MANAGEMENT OF HAND INJURIES: WHO SHOULD SEE A HAND SURGEON?

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OUTLINE

Injury evaluation
Triage:
• Bandage/splint
• Treat
• Transfer
Wound repair
• Lacerations
• Nail repair
Aftercare

INJURY EVALUATION

• ABC’s always first
• Don’t be distracted by a dramatic hand wound
• Life first, then limb
**INJURY EVALUATION**

Bleeding control

NO tourniquets!

Direct pressure

**INJURY EVALUATION**

- Just observe for a few seconds
- Take a systematic approach

**TRIAGE**
## TRIAGE

<table>
<thead>
<tr>
<th>What can be:</th>
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<tbody>
<tr>
<td>• Treated with splint/dressings?</td>
<td></td>
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<tr>
<td>• Repaired?</td>
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What needs to be transferred now?
Who needs to see a hand surgeon and when?

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## "CONSERVATIVE" TREATMENT

I.e. injuries that can be bandaged and/or splinted

- Most fingertip injuries
- Closed, minimally or non-displaced fractures

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## FINGERTIP INJURIES

- If no bone exposed, fingertip injuries do very well with daily washing + dressing changes
- Better results than skin grafting
- Nonstick dressing
TIP INJURY

NON-DISPLACED FRACTURES

Phalanx and metacarpals that don’t result in deformity
- Nearly all distal phalanx fractures
- Some proximal and middle phalanx fractures
- Boxer (metacarpal neck) fractures

FRACTURES
FRACTURES

<table>
<thead>
<tr>
<th>WHAT TO REPAIR (IN E.D.) WITH LOCAL ANESTHESIA:</th>
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</thead>
</table>

1. Hand and forearm uncomplicated lacerations
2. Nail injuries
3. Extensor tendons (no flexor)
4. Tip amputations

REPAIR
LACERATION REPAIR

- Uncomplicated (i.e. no underlying fracture, nerve/tendon injury, etc.)
- With isolated nerve or tendon injuries, repair skin anyway (not sure when they will get surgery)
- 3-0 suture in forearm, 4-0 in hand

NAIL REPAIR

- Nail hematoma – just drain it with drill hole
- Nail bed injury: fine suture (5-0 or 6-0 suture in past – painful)
  - Superglue (i.e. dermabond, indermil) it now
- Something under nail fold (the nail, foil from suture packet, etc)

NAIL HEMATOMA

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NAIL REPAIR

EXTENSOR TENDON

- Only if you can find both ends
- Usually non-absorbable suture (3-0 or 4-0)
- Use a pneumatic or finger tourniquet so you can see
Important points:
- Good lighting
- Control of bleeding so you can see
- Make the tip of the bone smooth
- Excise ends of digital nerves (neuroma)
- Excise excess skin at the corners (won’t go down on its own)
REVISON AMPUTATION

THINGS THAT NEED TO SEE HAND SURGEON SOON

- Isolated nerve injuries
- Flexor tendon lacerations
- Closed displaced fractures

- Timeframe: ideally within 48-72 hr
WHAT TO TRANSFER (OR SEND TO THE OPERATING ROOM):

- Anything ischemic
- Open fractures
- Flexor tendon injuries
- Mangling injuries
- High pressure injection injuries***

TRANSFER PREPARATION

- Control bleeding (direct pressure)
- Tetanus shot
- Always splint
- Avoid tourniquets

TRANSFER

- Control bleeding (direct pressure)
- Tetanus shot
- Always splint
- Avoid tourniquets

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TRANSFER

Right hand

TRANSFER

Left hand

BLAST INJURIES – NOT MUCH TO WORK WITH
### TRANSFER?

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### COMPARTMENT SYNDROME

- An unreleased/untreated compartment syndrome CANNOT be transferred or discharged
  - Release/fasciotomies MUST be performed at initial treating facility

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### FASCIO TOMIES

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Myth: the wound must be washed with sterile saline or sterile water.

• False: tap water irrigation is fine
WOUND REPAIR

Myth: don’t use epinephrine in the hand
• False: it’s fine and it helps with hemostasis
• Epinephrine effects last ~90 minutes – not long enough to kill a hand or finger
• Effects of the local will last longer
Local, digital or wrist block
• Lidocaine/xylocaine has rapid onset (marcaine/bupivicaine takes longer, lasts longer)

WOUND CLOSURE TIPS

Get comfortable
Good lights
Clean, clean, clean
Approximate, don’t strangulate
• “if it’s white tonight, it will be black tomorrow”

THANK YOU

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