

## TECHNIQUES IN DEBRIDEMENT OF OPEN FRACTURES

How I approach them

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## DON'T MISS IT

- Be suspicious of seemingly innocuous wounds
- Investigate wounds that seem remote from fracture site
- Don't allow the size or appearance of the wound impact the thoroughness of the treatment

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## INITIAL TREATMENT

- In ED prior to splinting
  - Ok to knock off obvious, gross contamination
  - Reduce protruding bone back into soft tissue envelope
  - Saline preferred over betadine
  - Avoid clamps

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### LIBERAL WOUND EXTENSION

- Surgical extension should allow complete debridement of wound ends
- Dirt and debris commonly deposits in the dead space of injury
- Incorporate typical exposures necessary for debridement
- Utilize counter incisions in more friable areas



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### GETTING THINGS CLEAN

- Settle in....
- Start superficial, work deep
- Only excise badly damaged skin
  - Either clearly nonviable, or so damaged would be unlikely to heal
- Scalpel is effective, excise muscle fascia with debris
- Be cognizant of zone of injury

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### MUSCLE

- Capacity to bleed
- Contractility
- Consistency
- Color
- Ronguer "tug-test"

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## MUSCLE

- Assessing two things:
  1. Is there dirt or other contamination?
  2. Is the muscle viable?
- The main reason for a repeat debridement (second look) should always be to assess the muscle viability\*\*

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## BONE

- Starts with periosteum
- Difficult, if not impossible to adequately clean....excise
- Make a distinction between cortical bone and cancellous bone
  - The devitalized cortical bone is the problem
  - Exception with joint fragments




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## DEAD SPACE

- Critical sized defects from bony debridement
  - Cement spacer...abx make sense
  - Beads take longer, don't seem to elute anymore drug
- Deadspace from muscular debridement
  - Suction drains exiting remote from wound
- Skin loss
  - Negative pressure wound therapy
  - Acute STSG?




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### CLOSURE

- Close all wounds that are able to have edges approximated
  - Give preference to closure over bone and joint
- Relaxing incisions helpful to reduce peri-wound tension
- No 'loose' closure to allow for drainage
- Gentle tissue handling may mean the difference between healing and need for coverage procedure
- May be some role for local antibiotic powder at time of definitive closure

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### SUMMARY

- Extension is key to visualization
- Limited skin excision
- Cleaning takes a long time
- Second look is for assessing tissue viability
- Devitalized cortical bone needs to be removed
- Reapproximation of wound edges is preferred
- Vacs are best utilized in setting of tissue loss



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