

Common Procedures for Primary Care

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Disclosure

Consultant: EM:RAP



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Learning Objectives

1. Review commonly performed office procedures
2. Discuss indications and contraindications
3. Review post-procedure care

Case

- Pt with big toe pain
- Has been doing warm soaks and OTC care with no relief



Ingrown Toenails

Common

- 2 of every 10 foot complaints that present to primary care

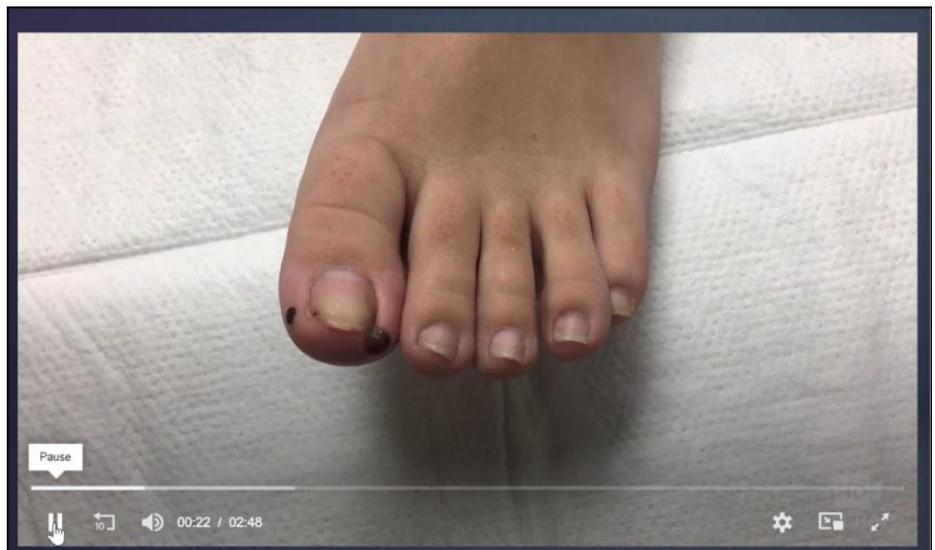
Causes

- Incorrectly cut toenails
- Poor fitting shoes
- Trauma to corner of nail
- Toe shape (nail is larger than toe)

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Toenail Anesthesia Options: Digital Block

- H – Pattern
- Base of the digit



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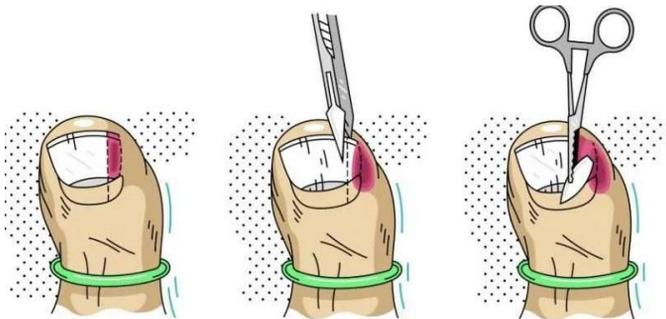
Finger Tourniquet



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Toenail Removal Steps

- Digital Block
- Tourniquet
- Nail edge cut
- Tourniquet removed
- Dressed with gauze and antibiotic dressing



McCue J. Removal of Ingrown Toenail. In: Swadron S, Nordt S, and Mattu A, eds. CorePendum. 6th ed. Burbank, CA: CorePendum, LLC. <https://www.emrap.org/corependium/chapter/rectmwzy883g6KUXL/Removal-of-Ingrown-Toenail#h.wasly1efsvbv>. Updated May 18, 2023

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Case

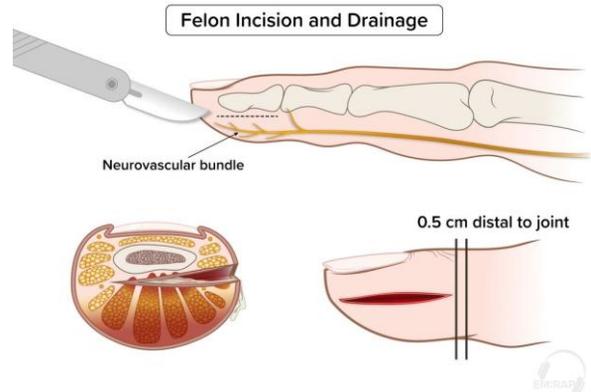
- Pt presents with painful thumb
- Getting larger the last few days
- Started after he got a splinter



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Diagnosis: Felon

- Infection of the pulp space of distal fingertip
 - Infection inside small compartments that fibrous septa divide



Skarpiak B, Pederson T. Paronychia and Felon. In: Swadron S, Nordt S, and Mattu A, eds. CorePendium. 6th ed. Burbank, CA: CorePendium, LLC. <https://www.emrap.org/corependium/chapter/recXYTknuuOoMLdJA/Paronychia-and-Felon>. Updated January 22, 2026.

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Felon Treatment

- I&D
 - Ideally the incision made along non-contact side of digit
 - Radial side of the thumb (to preserve pinch strength)
 - Ulnar side of the fingers
- Antibiotics to cover staph (MRSA) and strep
 - 7-10 day course
 - Trimethoprim/sulfamethoxazole, cephalexin, clindamycin, or doxycycline

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Digital Block



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Case

- Pt presents with painful finger
- On exam you see redness and swelling along the nail edge



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Paronychia

- Soft tissue infection of the fingernail edge
- See edema and erythema along the nail fold
- Tx: I&D
 - Blade between nail and skin
- Usually also topical antibiotic ointment



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Digital Block



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Herpetic Whitlow vs Paronychia

Herpetic Whitlow

- Can be multiple fingers
- Viral infection (Herpes) of the pulp of the fingertip and the perionychium
- Clear vesicles grouped together w red base



Paronychia

- One acute finger infection
- Localized bacterial abscess in the nail fold



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Case



- Pt presents after trauma to their hand
- Got their finger caught in a car door



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What Is the Best Treatment for Subungual Hematoma?

- A. Usually remove nail and fix nailbed laceration
- B. Usually trephination of the nail
- C. Do nothing, have patient elevate hand and take pain medication

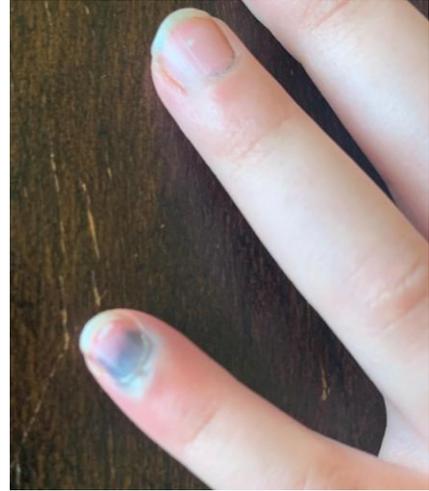
Subungual Hematoma

- If subungual hematoma <50%
 - drain via trephination of the nail
 - 18-gauge needle
 - Blade
 - Cautery
- If subungual hematoma >50%
 - *Consider* removal of the nail and evaluate for a nail bed laceration.



Subungual Hematoma Case

- 4-year-old runs over finger in wheel of scooter
- Painful finger



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Subungual Hematoma Drainage

- Cautery
- No anesthesia needed



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18G Needle Instead of Cautery



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What About This One? Is > 50% Hematoma



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Controversy in Nail Bed Management

- Subungual hematoma > 50% and underlying tuft fracture
 - 95% likelihood of nail bed laceration
- Newer studies show
 - If no disruption of nail bed -> Just trephinate nail
- If disruption of nail bed -> Fix nail bed lac
 - Suture with 6-0 absorbable suture/glue

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Nailbed Repair

- What about replacing the nail or stenting the nail?
 - Newer studies say not always critical
 - But still routinely recommended in most sources
- Study of dermal glue vs suture repair
 - Dermal glue had faster repair AND same outcome as suture

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Nail Bed Lacerations

- Often due to blunt trauma
- Can present with or without an intact nail
- 50% associated with distal phalanx fracture



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Nail Bed Injury

Nail Bed Laceration Repair



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What About This Case?



- Since nail already avulsed, remove nail and repair nail bed

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Nail Summary

- If nail already avulsed -> remove and fix nail bed laceration
- Subungual hematoma > 50% and underlying tuft fracture
 - 95% likelihood of nail bed laceration
 - If no disruption of nail bed -> Just trephinate nail
 - If disruption of nail bed -> Fix nail bed lac
 - Suture with 6-0 absorbable suture or glue

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Case

- 25-year-old presents with a painful finger
- “Jammed” his finger while playing basketball
- On exam: DIP is swollen/tender and unable to extend



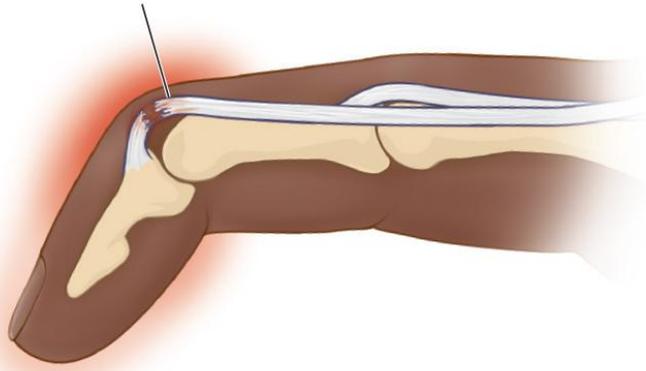
How Do You Treat This Injury?

- A. Buddy Tape
- B. Splint finger in extension
- C. Would send to ED for x-ray

Mallet Finger

- Anatomy:

Torn extensor tendon



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Mallet Finger

- Imaging
 - Bony avulsion of distal phalanx
 - OR
 - Normal hand x-ray
-
- Disrupts terminal extensor tendon



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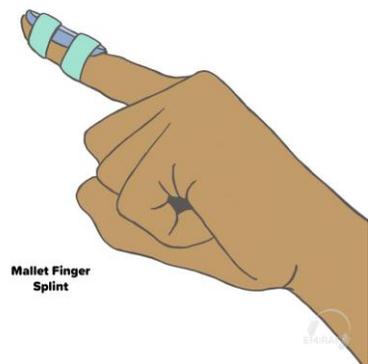
Mallet Finger



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Mallet Finger Treatment Pearls

- Splint DIP in extension for 6-8 weeks
- Free movement of the PIP joint
- Avoid hyperextension
- Flexion exercises after 6 weeks
- Surgical Fixation
 - Fractures >25% of joint surface or joint subluxation



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Mallet Finger Splints

- Need to always wear and keep finger in extension



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What If the Mallet Injury Occurred 3 Months Ago?

- Late presentation of Mallet
 - Referral to hand surgery
 - Likely need surgical reconstruction of the terminal extensor tendon

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Case

- 45-year-old presents with laceration to hand
- Was fixing a shower door and cut finger



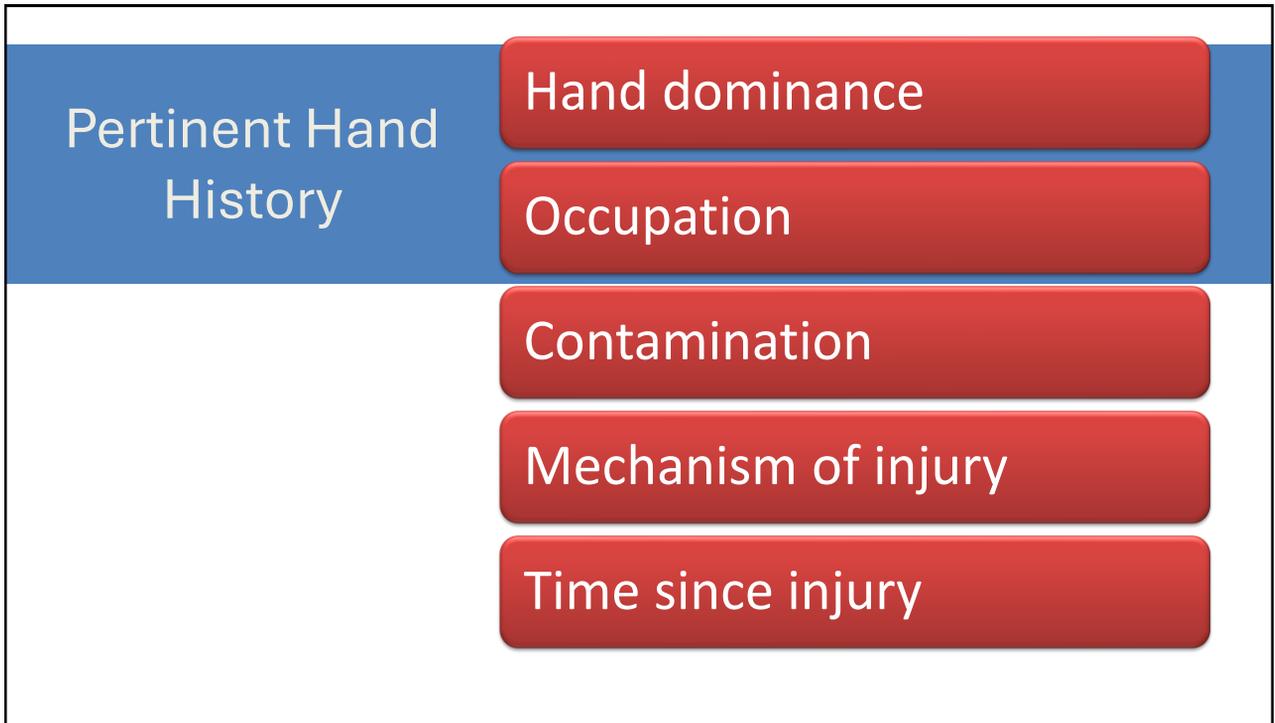
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Similar Case

- Wound Exploration
 - Examine while moving the digit
- Tendon will move so you can see the cut part more clearly



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Why Does “Time Since Injury” Matter?

- Ideally want to close lac <12 hrs from injury
 - Even better if <8 hrs!
- If >24hrs since injury
 - Face/scalp – still can close
 - Delayed primary closure with lacs at risk for infection

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Infection Risks? Should We Delay Closure If >24 hrs from Injury?

- Increase risk for infection:
 - Diabetes or immunocompromised state
 - Lower extremity location
 - Contamination
 - Wound length >5cm

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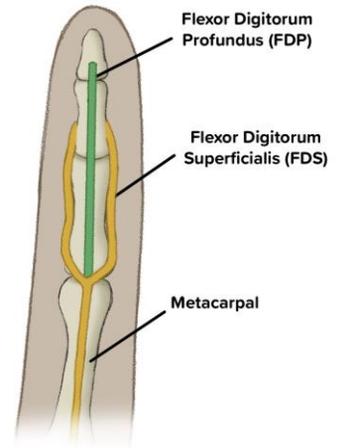
Delayed Primary Closure

- Irrigate wound extensively
- Leave wound open initially and start antibiotics
- Close 3-5 days later once infection risk decreases
 - Especially for large wounds or those where delayed closure can improve cosmetic outcomes

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Flexor Tendon Anatomy

- 2 flexor tendons per finger
 - Flexor digitorum profundus (FDP)
 - Flexes DIP (inserts on distal phalanx)
 - Flexor digitorum superficialis (FDS)
 - Flexes PIP
 - Insert onto side of middle phalanx
- 1 flexor tendon for the thumb
 - Flexor pollicis longus (FPL)



Abramson T, Ross K. Tendon Lacerations of the Hand. In: Swadron S, Nordt S, and Mattu A, eds. CorePendum. 6th ed. Burbank, CA: CorePendum, LLC. <https://www.emrap.org/corependium/chapter/rec6sWOPX6vB2Ux0I/Tendon-Lacerations-of-the-Hand>. Updated February 9, 2024.

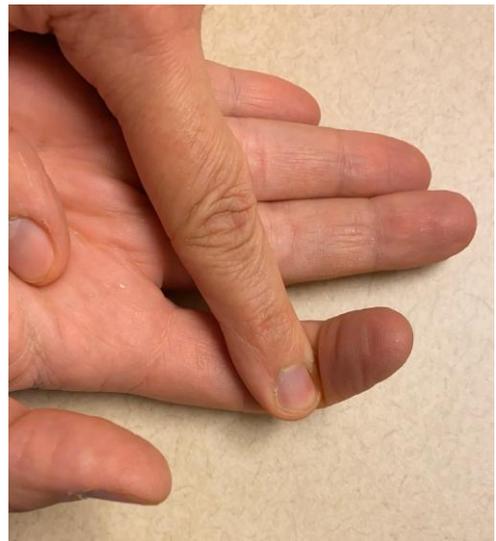
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Physical Exam of Flexor Tendons

FDS



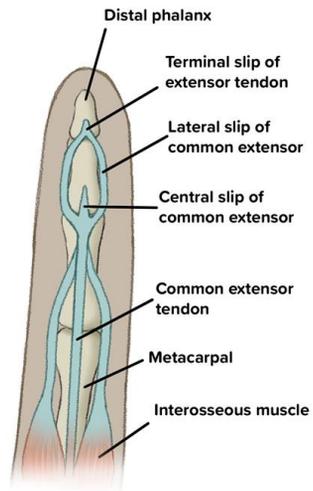
FDP



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Hand Anatomy – Extensor Tendons

- Common Extensor divides into 3 slips
- One central
 - Inserts at base of middle phalanx
 - Extends middle phalanx at PIP
- Two lateral
 - Extend the DIP joint



Abramson T, Ross K. Tendon Lacerations of the Hand. In: Swadron S, Nordt S, and Mattu A, eds. CorePendium. 6th ed. Burbank, CA: CorePendium, LLC. <https://www.emrap.org/corependium/chapter/rec6sWOPX6vB2Ux0I/Tendon-Lacerations-of-the-Hand>. Updated February 9, 2024.

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Physical Exam: Extensor Tendons

- Apply resistance to dorsum of finger while patient extends
- Extensor Pollicis Longus (EPL)
 - Lift thumb against resistance



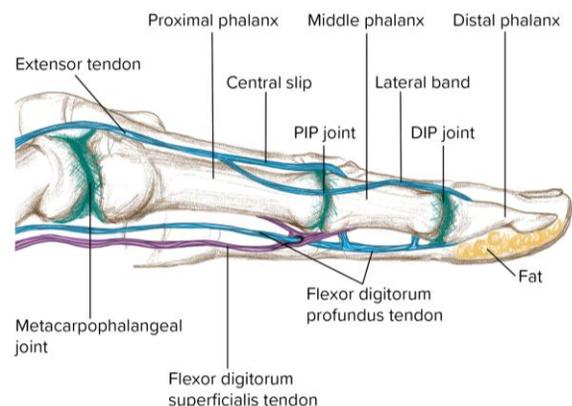
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Small Laceration to Extensor Hand Surface

- High risk of tendon injury!
- Study in Ann Plastic Surgery in 2005
 - Lacs < 2cm on hand or MCP had >50% tendon lac rate
- Study in Injury in 2022
 - 58% dorsal hand injuries had underlying structural injury
- Closed tendon injuries missed more than OPEN tendon injuries
 - Examine all digits!

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Hard to Know What Structures Are Injured: Need a Good Exam!



Abramson T, Ross K. Tendon Lacerations of the Hand. In: Swadron S, Nordt S, and Mattu A, eds. CorePendum. 6th ed. Burbank, CA: CorePendum, LLC. <https://www.emrap.org/corependium/chapter/rec6sWOPX6vB2Ux0I/Tendon-Lacerations-of-the-Hand>. Updated February 9, 2024.

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Do You Give Prophylactic Antibiotics with Hand Lacs?

DO NOT GIVE

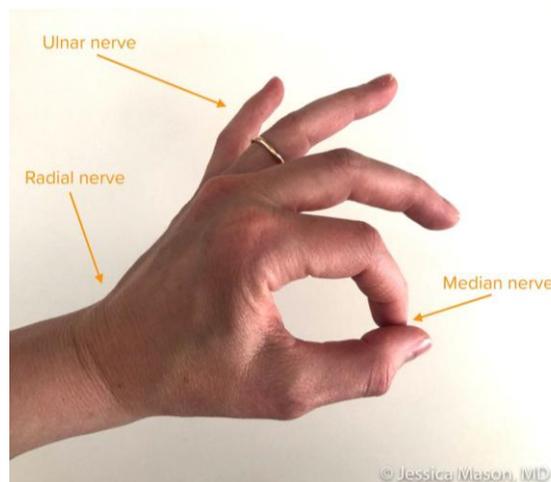
- Simple
- Uncomplicated
- Superficial wounds

YES - Give

- Grossly contaminated
 - Deeper lacs
 - High risk wounds:
 - Tendon lacs
- *Short course of prophylactic antibiotics for 3-5 days and coverage with cephalosporin (unless associated with dog/cat/human bites then tx for 7-10 days with amoxicillin-clavulanate).*
- *Allergy to cephalosporin, consider clindamycin as alternative*

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Need Good Neuro Exam with All Hand Injuries



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Finger Lac Case Continued

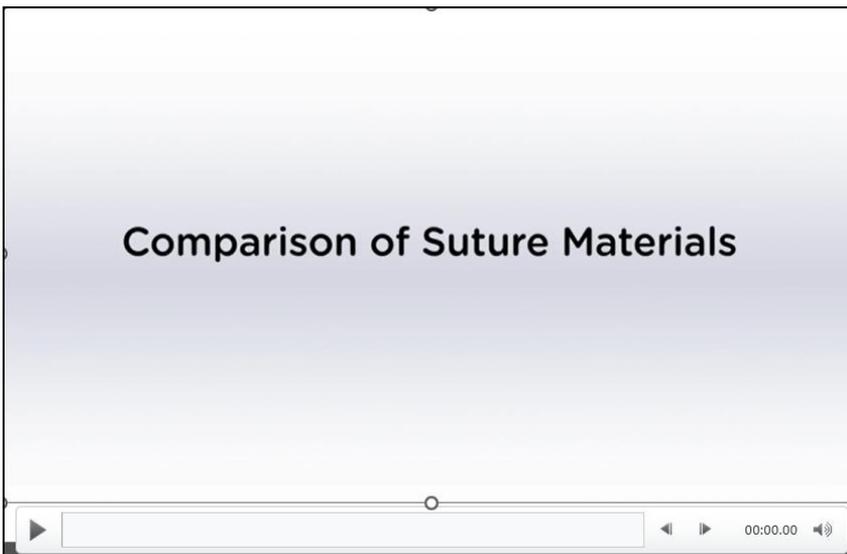


- Explored through full ROM
- Closed with 5-0 nylon
- Stitches out in 7-10 days

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What Type of Suture to Use?

Comparison of Suture Materials



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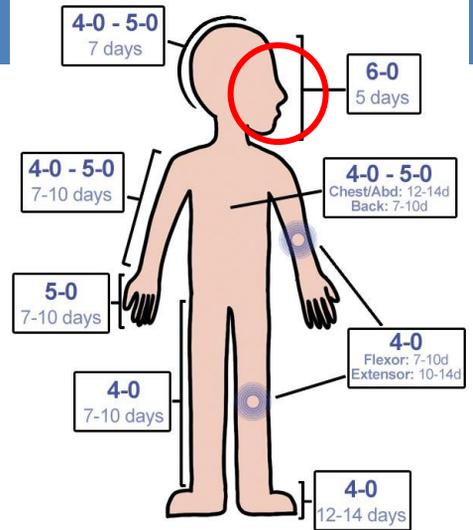
What Size & How Long?

- Shorter duration on face



How to suture, simple lacs. Health and Wellness. Aug 14, 2020

Suture Sizes and removal



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Case



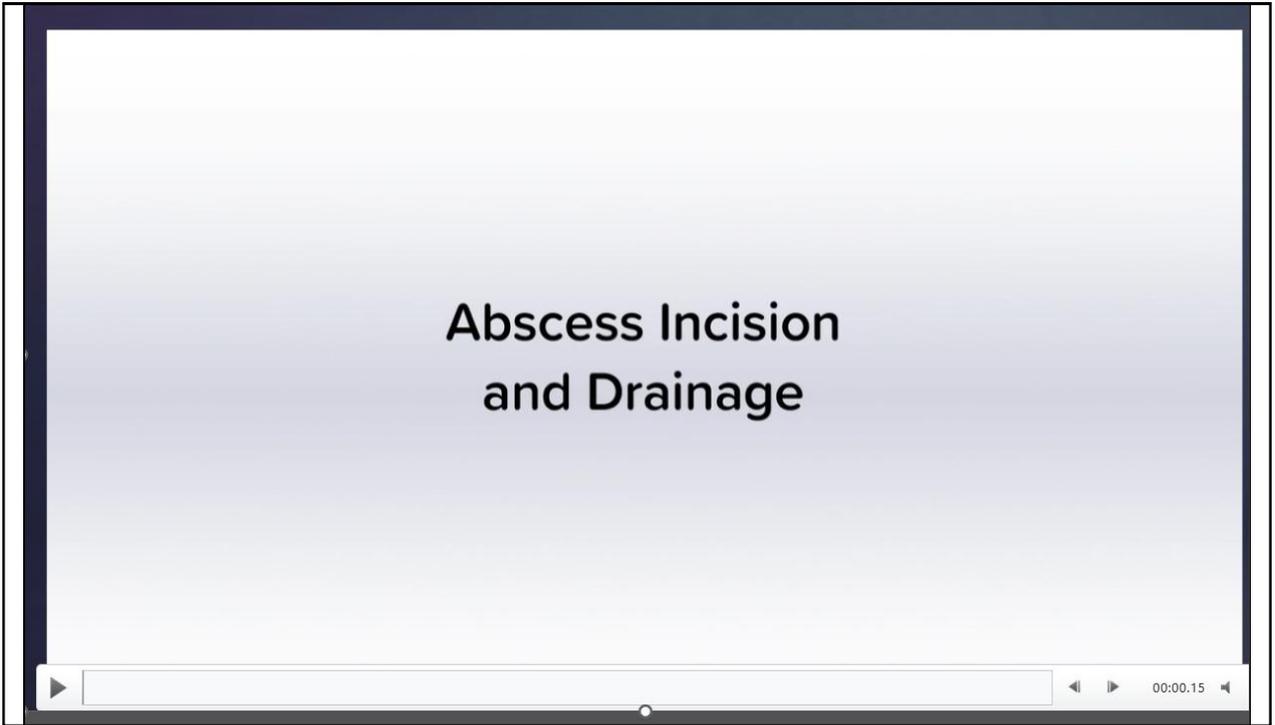
- 45-year-old diabetic presents with abscess
- Fluctuant center on exam

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Cutaneous Abscess

- Contraindications to drainage
 - Location
 - Palms/soles
 - Perirectal/breast
 - Near vessels/nerves
- Mostly *S. Aureus*

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Who Should Get Antibiotics?

- Clinical Infectious Diseases, 2020
- Multi-center, almost 800 patients
- Single abscess <5cm
- All I&D
- Either 10 days of Clinda or Bactrim or Placebo
 - Higher likelihood of cure with **Abx/I&D** vs I&D alone

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Case

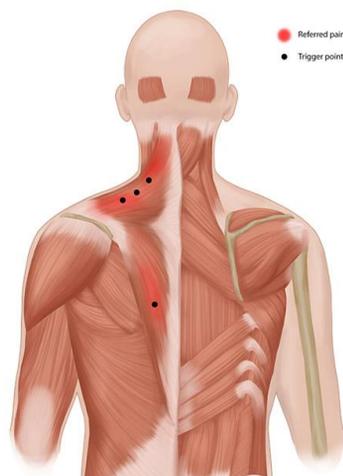


- Pt presents with painful knot to back of neck/back

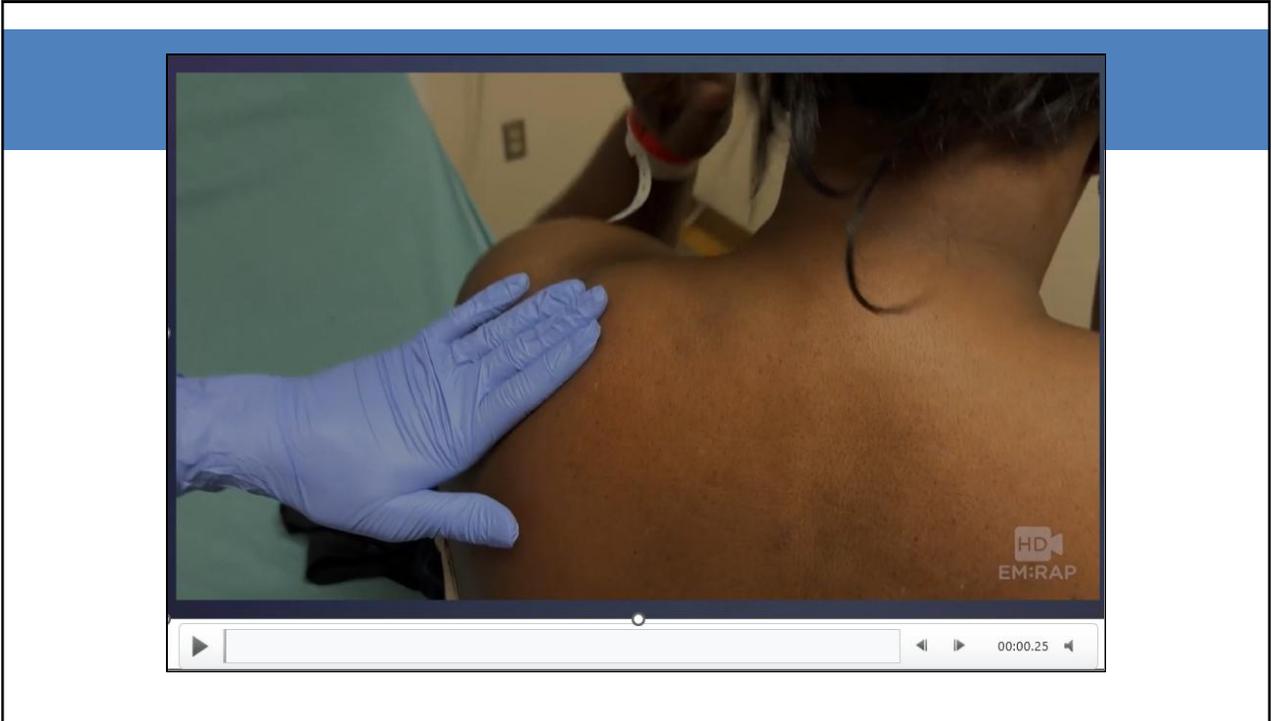
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Tigger Point Injection

- Trigger point
 - Taught band of painful muscle
- Injection shown effective
 - Unsure if injection meds (lido/NS)
 - Or just dry needling of site



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Case

- 50-year-old presents with a tick in their upper arm
- Was hiking the day prior



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Tick Removal



- Goal is to extract the tick alive
 - Try not to leave retained parts
- Use NON-TOOTH Forceps
- Gentle traction

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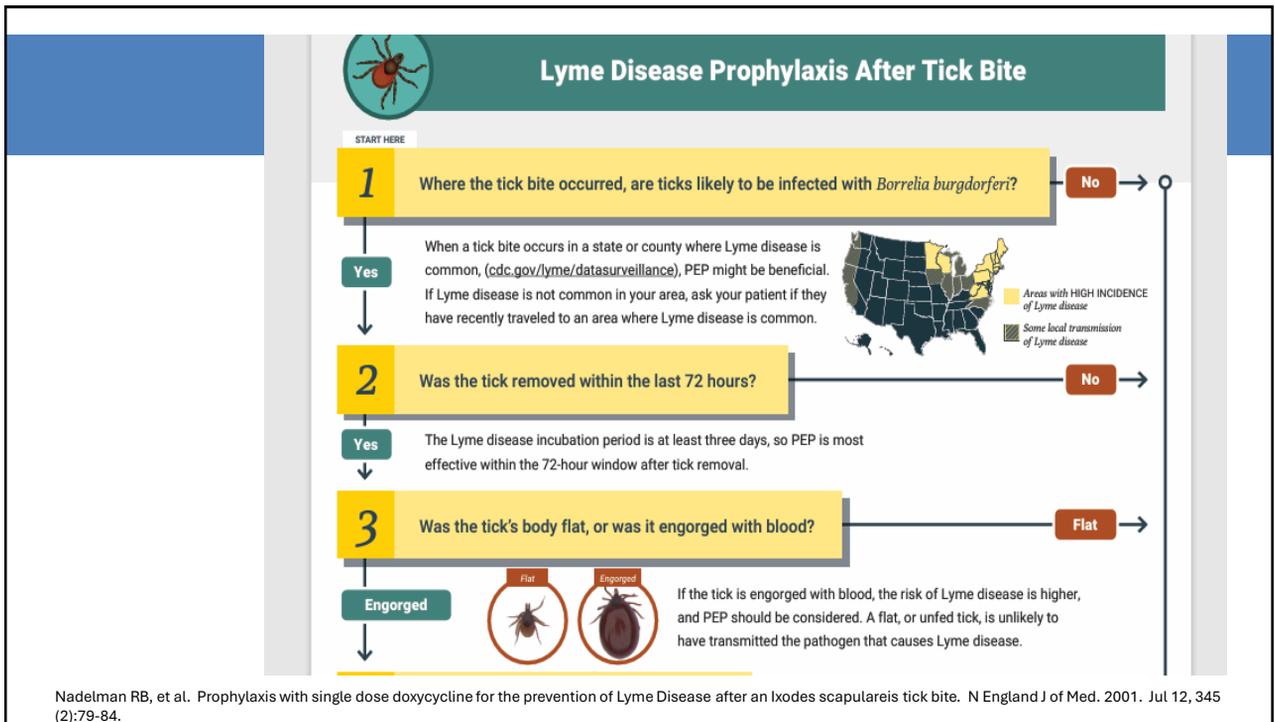
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Antibiotic Prophylaxis?

- Lyme disease from an infected tick bite can be prevented if the tick is removed within 24 to 36 hours.
- In high-risk Lyme area?
 - 2019 Study out of Canada
 - Prevention with single dose of doxycycline, 200mg

Sutton D, Spry C. One Dose of Doxycycline for the Prevention of Lyme Disease: A Review of Clinical Effectiveness and Guidelines [Internet]. Ottawa (ON): Canadian Agency for Drugs and Technologies in Health; 2019 May 21.

69



Nadelman RB, et al. Prophylaxis with single dose doxycycline for the prevention of Lyme Disease after an Ixodes scapularis tick bite. N England J of Med. 2001. Jul 12, 345 (2):79-84.

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4 Was the tick an *Ixodes* (blacklegged) tick?

Definitely NOT →

Yes / Possibly / Tick Unavailable

Ixodes *Ixodes*
Nymph Adult

In the United States, the only ticks that transmit the bacteria that cause Lyme disease are the small, teardrop-shaped *Ixodes* ticks. Tick identification can be challenging, and PEP can still be considered when the tick cannot be identified.

5 Is doxycycline safe for the patient?

No →

Yes

A single dose of doxycycline has been shown to reduce the frequency of Lyme disease after a high-risk tick bite and is safe for people of all ages, including young children. Before recommending doxycycline prophylaxis, make sure that it is a safe medication for your patient. Considerations include allergy to doxycycline, pregnancy, and lactation.

Consider Prescribing PEP*

PEP Not Indicated ←

*Single dose of doxycycline (200 mg for adults or 4.4 mg/kg for children of any age weighing less than 45 kg)

REFERENCES:
Nadelman RB, et al. Prophylaxis with single-dose doxycycline for the prevention of Lyme disease after an *Ixodes scapularis* tick bite. *N Engl J Med*. 2001 Jul 12;345(2):79-84.
Harms MG, et al. A single dose of doxycycline after an *Ixodes ricinus* tick bite to prevent Lyme borreliosis: An open-label randomized controlled trial. *J Infect*. 2021 Jan;62(1):98-104.

Nadelman RB, et al. Prophylaxis with single dose doxycycline for the prevention of Lyme Disease after an *Ixodes scapularis* tick bite. *N England J of Med*. 2001. Jul 12, 345 (2):79-84.

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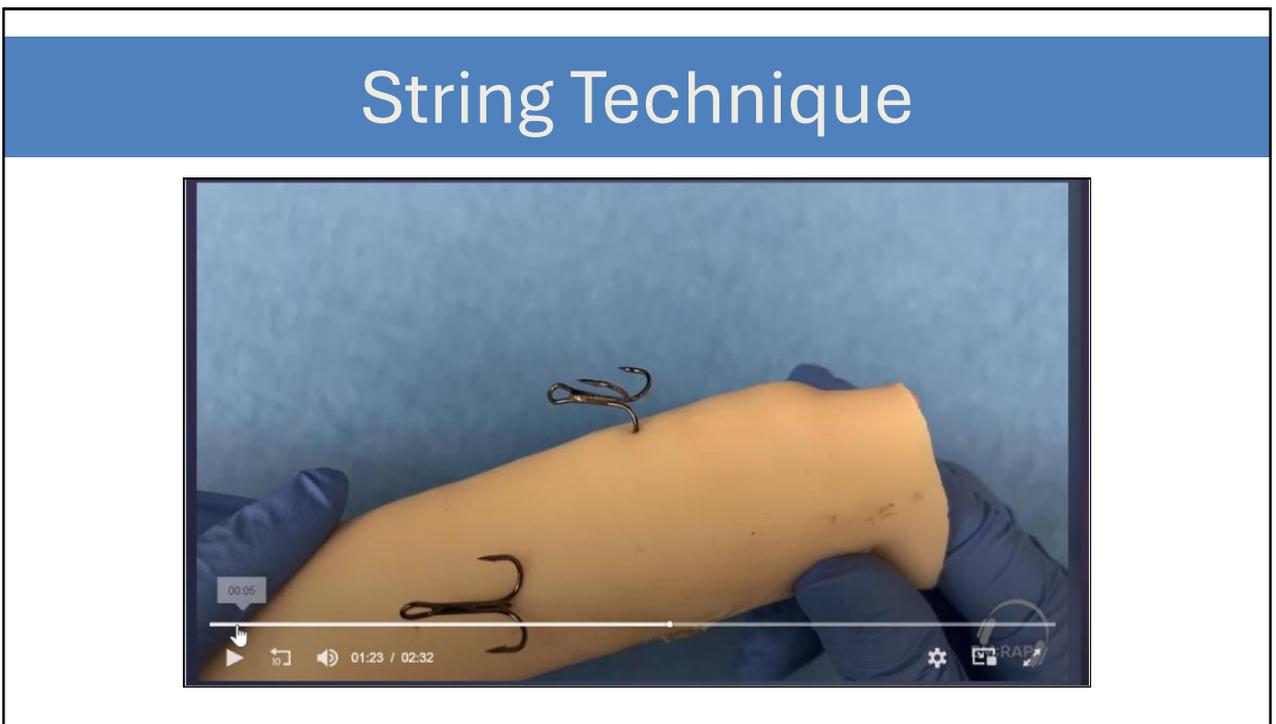
Case

- Fishing today
- Presents to your office with a fishhook in their hand

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Do You Give Antibiotics After Fishhook Removal?

- A. Yes
- B. No
- C. To select patients

Antibiotics After Fishhook Removal

- Not routinely recommended
- Yes –
 - If involves penetration into cartilage/tendons
 - Immunocompromised pts
 - Contaminated

Abx in Marine Contaminated Wounds

- Augmentin is good 1st line therapy for fish related soft tissue infections
- Marine contaminated wounds:
 - Target Gm neg organisms (Ex: vibrio or pseudomonas)
 - Doxy plus ceftazidime Or fluroquinolone

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Case



- 65-year-old male presents with a painful, swollen knee
- Has a family history of gout
- Had a prior flare of 1st great toe but no tap of joint prior

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Arthrocentesis Contraindications

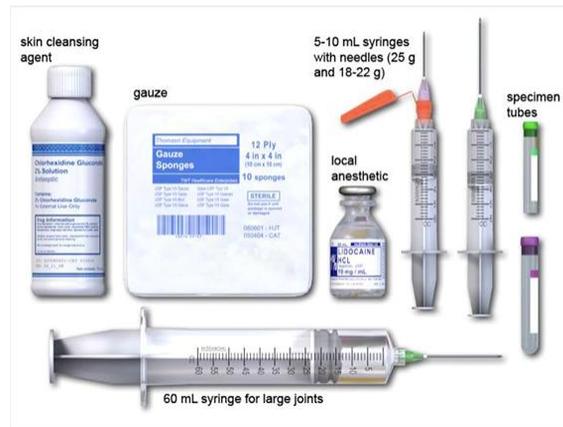


- Cellulitis
- Coagulopathy
- Hemarthrosis
- Prosthetic joints

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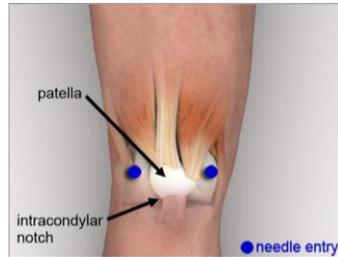
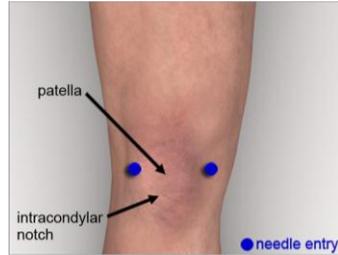
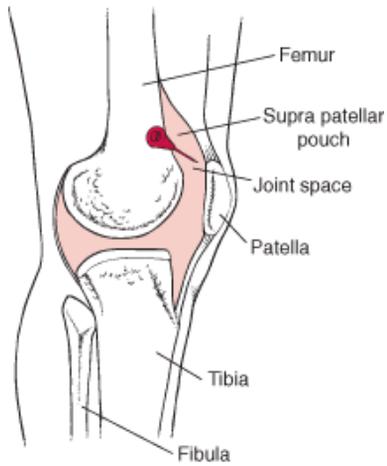
Equipment

- 25-27 gauge needle
- 18-20 gauge needle
- 20-60 ml syringe
- Sterile prep
- Anesthesia
- Gauze/bandaids



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Knee – Landmark Guided



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Knee – Ultrasound Guided



Highland Ultrasound

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Local Anesthetic



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- Gout?
- Send fluid for crystals
 - Send also for gram stain and culture
 - r/o secondary infection



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Case

- 4-year-old brought in by family for not using her arm
- Older sibling was pulling her up by a single arm and child wouldn't use it afterwards
- On exam, child holding arm, no pain with palpation, no bruising but will not use

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Nursemaid Elbow

- Radial head subluxation
 - Partial separation of radiocapitellar joint
- See mostly under age 7
- Mechanism is never trauma or fall
- Two reduction techniques:
 - Hyperpronation
 - Supination and flexion

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Nursemaid



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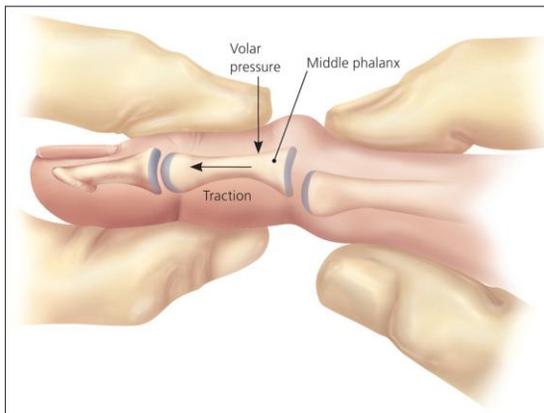
Case

- Playing with grandkids and was catching a ball
- Ball hit their digit at a strange angle
- Presents to your office



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Reduction Technique



- Direct Traction

Childress MA, Olivas J, Crutchfield A. Common Finger Fractures and Dislocations. Am Fam Physician. 2022 Jun 1;105(6):631-639. PMID: 35704814.

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Finger Dislocation Reduction



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Finger Dislocation Treatment

- Buddy Taping
 - No good evidence behind this practice
- 2017 study Hand Surg Rehab
 - Looked at splint vs buddy tape for 3 wks
 - No difference in pain, edema, ROM



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Why Not Delay and Send to ER or Hand Specialist?

- Delay in reduction of finger dislocation
 - Increased complications and worse pt outcomes
 - Stiffness
 - Pain
 - recurrent instability
 - volar plate laxity
 - decreased ROM
- Reduce finger dislocations ASAP!

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Take Home Points

- Reviewed many common procedures that will present to your office
- National trend in ED/Hospital overcrowding
 - Likely see more inter-office procedures
 - Patients prefer their PMD too!

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