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Acute Monoarthritis

David Stultz, MD

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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

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Most Common Causes

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

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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

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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

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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

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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

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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 dihrdrate – rhomboid, (+) birefringent
- Gram stain and culture

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Interpretation of Synovial fluid

- WBC/mm^3
  - <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)

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Labs

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

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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

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Antibiotic Therapy

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

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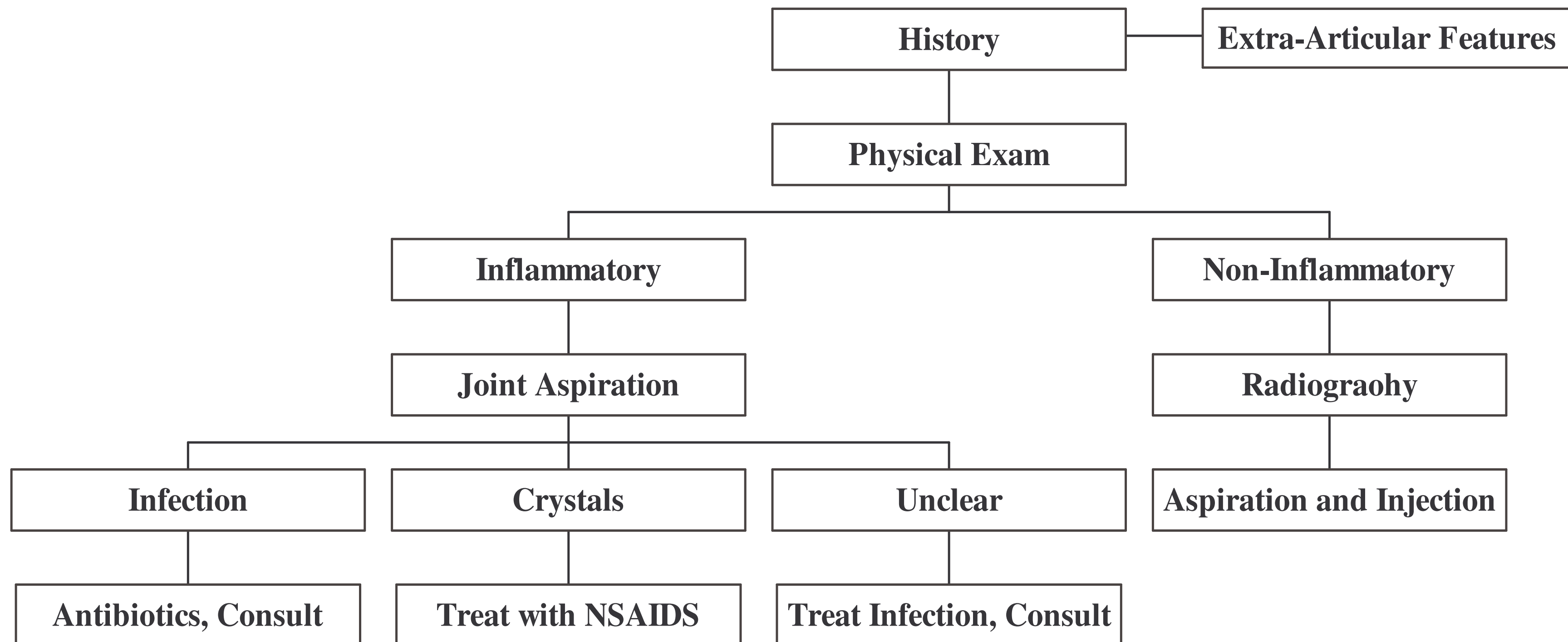
Monoarthritis



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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