Common Hand Problems and Case Examples

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Sometimes the problem is obvious
Sometimes the problem is everywhere...
Anatomy

- Skin
- Tendon
  - Extrinsic
  - Intrinsic
- Bone
- Vascular
- Nervous
History

- OLD CARTS
- PMH—DM, vascular disease, stroke, trauma history, congenital
- PSH—previous surgery on the extremity
- Medications—steroids, vasoconstrictors
- Allergies
- Social/Family History—tobacco, job history, factitious behavior
- ROS
Physical Exam

• Skin
• Tendon/Muscle
  – Resting posture/tenodesis effect
• Nerve
• Vascular exam, Allen’s test
Allen test

- Occlude both ulnar and radial arteries and have patient make fist
- Open hand
- Release ulnar artery and watch refill
- Repeat, but release radial artery
- Can be done with doppler
Work-up

• Labs
  – SLE, RA, immunodeficiency, ESR/CRP, etc.
• X-ray
• EMG
• Other imaging
  – Angiogram
  – MRI
  – ultrasound
Case 1

- 56 year old RHD florist presents for evaluation of numbness and tingling of the thumb, index and middle fingers for years. She wakes up from sleep and needs to shake her hands out. Driving and talking on the phone exacerbate her symptoms, as does her certain motions at her job.
Exam
Etiology

- Hereditary (carpal tunnel anatomy)
- Hand use over time
- Hormonal changes related to pregnancy
- Age
- Medical conditions, including diabetes, rheumatoid arthritis, and thyroid disease
Treatment

- Night splints/behavior modification
- NSAIDs
- Steroid injection
- Surgical release
Injection Technique

- Insert needle just ulnar to the palmaris longus tendon and at the proximal wrist crease.
- The needle is inserted at a 30-degree angle and directed toward the ring finger. If the needle meets obstruction or if the patient experiences paresthesias, the needle should be withdrawn and redirected in a more ulnar fashion.
- With any injection, aspirate to ensure that the needle has not been placed in a blood vessel. Inject slowly, but with consistent pressure.
What if this was the exam?
What if this was the x-ray?
Case 2

- 22 year old woman presents after a lump appeared on her wrist. She has no history of trauma that she remembers. Sometimes it decreases in size, but always returns. It is not painful, but bothers her when she bends her wrist. Her boyfriend, who is a nurse said he would smack it with a Bible if she didn’t come in to see you.
Exam

- Full active range of motion
- non-tender wrist, neurovascular exam normal
Etiology

• Arises from joint capsule or tendon sheath
• Contains joint fluid
• Repetitive trauma, no exact cause
• Women > Men
Treatment

• Observation
• Immobilization
• Aspiration/Injection
• Surgical excision—open versus arthroscopic
Injection Technique

• An 18- or 22-gauge needle inserted directly into the cyst should be used to aspirate the cyst after local anesthesia is given.
• Alternately, a corticosteroid injection can be given into small retinacular cysts to rupture it.
• Massage if amenable.
• In general, don’t aspirate near radial artery.
Case 3

30 year old post-partum mother presents for wrist pain. She has significant pain that began during pregnancy and is especially painful when lifting her infant. She describes it as pain in the wrist and thumb.
Exam

- Negative Tinel
- No snuffbox tenderness
- Negative Grind test
- Positive Finkelstein’s
Etiology

- Pregnancy
- Overuse
- Women > Men
- Middle age
Treatment

- Activity modification/NSAIDs
- Thumb spica splint
- Steroid injection
- Surgical release
Injection Technique

- Keep thumb abducted and extended, palpate the course of the tendons distal to the radial styloid.
- The needle is placed into the first extensor compartment proximal to and directed toward the radial styloid and parallel to the abductor and extensor tendons.
Case 4

• 56 year old mechanic presents for evaluation of left thumb pain. He has had the symptoms for years, but he is now unable to grip objects and perform ADLs without pain. He thinks he had an injection in the hand years ago and has no trauma history.
Exam

• Pain with palpation of the base of the thumb
• Decreased grip strength
• Positive axial grind test
Treatment

- Rest, NSAIDs, activity modification
- Thumb spica splint
- Corticosteroid injection
- Surgery

Injection technique:
- Palpate joint
- Can apply gentle traction
- Joint will fill and resistance will occur
Other osteoarthritis treatments:

- DIP fusion
- MCP or PIP arthroplasty or arthrodesis
- Wrist limited or full arthrodesis, arthroplasty
- …If patient is in pain, doesn’t hurt to refer
Case 5

• Your 85 year grandfather shows you his hands at Christmas Day dinner. He noted nodules years ago that slowly grew. Now he cannot fully straighten his fingers or lay his hand flat on a table. He wants you to tell him how he can fix this inconvenience.
Exam
Etiology

• Cause is unknown. It does not correlate with trauma or occupation.
• Family history, especially Scandinavian and Northern European, Mediterranean, and Japanese
• Men>>Women
• Age >40
• Risk factors include DM, tobacco use and cirrhosis
• Dupuytren’s diathesis
  – Peyronie’s disease, Ledderhose disease, Garrod’s pads
  – Male gender
  – Age <50
  – Bilateral disease
  – Family hx
Treatment

- Education
- Radiation
- Needle fasciotomy
- Xiaflex injection (collagenase)
- Surgery
Case 6

• 45 year old woman with diabetes presents for evaluation of finger ‘locking.’ The symptoms are worse in the morning, and she has to use her other hand to straighten the finger.
Exam

• She has a palpable nodule on the palmar surface of the hand at the level of the A1 pulley. As she extends her finger, it pops open painfully. She does not have numbness or tingling.
Etiology

- Women > Men
- Most common between 40 and 60 years
- More common in patients with diabetes, gout and rheumatoid arthritis
- Trigger fingers may occur hand trauma or strain
Treatment

- Steroid injection
- Percutaneous release
- Surgery

Injection technique:
- A 25-gauge needle is inserted over the palmar aspect distal to the metacarpal head, stay on the midline of the finger and there should be no resistance (tendon injection)
Case 7

- 33 year old chicken farmer pricked and injected his finger while giving his chickens vaccines. 1 day later he developed painful swelling of the finger, pain with movement, redness and drainage.
Exam

• Semi-flexed position of finger
• Fusiform swelling
• Excessive tenderness along flexor tendon sheath
• Pain out of proportion to exam with passive extension
Etiology and Treatment

- Infection of the tendon sheath
- Can extend proximally via sheath/bursa
- Can develop from untreated felon or paronychia
- Very early presentation may be admitted for IV abx (<24h, mild sx)
Paronychia

Pus beneath eponychial fold
Felon

A

B

C

Eponychium
Matrix germ sterile
Nail
Phalanges
Pad
Pus

D

E

F

A

B

C


Case 8

- 18 year old TAMU student playing flag football injured his right small finger. He is unsure of what happened exactly, but is now unable to fully straighten the finger. There is pain at the site and no other complaints.
Treatment—Mallet finger

- Splint for 6 weeks in extension (PIP free)
- Surgery if joint subluxated, large fracture fragment, failed conservative treatment, or patient cannot tolerate splinting
Same patient, different x-ray, now unable to flex fingertip
Treatment—Jersey finger

• Surgical