

Differential diagnostics in Rheumatology

- number of affected joints
- lengths of duration

- Acute monoarthritis
- Chronic monoarthritis
- Acute polyarthritis
- Chronic polyarthritis

Acute monoarthritis

- Infective (bacterial, fungal, viral)
- Crystalline arthritis
- Haemarthrosis
- Non- infective inflammatory disease
- Monoarticular presentaion of polyarticular diseases
- Hydrops infermitens



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Acute monoarthritis

- Aspiration
- Cultivation
- Microscopy
- ATB sensitivity
- Polarized light microscopy
- X-ray
- CRP, FW, Hb, leu, uric acid....



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Chronic monoarthritis

- **Infection**
 - Not treated
 - Bacterial osteomyelitis
 - Fungal infection
 - Lyme disease
 - TB arthritis
- **Non-infective inflammatory diseases**
 - Seronegative spondylarthritis
 - RA
 - JCA
 - Sarcoidosis
 - Crystal induced
- **Non-inflammatory diseases**
 - Osteoarthritis
 - Intern injuries
 - Avascular bone necrosis
 - Neoplasma

Acute polyarthritis

- Infection-(bacterial, viral, Lyme disease, parasitic, reactive)
- Inflammatory-non infective
 - RA, JRA, SLE, rheumatic fever, systemic autoimmune diseases, seronegative spondylarthritis, crystal induced, serum sickness, sarcoidosis, vasculitis, leukemias

Chronic polyarthritis

- RA
- SLE
- SS
- Polymyositis
- Overlap
- Seronegative spondylarthritis
- Osteoarthritis

Arthritis and fever

- SLE
- Infection
- Gout
- JCA
- RA
- Vaskulitis
- Rheumatic fever
- Skleroderma
- Lyme disease
- Sarkoidosis

Arthritis and renal disease

- SLE
- Scleroderma
- RA
- MCTD
- Vasculitis
- Amyloidosis
- Medication

Arthritis and abdominal symptoms

- Crohn disease
- UC
- Whipple's disease
- Vasculitis syndromes
- Rheumatoid arthritis
- SLE
- Scleroderma
- Polyarteritis nodosa
- Amyloidosis
- Familial mediterranean fever
- Reactive arthritis
- Hemoch-Schoenlein
- Coeliac disease

Arthritis and eye

- Uveitis HLAB27+
- Anterior uveitis- JCA, RA
- Posterior uveitis- sarcoidosis, SLE, Behcet disease
- Corneal disease RA
- Keratoconjunctivitis sicca (Sjögren's syndrome)

Arthritis and skin lesions

- Exantems
 - ◆ SLE, DM, Lyme disease, Still, Kawasaki, viral...
- Papulosquamous lesions
 - ◆ psoriasis, Reiters, SLE, keratoderma blenorhagicum
- Annular lesions
 - ◆ rheumatic fever, SLE, Lyme disease
- Facial lesions
 - ◆ SLE, dermatomyositis, scleroderma
- Nodular lesions
 - ◆ RA, gout, pseudogout, vasculitis, infections, rheumatic fever, cholesterol, erythema nodosum

Arthritis and skin lesions

- Acne
 - ◆ SAPHO
- Purpura
 - ◆ Vasculitic syndrome, palpable purpura, cryoglobulin
- Ulcers
 - ◆ RA, vasculitis, SLE, scleroderma
- Dermal sclerosis
 - ◆ Scleroderma, coup en sabre, morfea, teleangiectases
- Oral lesions
 - ◆ SLE, Reiter's, Behcet's, Kawasaki
- Nail abnormalities
 - ◆ Psoriasis, Reiter's SLE, RA

Know It When You See It

Osteoarthritis: Typical hand

- Hard bony enlargements
- Heberden's nodes at the DIP joints
- Bouchard's nodes at the PIP joints
- Often have “squared” first CMC joint due to osteophytes at that joint



Know It When You See It

Rheumatoid arthritis

- Soft synovial swelling
- Synovitis and volar subluxation at the MCP joints
- Synovitis of the wrists
- Synovitis of the PIP joints with early swan neck deformities



Rheumatoid Arthritis: Swan Neck and Boutonnière Deformities



- Late-stage findings indicating serious changes in the joints
- Swan neck (digits 2 to 4) is caused when the flexor tendons slip dorsally and act as extensors of the PIP joint
- Boutonnière (digit 5) is the reverse; extensors act as PIP flexors

Know It When You See It

Tendon rupture in RA

- Inability to extend fourth and fifth digits
- Due to deformity and inflammation at the wrist causing excess wear of the extensor tendons



Know It When You See It

Psoriatic arthritis

- Inflammation of the DIP joints
- Sausage fingers
- Joint involvement shows radial pattern
- Nail changes
- Psoriatic patches
- Arthritis may start before the skin



Know It When You See It

Psoriatic arthritis

- Sausage toes
- IP joint involvement of a toe suggests a rheumatoid variant
- Psoriatic arthritis and Reiter's disease are the most common causes



Know It When You See It

Reiter's syndrome

- Keratoderma blennorrhagica
- May look like psoriasis or syphilis
- Can occur in patches or as sterile pustules



Reiter's Syndrome (Reactive Arthritis)

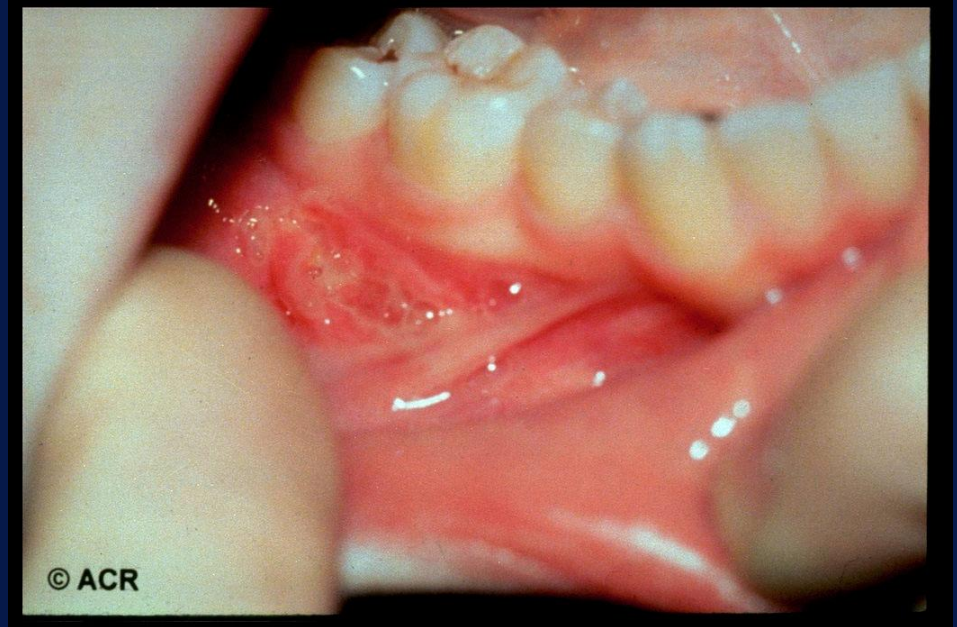
Seronegative asymmetric arthritis

- Following:
 - ◆ Urethritis or cervicitis
 - ◆ Infectious diarrhea
- Often associated with:
 - ◆ Inflammatory eye disease
 - ◆ Balanitis, oral ulceration, or keratoderma
 - ◆ Enthesopathy
 - ◆ Sacroiliitis



Inflammatory Bowel Disease

- Ulcerative colitis
- Regional enteritis (Crohn's disease)
- ? Whipple's
- ? Behçet's



Know It When You See It

Systemic lupus erythematosus

- Butterfly rash
- Involves cheeks and nose
- Patient also has rash on chin and some telangiectasia



Know It When You See It

Systemic lupus erythematosus

- Interarticular dermatitis
- Also has periungual erythema
- This rash is distinct from that seen in dermatomyositis that occurs over the joints



Know It When You See It

Dermatomyositis

- Scaly rash over the extensor surfaces of the interphalangeal joints



Know It When You See It

Periungual changes

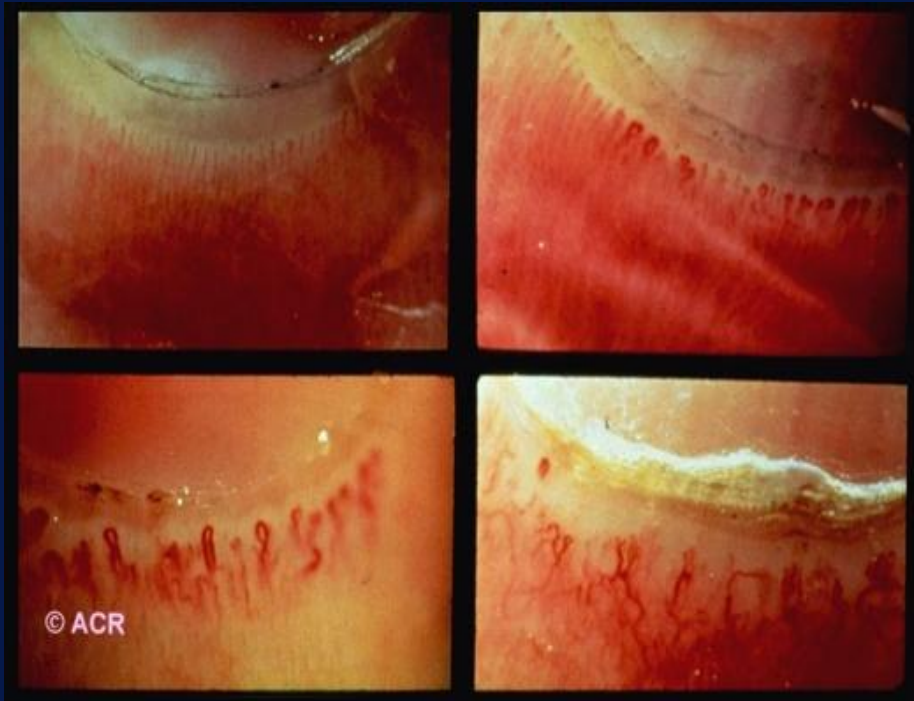
- Seen in lupus erythematosus, dermatomyositis, and scleroderma
- Thickening of capillary loops
- Dropout of capillary loops
- Hemorrhage in the nail fold may also be present



Know It When You See It

Close-up views of periungual changes

Upper left:
Normal



Upper right:
Dilated loops

Lower left:
Dilated loops
with dropout

Lower right:
Dilated loops
with branching

View with ophthalmoscope and drop of oil

Know It When You See It

Dermatomyositis

- Mantle or shawl distribution of rash



Know It When You See It

Linear scleroderma

- Not usually associated with systemic disease



Know It When You See It

Livedo reticularis

- Appears in a broad-based interrupted pattern in systemic vasculitis, including SLE
- May occur as a fine, connected, lacy pattern in normals



Know It When You See It

Palpable purpura

- Characteristic of dermal vasculitis in Henoch-Schönlein purpura



Know It When You See It

Saddle nose deformity

- Relapsing polychondritis
- May also occur in Wegener's granulomatosis and syphilis



Know It When You See It

Relapsing polychondritis



Left: Ear changes with inflammation in the cartilage and swelling

Right: Loss of ear cartilage in late stages

Know It When You See It

Ochronosis

- Deposition of homogentisic acid
- Gray discoloration of the ear and dense pigment on transillumination



Know It When You See It



Gout tophi in the ear a good tip-off if present

- Tophi appear rather late in gout
- Prick the tophus with a needle. Put the drop of material on a slide
- Multiple birefringent crystals will be seen on polarized microscopy

Know It When You See It

Urate crystal in a tophus

- Top: Seen with ordinary light microscope with condenser racked down and light intensity adjusted
- Bottom: Seen with compensated polarized light, the preferred method



Know It When You See It

Gouty tophus on finger

- Note the yellow-orange color typical of a tophus
- Patient also has swelling of the PIP of the index and fifth digits



Know It When You See It

Skin pustule with disseminated gonorrhea

- Usually a few lesions
- Usually found on the extremities



Know It When You See It

Septic olecranon bursitis

- Swelling of the bursa
- Erythema and tenderness
- If it looks ugly, tap it



Know It When You See It

Septic prepatellar bursitis with cellulitis

- Rubor, calor, dolor over the patella and adjacent tissue
- Lack of joint involvement evident from nontender suprapatellar pouch and popliteal area
- Don't tap a normal knee through cellulitis



Know It When You See It

Hypertrophic osteoarthropathy

- Clubbing with loss of nail angle
- Full syndrome includes periostitis of ends of long bones
- Associated with
 - ◆ Chest malignancies
 - ◆ Chronic lung infection
 - ◆ Other tumors



Know It When You See It

Amyloidosis

- Shoulder pad sign
- The worst case you are likely to see
- Patient also has macroglossia and purpura



Know It When You See It

Hyperthyroidism

- Acropachy
- Right: Soft tissue swelling between joints
- Left: Periosteal new bone formation



Know It When You See It

Ehlers-Danlos syndrome

- A true connective-tissue disease
- Left: Hypermobility of joints. Can touch thumb to volar surface of forearm
- Right: Hyperelasticity of skin
- Associated with vascular abnormalities

