Reactive Arthritis vs. Disseminated Gonococcus

Ruddy: Kelley’s Textbook of Rheumatology, 6th ed. Chapter 70, pp 1055-64; Ch 96, pp 1478-81.


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Key Points:
- Classic triad for reactive arthritis is urethritis, conjunctivitis, and arthritis following a diarrheal infection; don’t forget, though, about other manifestations like enthesopathy, sacroileitis, circinate balanitis, and keratoderma blenorrhagica
- DGI joint fluid culture has a yield of only 50%, but culture of all sites has a combined yield of 80%
- Only 25% of cases of DGI have associated genitourinary symptoms

1. What do I need to know about reactive arthritis?
   - One of the HLA-B27 seronegative spondyloarthropathies (the others are ankylosing spondylitis, psoriatic arthritis, and IBD-associated)
   - If you’re a lumper, put it in the bag with Reiter’s syndrome and undifferentiated spondyloarthropathy; if you’re a splitter, they are 3 different diseases
   - Classic triad of urethritis, conjunctivitis or uveitis, and arthritis
     - The arthritis is usually asymmetric, mono/oligoarticular, lower extremities
     - Remember that the hallmark of this family of disease is enthesopathy (inflammation of insertion of tendons) which can cause sausage digits, tenderness at the Achilles insertion, chest pain from sternoclavicular inflammation, etc
     - These patients may have the classic inflammatory low back pain and evidence of sacroileitis that we usually associate with ankylosing spondylitis
     - Other associated features: circinate balanitis in men, keratoderma blenorrhagica, conduction system abnormalities or aortic insufficiency
     - Associated with HIV infection, even in non-HLA-B27 patients
   - Follows an infection (either urethritis/cervicitis or diarrheal); classic organisms are Yersinia, Salmonella, Shigella, Campylobacter, Chlamydia trachomatis, Mycoplasma, Ureaplasma
   - Diagnostic tests: Should include search for causative organism (urine sample, genital swab for Chlamydia; stool sample for enteric pathogens), although lack of finding one does not rule out this diagnosis.

2. What do I need to know about DGI?
   - Only 25% of patients with DGI will have genitourinary symptoms
   - Incubation period since sexual contact may be up to 2 months
   - More common in women than in men, esp. if infection acquired during menses or peripartum; also associated with terminal complement deficiencies
   - Classically presents as EITHER arthralgias, tenosynovitis, and dermatitis OR purulent arthritis without associated skin lesions—but there is significant overlap between these clinical syndromes
     - Asymmetric, migratory mono/oligoarticular arthritis affecting primarily large joints (knees, ankles, wrists, elbows)
       - Yield of synovial fluid culture only 50%, but combined yield of cultures of all sites (synovium, blood, urethral, rectal, pharyngeal) approaches 80%
       - Joint fluid cell counts usually consistent with septic arthritis
       - Improved yield on synovial fluid PCR for GC
     - Tenosynovitis, particularly over dorsum of hand, wrist, ankle or knee
     - Dermatitis may be maculopapular, vesicular or pustular; distributed over trunk and extremities; may be very subtle
   - Differential diagnosis (in addition to reactive arthritis, other septic arthritis, rheumatic fever, hepatitis B, Lyme, acute HIV) includes meningococcal disease, so be alert for this as a possibility
   - When in doubt, treat with antibiotics (usually CTX 1 gm/day until sensitivities known)
   - Don’t forget to notify DPH and test for all other STD’s (syphilis, chlamydia, HIV)
3. **How to differentiate between the two?**
   - Culture broadly, as mentioned above
   - Look for associated signs unique to reactive arthritis—circinate balanitis, keratoderma blenorrhagica—or sacroileitis
   - Reactive arthritis should not respond to antibiotics, and DGI patients should respond rapidly