

PROTOCOLS HAND THERAPY

PROTOCOL BOOKS/GUIDELINES:

POST SURGICAL REHABILITATION GUIDELINES for the ORTHOPEDIC CLINICIAN: HOSPITAL FOR SPECIAL SURGERY

%% HAND AND UPPER EXTREMITY REHABILITATION: A PRACTICAL GUIDE: CURTIS NATIONAL HAND CENTER

**** DIAGNOSIS AND TREATMENT MANUAL FOR PHYSICIANS AND THERAPISTS: UPPER EXTREMITY REHABILITATION (INDIANA)**

&& CSE: HAND-ON TENDON TRAUMA: FLEXOR & EXTENSOR INJURIES

These symbols will be used referring a clinician to a protocol to read/research after reviewing surgical reports of patients scheduled on a clinician's schedule and prior to speaking with the Hand Surgeon. These steps should be completed prior to the first post-op visit in hand therapy. Always Discuss with co-workers

These books/guidelines are located in the cabinet above the printer in our office.

REMEMBER "TIME FRAMES OF TISSUE HEALING"
INFLAMMATORY (0-10 DAYS), REPARATIVE (10-28 DAYS), REMOLDING (28 DAYS - 12 MONTHS)... deliver rehab according to time frames of healing!!!! Schedule MD f/u visits according to time frames of healing!!!!!! **LET'S TALK!!!!!!**

TOTAL ELBOW ARTHROPLASTY

Read op report prior to talking w/ MD
Splint (custom (L3702) or off the shelf elbow)
See **##, %%** for protocols

DISTAL BICEPS REPAIR

Bieber: hinged brace (blocks 75-120) ASK MD!; prom flex/sup/pro x 2 weeks; start allowing increase in ext (by 10) beginning 2 week post op
AAROM starting 2 weeks post op
No lifting more than a coffee cup (starting 2-3 weeks post op)
f/u with MD 5 weeks

Durbhakula: hinged brace (45-120) ASK MD!; may allow a sling depending on hardware used and stability of repair...talk with him....can follow similar to Dr. Bieber....TALK W MMD!!!!

See ****** for protocol information/guidelines

TENDON REPAIR FLEXOR & EXTENSOR

EAM PROTOCOL (EAM W/ MODIFIED DURAN); SPLINT: L3808
See **##, %%**, Roz Evan's Tendon Update Article for protocols
Must start EAM no later than day 5
Can see patient Day 2 (for splint/modified Duran portion of protocol)
Bring pt back in next 1-2 days to start EAM portion of protocol
Pictures to give patient are on computer & with Ann
Talk with co-worker

ELBOW FRACTURE/ORIF OLECRANON

Splint: custom (L3702 or hinged brace or sling)...custom 60 flexion...hinged brace (ask about blocks).... (ASK MD!!!!!!)
Protocol depends on hardware used/stability of fracture (ASK MD!!!)
PROM extension/ limit flexion
Protect for 4 weeks...see MD again at 4 – 6 weeks (ask MD!!!!!!)
Advance according to time frames of tissue healing...LET'S TALK!!!!!!

RADIAL HEAD REPLACEMENT

See ##; custom splint 80/90 degrees flexion; overhead protocol x 4 weeks; wean from splint at 6 weeks; MMD may want to come over at 2 weeks, 4 weeks, & 6 weeks (ASK MD!!!!!!)

TFCC REPAIR

See %%, **; splint: Munster, sugartong (90 elbow flex)
READ POST OP REPORT; TALK W/ CO-WORKER; TALK WITH MD!!!!

UCL/RCL REPAIR

Hand: splint L3913; protect joint for 4 weeks (no movement at repaired joint); AROM all unaffected joints...take stress off of repaired ligament (deviate towards repaired side)....TALK WITH CO-WORKERS...read **, ,

TENDON TRANSFER (EIP to SMALL; EDC OF MIDDLE TO RING)

Splint: L3808; volar FA based including fingers (all joints); AROM unaffected jts; edema control principles; PROM PIP/DIP hand in gravity eliminated position (keep MP extended); cut down splint at 2 weeks to

allow free PIP & DIP movement (continue to protect tendon transfer; no MP movement....talk with co-workers about progression of exercises during therapy session and for HEP...D/C splint 6 weeks...always TALK WITH MD during combined visits to discuss progression...(TALKING WITH MD ABOUT DIFFERENT PROGRESSION OF SPLINTING!!!

TENDON TRANSFER EIP TO EPL

Casted x 4-6 weeks; start isolated joint motion (no combined wrist & thumb flex/opposition)...MD may want a custom splint made if cast removed "on the earlier side" ...wean from splint @ 6 week mark....talk with co workers!!!!

CMC Arthroplasty /LRTI

First visit – Same day cast off/pin removal 4 weeks post-op

Splint – Pre-fab or custom thumb spica (L3808) per MD preference.

Wean from brace use.

Precautions - Limit resistive pinch/heavy grip 3-4 weeks.

Therapy – 1-2x/week 4-8 weeks

A/AAROM wrist, thumb, fingers all planes of motion. Strengthening at 8 weeks per Albrecht Manual (talk with co-workers about this)

MD f/u – 8 weeks post op...x-ray at 8 weeks post op

Dupuytren's Contracture Xiaflex Release

First visit – Day of manipulation

Splint – L3913 Hand based HFO finger extension splint for night use for 4 weeks (include adjacent fingers)

Precautions – Skin care/bandaging as needed if skin tear.

Therapy – 1x/week for 3 weeks

AROM and tendon glides for flexion/ext during the day. Blocking ex for affected joints. Encourage normal active use during day.

MD f/u 3 weeks. Post manipulation

Post-op Dupuytren's Open Release

First Visit: 3-5 days post-op

Splint: Hand based finger extension splint (L3913)

Remove sutures 10-14 days post op

Therapy: 1x-2x/week.

AROM for 1-2 weeks advance to AAROM. AROM to unaffected joints/fingers. Pt edu on splint use, precautions, wound care/dressing changes/scar management. AROM ex /tendon glides, progression of functional activities.

MD f/u 4 weeks post op (check with MD upon initial visit)....

Elbow Ulnar Nerve Transposition/Decompression

Seen for Therapy – during 1st week post op

Precautions – Transposition: NO extension past 45 deg flexion.

Brace – Hinged elbow brace

Transposition: 45 deg ext to 120 flexion

Decompression: 30 deg ext to 105 flex

Sutures- usually internal dissolvable; if CTR preformed remove sutures 7-10 days (always consider underlying co-morbidities prior to removing sutures); talk with co-workers!!

AROM from protected ext to full flexion as tolerated. Brace x 4 weeks; no lifting or resistive activity x 4 weeks post op; MD f/u in 4 weeks.

MMD may only use sling for first 1-2 weeks

Gentle AROM

Elbow Olecranon Fracture ORIF with wires/screws

Prior to talking with MD, READ SURGICAL REPORT!!! Meet with MD prior to first visit to determine stability of fracture post op and about type of splint (may be hinged brace or sling); get guidelines from MD concerning allowed ROM

Brace – Hinged elbow brace - 45 deg ext to 120 flexion (clarify with MD!) may only want a sling (depends on stability of fracture) TALK WITH MD!!; remove staples 3 weeks post op

MD f/u 4-5 weeks post op

Wrist /Finger Fracture ORIF Cast Removal

Seen for Therapy – same day cast off

Precautions – check with MD

Therapy - AROM wrist all planes, DTM, and thumb ROM/ finger tendon glides 1-2 weeks then begin gentle AAROM. Begin strengthening at 8 weeks post –injury.

MD f/u- in 4 weeks.

Finger Fracture Closed (CRPP) or Open Reduction

READ SURGICAL REPORT!! TALK WITH CO-WORKERS!

TALK WITH MD PRIOR to first visit for custom splint needs and positioning required!!!

First visit: 3-5 days

Therapy: Will need protective splinting 4-6 weeks. AROM to unaffected joints; AROM TO AFFECTED FINGER MAY BE POSSIBLE (**ASK MD!!**)

MD F/U 4 weeks post op (could be 2 weeks post op if MD concerned about stability)....ASK MD AT FIRST VISIT!!!!

Ganglion Cyst (wrist/finger), CTR, Synovectomy, Trigger Release

Frequency: 1-2 visits

EJB: First visit: 7-8 days post-op

Remove sutures (be aware of any co-morbidities that might affect suture removal !!!) talk with MD if you have concerns

AROM, tendon and nerve glides as needed, wound care/scar management, precautions, return to functional activities.

EJB f/u in 3 months (make sure pt has paperwork to give to checkout/make appointment) Therapist to fill out small prescription form and Post-op Therapy List.

Ganglion Cyst (wrist/finger), CTR, Synovectomy, Trigger Release
(continued)

MMD: First visit: 8-10 days post op

MMD will come over for first therapy visit. Wait for "ok" to remove sutures. Apply steri-strips.

AROM, nerve and tendon glides, wound/scar management, precautions, return to functional activities. Stockinet or light dressing.

MD f/u in 1 month. Patient to make appointment at checkout desk.

Laceration of nerves

READ SURGICAL REPORT/CONSULT WITH MD PRIOR TO FIRST VISIT.....TALK WITH CO-WORKERS!

Discuss splint options (depends on location of repair: digital, common digital, wrist level, forearm level) (L3808/L3913/L3933); Discuss angles of splint

AROM (flexion) within confines of splint; splint x 4 weeks

MD f/u at 4 weeks; patient d/c from orthoses and AROM to return to full motion is initiated. Continue to work on scar management and patient education with regard to condition.

Nerve Repair (GENERAL GUIDELINES)

FIRST VISIT: READ SURGICAL REPORT! TALK WITH CO-WORKERS!

Pt, therapist and doctor meet. Therapist has already spoken to physician regarding protocol and POC; %% consult manuals, books, protocols prior to speaking to physician

Pt seen 2-4 days post op; splint fabrication made on first visit depending on location of repair, may be forearm based L3808/L3906, Hand based L3913 or finger based L3933; decided by physician and location of repair (digital, common digital, wrist level, forearm level)

First four weeks: Pt in splint at all times except hygiene, and when splint removed patient must maintain positioning and precautions as to not disrupt repair;

During this time protected AROM, to affected areas, sutures removed, desensitization exercises, and scar management

F/U with physician at week four, and depending on patient mobility either discharged with HEP or therapy to continue for desensitization, AROM or scar management. Splint D/C at this time

Wrist Hardware Removal

- Prior to FIRST VISIT...
- Therapist has already spoken to physician regarding any concerns or restrictions
- Pt can use wrist brace/forearm based orthoses digits free for high risk activities and in crowds (may go w/o brace or splint)
- Sutures (if any removed 10-14 days for MMD; 7-10 with EJB)
- Start AROM ex; depending on instructions per MD, patient can start with light ADLs; use pain as a guide for performance of ADLs
- F/U with physician in 4 weeks from initial visit; may need to see patient 1-2x week for 4 weeks for ROM

CMC arthroplasty

0-2 weeks patient is in post op dressing, pt follows up with Dr. during this time and is casted in thumb spica for 4 WEEKS...

cast removed at week four,; patient starts therapy and depending on the physician a thumb spica may be fabricated or over the counter splint will be issued

AROM ex should be started at this time to hand, wrist and forearm.
PROM started at week 7-8

Pt educated on scar management, progression and precautions with the performance of ADLs and self-care. Use of splint for high risk activities

Pt encouraged to perform light ADLs without brace to encourage motion.

Strengthening week 8; MD f/u at 8 weeks

WRIST ORIF

FIRST VISIT: Pt, therapist and doctor meet. Therapist has already spoken to physician regarding protocol and POC; consult manuals, books, protocols prior to speaking to physician

Pt seen 3-5 days post op for EJB and ~ 3-7 days post op for Dr. D.

Splint fabrication: depending on the physician EJB FA based orthoses digits free MMD Cylindrical FA based orthoses fingers free; wrist in neutral position

NO PROM, WBing, strengthening, or lifting (greater than 1-2#) for six weeks

EJB: start with gentle AROM to affected UE;
MMD: hold wrist still for 1-2 weeks; AROM at all other joints (elbow, fingers/hand, and shoulder) After two weeks can start motion at wrist (gentle)

First 4 weeks: AROM to UE per above details, splint on at all times except hygiene and exercises; scar and pain management; F/U with Doctors at week 4

Week 6: wean from orthoses/splint; can discontinue wearing splint at night; if patient doing well with motion, and pain is under control, may start light strengthening as appropriate; gentle PROM

WEEK 8:

Weight bearing as tolerated through the affected extremity; lifting restrictions also as tolerated; continue to progress with any loss of motion without any restrictions

MC/PIP/DIP FRACTURE (ORIF OR CRPP)

FIRST VISIT: Pt, therapist and doctor meet. Therapist has already spoken to physician regarding **surgical report** & splint design; review protocol guidebooks prior to speaking to physician; TALK WITH CO-WORKERS!

Pt seen 3-5 days post op for EJB/MMD

MC FRACTURE: (L3808) FA Based radial/ulnar gutter to include affected digit and neighboring digit; depending on the location of the

fracture, and after speaking with the physician may consider leaving IPs free; buddy straps may also be used to protect motion if IPs are left free

FINGER FRACTURE: (L3913 (PIP) L3933 (DIP)) Hand based (PIP) radial/ulnar gutter to include affected digit and neighboring digit; depending on the location of the fracture

First 4 weeks: AROM to UE per above details, splint on at all times except hygiene and exercises; scar and pain management; AROM (tendon gliding) to fingers as guided by MD

Week 6: wean from orthoses/splint; use for high risk activities or ; use for high risk activities or crowded areas; can discontinue wearing splint at night; if patient doing well with motion, and pain is under control, may start light strengthening as appropriate; gentle PROM

Week 8: Weight bearing as tolerated through the affected extremity; lifting restrictions also as tolerated
Continue to progress with any loss of motion without any restrictions

MP ARTHROPLASTY

FIRST VISIT: Pt, therapist and doctor meet. Therapist has already spoken to physician regarding **surgical report** & splint design; review protocol guidebooks (HSS book (##)/Hand & Upper Ext. Rehab a Practical Guide (%%)) prior to speaking to physician; TALK WITH CO-WORKERS!

SPLINTING: 2 splints alternating use (every other day switch)

Static extension: FAB wrist 15* ext/MP's & PIP& DIP ext (make sure MP's are 10* radially deviated **USE BUDDY STRAP** to encourage radial deviation...(this is more for RA patients)

Static MP Flexion: FAB wrist 15* ext/MP's flexed to 50-60* (10* radially deviated)/PIP & DIP extended

HEP:

Weeks 0-3: gentle AROM/AAROM surgical fingers/tendon glides/thumb opposition to index & middle fingers/radial digit walking; AROM uninvolved joints (SEE TEXT BOOK: ##; pg 53)

THERAPIST:

Gentle PROM: MP flex (avoid ulnar deviation) do not flex past 70*; intrinsic stretch; PROM uninvolved jts...(SEE TEXT BOOK: ##; pg 53)

MP ARTHROPLASTY (CONTINUED)

Weeks 3-6: meet w/ MD at **week 4** (MD preference); continue with A/AAROM/PROM digits & wrist; initiate light Functional activities (talk with MD...might start at week 5/6?)

Start to wean from splints week 6

BEFORE STARTING SERIAL SPLINTING/CASTING talk with MD & co workers...

(SEE TEXT BOOK: ##; pg 56)

Weeks 6-12: (SEE TEXT BOOK: ##; pg 57)

Con't with ext splint at night.....

PIP ARTHROPLASTY

See article : Postoperative Management of PIP Joint Pyrocarbon Arthroplasty for general information (located with other protocol books)....*talk with co-workers/read op report/talk with MD*

SPLINTING: Volar L3913; MP flexed to 45/50; PIP's extended

2 Exercise Template Splints:

1) volar L3933/allows for Short Arc motion of PIP & DIP (start at 30* block for PIP & 20* for DIP)

2) volar L3933/allows for Short Arc motion of DIP; PIP @ 0*/DIP free AROM (**as long as lateral bands are not repaired**)

EXERCISES

Week 1

Wrist 30* flexion; MP jt 0* extension/slight flexion; manually support MP jt in position while allowing PIP to flex to 30* and DIP to 20*/25* using TEMPLATE SPLINT 1; avoid lateral or rotational stress; 10-20 reps 7/8 sessions per day/////using TEMPLATE SPLINT 2 manually stabilize PIP 0* extension; MP jt 0* extension; keep wrist flexed to 30*; if lateral bands intact, flex DIP fully (if disrupted only allow DIP flex to 30*/35*); 10-20 reps 7/8 sessions per day/////GENTLE AROM unaffected fingers (keep affected finger in TEMPLATE SPLINT 1)...

PIP ARTHROPLASTY CONTINUED

WEEK 2

Template splint 1 remolded to allow 40* flexion at PIP jt (if NO extensor lag is present)////if ACTIVE PIP flexion <30* add AAROM to 40* (if no extensor lag)

WEEK 3

Template splint 1 remolded to 50* flexion at PIP jt. (if no extensor lag is present)///con't with AAROM to 50* (if not extensor lag)////WITH HAND THERAPIST supervision add light functional activities (in clinic only)

WEEK 4 (MEET WITH MD)

AROM can be increase to 70 if no PIP extensor lag present///can consider intermittent splinting into flexion////STATIC EXTENSION SPLINTING SHOULD CONTINUE///remember: **flexion must not be regained at the expense of extension////if a lag develops flexion increments should be more modest and focus on extension exercises and extension splinting**

WEEK 5

Composite flexion is appropriate

WEEK 6

Use buddy taping to assist w/ alignment and motion for up to 12 wk///begin to wean from splint (if PIP ext is 0*)///look for angular deformity (fabricate splint to provide radial & ulnar support///CONTINUE NIGHT TIME SPLINTING////may need to use longer if difficulty maintaining PIP extension to 0*////**GOAL: 70* FLEXION at PIP joint**////talk with MD about commencing with putty strengthening & general UE strengthening (direct strengthening towards functional activities and/or return to work)

PIP ARTHROPLASTY CONTINUED

WEEK 12

SPLINTING AS INDICATED/////activities as tolerated....**AVOID**
LATERAL stresses to PIP joint for a minimum of 12 weeks

See article for **CLINICAL PEARLS** for each phase/week of rehab

SAGITTAL BAND REPAIR

Read surgical report/meet with MD prior to "35" to discuss splint design and approach

WEEK 1

L3913 (talk with MD concerning including IP/IP's for first week)...include adjacent fingers...

WEEK 2

Start AROM 0-30* (can start with place/holds then advance to movement through arc of motion (0-30*))....start gravity eliminated during ex's...may want to free up IP/DIP's in splint (talk w/ MD)

WEEK 4

MD f/u...increase arc of motion to 50*...slowly progress by 10* each week....can discuss use of RM splint at this point (talk with MD)

WEEK 6

Wean from splint...con't with night splinting...move through unrestricted motion...discuss current status with co-workers if stiff in MP flexion...

WEEK 8

MD f/u...Start strengthening and focus on full return to ADL's (including resisted activities)...encourage activity modification/adaptive equipment especially with motions involving resisted UD/MP abd (rotational torqueing)

TRICEPS REPAIR

Read surgical report/meet with MD prior to "35" to discuss splint design and approach

WEEK 1

Splint: L3702 (may or may not include wrist); 30* elbow flex
AROM unaffected joint; educate in precautions (no active contraction of triceps); dawn/doffing splint; wound care....

WEEK 2

Instruct in AROM 0-30/40 (biceps concentric/eccentric contraction; no active contraction of triceps)...con't to increase active flexion by 10* each week...

WEEK 4

f/u with MD; discuss when to start active contraction of triceps (may be closer to 5-6 week mark?); con't with 10* increase in active flexion per week...

WEEK 6

Begin to wean from brace; active contraction of triceps; full arc of motion; begin light ADL's...

TRICEPS REPAIR
continued

WEEK 8

f/u with MD; start strengthening; always discuss protocol advancement during f/u's with MD...