

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

Anjan R. Shah MD
Florida Orthopaedic Institute



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

Michael Sirkin, *Roy Sanders, *Thomas DiPasquale, and *Dolfi Herscovici, Jr.
Department of Orthopaedics, New Jersey Medical School, Newark, New Jersey, U.S.A.; and
*Orthopaedic Trauma Service, Florida Orthopaedic Institute, Tampa, Florida, U.S.A.

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

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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/Ilizarov
- 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

- Xrays: limited value
 - Loosened hardware, fracture healing?
- MRI +/- Contrast (GOLD STANDARD)
- WBC Tagged Bone
- C-reactive Protein
 - 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

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
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 - Plastic Surgery
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 - **Optimize Patient**
 - Nutrition consult (pre/albumin >3.5)
- 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

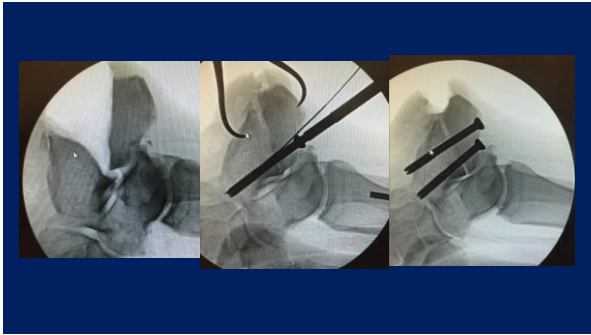
Bone culture sensitivity is predictive of successful non surgical treatment

Case Example

- 70 y/o male
- DM, Obesity
- R heel pain, early pressure decub from poor footwear
- Initial X-rays negative
- Worsens, eventually treated with wound care by Plastics
- Worsens, CT scan obtained









Wound V.A.C.

Sub atmospheric pressure:

1. Helps close wounds
2. Removes interstitial fluid
3. Promotes granulation formation
4. Increases local blood flow

Morykwas MJ et al. Annals of Plastic Surgery. 1997
June:38(6):553-62.



Wound V.A.C.

Sub atmospheric pressure:

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



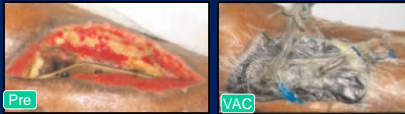
Morykwas MJ et al. Ann of Pl Surg, 2001; 47(5):547-551.
Weed et al Ann of Pl Surg, 2004; 52(3):276-279.

Wound VAC



Convert the need for a free flap to VAC therapy and STSG.

Wound VAC





ACell's proprietary urinary bladder matrix (UBM) technology platform is based on an extracellular matrix, or ECM, derived from porcine urinary bladder.

These product characteristics facilitate a constructive remodeling process in the body that reduces scarring and facilitates the restoration of normal site-appropriate tissue.













INTEGRA™ Bilayer Wound Matrix is an advanced wound care device comprised of a porous matrix of cross-linked bovine tendon collagen and glycosaminoglycan and a semi-permeable polysiloxane (silicone layer).

Provides excellent coverage over exposed bone, tendon, cartilage and joints.