RHEUMATOLOGY OVERVIEW

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What is Rheumatology?

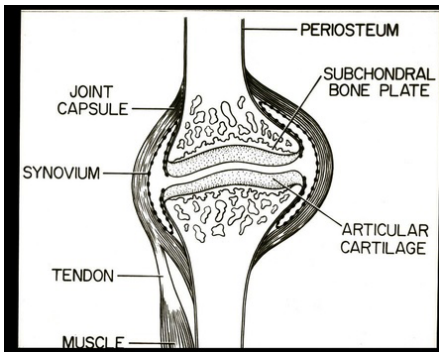
- Medical science devoted to autoimmune diseases, particularly connective tissue disease, and certain musculoskeletal disorders
- “rheuma” – “a substance that flows”
- “rheumatism” – emphasis that arthritis could be a systemic disorder

Rheumatology Classification

(shortened list)

- Systemic connective tissue disease
- Vasculitis
- Seronegative spondyloarthropathies
- Arthritis associated with infection
- Inflammatory Myopathy
- Rheumatic disorders associated with metabolic, endocrine, and hematologic disease

Anatomy of a Joint



Diagnostic Approach

- Articular vs non-articular
- Mechanical vs inflammatory
- Poly- vs oligo- vs monoarticular
- Acute vs chronic
- Localized vs systemic

Inflammatory vs Non-inflammatory

- Erythema
- Warmth
- Pain
- Swelling
- Prolonged stiffness
- Systemic symptoms
- Laboratory abnormalities

- Mechanical pain (worse with activity)
- Improves with rest
- Stiffness after brief periods of rest (not prolonged)
- Absence of systemic signs

Diagnostic Approach

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- Mechanical vs inflammatory
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- Acute vs chronic
- Localized vs systemic

Differential Diagnosis

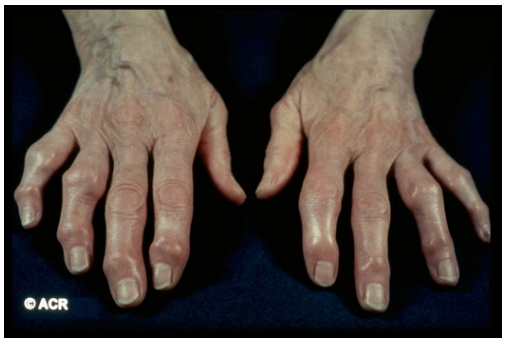
- Monoarticular inflammatory
  - trauma, hemarthrosis, spondyloarthropathy
  - Septic arthritis, crystal induced
- Oligoarticular
  - Spondyloarthropathy, crystal induced, infection related
- Polyarticular
  - RA, SLE, crystal induced, infectious

Physical Exam

- Inspection
- Palpation
- Maneuvers

Rheum Diseases You Will Encounter

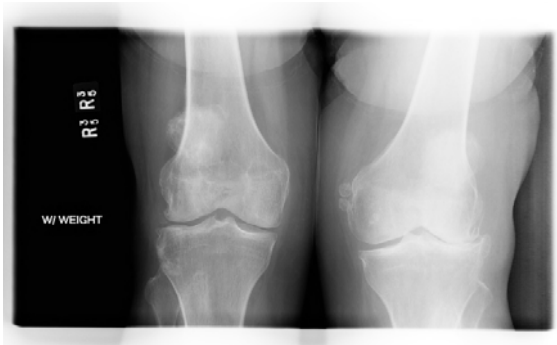
- Osteoarthritis
- Rheumatoid Arthritis
- Seronegative spondyloarthropathy
- Crystal induced arthritis
- Systemic lupus erythematosus and related connective tissue diseases
- Vasculitis
- Idiopathic Inflammatory Myopathy



OSTEOARTHRITIS

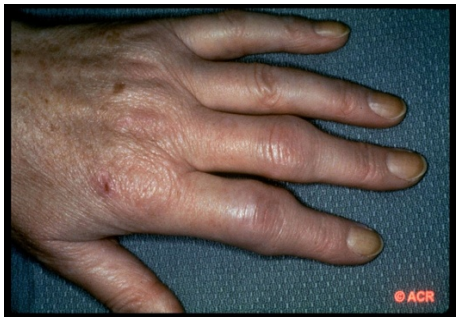
- Most common form of arthritis
- > 50 years of age
- Risk factors: age, obesity, occupation, history of trauma
- Most common sites: hands, feet, knees, hips, AC joints, and facet joints of the cervical and lumbosacral spine
- PAIN (mechanical type), stiffness (< 30 minutes), loss of function are presenting features
- No systemic involvement
- DIP/PIP involvement; spares the wrists (Heberden's/ Bouchard's)
- Non-inflammatory synovial fluid

KNEE XRAYS

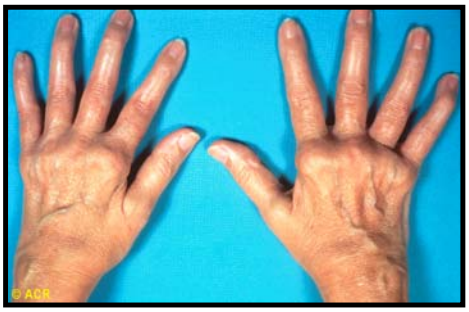


RHEUMATOID ARTHRITIS

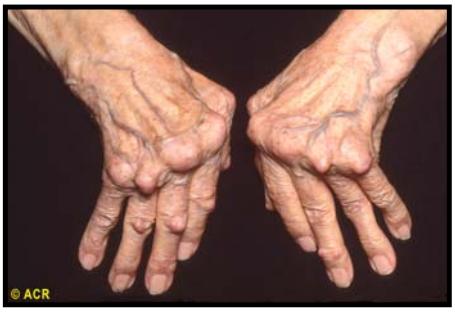
- Chronic (>6 wks), inflammatory
- Female > Male
- AM stiffness lasting at least 1 hr
- Soft- tissue swelling in at least 3 joint areas simultaneously
  Including wrist, MCP, or PIP joint
  Symmetric
- Swan neck/Boutonniere/ulnar deviation , erosive
- Rheumatoid nodules, extra-articular manifestations
- Positive rheumatoid factor , anti-CCP



RHEUMATOID ARTHRITIS



RHEUMATOID ARTHRITIS



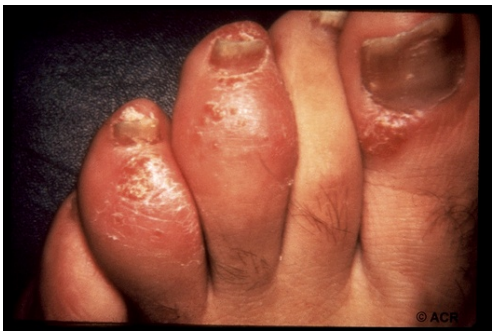
Seronegative Spondyloarthropathy

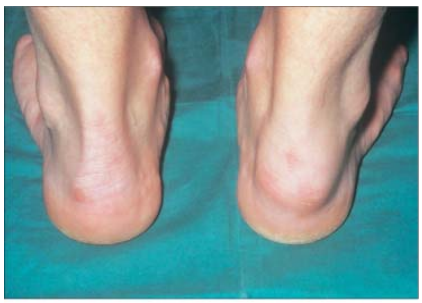
- Seronegative
- Oligoarticular, assymetric
- Chronic, inflammatory
- Sacroiliac involvement
- Enthesopathy
- Spinal involvement (inflammatory)
- HLA B27

Seronegative Spondyloarthropathies

- Ankylosing spondylitis
- IBD associated arthropathy
- Psoriatic arthritis
- Reactive arthritis
- Undifferentiated spondyloarthropathy

Dactylitis (Sausage Toes)





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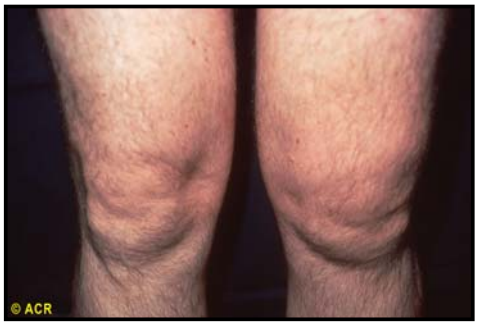
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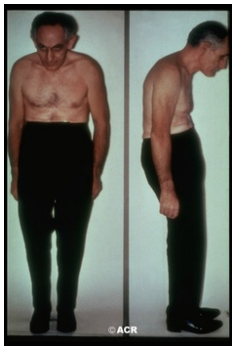
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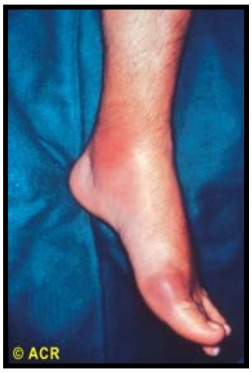
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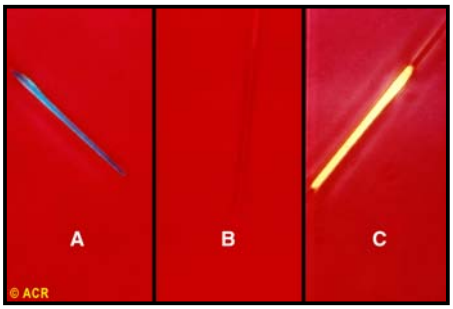
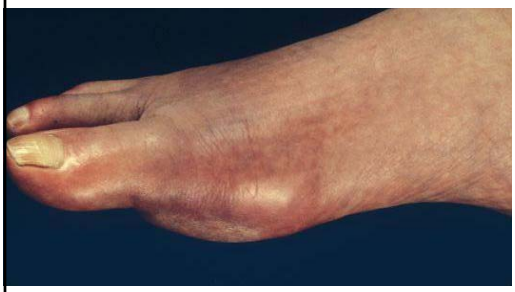
GOUT

- Recurrent, episodic inflammatory arthritis
- Peak of pain: 24 hours; subside in 3-10 days
- 75 % of initial attacks in 1st MTP joint (podagra)
- Usually monoarticular, may be polyarticular
- Hyperuricemia may or may not be present
- Predisposing factors and associated conditions: surgery, medications (DIURETICS, low dose aspirin, cyclosporine A), alcohol ingestion, hypertension, renal insufficiency, hyperlipidemia

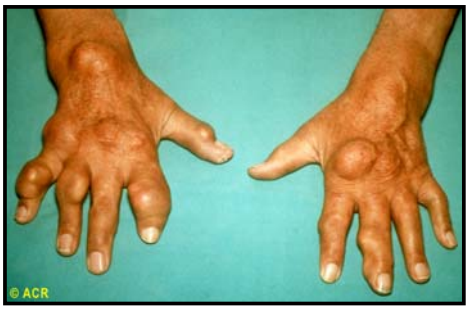
Gout (diagnosis)



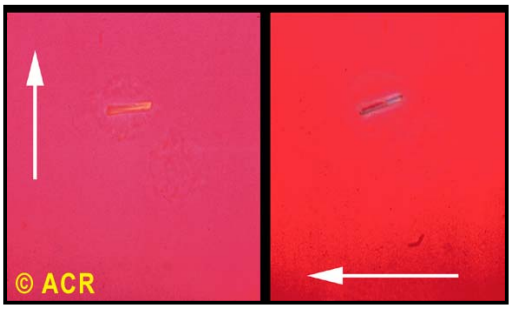
Gout (podagra)



Tophaceous gout



Pseudogout

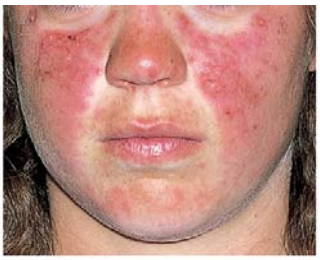


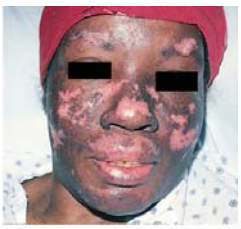
Connective Tissue Diseases

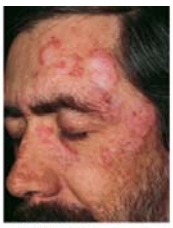
- Systemic Lupus Erythematous
- Sjögren's Syndrome – Sicca symptoms, +SSA/SSB
- Scleroderma
- Mixed Connective Tissue Disease – features of SLE and Scl, +RNP
- Overlap/ Undifferentiated Connective Tissue Disease

Systemic Lupus Erythematosus

- Malar Rash
- Discoid Rash
- Serositis
- Oral ulcers
- Arthritis
- Photosensitivity
- Blood disorder
- Renal disorder
- ANA*
- Immunologic abnormalities
  - (anti-Smith antibody, anti-double stranded DNA, anti-phospholipid antibodies)
- Neurologic symptoms

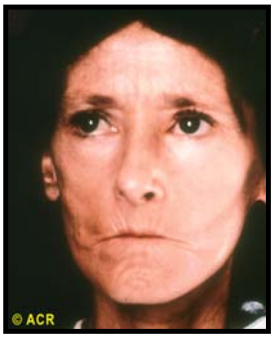


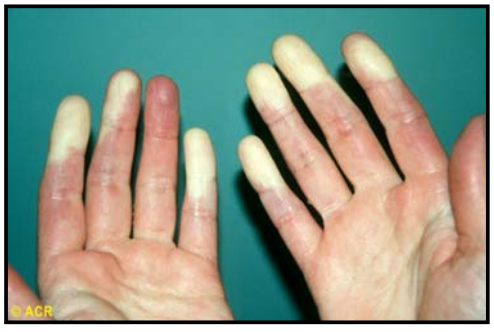


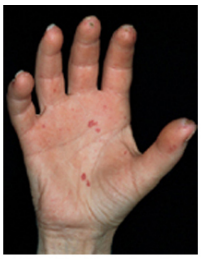


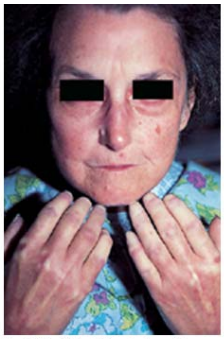
Scleroderma

- Sclero = thickened, derma = skin
- Systemic : Limited or Diffuse
  - Limited = CREST (calcinosis, Raynaud's, Esophageal dysmotility, Sclerodactyly, Telangiectasias)
  - Diffuse = scleroderma proximal to MCPs
  - Pulmonary (ILD, pHTN), Renal involvement (renal crisis)
- Localized
- Overlap syndrome



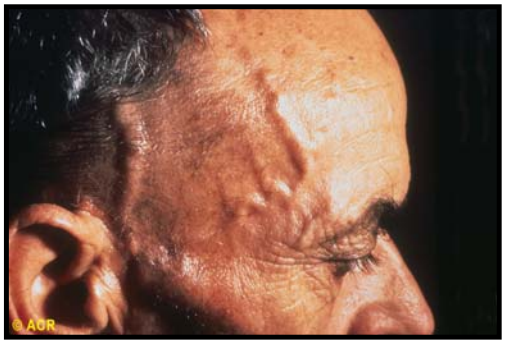






Vasculitis

- Inflammation & necrosis of blood vessel
- Perforation & hemorrhage, thrombosis, ischemia
- Large vessel
  - Takayasu, Giant Cell Arteritis
- Medium vessel
  - Polyarteritis nodosa, Kawasaki's
- Small
  - Henoch-Schonlein purpura, Wegener's granulomatosis, Microscopic polyangiitis, Churg-Strauss
  - ANCA –antineutrophil cytoplasmic antibodies*



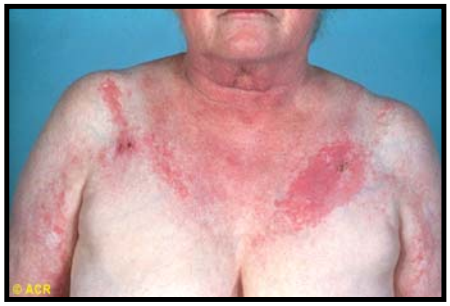
Giant Cell Arteritis

- Patients >50 y/o
- Cranial symptoms—superficial HA, scalp tenderness, jaw claudication, blindness
- Polymyalgia rheumatica—pain and stiffness of proximal joints
- Fever, systemic symptoms
- Elevated ESR and CRP
- Diagnosis: Biopsy of temporal artery

Idiopathic Inflammatory Myopathy

- Polymyositis
- Dermatomyositis
- Inclusion body myositis

- Proximal muscle weakness
  - (muscle pain not a typical symptom)
- Elevated muscle enzymes: CK, Aldolase, LDH
- Diagnosis: biopsy
- Lung involvement, increased risk for malignancy



Case 1

- 67 y/o man with DM, HTN, hyperlipidemia, h/o arthritis (unclear what kind)and EF of 25%. He came with SOB and signs of CHF. Treated with IV Lasix -> he did well, SOB improved, lungs are now clear
- Pt is ready for discharge but now complains of severe right knee pain
- Examination: his right knee is flexed and looks much bigger than the left; you touch it and it feels warm; you try to move it but patient is in too much pain and you cannot flex or extend it further. Also, you look at the vital signs and the last temperature checked at 6 am showed 37.8 °C

What are your thoughts?

1. Crystal induced arthritis?
2. Infection?
3. Acute trauma?
4. Hemorrhage?

What test needs to be done?

ARTHROCENTESIS OF RIGHT KNEE

Synovial Fluid Analysis

- Cell Count
- Crystal analysis
- Gram Stain and culture

	Normal	Non-inflammatory	Inflammatory	Septic
WBC	0-200	200-2000	2000 – 50 K	> 50 K
% PMN	25%	50%	75%	> 90%

Case 2

- Scenario: Loyola Rheumatology Clinic
- CC: joint pain
- HPI: 29 y/o law student complains of bilateral hand pain x 6 months. Initially, she attributed the pain to the fact that she was taking too many notes in class. Involved joints: knuckles and right wrist. Taking Aleve OTC with minimal relief at this point. She denies swelling but has trouble to take her engagement ring off. Also with oral ulcers for the last 6 months
- ROS: fatigue, night sweats, weight loss, Raynaud's phenomenon since her college years; hair thinning; stiffness in the morning; dry eyes
- PE: +2 oral ulcers, malar rash, mild synovitis of right wrist, 2nd and 3rd PIPs bilaterally

Case 3

- Scenario: Hines Arthritis Clinic
- CC: joint pain
- HPI: 29 y/o Hispanic man complains of pain in his joints x 7 years (since he left the military). Involved joints include: right shoulder, right knee, and left ankle. He states that pain is worse when he wakes up. He believes his left ankle has been swollen for years. Despite his joint symptoms, he continues to work out 5 x week. He feels that being active helps with his symptoms.
- ROS: low back pain since his military time; morning stiffness that lasts at least 2 hours
- PE: very mild swelling around his left ankle with decrease ROM in that joint

Case 4

- Scenario: Loyola Gen Med Clinic
- CC: headaches
- HPI: 74 y/o male with 3 weeks headache. Has pain at temporal areas, which are also painful with combing hair. Has had low grade fevers for last 2 weeks and loss of energy. For the last two days, has noticed decreased vision in his right eye.
- PE: afebrile. Decreased temporal artery pulse. Temporal artery tender to touch.