Hand and Upper Body REHABILITATION CENTER

A Hand Up In Healing!

Rehabilitation Following Ulnar Wrist Procedures

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Post-op Management Guidelines

Every wrist procedure/referral

- What is objective of this operation
- What is surgeon's / patient's expectation of the outcome
- How will we (team) meet these objectives

Journal of Hand Therapy : Special Issue of the Wrist April/June 2016

Clinical Manual assessment of the wrist Ann Porretto-Loehrke, PT,DPT,CHT,COMT,COMTPT

The ulnar side of the wrist; Clinically relevant anatomy and biomechanics Emily Altman PT,DPT,CHT,CLT,WCC,OCS

The "Four –Leaf" Treatment Algorithm;A Practical Approach to Manage Disorders of the Distal Radioulnar Joint, Sanjeev Kakar,MD

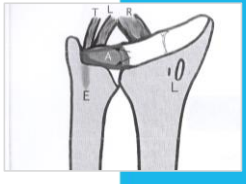
Hardy..

"Progress of rehab depends on quality of reconstructed structures as determined by surgery."

- Communicate with surgeon!

Wrist – stability = pain free or less pain = good outcome!

TFCC Management – Arthroscopic debridement or repairs



- Debridement – gentle AROM
- Repair (central repair) – unload repair site while soft tissue healing occurs.

Debridement

LaStayo – Central articular disk tear

- 1-2 wks – wrist support splint – progress activities as tolerated
- Advance exercise program if no adverse effects of:
  - Pain
  - Swelling
  - Decreased ROM
  - Decreased strength

Outcome: Functional activities possible within 1st 2 wks after surgery.

TFCC Management

Arthroscopic or Open repair TFCC

- Wrist/forearm may be immobilized for 4-8 wks
- Functional activities/tasks limited for 3 months
- Progression of exercises
  - active to active assisted to passive wrist and forearm



Continued supportive splinting 1-2 months after initial immobilization

Principles Regarding Progression of Activities and Exercise – Ulnar Wrist Problems (Skirven, LaStayo, Hardy)

- Therapist Responsibility – Communication and understanding surgery and goals/outcome expectation
- Structures to protect
- Structures to move and or stress
- Deliver *stressors* in careful manner

Splinting guidelines to accomplish goals

Splint in position of comfort ulnar gutter/wrist support

Forearm limitation – sugar tong/munster splint

Static progressive splinting/ serial casting/dynamic splinting may be utilized

Pain relief

TENS, ionto, ultrasound, heat for rest phase of therapy and to facilitate increased ROM

Strengthening if indicated (based on goals) – only if no pain

Grip progressed from
- 1st supinated position
- 2nd forearm neutral
- 3rd pronation



ECU Tendon Stabilization (Adams)

Anatomy – ECU tendon normally held within groove of ulna head by sub sheath (deep retinaculum) Sub sheath resists the normal tendency for tendon to sublux

Indications
- Repetitive stress on sub sheath
  - Fibrosis results in stenosing tenosynovitis
  - Tendon becomes unstable
  - Recurrent subluxation over ulnar ridge or groove produce partial tendon rupture
- RA – volar subluxation common

Exam – pain/snapping by combined supination, UD against resistance,tendon dislocates volar/ulnar direction with supination and UD, relocates with pronation

Surgery – ECU tendon stabilization – sling created from extensor retinaculum

Post-op care
- Immobilization in long arm cast in position of greatest tendon stability for 4 wks
- Wrist splint 2+ wks, supination/UD weak
- Gradual AROM – limiting force
- Return to activities 3-4 months

ECU stabilization

POST op considerations/ Altman JHT April/June 2016
ECU dynamic stabilization role:
depression of ulnar head
elevation of ulnar carpus
tensioning of TFCC w/subsheath's interaction with DRUL
Program Focus
promote DRUJ stabilization and ECU function
dynamic strengthening
proprioception exercises
targeted strengthening
Soft orthosis for tender pisiform when writing (volar posture of distal radius)

L-T repair (Hastings-Green)

Lunotriquetral Arthrodesis
- Indications
  - Complete lunotriquetral instability
  - Usually traumatic injury
  - Degenerative arthritis – long standing ulnocarpal impingement

Surgery – L-T fusion with k-wire and corticocancellous graft

Post-op Management
- 10-14 days – dressing removed, x-ray, short thumb spica applied
- 8 wks – cast removed, x-ray, AROM exercises with short arm splint between exercises, splint continued for 10 wks+, strengthening begins
- 12 wks – full unrestricted use
- Pins left in place unless symptomatic
- Solid fusion requires 10-12 wks before unrestricted RTW
- May have discomfort and weakness for several months

L-T arthrodesis outcomes:

- Successful operation
- Non union can occur up to 30%
- 80% of AROM by 10-12 wks
- Grip strength – maximum 9-12 months
- 60-80% of normal
- Pain relief

Bednar's (Melone) Stage 5

- Dosal Radial carpal ligament repair
- Repair TFCC, ECU, UCL, LT, DRCL
- Fusion- 4 corner fusion
- Post op management – stability, motion without pain

Ulnar Shortening Osterotomy

Shortens ulnar to treat ulnar impaction syndrome
Reduces load across TFCC
Goal to reduce chronic wrist pain

Advantage of USO: DRUJ and TFCC stay intact
Needs complete healing of osteotomy site up to 12-14 weeks, 16 weeks to full activity
Immobilization in cast 4 weeks long arm 4 weeks short arm to 12-14 weeks
Therapy program should progress slowly with load application across ulnar due to healing

Darrach Resection

Removal of ulnar head to relieve severe pain and instability at DRUJ
Common with less active patients ie RA

Post op Management
Immobilization in long arm cast or orthsis , neutral rotation 6 weeks for soft tissue healing
Gentle AROM , functional activities initiated at 6 weeks

Wafer Resection Osteotomy

Diagnosis of TFCC symptomatic tears , ulnar impaction syndrome

Surgery; 2-4 mm removal of distal ulna to unload ulna
Post op forearm immobilized in neutral rotation 3 weeks
Gentle AROM at 3 weeks plus
6 weeks normal use is expected
May take up to 3-6 months for maximal pain relief

Problem Solving Pearls:

- Stable wrist position is supination
- Focus on ECU/FCU (Skirven) – together stabilize ulnar wrist
  - Use symptoms response as guide to progress activities/exercise
  - PWRE – Patient Rated Wrist Eval
  - VAS – Visual Pain Analogue

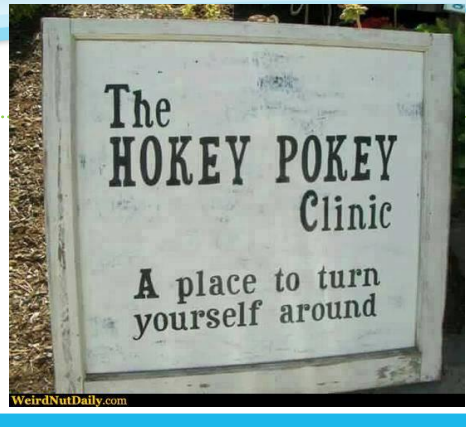
Avoid: Aggressive wrist mobilizations wrist curls repetitive putty squeezing in pronation

Guiding Principles for therapy (Michlowitz)
- Protect healing tissues
- Recognize and treat post op complications
- Maximum gains/recover time 1-1.5 year post rehab
- LESS IS MORE!

Activity Modification (Prosser)

- Avoid ulnar deviation
- Loading ulnar side of wrist
- Rotational activities esp. pronation
- Splinting/taping for 4-6 months
- ulnar side strap to support ulnar carpus

Grip strengthening – used only to improve isometric wrist stabilization while gripping
- Neutral/supinated/pronated position
- Eccentric ECU strengthening



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Additional references and update to power point www.ErieHandCenter.com

Thank You