

Managing Nonunion in the Face of Infection

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1. Diagnosis
 - a. History
 1. Open fracture
 2. History of external fixation
 3. History of wound issues
 - b. Patient factors
 1. IDDM
 2. HIV
 3. Steroids, etc
 4. ETOH
 5. Smoking
 - c. Radiographs
 1. Resorption
 2. Cortical irregularities
 3. Periosteal reaction
 4. Lucency of fixation / around fixation
 - d. Lab tests, etc
 1. ESR
 2. CRP
 3. WBC
 4. Procalcitonin?
 5. Bone scan (no)
 6. Gallium (no)
 7. Other expensive tests (NO!)
2. Surprise positive cultures
 - a. Everything looked ok... did definitive procedure
 - b. Wait it out and treat EVERYTHING for 6 weeks minimum (my arbitrary method!)
 - c. Monitor CRP (calcitonin) and act quickly if rises on antibiotics or after comes off
 - d. 25% Will need secondary intervention
3. REAL infection... as in puss, wounds broken down, etc
 - a. Generally stage unless patient is too sick and one shot or amp.
 - b. Stage 1:
 1. Choose incisions to allow for secondary reconstruction
 2. Plastics / hand consultation for incisions in case flap is needed
 3. All hardware out, consider sonication
 4. All dead bone out, biopsy bone and soft tissue from multiple locations
 1. High speed burrs and drills may help assess vascularity
 5. Temporary fixation
 1. Antibiotic nails or plates
 6. Redebribe if necessary and get stable soft tissues
 - c. Stage 1.5: Culture specific antibiotics
 - d. Stage 2:
 1. Incision based on soft tissue coverage, might go to a new location
 2. Plate, nail, ex fix, transport depending on the location
 3. Graft defect ..based on defect size and host (talk on this to come...)