Supracondylar Humerus Fractures v1.0

PHASE I (E.D. or Urgent Care)

Inclusion Criteria
- Suspected upper extremity fracture

Exclusion Criteria
- None

ED Fracture Plan
Safety Checklist
- Vascular exam
- Neurologic exam
- Consider non-accidental trauma
- Check for open fracture

Orders
- Pain medication PO/IV/IN (if needed)
- Xrays (if not done)
- Nursing orders (eg. Pain assessment, NPO)
- Antibiotic for Ortho Fracture/Tetanus if indicated
- Consider sending pain prescriptions early

X-ray confirms supracondylar fracture

Discharge Criteria
- Type I or non-operative Type II supracondylar fracture
- Neurovascularly intact
- Splinted in posterior long arm splint at 90 degrees
- Pain control discussed
- Ortho follow up in 5-7 days scheduled

Possible Open Supracondylar Fracture
- Consult Orthopedics

Non-Operative

Operative

Type I

Type II/III

Go to Phase II (Orthopedic Assessment and Mgmt)

For questions concerning this phase of the pathway, contact: EDFractures@seattlechildrens.org
© 2017 Seattle Children’s Hospital, all rights reserved, Medical Disclaimer
Last Updated: March 2017
Next Expected Revision: March 2022
Supracondylar Humerus Fractures v1.0

PHASE II (Orthopedic Assessment and Management)

Inclusion Criteria:
- Supracondylar humerus fractures

Exclusion Criteria:
- Polytrauma
- Adult type T-condylar or supracondylar fracture
- Metabolic bone disease
- Bone fragility conditions
- Pathologic fractures

For questions concerning this phase of the pathway, contact: SupracondylarHumerusFractures@seattlechildrens.org
© 2017 Seattle Children's Hospital, all rights reserved, Medical Disclaimer
Supracondylar Humerus Fractures v1.0

PHASE II (Orthopedic Assessment and Management)  
Pg 2

**Inclusion Criteria**
- Supracondylar humerus fractures

**Exclusion Criteria**
- Polytrauma
- Adult type T-condylar or supracondylar fracture
- Metabolic bone disease
- Bone fragility conditions
- Pathologic fractures

**Post Operative Care and Discharge**
- Post op observation N/V after reduction / pinning for a minimum of 4 hours
- Pain Medicine After Orthopedic Surgery – PE886
- Cast Care Instructions for Patients and Families – PE002
- Constipation After Surgery – PE432

**Discharge Criteria**
- No increased incision redness or pain
- Temp less than 38 C for last 12 hours
- Pain controlled without IV meds > 4hrs and pain score < 3 for last 4 hours
- Maintaining hydration orally/enterally and tolerates diet without emesis for 4hrs, Urine output 0.5mL/kg

**Follow Up**
- Follow up 1 week post procedure with Xray and overwrap
- Follow up 4 weeks post-op with cast off xray and pin removal

**Instruct parent of child to dose of pain medication 1 hr prior to pin removal appointment**

**If persistent neurological deficit after 3 months consider referral to hand service**

For questions concerning this phase of the pathway, contact: SupracondylarHumerusFractures@seattlechildrens.org  
© 2017 Seattle Children’s Hospital, all rights reserved, Medical Disclaimer

Last Updated: March 2017
Next Expected Revision: March 2022
Approved by the CSW Supracondylar Humerus Fractures team for March 15, 2017

CSW Supracondylar Team:

Ortho, CSW Owner  
Mark Dales, MD
ED, Co-Owner  
Brianna Enriquez, MD
Pharmacy  
Chih-Hui Tracy Chen, PharmD, BCPS
Ortho, Nurse Practitioner  
Brenda Eng, ARNP
ED, Clinical Nurse Specialist  
Sara Fenstermacher, MSN, RN, CPN
Surgical, Clinical Nurse Specialist  
Kristine Lorenzo, MS, RN, CPN
Fellow  
Alex Mortimer, MD
Pharmacy  
Chih-Hui Tracy Chen, PharmD

Clinical Effectiveness Team:

Consultant:  
Jean Popalisky DNP, RN
Project Manager:  
Asa Herrman
CE Analyst:  
Nate Deam
CIS Informatician:  
Michael Leu, MD
CIS Analyst:  
Heather Marshall
Librarian:  
Sue Groshong
Program Coordinator:  
Kristyn Simmons

Executive Approval:

Sr. VP, Chief Medical Officer  
Mark Del Beccaro, MD
Sr. VP, Chief Nursing Officer  
Madlyn Murrey, RN, MN
Surgeon-in-Chief  
Bob Sawin, MD

Retrieval Website:  

Please cite as:  
This pathway was developed through local consensus based on published evidence and expert opinion as part of Clinical Standard Work at Seattle Children’s. Pathway teams include representatives from Medical, Subspecialty, and/or Surgical Services, Nursing, Pharmacy, Clinical Effectiveness, and other services as appropriate.

When possible, we used the GRADE method of rating evidence quality. Evidence is first assessed as to whether it is from randomized trial or cohort studies. The rating is then adjusted in the following manner (from: Guyatt G et al. J Clin Epidemiol. 2011;4:383-94.):

Quality ratings are *downgraded* if studies:
- Have serious limitations
- Have inconsistent results
- If evidence does not directly address clinical questions
- If estimates are imprecise OR
- If it is felt that there is substantial publication bias

Quality ratings are *upgraded* if it is felt that:
- The effect size is large
- If studies are designed in a way that confounding would likely underreport the magnitude of the effect OR
- If a dose-response gradient is evident

Guideline – Recommendation is from a published guideline that used methodology deemed acceptable by the team.

Expert Opinion – Our expert opinion is based on available evidence that does not meet GRADE criteria (for example, case-control studies).

**Quality of Evidence:**
- 🌟🌟🌟🌟 High quality
- 🌟🌟🌟 Moderate quality
- 🌟🌟 Low quality
- 🌟🌟🌟 Very low quality

Guideline
Expert Opinion
Summary of Version Changes

- **Version 1.0 (3/15/2017)**: Go live
Medical Disclaimer

Medicine is an ever-changing science. As new research and clinical experience broaden our knowledge, changes in treatment and drug therapy are required.

The authors have checked with sources believed to be reliable in their efforts to provide information that is complete and generally in accord with the standards accepted at the time of publication.

However, in view of the possibility of human error or changes in medical sciences, neither the authors nor Seattle Children’s Healthcare System nor any other party who has been involved in the preparation or publication of this work warrants that the information contained herein is in every respect accurate or complete, and they are not responsible for any errors or omissions or for the results obtained from the use of such information.

Readers should confirm the information contained herein with other sources and are encouraged to consult with their health care provider before making any health care decision.
Search Methods, Supracondylar Fractures Periodic Review, Clinical Standard Work

Studies were identified by searching electronic databases using search strategies developed and executed by a medical librarian, Susan Groshong. A search was performed in May 2015 in the following databases – on the Ovid platform: Medline and Cochrane Database of Systematic Reviews; elsewhere: Embase, Clinical Evidence, National Guideline Clearinghouse, TRIP and Cincinnati Children’s Evidence-Based Care Recommendations. Retrieval was limited to ages 0-18, English language and 2014 to current. In Medline and Embase, appropriate Medical Subject Headings (MeSH) and Emtree headings were used respectively, along with text words, and the search strategy was adapted for other databases. Concepts searched were humeral, supracondylar and elbow fractures. All retrieval was further limited to certain evidence categories, such as relevant publication types, index terms for study types and other similar limits. A guideline was identified by team members and added to results.

Susan Groshong, MLIS
December 7, 2016

Flow diagram adapted from Moher D et al. BMJ 2009;339:bm.b2535