

Plastic Surgery Survival Guide

A guide to help you survive nights and
weekends

Outline of Topics

- ▶ General overview of service
 - ▶ Expectations
 - ▶ Hand
 - ▶ Face
 - ▶ Soft tissue injuries
 - ▶ Decubitus ulcers
 - ▶ V.A.C. system
- 

General Overview of Service

- ▶ The make-up of the division of Plastic and Hand Surgery
 - Dr. Casuccio
 - Dr. Loos
 - Dr. Lisa Jacob
 - Dr. Glen Jacob
 - Danielle Mullen PA-C
 - Janice Shreve ANP
 - Bobbi Hamilton Clinical Manager
 - Ronda Fike Scheduler (hand)
 - Lynn Smith Secretary

General Overview of Service

- ▶ Resident coverage is supplemented by Janice who will be first call for all in-house plastics and hand consults.
- ▶ The OR and Clinics will be covered by both the residents and Danielle
 - Check with the chief resident for details
- ▶ This Division covers Face, Hand, and general Plastics consults
 - A wound care center is currently in development

Expectations

- ▶ You are not expected to know everything about plastic surgery
- ▶ YOU SHOULD:
 - Be competent in the basic physical exam (hand, face, wounds)
 - Be able to assess severity of injuries
 - Be able to clearly describe injury
 - Be able to identify plastic surgery “emergencies”
 - Be comfortable with nerve blocks, fracture reduction, splinting, and suturing
 - Know when to call for help

Expectations

- ▶ Participate in the didactic sessions twice monthly
- ▶ Review the online curriculum
 - We have several textbooks in our offices for loan if you want to read something “old school”
- ▶ Arrive prepared to the OR
 - Read about the patient
 - Read about the procedure

Plastic and Hand Surgery

“Emergencies”

▶ Hand/Extremity:

- amputation, near amputation, vascular compromise
- compartment syndrome
- Uncontrolled bleeding

▶ Face:

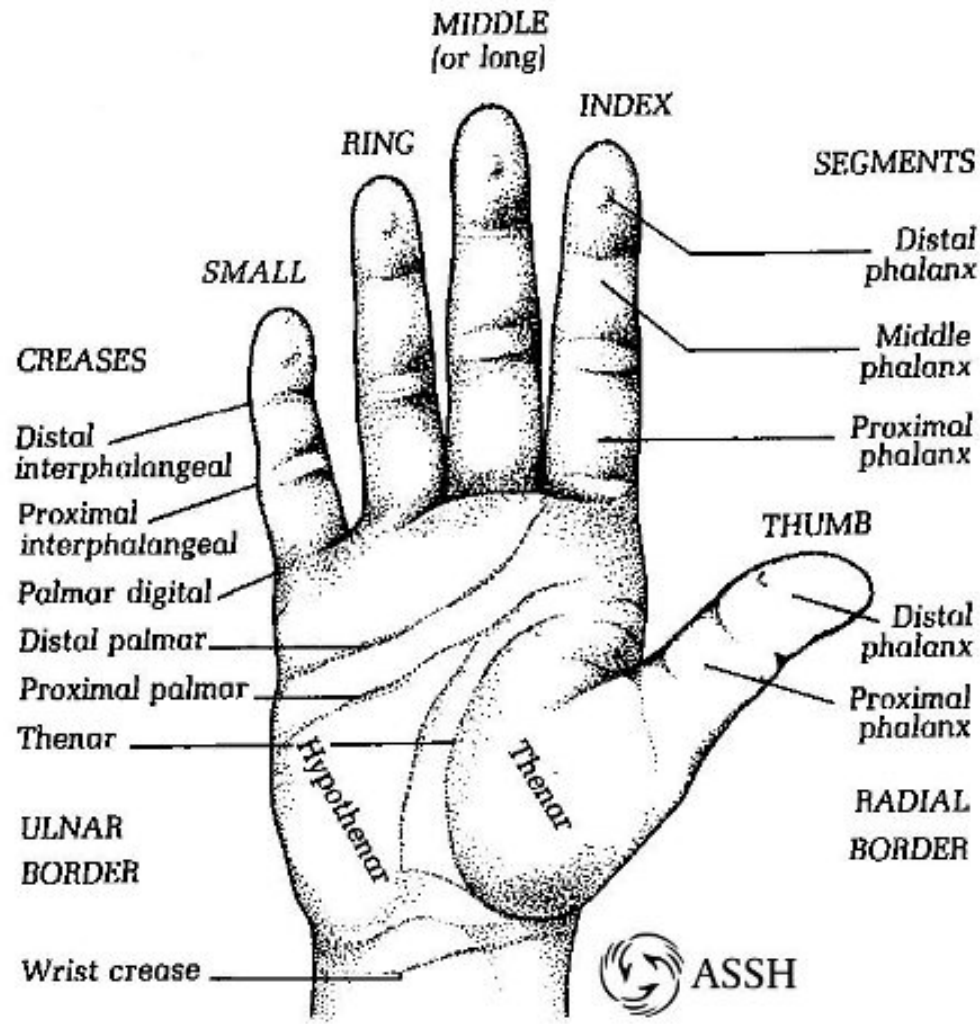
- Entrapment of ocular muscles
- Septal hematoma
- Complex multifacial trauma

Hand

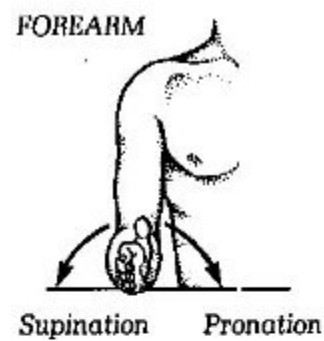
- ▶ Includes soft tissue distal to the elbow and bones distally from the metaphyseal flare of the distal radius
- ▶ Most common injuries include:
 - Fractures
 - Lacerations
 - Tendon injuries
 - Nerve injuries
 - Nailbed injuries
 - Cellulitis
 - IV infiltrate

“Hand History”

- ▶ Specifics about “hand history”
 - Mechanism of injury (crush, laceration, fall)
 - Right-handed or left-handed
 - Occupation (piano player, construction)
 - Tobacco use
 - Diabetes
 - Injury at work or at home

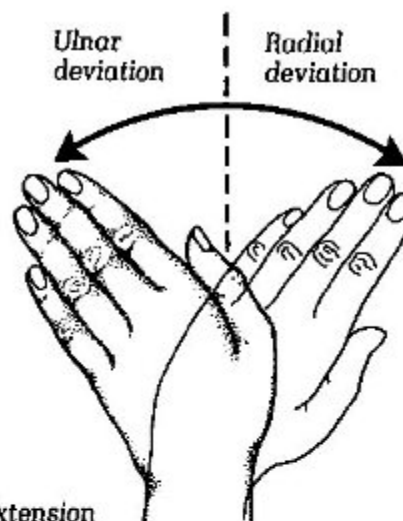


FOREARM

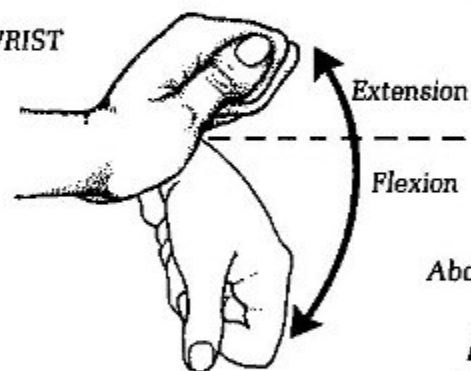


Ulnar
deviation

Radial
deviation

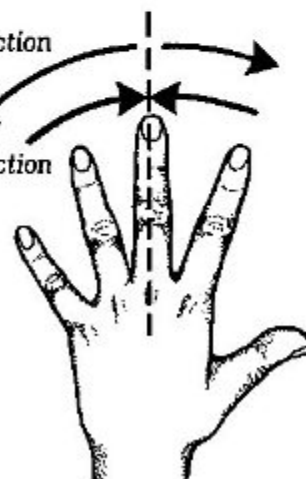


WRIST

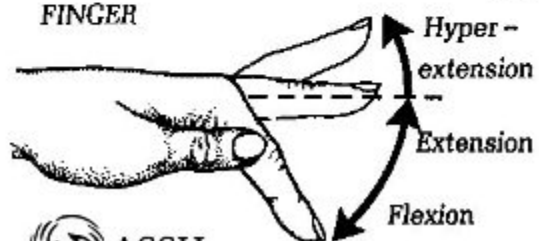


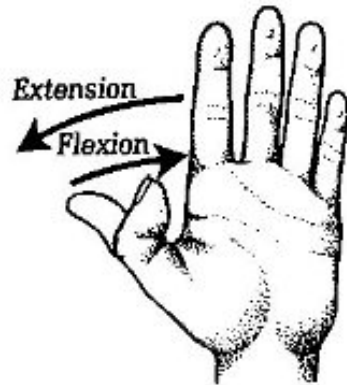
Abduction

Adduction



FINGER





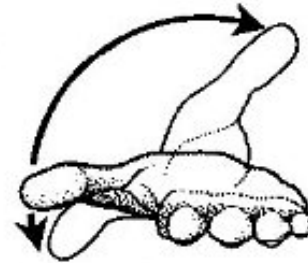
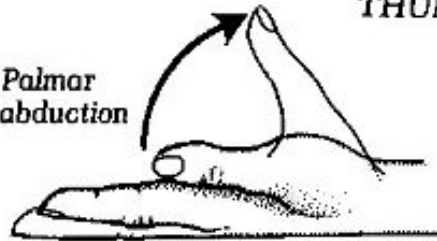
ASSH

Opposing thumb to finger

Anteposition (opposition)

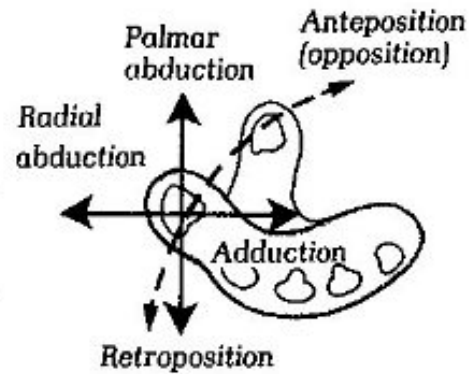
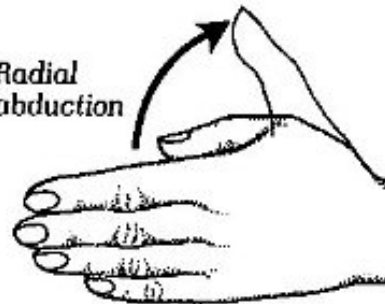
THUMB

Palmar abduction



Retroposition

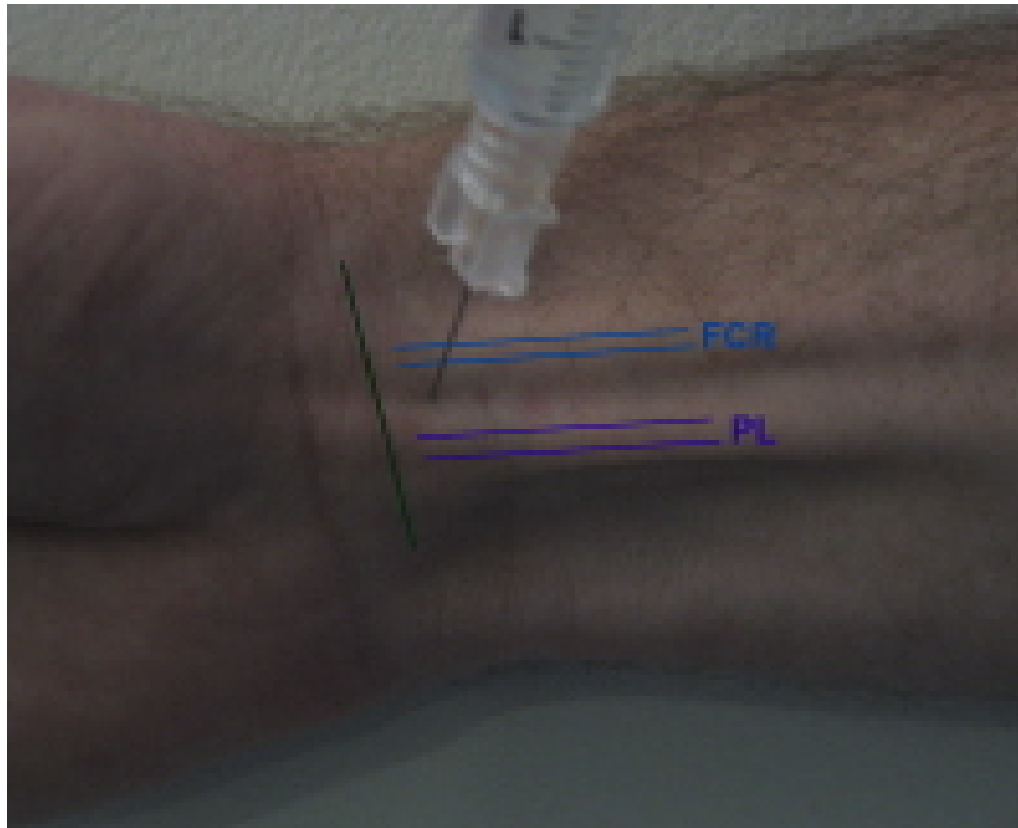
Radial abduction



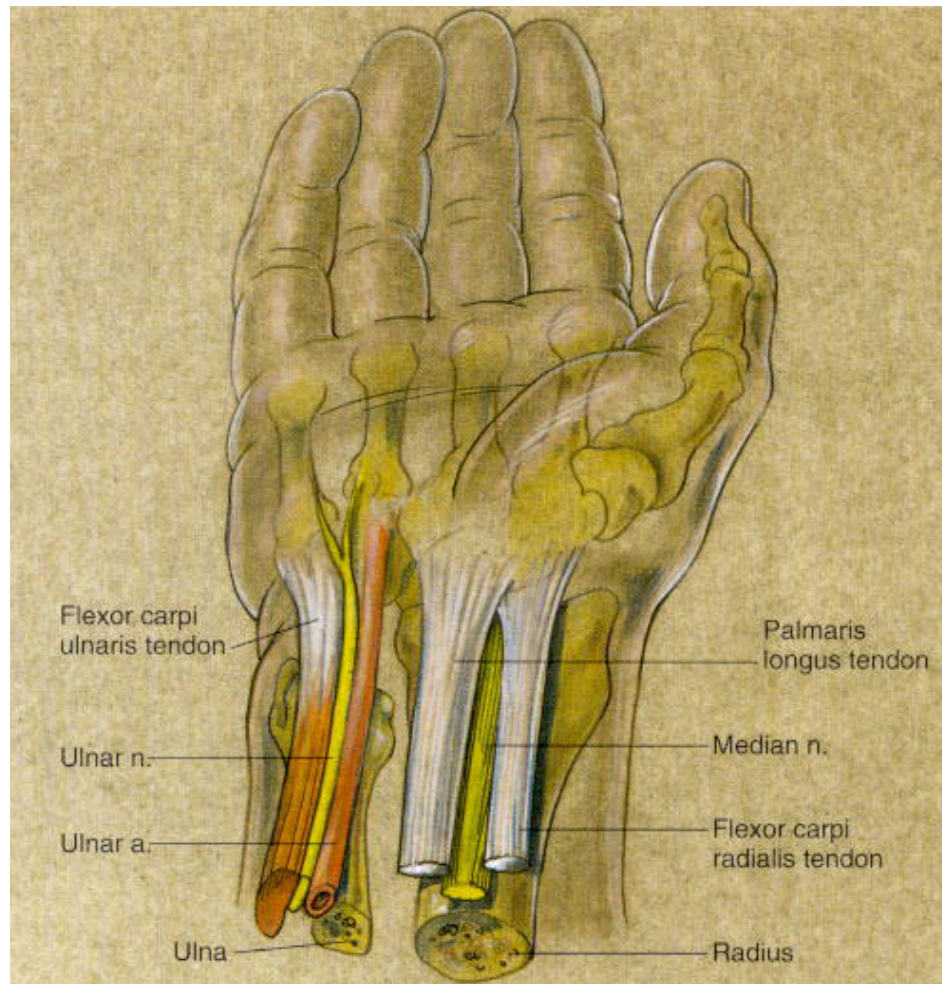
Blocks



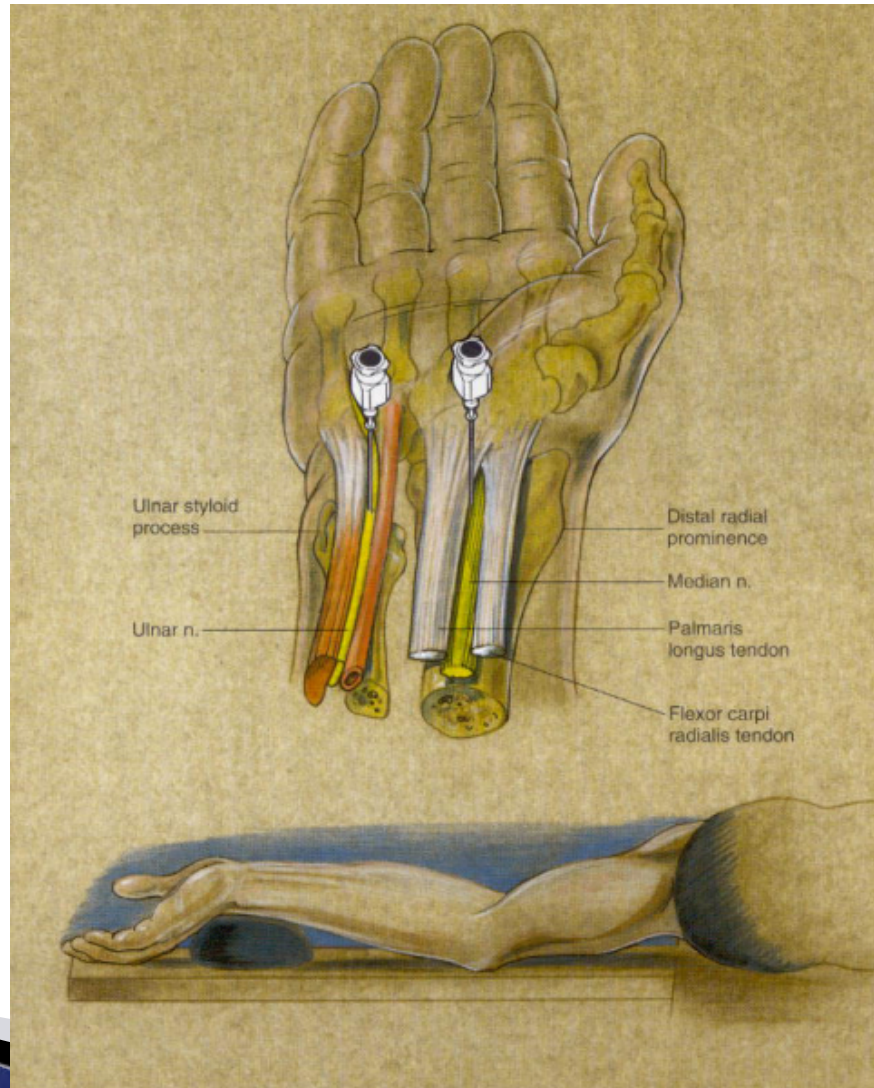
Blocks



Blocks

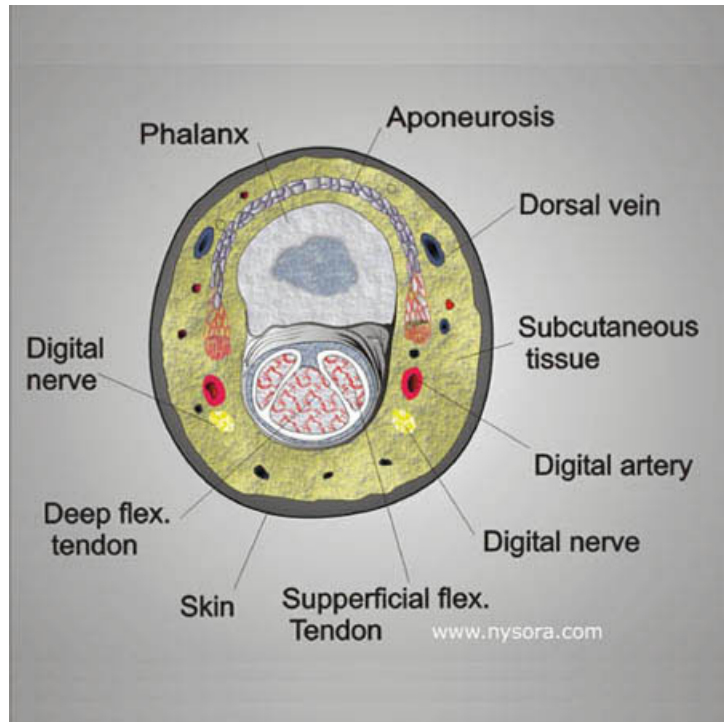


Blocks



Digital Block

- ▶ 1% lidocaine – **NO EPINEPHERINE**
- ▶ 2 digital nerves and the dorsal nerve plexus – must block all for each injured finger
- ▶ 2 techniques:
 - Individually block each nerve (in web space and along the dorsum)
 - Trans-thecal – inject into tendon sheath and anesthetic diffuses out sheath into nerves
- ▶ You can always inject directly into wound

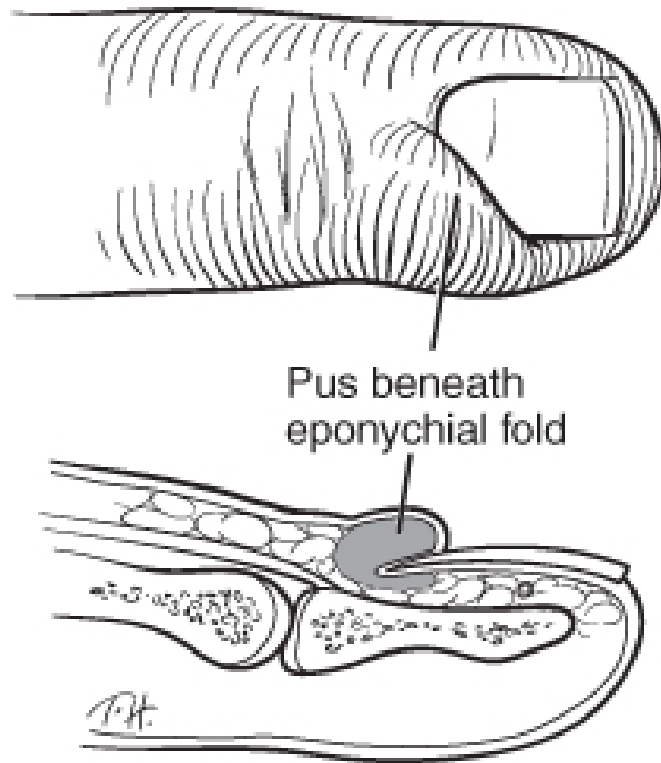


Individual Nerves – inject in each web space



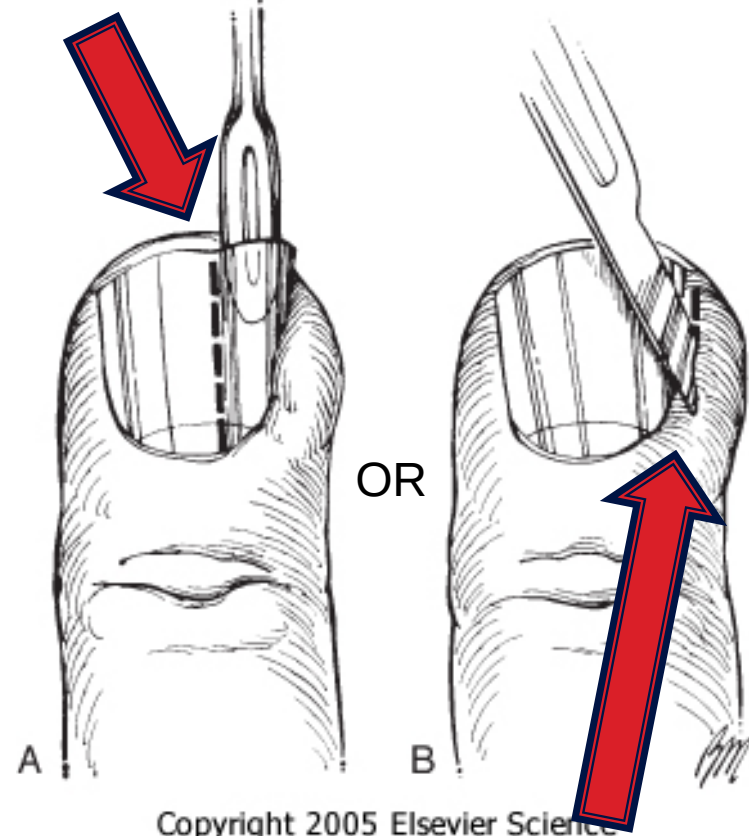
Trans-thecal – inject in tendon sheath at A1 pulley

Perionychiitis



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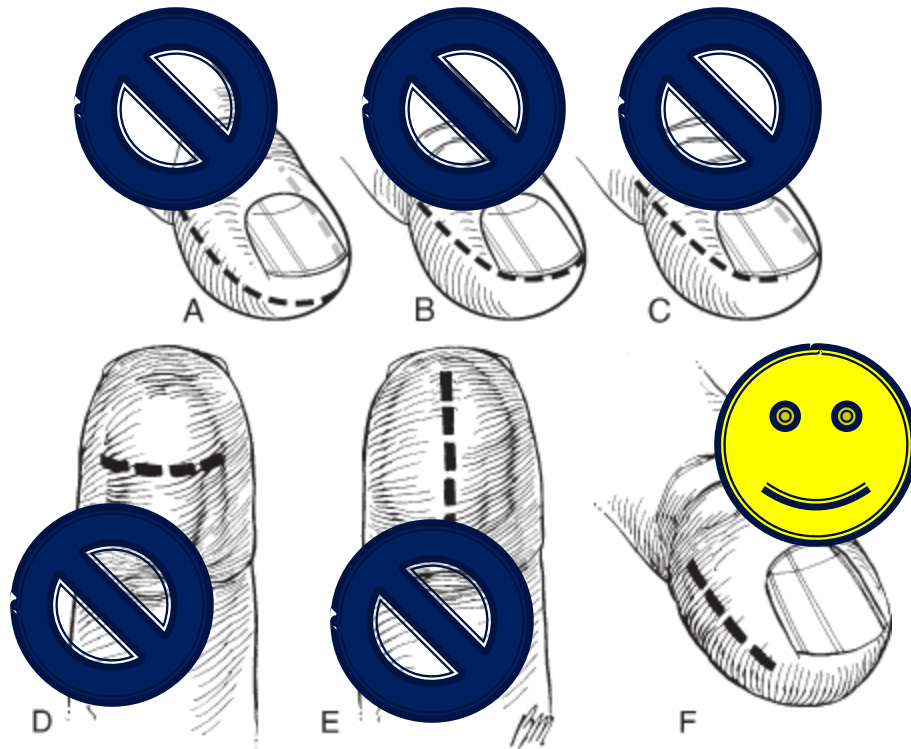
Remove 1/3 of the nail
closest to the abscess



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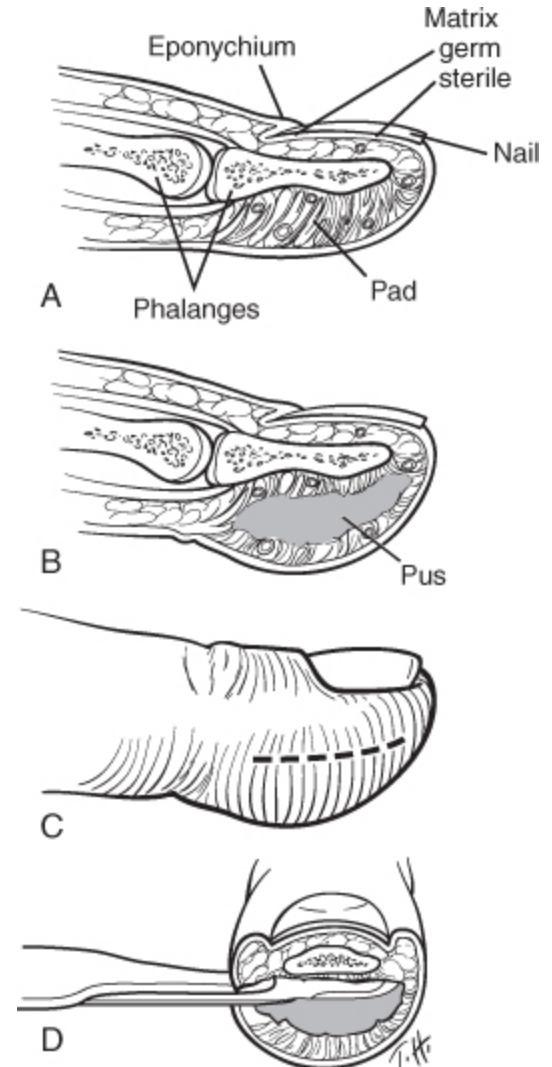
Longitudinal incision along
the abscess pocket

Felon



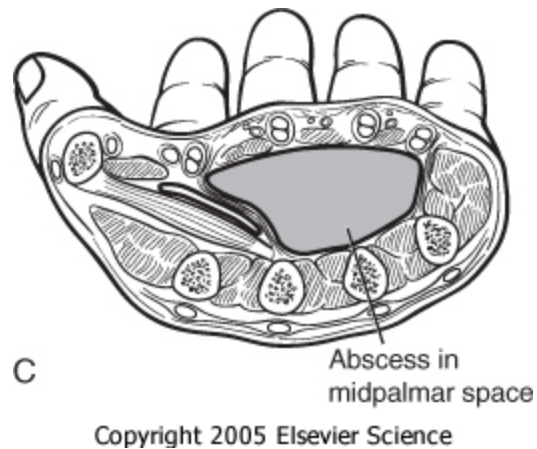
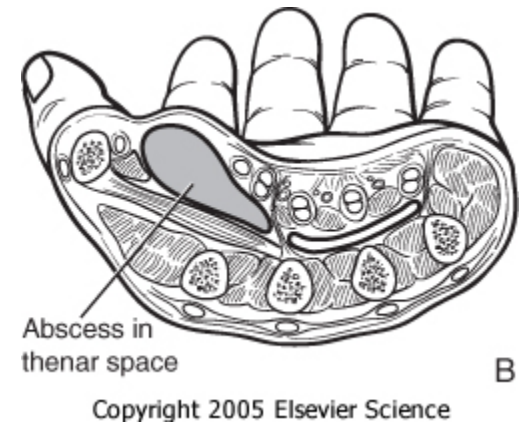
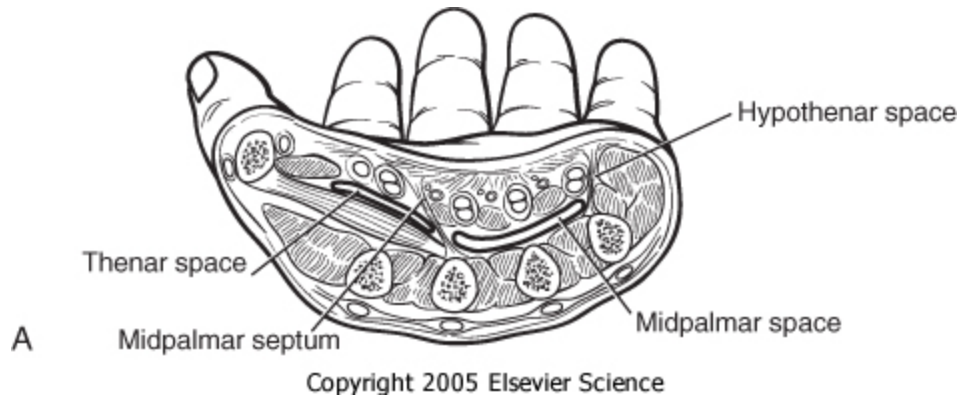
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This is the incision...
Along the ulnar side of
the digit if you can



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Other Deep Hand Abscess



Flexor Tenosynovitis

- ▶ Infection in flexor sheath
- ▶ 4 classic Knave Signs
 - Pain with passive extension
 - Fusiform swelling
 - Fixed in flexion
 - Pain along tendon sheath
- ▶ Treatment is operative drainage



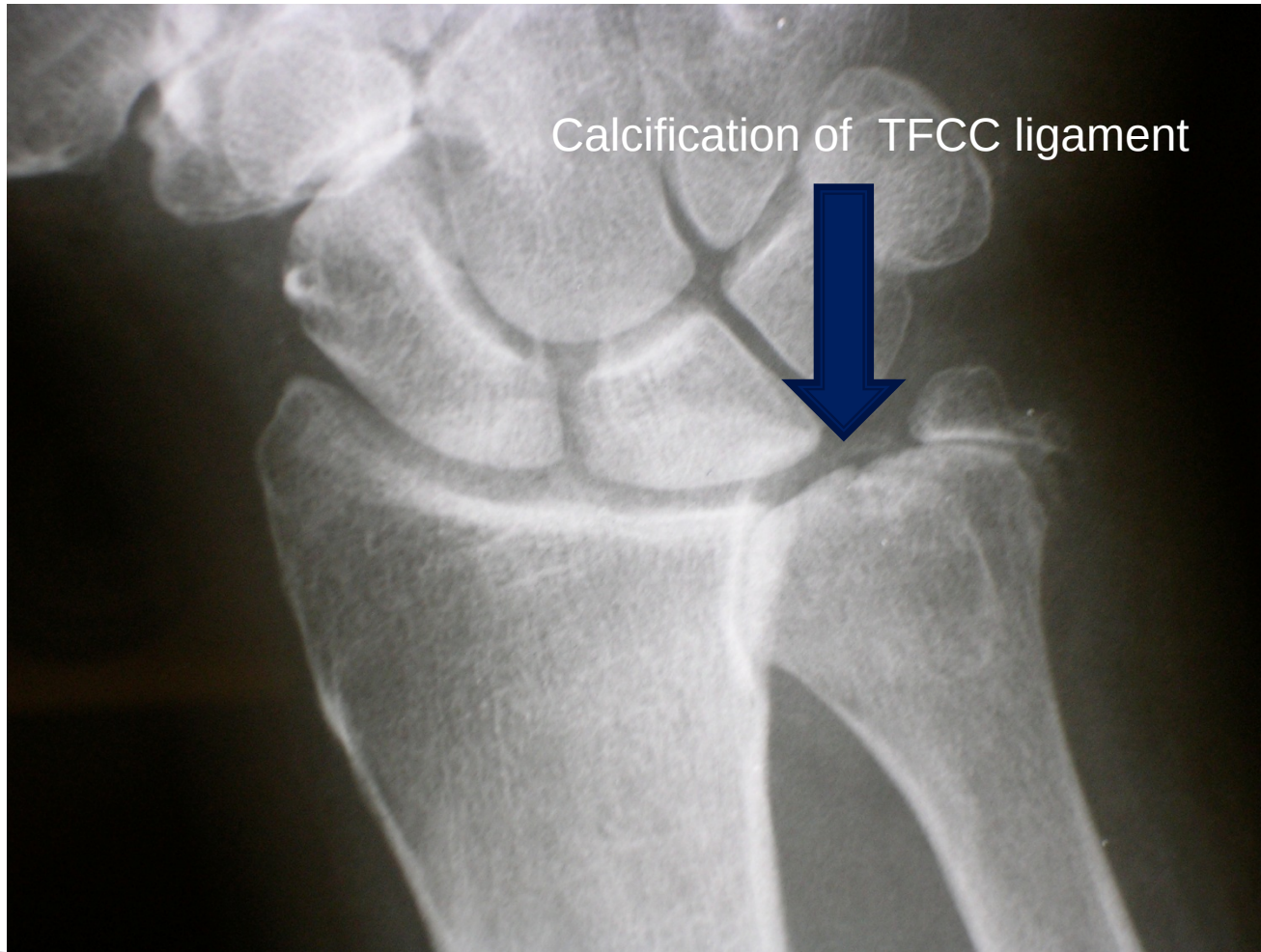
Gout



- ✓Difficult to differentiate at times
- ✓Elicit any history of trauma
- ✓Associated with history of HTN
- ✓History of this in the past
 - ✓Other areas of the body (toes?)
- ✓Uric acid level



Pseudogout



Dislocations

- ✓ Digital Block
- ✓ Try to “re-create” the vector of the injury
 - ✓ Feel the “clunk” after successful reduction
- ✓ Test for stability
 - ✓ Gentle motion- does/not dislocate again
- ✓ Post reduction x-ray
- ✓ Splint in position to support reduction



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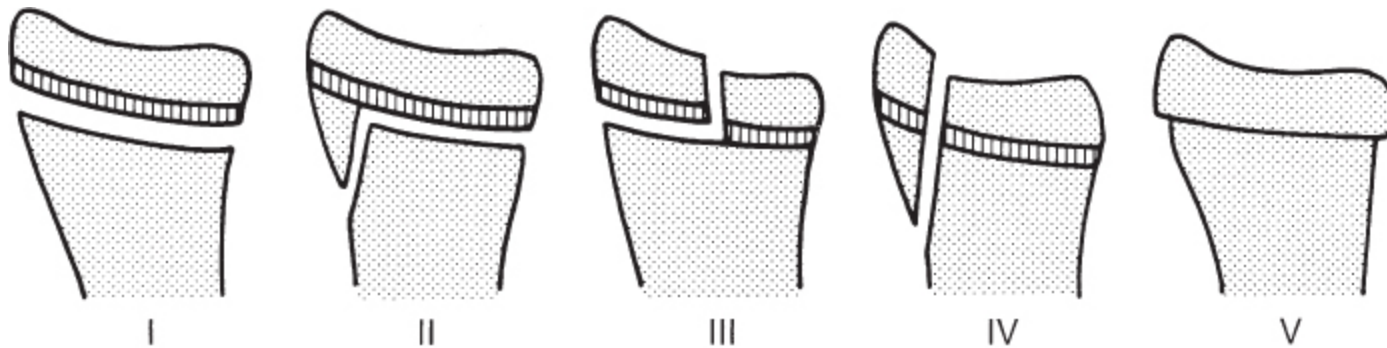
Fractures

- ▶ Likely requires a reduction
 - See the card handout provided for more details on reduction maneuvers
- ▶ Splint options:
 - Phalanx, metacarpal, carpals– volar splint
 - “boxer” fracture, 4th/5th metacarpal – ulnar gutter splint
 - Thumb, suspicion of scaphoid fracture– thumb spica splint.
- ▶ **NO CASTS**

Fractures– Distal Radius



Fractures

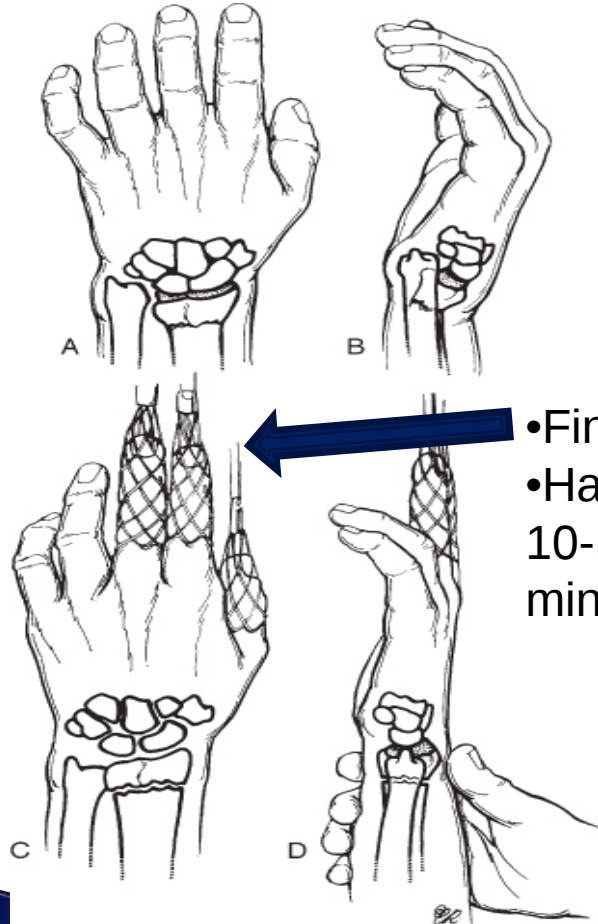


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Salter Classification Of Pediatric
Fractures

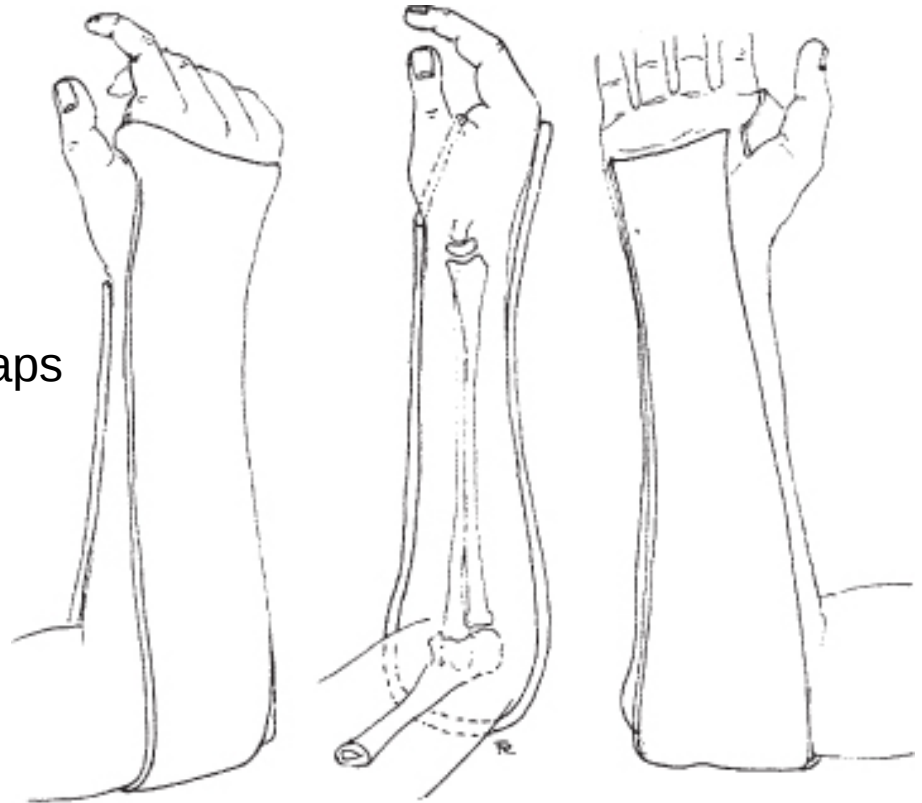
Fractures– Distal Radius

Distal Radius Reduction



- Finger traps
- Hang for 10-15 minutes

Sugar-tong splint



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Fractures– Scaphoid



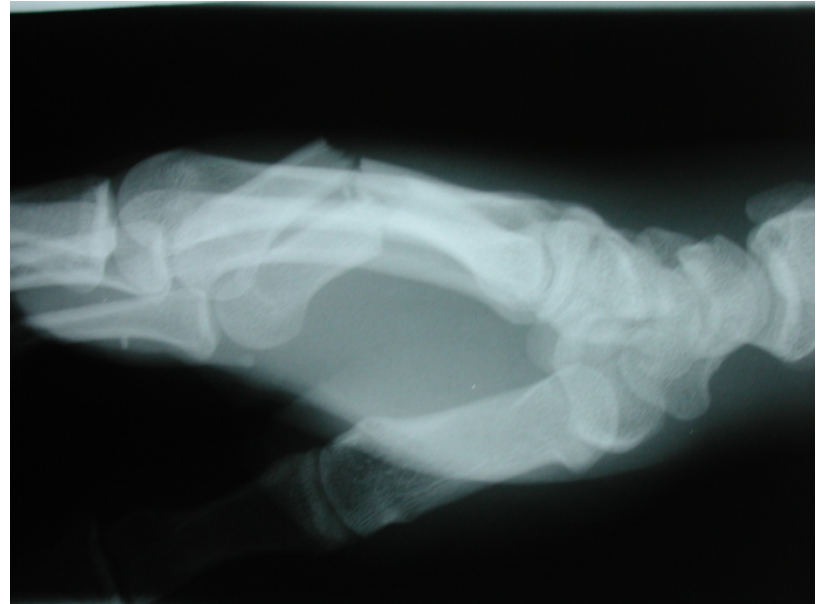
- ✓ Most commonly missed on initial x-ray
- ✓ If tender in anatomic snuffbox, splint
- ✓ If missed, can be a devastating injury

Fractures– Scaphoid

Thumb Spika Splint

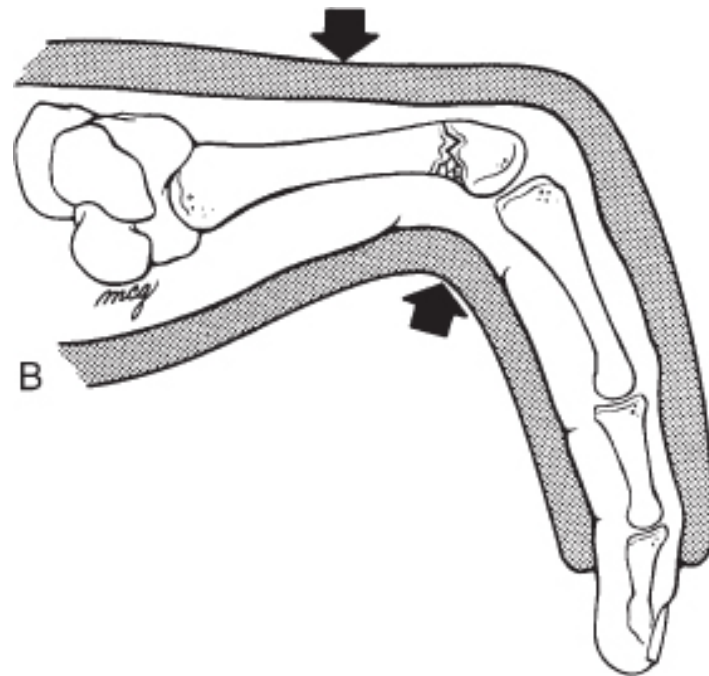
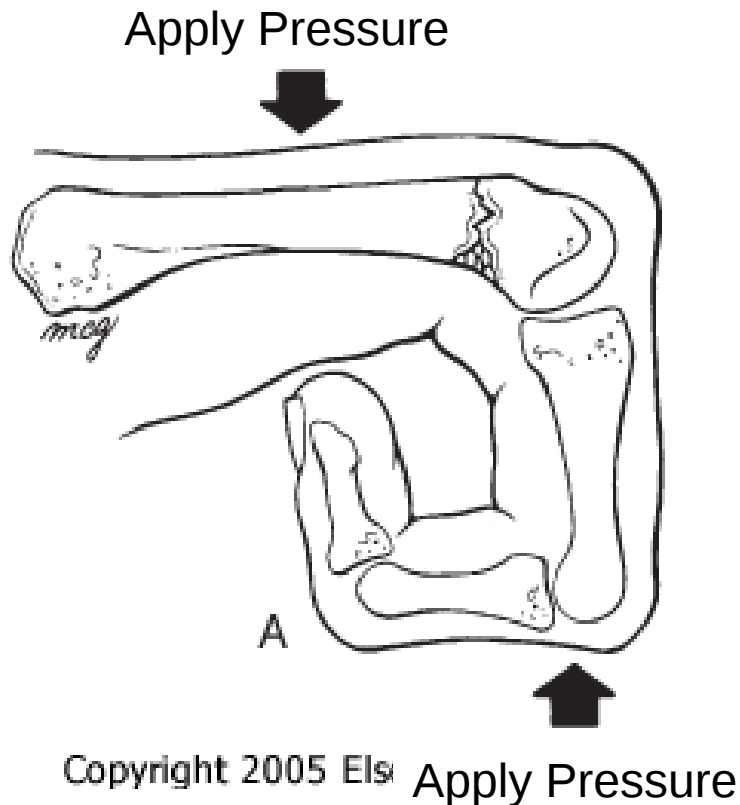


Fractures– Metacarpal



- ✓Very common
- ✓Hematoma block
- ✓Reduction
- ✓Splinting
- ✓Refer to handout for more details

Fractures– Metacarpal



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Reduction and splinting techniques

Fractures– Metacarpal

Ulnar Gutter splint with intrinsic plus positioning



Fractures– Digits



Digital Block
Reduction
Splint
Post-reduction x-ray

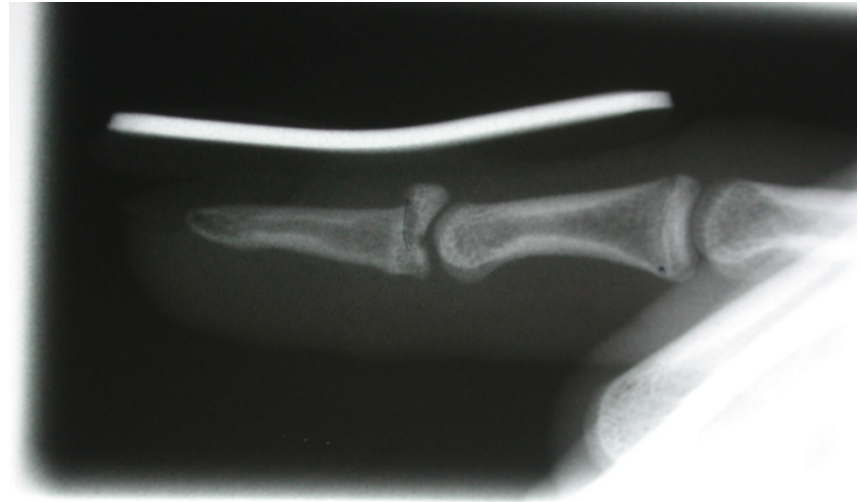


Fractures– Digits

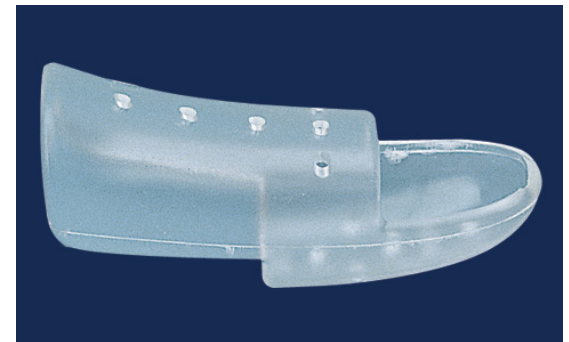
- Alumnafoam Splints
- Volar or gutter splints



Fractures– Digits



Mallet injury



Stack Splint

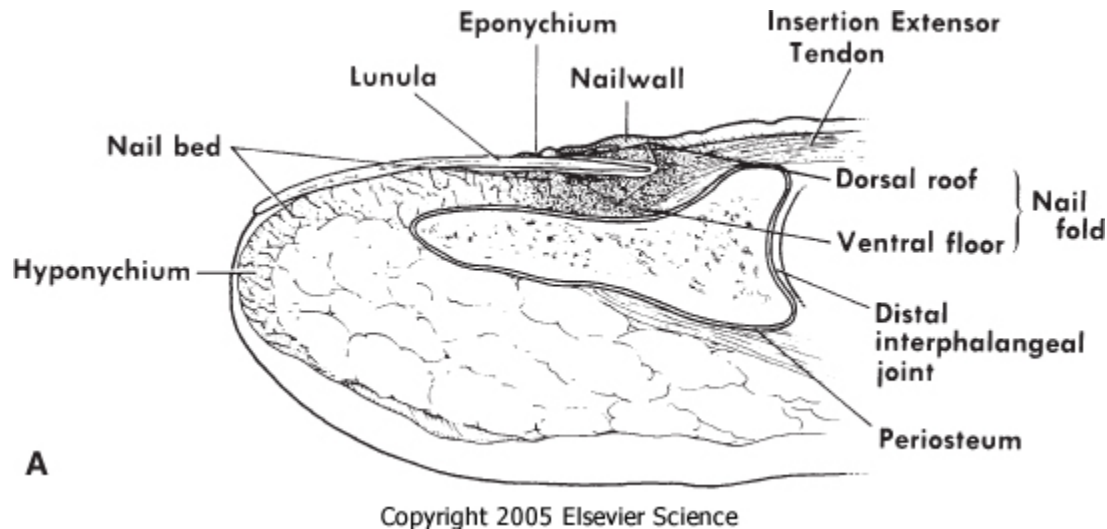
Fractures– Digits

Finger tips



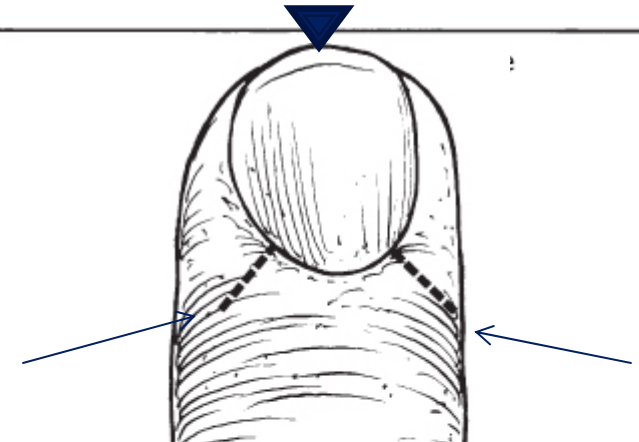
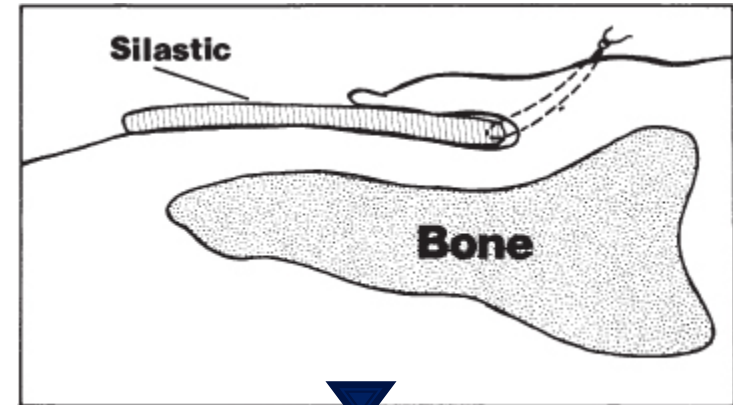
- ✓ Usually associated with Crush injuries
- ✓ Must repair nailbed/perionychium
- ✓ 6-0 chromic stitch for nailbed repair
- ✓ 4-0 chromic suture for skin

Fractures– Digits



- ✓ After repair of nailbed, must reattach nail
- ✓ “3-point” fixation

May use native nail, adaptec,
or foil from stitch pack to create new nail



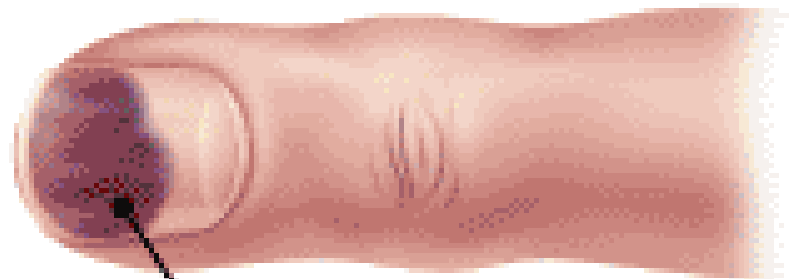
Three stitches at these
points of the nail



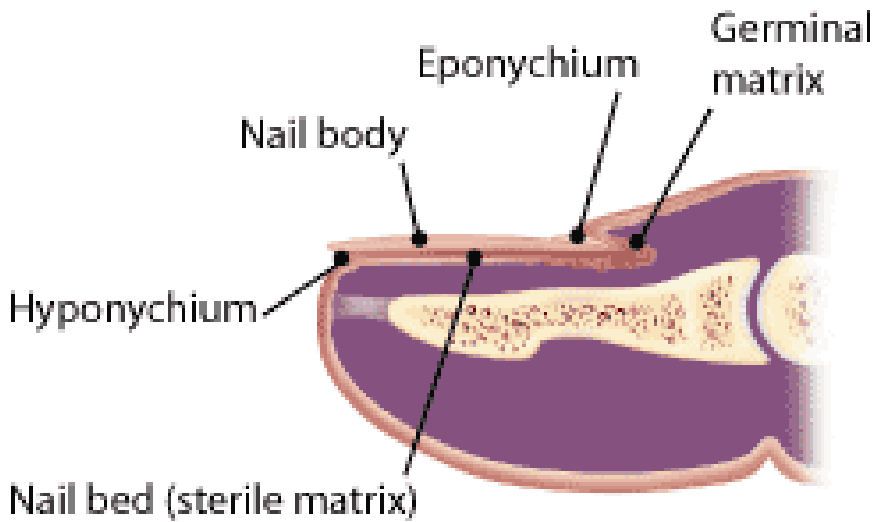
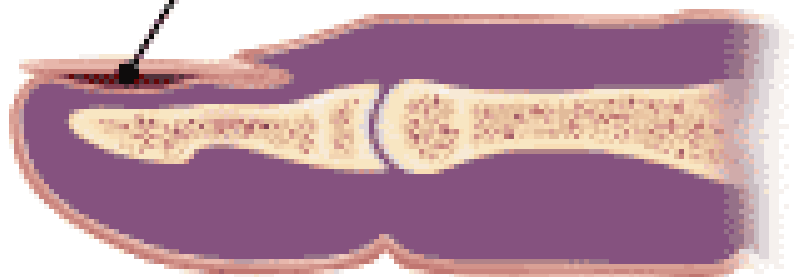
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Sub-Ungal Hematoma

- ▶ Hematoma under nail plate
- ▶ Should be drained if $> 50\%$ nail surface
- ▶ Drain by boring a hole in nail with 18 gauge needle. This should not be painful to patient.
- ▶ If hematoma and nail-plate is partially avulsed, you can simply remove the nail



Subungual hematoma



Lacerations

- ▶ Close in 1 layer with 4.0 nylon sutures
 - ▶ Not too tight – it will swell
 - ▶ Bacitracin or xeroform/dry dressing
 - ▶ May place splint for comfort
 - ▶ Elevation
 - ▶ ABx – 1 dose IV in ED and 5–7 days oral
 - ▶ Tetanus booster
 - ▶ Sutures remain for 10–14 days
- 

Tendon Injuries

- ▶ You are not expected to know how to repair these
- ▶ You must be able recognize the injury
- ▶ Know anatomy
 - FDP flexes at DIP joint
 - FDS flexes at PIP joint
- ▶ Generally the splint will be applied on the side of the hand opposite of the tendon laceration
 - i.e. flexor tendon lacerations get a dorsal splint



FDS tendon – flexes PIP joint



FDP tendon – flexes DIP joint



Extensor tendon

Nerve Injury

- ▶ Must have high degree of suspicion given location of laceration
- ▶ Most of the time, patient will say that it feels “a little weird at the tip”. This is more common than complete numbness.
- ▶ Document 2-point discrimination
- ▶ Repair not emergent.
- ▶ Important to test BEFORE giving anesthesia

Amputations

- ▶ This is an emergency – *the clock is ticking...*
- ▶ Also, facilitate the following in the ED:
 - Tetanus, IV ABx
 - Xray of hand (yes this is important)
 - Pre-op labs – results should be printed and sent with patient
- ▶ Packaging of part – Wrap in wet gauze and place in plastic bag, then place that on ice. **NEVER PUT PART DIRECTLY IN ICE**
- ▶ If part is “hanging” by small skin bridge, **NEVER COMPLETE THE AMPUTATION**. Wrap in wet gauze with bag of ice around hand and secure with ace bandage.

Facial lacerations

- ▶ Rule out other injuries based on location
 - Lacrimal duct
 - Parotid duct
 - Facial nerve
 - Vascular injury
- ▶ 6.0 nylon or prolene
- ▶ Sutures removed in 3–5 days
- ▶ Bacitracin ointment, keep dry

Facial Fractures

- ▶ CT scan – axial and coronal with fine cuts through orbits (3mm)
- ▶ Protect airway if multiple fractures or mandible/maxilla fractures
- ▶ 10 % incidence of C–Spine injury in setting of mandible fracture or multiple facial fractures
 - All patients need spine cleared if significant facial injury.

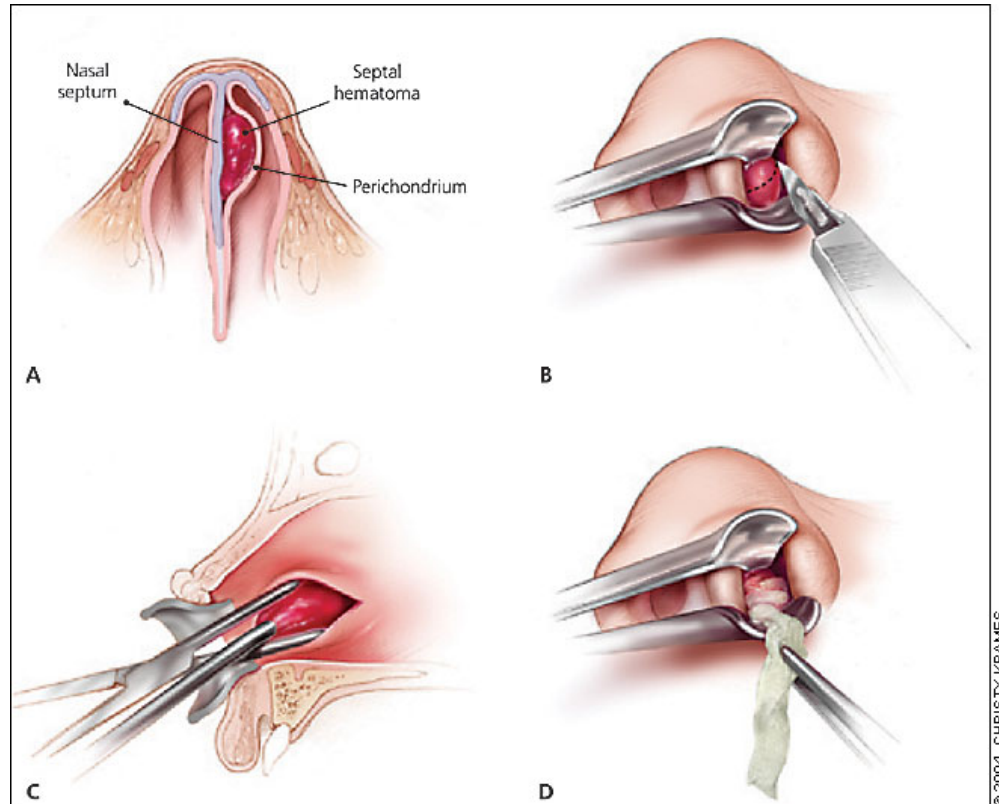
Orbit Fracture

- ▶ Ophthalmology must see the patient
- ▶ Assess gross vision
- ▶ Assess ocular muscles
 - Entrapment is emergency
- ▶ Check for forehead parathesia (supra-orbital N.) and cheek parathesia (infra-orbital N.)

Nasal Fracture

- ▶ Look for septal hematoma
 - Must be drained if present to prevent septal necrosis
- ▶ Is fracture stable or unstable (“crunches” when palpated)

Septal Hematoma



Complex Soft Tissue Injuries

- ▶ Assess wound
- ▶ Irrigate copiously
- ▶ Xray to rule out fractures or foreign bodies
- ▶ Most do not need “coverage” or “repair” in the acute setting
- ▶ Priority is bone/vascular/nerve injuries
- ▶ Must assess neurologic function *before* injecting local anesthetic

Decubitus Ulcers

- ▶ Only “emergent” if source of sepsis
- ▶ If wound is open and draining, very unlikely to be septic source
 - Look for other sources (urine, lungs, etc.)
- ▶ If “boggy” and fluctuant, need to open wound and allow drainage

V.A.C. system

- ▶ Know how to troubleshoot system if called because it is “beeping”
- ▶ Usually it is a leak in the dressing. Can patch leaks with Tegaderm
- ▶ If machine says cannister is full...but clearly it is not, most likely because clogged tubing
 - Change cannister first
 - If still not working, change tubing on dressing next. Can simply replace “disk” and tube without removing sponge. Cut out disk, replace it, and patch over top of it.



Conclusion

- ▶ Busy service
 - ▶ Responsibilities include Clinics, OR, ED, In-patient
 - ▶ Never be afraid to ask for help
 - ▶ Read, Read, Read... this will be a great refresher on anatomy as we work all over the body!
- 