Carpal Instability Procedures

Surgeries listed below address different levels of scapholunate ligament tears and carpal instabilities, ranging from isolated tears to advanced carpal collapse as seen in SLAC wrists. Rehabilitation progression is limited by bone/ligament healing and carpal kinematics. The goal of all surgical procedures is to provide a stable, pain-free joint – therefore full range of motion of the wrist is not the therapy goal. Patient education pre-operatively is critical to prepare the patient for decreased wrist mobility and loss of grip strength. Specific education regarding the concept of axial loading across the carpals with resistive gripping is critical to maintaining the stability of the ligament repair.

Goals of therapy

• Promote wound healing
• Minimize edema
• Prevent thumb IP joint extensor lag
• Minimize scar formation

Days 0-7

• Post-op dressings removed, wounds cleansed and sterile dressings applied
• Fabricate 2 splints: forearm-based dynamic thumb IP joint extension splint for day use (wrist in 30 degrees extension, thumb in extension. Apply outrigger more proximally to allow hyperextension of the IP joint) and forearm-based static extension splint for night use
• Begin protected thumb IP joint flexion to 30 degrees, with dynamic assist for IP joint flexion
• Protected wrist and thumb passive range of motion in therapy sessions only
• Edema reduction techniques, as needed

Days 10-14 (First follow-up with PA)

• Sutures removed. Begin gentle scar massage
• Advance thumb IP joint flexion to 45 degrees (2 weeks post-op)
• Continue protected wrist and thumb passive range of motion in therapy sessions only
• Continue dynamic assist thumb extension within splint

**Week 3**

• Begin "place and hold" exercises for thumb IP joint extension
  - Motor re-training with index finger extension, as needed
  - Instruct patient to use 50% of motor power with exercises
• Continue dynamic extension splint between exercise sessions
• Advance IP joint active flexion to 60 degrees
• Begin active wrist range of motion in all exercise sessions in tenodesis pattern

**Week 4**

• Begin active thumb IP extension
• Wean from dynamic extension splint
• Continue static extension splint at night
• Monitor for extensor lag

**Weeks 5-6**

• Begin full composite thumb flexion and extension
  - Monitor for changes in extensor lag and decrease exercise if lag develops
• Advance to strengthening program
• Discontinue static extension splint if no extensor lag present