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
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
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
Blocks
Blocks
Blocks

Flexor carpi ulnaris tendon
Palmaris longus tendon
Median n.
Flexor carpi radialis tendon
Ulnar n.
Ulnar a.
Ulna
Radius
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
Remove 1/3 of the nail closest to the abscess

OR

Longitudinal incision along the abscess pocket
Felon

This is the incision...
Along the ulnar side of the digit if you can
Other Deep Hand Abscess

A

B

C

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Flexor Tenosynovitis

- Infection in flexor sheath
- 4 classic Knavel Signs
  - Pain with passive extention
  - 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

Calcification of TFCC ligament
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
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
Salter Classification Of Pediatric Fractures
Fractures – Distal Radius

- Distal Radius Reduction

- Sugar-tong splint

- Finger traps
- Hang for 10-15 minutes
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

Apply Pressure

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
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.
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
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 then 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

- Ophthamology must see the patient
- Assess gross vision
- Assess occular 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!