DIGIT CONDITIONS

FINGER DISLOCATION

Patho loss of normal alignment of joint
± associated fracture or soft tissue injury

Clinical pain, swelling, deformity, ↓ROM

diagnosis 3V digit X-ray
- dislocation may be dorsal, volar, or lateral

treatment closed reduction and splinting
- longitudinal traction w/ pressure until in place
- ortho referral=definitive

PHALANX FRACTURE

Patho MOI age dependent
- 10-29yo → sports
- 30-69yo → machinery
- >70yo → falls

Clinical tenderness, swelling, ecchymosis, ↓ROM, deformity

diagnosis 3V digit X-ray

treatment immobilization
emergent → open, tendon rupture

displaced → closed reduction

GAMEKEEPERS THUMB

Patho injury to ulnar collateral ligament w/ MCP joint instability at thumb
- commonly during sports

Clinical swelling, tenderness along ulnar thumb MCP

diagnosis Xray rules out fracture
CT/MRI can confirm rupture

treatment
partial tear → thumb spika 2-6 weeks
significant → immobilize + refer

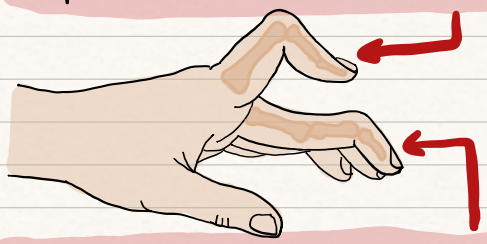
BOUTONNIERE DEFORMITY

Patho rupture of central slip over PIP joint due to laceration, trauma, or rheumatoid arthritis

Clinical PIP flexion, DIP extension

diagnosis Clinical

treatment refer within 1 week if acute
nonoperative → splint PIP x6wks
operative → if acute or fails splint



MALLET FINGER

Patho disruption of terminal extensor tendon distal to DIP joint

Clinical droopy finger at DIP joint
- unable to actively extend at DIP joint

diagnosis 3V xray finger

treatment
nonoperative → splint x6-8wks
operative → CRPP x 8 wks

SWAN NECK DEFORMITY

Patho degenerative and common in RA
- causes: lax volar plate and imbalance of muscle forces on PIP

Clinical DIP flexion, PIP extension

diagnosis Xray

treatment double ring splint
operative = definitive

DUPUYTREN'S CONTRACTURE

genetic. male>female

Patho hyperplasia of palmer fascia with nodule formation and palmer fascia contracture

Clinical typically chronic. Hx of nodules in hands → mild discomfort
- ring and small fingers most commonly

diagnosis Clinical

treatment observation unless
+table top test → consider needle aponeurotomy, xiaflex, surgical excision

INFECTIOUS FLEXOR TENOSYNOVITIS

Patho infection → inflammation of flexor tendon and sinovial sheath

diagnosis Clinical. consider imaging

treatment emergent consult
- typically requires I/D and IV abx

Clinical Kanavel signs -
- flexed posture of digit
- tendon sheath tender to palp
- pain w/ extension
- fusiform swelling

HAND/WRIST INJURIES

METACARPAL FRACTURE

Patho trauma. 40% of hand injuries
AKA boxer's fracture

Clinical pain, swelling, ecchymosis, ↓ROM

diagnosis 3 view hand

treatment reduction if needed.
- rarely operative
- splint if MCP in flexion

SCAPHOID FRACTURE

Patho fall on outstretched hand
- most commonly fractured
  low blood flow to scaphoid creates watershed area and poor healing

Clinical tenderness at anatomical snuffbox

diagnosis wrist x-ray + scaphoid view
- if x-ray negative → CT or MRI

treatment Urgent consult
non-operative → 8-10 wks thumb sica splint
± operative → avascular necrosis risk

DISTAL RADIUS FRACTURES

most common orthopedic injury
- often associated w/ ulnar fracture

Patho FOOSH or trauma

Clinical pain, swelling, ecchymosis, deform
- assess skin injury and NV exam

diagnosis 3 view wrist x-ray

treatment
nondisplaced/extrarticular → sugartong splint, ortho FU in 1 wk
displaced → reduction + post reduction xrays →
non-operative → short arm cast x6 wks
operative → closed reduction (Percutaneous pinning) or open reduction internal fixation

Colles fracture: dorsally displaced
- typically results from fall on extended wrist. More common.
  "Dinner fork" appearance

Smith's fracture: Volarly displaced
- typically results from fall on flexed wrist.

CONDITIONS

CARPEL TUNNEL SYNDROME

Patho compressive neuropathy of median nerve
- due to repetitive motions/vibrations

Clinical numbness, tingling
↓medial nerve sensitivity
Phalens, durkans, tinels

diagnosis Clinical

treatment Cock up wrist brace @ night (first line)
- steroid injections
- release (open or scope)

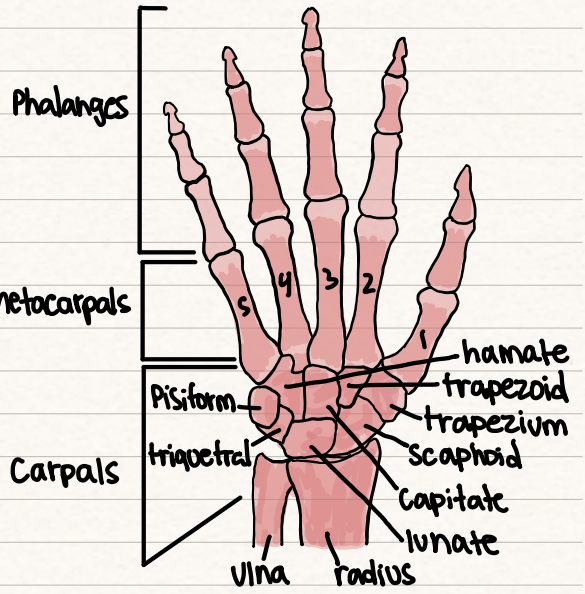
de QUERVAINS TENOSYNOVITIS

Patho stenosising 2 of 1st dorsal compartment
(abductor pollicus longus and extensor pollicus brevis)

Clinical radial sided wrist pain → worse when raising objects

diagnosis Clinical
+finkelsteins

treatment thumb spica brace w/ NSAIDs
if severe, steroid injection/surgery



GANGLION CYST

Patho fluid filled cyst overlying joint or tendon. dorsal wrist most common

Clinical firm, well circumscribed mass – transilluminates. Usually asymptomatic

diagnosis Clinical

treatment observation ± bracing, aspiration (50%), surgery (10%)

FOREARM AND ELBOW

Shaft fractures

patho diaphyseal fracture of radius and/or ulna
clinical pain at forearm, swelling, ↓ROM. Assess pulses
diagnosis 2V forearm
treatment
peds → reduction w/ casting
adults → sugartong splint + refer

Galeazzi: radial shaft fracture w/ dislocation of DRUJ (distal radioulnar joint)
Monteggia: ulnar shaft fracture w/ radial head dislocation. can cause PIN neuropathy (thumb weakness)

↑ treated operatively

Radial head fracture

patho FOOSH, occasionally elbow trauma
clinical pain at radial head, elbow edema, ↓ROM (supination)
diagnosis 3V elbow xray
treatment
displaced → sling/posterior splint and early ROM (7-10 days)
nondisplaced → sling/posterior splint
- FU ortho within 1 week ± ORIF

Supracondylar humerus fracture

epi peds (5-7yo)
patho MOA usually FOOSH. Distal humerus fracture common in peds
clinical ↓ROM elbow, neuro exam required:
- AIN neuropaxia unable to flex thumb IP joint, index DIP joint (okay sign)
- median nerve injury ↓sensation volar index
- radial neuropaxia ↓extension wrist, MP, IP

diagnosis 3V elbow ± 2V forearm
treatment long arm splint → refer
emergent → NVC, open, compartment s.

Elbow dislocation

age 10-20yo
patho due to cascade of trauma to elbow
Posterolateral → axial force, rotation of forearm
clinical simple or complex (terrible triad - LCL tear, radial head fx, coronoid tip fracture)
diagnosis 3V elbow x-ray
treatment closed reduction, splinting, early motion if simple. ±ORIF. Refer.

Epicondylitis

	Medial	Lateral
	golfers elbow	tennis elbow
epi	MORE COMMON	laborers
patho	overload of flexor-pronator mass at medial epicondyl •associated w/ Ulnar neuropathy, UCL insufficiency	overload at origin of common extensor tendon •repetitive gripping, forceful activity
sx	pain worsened by •repetative mvmt •gripping •resisted wrist flexion tender along medial epicondyl or 5-10mm distal	pain worsened by •gripping •resisted wrist and long finger extension decreased grip strength
dx	Clinical •X-ray normal MRI/US definitive	Clinical X-ray → calcifications US → thick ECRB
mgmt	RICE, NSAIDs x6 months If failed, tenex or open debridement of pronator teres/ flexor carpi radialis reattachment	RICE, NSAIDs x6 months If failed, tenex or open debridement of ECRB

Olecranon Bursitis

patho inflammation of fluid filled synovial sac
- trauma, pressure, infection

clinical pain worse w/ direct pressure.
- Painless, full extension differentiates from effusion

diagnosis Clinical.
Septic → aspirate
treatment RICE, NSAID, PT
If septic → antibiotics
- steroid injection → no benefit

Cubital tunnel syndrome

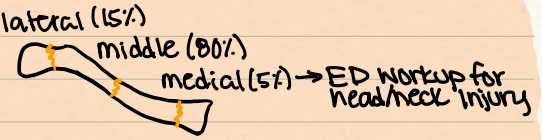
patho Ulnar nerve compression at elbow
clinical parathesis of small finger, ulnar ring
- motor sx less common

diagnosis tinels at elbow
- gold standard → EMG
- MRI/US → ↑signal, thick

treatment brace @ night
operative → decompression or transposition of nerve

SHOULDER

Clavicle fractures



epi most common fracture in kids/adolescents
patho traumatic injuries - falls, MCVs, sports injuries
Clinical pop, pain. Pneumothorax and brachial plexus injury are complications
diagnosis 2V clavicle (AP and cephalic tilt)
treatment Sling, early motion. Surgery if open, unstable, NV compromise

Shoulder dislocation - dislocation of glenohumeral joint

Anterior - far more common

patho occurs when shoulder is abducted and externally rotated and anterior force occurs
Clinical pain, deformity, ↓ROM
- loss of normal rounded appearance

diagnosis 3V shoulder (AP, Y, axillary) →
treatment reduction (+post-red imaging)
- immobilization → ortho within week

Posterior

patho seizures, electric shock most common mechanism when shoulder is adducted and internally rotated
Clinical arm adducted/internally rotated. Flattening of anterior shoulder, prominence at coracoid and posteriorly
diagnosis AP may show lightbulb sign
treatment immobilize 4-6 weeks + PT
if recurrant → operative

Management → REDUCTION

Kocher: arm at side, externally rotated is forward flexed then internally rotated
Hippocratic: traction against a heel placed in patient axilla
Stimson's: weight hung from affected arm of patient in prone position

Always take post reduction xrays before discharge

AC joint separation

patho traumatic injury to AC joint w/ disruption of acromioclavicular and/or coracoclavicular ligaments
- direct blow or fall on shoulder

Clinical hx trauma, pain over AC joint, abnormal shoulder contour
diagnosis 2V clavicle ± bilateral AP
treatment
I-III → nonoperative. Sling, early PT
IV-VI → operative. CC ligament reconstruction

Adhesive Capulitis AKA frozen shoulder

epi diabetes, thyroid disease
patho functional loss of both passive and active shoulder motion
- idopathic, post-traumatic, / st-surgical

Clinical external rotation deficits common.
Stages: freezing (gradual, diffuse pain) →
frozen → thawing (gradual ↑ROM)
diagnosis 3V x-ray (benign). ±MRI
treatment PT. ±NSAIDs, steroid injections
operative → capsular release (anesthetized)

Subacromial Impingement → Bursitis → partial to full thickness tear → massive RC tears → Rotator cuff arthropathy

epi first stage
patho compression of rotator cuff muscles by superior structures
sx insidious onset. Worsened by lifting, overhead activities, nighttime. Normal strength
+neer impingement test
+Hawkins test
dx 3V x-ray → normal. ±MRI/US
mgmt PT, NSAIDs, injections
operative → Subacromial decompression

Biceps tendonitis

epi associated w/ subscapularis tears and shoulder impingement
patho inflammation/tendinosis of biceps tendon
sx anterior shoulder pain. +Speeds test, yergason's test. Popeye deformity
dx 3V shoulder benign. MRI/US
mgmt NSAIDs, PT, injections
operative → arthroscopic tenodesis