis 1-2 hours per day

ROM

- Continue phase 1 ROM progressing to composite stretching
- Initiate PROM to elbow, forearm, and wrist if there are deficits

Manual Therapy

- Continue phase 1 scar and edema management
- Desensitization if complaints of hypersensitivity in lateral elbow

Modalities

- Fluidotherapy for heat, ROM, and desensitization
- Paraffin may be used for deep heat prior to ROM
- Ultrasound for scar management

Strengthening

- Initiate eccentric strengthening for wrist extensors beginning with 1–2-pound free weight with elbow flexed at 90 degrees 10 reps, 2x/day; progressively work toward eccentrics with elbow fully extended
- Continue proximal scapular strengthening in prone position or prone on therapy ball
- At 4 weeks as long as patient has full AROM and tolerates isometric strengthening, initiate light weight isotonic shoulder, elbow, forearm, and wrist strengthening, and grip and pinch strengthening with putty

Functional Activity

Gradually return to functional activity as tolerated



Phase 3 –Strengthening and Return to Full Function 6+ weeks

Goals for phase 3

- Return to all daily activities
- Return to sports and full duty work

Other Consideration:

Educate patient in importance of pain-free exercises and daily activities. Patient should stop any exercise or activity that produces pain immediately as flare-ups are common.

ROM

Continue ROM and composite stretching to shoulder, elbow, forearm, and wrist

Manual Therapy

- Continue scar and edema management as needed
- Joint mobilizations as needed for pain-relief and to restore full ROM

Modalities

Continue with heat modalities as needed for pain, scar management and resolve any ROM deficits

Strengthening

- Continue pain-free eccentric strengthening for wrist extensors progressing up to 5# free weight or the amount of weight tolerated on uninvolved side
- Continue proximal to distal upper extremity isotonic strengthening
- Initiate functional strengthening and work simulation as tolerated

Functional Activity

Gradually return to all activities of daily living including home management and work tasks as tolerated

Work Conditioning

After 8-10 weeks and with MD consent a comprehensive work conditioning program for patients with high demand / heavy manual labor occupations may be appropriate

References

- Cannon, N. M., & Schnitz, G. (2001). *Diagnosis and treatment manual for physicians and therapists*. Indianapolis, IN: Hand Rehabilitation Center of Indiana.
- Finestone, H. M., MD CM, & Rabinovitch, D. L., MD. (2008). Tennis elbow no more: Practical eccentric and concentric exercises to heal the pain. *Canadian Family Physician*, 54(August), 1115-1116.
- Peterson, M., Butler, S., Eriksson, M., & Svärdsudd, K. (2014). A randomized controlled trial of eccentric vs. concentric graded exercise in chronic tennis elbow (lateral elbow tendinopathy). *Clinical Rehabilitation*, 28(9), 862-872. doi:10.1177/0269215514527595

This protocol was reviewed and updated by Brian Klika, MD, Lacey Jandrin, PA, Andrew Kirkpatrick, MD, Tiffany Terp, PA, and the Hand Therapy Committee 8/9/2021.