Infections Around the Foot & Ankle: How Should I Manage?
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Infections Around the Foot & Ankle

- Common source of morbidity, disability, limb loss
- Lower extremity injuries >11% of injuries seen in ER
- DM, systemic conditions affect peripheral limbs greater
- + lower extremity role in weight bearing/exposure to trauma
- = increased risk of compromised soft tissue healing

Managing Infections Around the Foot & Ankle

- PREVENTION!!!
- Delay fixation of fractures till soft tissue amenable

A Staged Protocol for Soft Tissue Management in the Treatment of Complex Pilon Fractures

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Conclusion

• Once soft tissue swelling has subsided *semi-elective ORIF* can be performed with a minimum of soft tissue problems in open and closed fractures alike

Managing Infections Around the Foot & Ankle

• *PREVENTION!!!*
• Delay fixation of fractures till soft tissue amenable
• Respect the soft tissue during fixation
• “no touch technique”
Managing Infections Around the Foot & Ankle

- Prevention!!!
- Delay fixation of fractures till soft tissue amenable
- Respect the soft tissue during fixation
- "no touch technique"
- Avoid tourniquet in DM and vasculopathic patients
- Limited incisions
- External fixation/TSF/Illizarov
- Stable fixation

Managing Infections Around the Foot & Ankle

- Early Identification
- Early Treatment
Infections Around the Foot & Ankle

Symptoms

- General Malaise
- Fever
- Body aches
- Bone pain
- Erythema
- Swelling

Work Up & Diagnosis

- X-rays: limited value
  - Loosened hardware, fracture healing?
- MRI +/- Contrast (GOLD STANDARD)
- WBC Tagged Bone
- CRP - Quantitative
- ESR
- Biopsy
- Bone Protocol
Treatment of Infections Around the Foot & Ankle

- Superficial Wounds/Cellulitis
  - Local wound care, ABX
- Deeper Wounds/Abscess/Osteomyelitis
  - Surgical Debridement/Wound care/ABX

Surgical Treatment of Major Wounds

- Staged Treatment
  - Get control of the infection
    - Early aggressive debridement
    - Local and systemic abx
  - Wound closure/Primary vs secondary healing

- Optimize Local Environment
- Optimize Patient
- Multidisciplinary Approach
Treatment of Infections Around the Foot & Ankle

Surgical Treatment of Major Wounds

- Staged Treatment
  - Get control of the infection
    - Early aggressive debridement
    - Local and systemic abx
- Wound closure/Primary vs secondary healing
  - Optimize Local Environment
    - Vascular consult (Doppler/Angio)
    - Plastic Surgery
    - Fracture stability
  - Optimize Patient
- Multidisciplinary Approach

Osteomyelitis: Surgical Goals

- Principles of Treatment
  - Obtain biopsy
  - Thorough debridement/Saucerization
  - "soft bone"
  - Management of resultant dead space
  - Remove all loose/excess hardware
  - Fracture stability w/ limited internal fixation
  - Local and systemic abx
- Cultures and biopsy must be from many places
  - Sinus tract
  - Bone
  - Purulent material
  - Soft tissue

Bone culture sensitivity is predictive of successful non surgical treatment
Case Example

- 70 y/o male
- DM, Obesity
- R heel pain, early pressure decub from poor shoewear
- Initial X-rays negative
- Worsens, eventually treated with wound care by Plastics
- Worsens, CT scan obtained
Sub atmospheric pressure:
1. Helps close wounds
2. Removes interstitial fluid
3. Promotes granulation formation
4. Increases local blood flow

Wound V.A.C.

**Wound V.A.C.**

Sub atmospheric pressure:
1. Decreases time to wound closure
2. Decreases bacterial burden and colony counts?
   - Gm (-) yes
   - Gm (+) no


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**Wound VAC**

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