Acute Monoarthritis

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Acute Monoarthritis

• Inflammatory Process involving a single joint
• Develops over a few days
• Any rheumatic disease can present as monoarthritis
• Monoarthritis is not the initial symptom of a systemic connective tissue disease
Most Common Causes

• Infection
• Crystals
  – Monosodium urate
  – Calcium pyrophosphate dihydrate
  – Basic calcium phosphate
• Trauma and Overuse
• Systemic rheumatic disease
  – Rheumatoid arthritis
  – Seronegative spondyloarthritis
History

- History of previous joint problem
- History of osteoarthritis
- Timing of onset
  - Rapid – Trauma with mechanical problem
  - Hours-week – Infection or Crystal arthritis
    - Hours-days – Gout
    - Several Days – Pseudogout
  - Longstanding – OA with mechanical or crystal problem
  - Weeks-Months – Inflammatory Arthritis (eg Reiters or spondyloarthropathy)
History

- Migratory Pattern – GC or Rheumatic Fever
- Erythema most common with infection or crystal arthritis
- Desquamation of skin – Gout
- Monoarthritis vs Oligoarthritis (<5 joints)
- Risks for Lyme disease, HIV
Physical Exam

• Articular vs Periarticular pain
  – Articular problems cause active and passive range of motion restriction
  – Periarticular problems restrict active range more than passive range of motion

• Inflamed joint
  – Most sensitive test – stress pain (pain at extreme range of motion)
  – Most specific test – Joint effusion
Extra-Articular Features

- Reiter’s Syndrome – Urethritis, conjunctivitis, diarrhea, rash
- Psoriatic Arthritis – Psoriatic skin rash, pitting nails
- Gouty Arthritis – Diuretics, tophi, renal stones
- Ankylosing spondylitis – Uveitis, low back pain
- Sarcoidosis – Hilar adenopathy, erythema nodosum
- GC – Tenosynovitis, pustules, sexual hx
- Coagulopathy – Bleeding tendency, anticoagulants
- Avascular necrosis – SLE, steroids, Alcohol
- Septic Arthritis – Immunosuppression, IV drugs, abnormal joint
Joint Aspiration

• Color
  – Can read newsprint through normal synovial fluid

• WBC with differential
  – WBC’s, neutrophils increased in infection

• Crystal analysis
  – Monosodium urate – needle shaped, (-) birefringent
  – Calcium pyrophosphate dihydrate – rhomboid, (+) birefringent

• Gram stain and culture
Interpretation of Synovial fluid

- **WBC/mm³**
  - <200 – normal
  - <2,000 – noninflammatory
  - 2,000-20,000 – Mild (SLE)
  - 20,000-50,000 – Moderate
    - Rheumatoid Arthritis
    - Reactivie Arthritis
  - >50,000 – Severe (Sepsis, Gout)
Labs

• CBC, blood culture (optional)
• Uric acid – not always helpful
• Xray – chondrocalcinosis, fracture
• MRI, CT, technetium bone scan
Treatment

• Rest, Ice, Range of Motion
• Antibiotics for bacterial arthritis
• NSAIDS +/- intra-articular steroids for noninfectious inflammatory arthritis
• Arthroscopy for internal derangement
• If uncertain dx then empiric abx and reaspiration in 24 hours is appropriate
• If high suspicion for septic arthritis, treat with IV abx, ortho consult
Antibiotic Therapy

• Normal Host – Gram (+) organisms (including MRSA and Strep)
• Immunocompromised – Gram (-) Bacteria
• Gonococcal Arthritis – Ceftriaxone
• Drain all septic joints at least q24h
Monoarthritis

History

Extra-Articular Features

Physical Exam

Inflammatory

Joint Aspiration

Infection
  - Antibiotics, Consult

Crystals
  - Treat with NSAIDS

Unclear
  - Treat Infection, Consult

Non-Inflammatory

Radiography

Aspiration and Injection
When to Refer

• Unable to aspirate a suspected septic joint
• Deep septic joints (hip, sacroiliac)
• Uncertain inflammatory etiology
• Persistent monoarthritis not responding to initial therapy
• Extra-articular features suggesting a systemic connective tissue disease