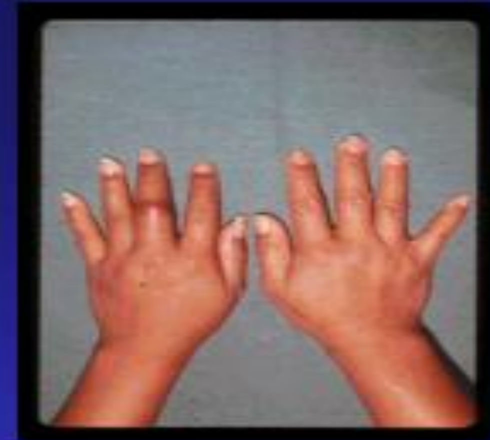
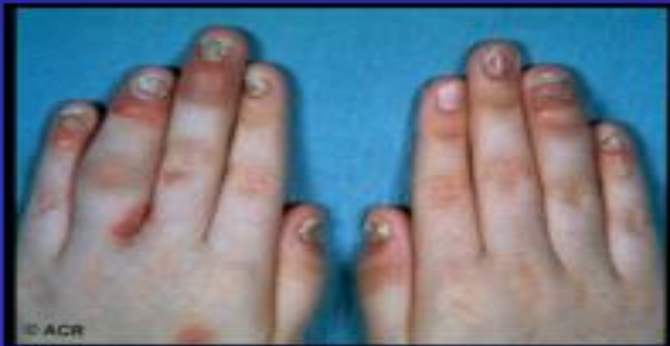
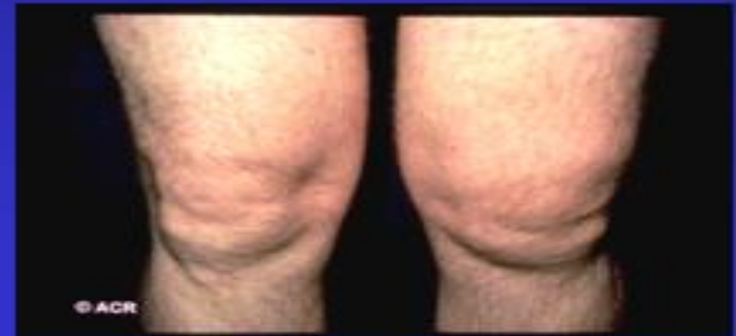
Spondylo-arthropathies

Inflammatory Arthritis







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- NONE

What is meant by spondyloarthropathy?

- Literally translated to “inflamed spine growing together”
- The first documented ankylosing spondylitis case was reported in 1691, although it may have been present in ancient Egyptians

- Inflammatory axial spine involvement
  - Spondylitis, sacroiliitis
- Asymmetric peripheral arthritis
  - DIP involvement, dactylitis ("sausage digits")
- Inflammatory eye disease
- Mucocutaneous features
- Enthesopathies:
- - Achilles tendinitis
- - Plantar fasciitis
- Tenosynovitis

- Familial aggregation
- HLA-B27 association

SpA's include

- Ankylosing spondylitis
- Reactive arthritis
- Psoriatic arthritis/spondylitis
- Arthritis/spondylitis of inflammatory bowel dz
- Juvenile spondyloarthropathy
- Undifferentiaed spondyloarthropathies
- ?Whipple dz, Bechet's dz, Celiac Dz

Prevalence

- 2.7 million adults in the United States have seronegative SpA
  - Rheumatoid arthritis only affects 1.3 million adults, down from the previous estimate of 2.1 million

- Ankylosing spondylitis is the most prevalent of the classic spondyloarthropathies.

- Prevalence AS is 0.1-1% overall ,but is higher in certain Native American populations and lower in African Americans
  - highest prevalence in northern European countries and the lowest in sub-Saharan Africa

Who’s affected?

- Male-to-female ratio of AS is 3:1
- Male-to-female ratio of PsA is 1:1
- Age of onset for AS is from late teens to 40 yo.
  - Approximately 10%-20% of all pts have onset of symptoms before 16 yo

Relationship with HLA-B27

- Strong association with HLA-B27

Population or Disease Entity	*HLA-B27 +*
Healthy whites	8%
Healthy African Americans	4%
Ankylosing spondylitis (whites)	92%
Ankylosing spondylitis (African Americans)	50%
Reactive arthritis	60-80%
Psoriasis associated with spondylitis	60%
IBD associated with spondylitis	60%
Isolated acute anterior uveitis	50%
Undifferentiated spondyloarthropathy	20-25%

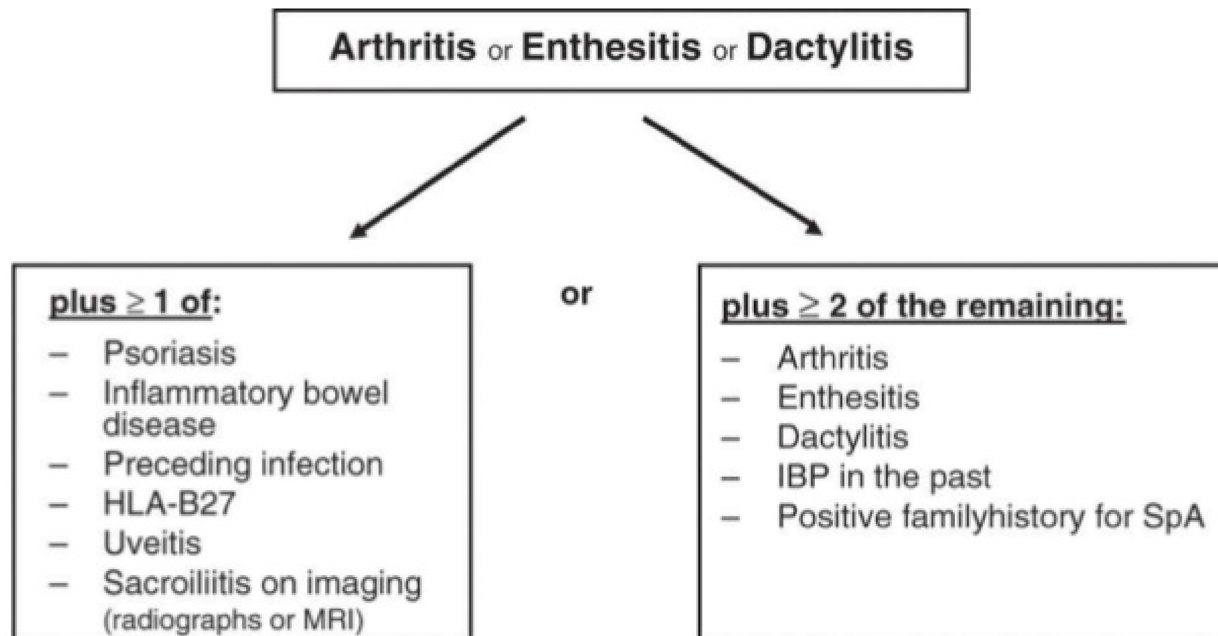
Spondyloarthropathies (SpA)

- Newer diagnostic criteria (2.7 million patients)
- SIJ MRI (more sensitive for sacroiliitis than plain radiographs)
- Ustekinumab (Stelara) IL12/IL23 targets; approved for PsA 9/2013, AS '16
- Apremilast (Otezla) phosphodiesterase-4 (PDE4) inhibitor. Oral Rx. No routine blood work, nausea, weight loss (5-10#), depression
- TNF alpha inhibitors (patients feel great on these)
- Secukinumab (IL-17 inhibitor) Cosentyx now available for AS 1/2016

- 3 points or greater
- Current Psoriasis (2)
- H/o Psoriasis (1)
- Family history (1)
- Dactilytis (1)
- Juxta-articular bone formation (1)
- RF neg (1)
- Nail dystrophy (1)

In patients with ≥ 3 months back pain and age at onset < 45 years		
Sacroiliitis on imaging[A]	**OR**	**HLA-B27**
Plus		**Plus**
≥1 SpA feature[B]		**≥2 other SpA features[B]**
A. Sacroiliitis on imaging • Active (acute) inflammation on MRI highly suggestive of sacroiliitis associated with SpA • Definite radiographic sacroiliitis according to modified New York criteria		B. SpA features • Inflammatory back pain • Arthritis • Enthesitis (heel) • Uveitis • Dactylitis • Psoriasis • Crohn's/ulcerative colitis • Good response to NSAIDS • Family history of SpA • HLA-B27 positivity • Elevated CRP

Final set of classification criteria for peripheral spondyloarthritis (SpA) (set 2D) selected by Assessment of SpondyloArthritis international Society (ASAS).



Rudwaleit M et al. Ann Rheum Dis 2011;70:25-31

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ARD

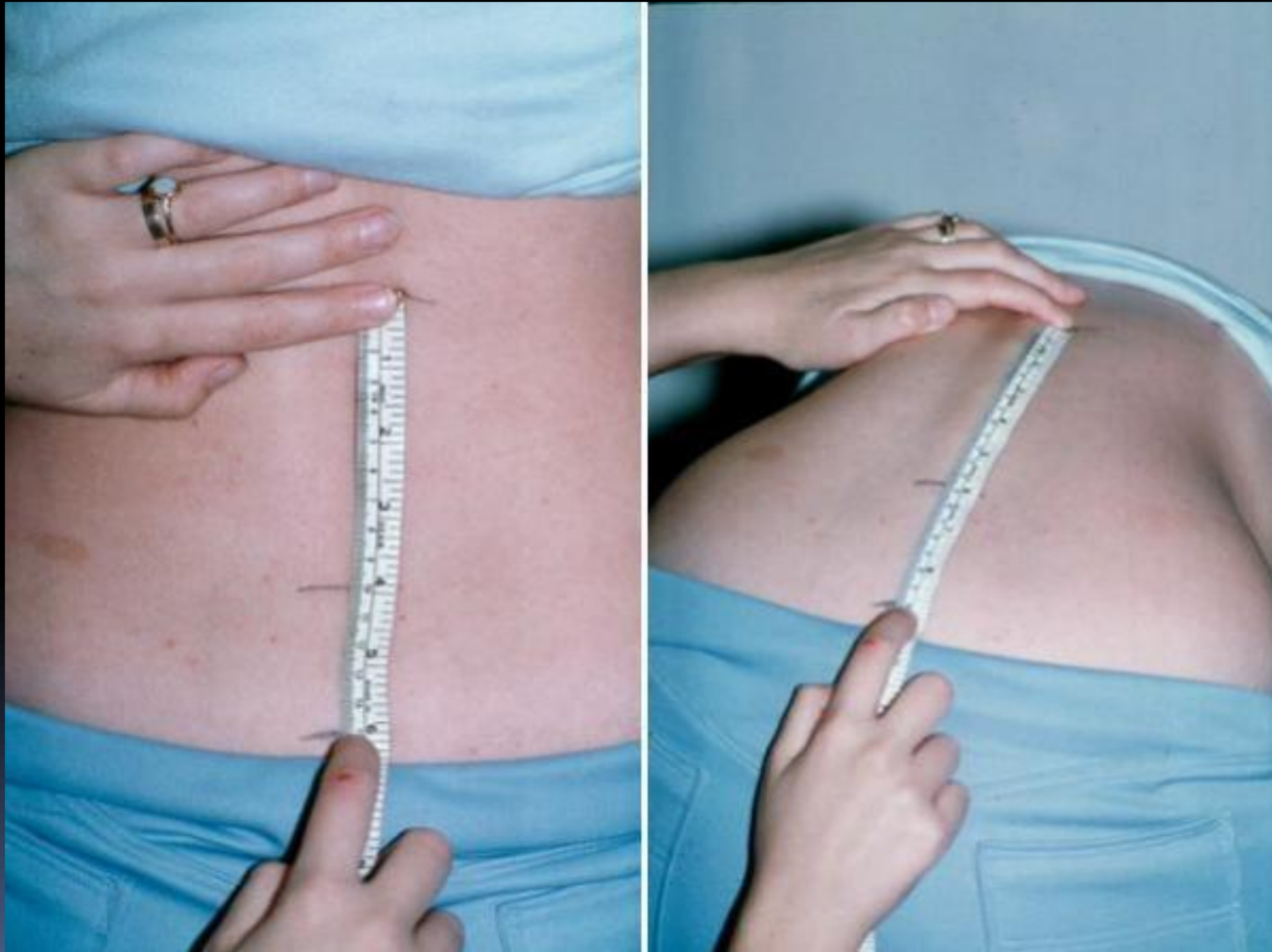
Axial Spine

- Schober Test: expect greater than 5 cm change when pt bends forward, if <5 cm change = reduced lumbar mobility
- Spinal fusion results in irreversible impairments, but reductions in mobility also can be induced by pain or muscle spasm so may vary between visits
- With advanced disease, lead to loss of lumbar lordosis, exaggeration of thoracic kyphosis, an inability to extend the neck, and compensatory hip flexion deformities
- Costovertebral and costochondral joints commonly lead to impaired chest expansion; slight ↓ in VC & TLC

Physical examination tests to assess spinal disease in AS

- Occiput-to-wall-test
- Tragus-to-wall-test
- Chest expansion
- Schober’s test
- Sacro-iliac stress test

Schober Test



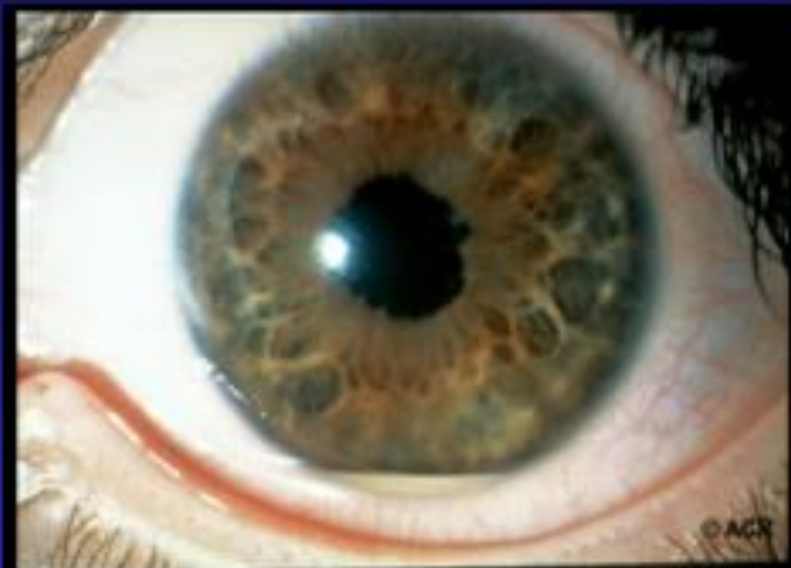
- Anaemia
- - secondary to chronic disease
- - blood loss
- - ? drugs
- ESR/CRP
- Renal function, urinanalysis,
- Serum IgA elevation
- Negative RF
- HLA B27

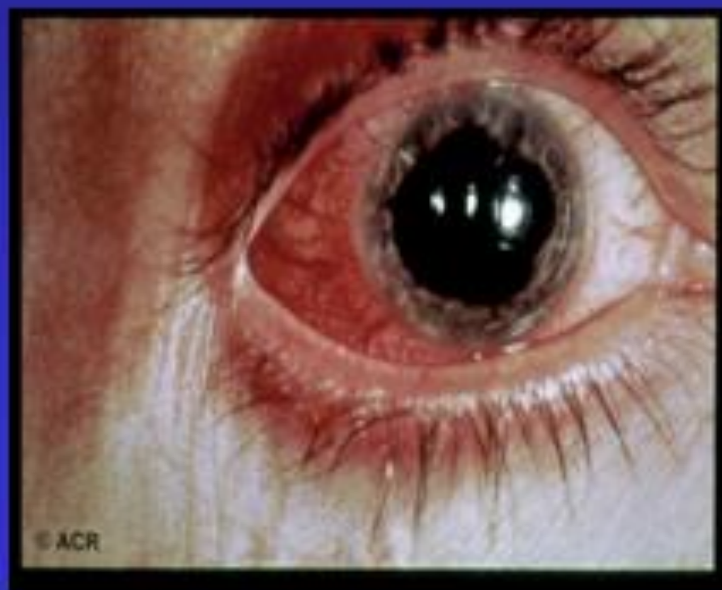
Other manifestations

- Ocular: acute anterior uveitis-unilateral eye pain, photophobia, blurred vision, and increased lacrimation
- Osteoporosis-d/t increased inflammation, syndesmophytes can lead to falsely elevated DEXA score
- GI: Small or large bowel inflammation
- Cardiac: ascending aortitis, AR, conduction abnormalities, and myocardial disease
- Pulmonary: apical fibrobullous disease
- Neuro: spinal fracture, cauda equina syndrome
- Rare: secondary amyloidosis, retroperitoneal fibrosis

Spondylo-arthropathies

Iritis (Uveitis)





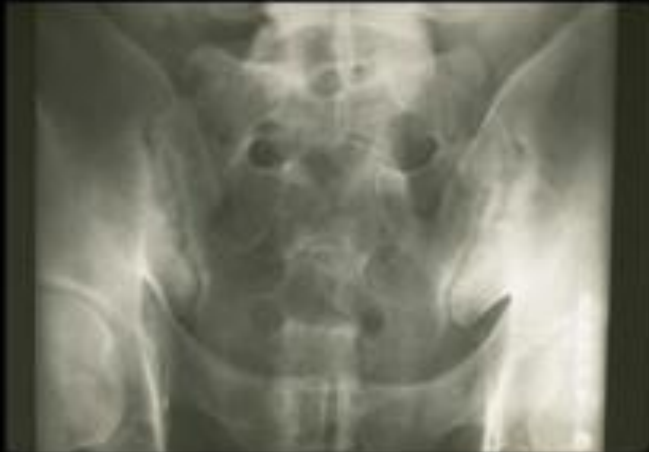
Likelihood of Iritis

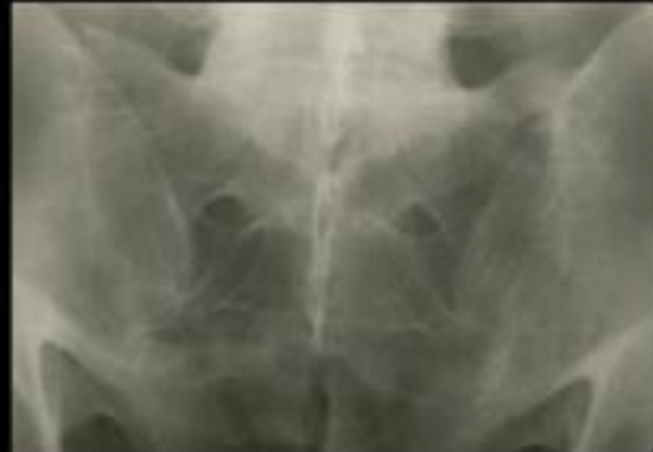
Disease	Percent
•Ank spondylitis	20-30
•Reiter's	12-37
•Psor Spondylitis	7-16
•IBD	2-9
•Undiff SA	ND

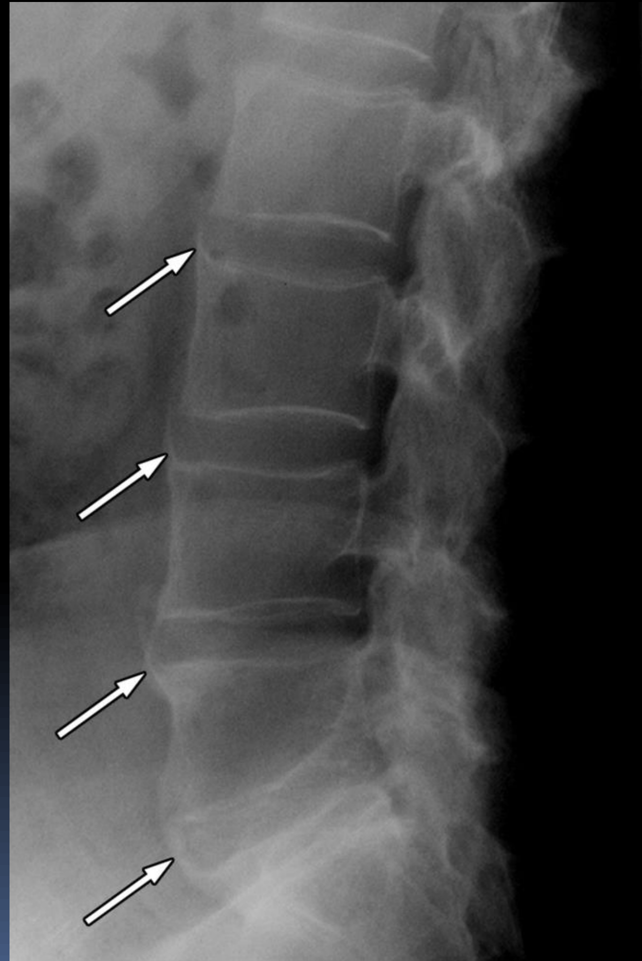
Radiographic Testing

- X-ray of SI joints:
  - Iliac erosions (postage stamp serrations) → erosions become more prominent and produce "pseudowidening" of the SI joint → fusion → complete obliteration of the SI joint by bone and fibrous tissue. The pattern of sacroiliac joint involvement is bilaterally symmetric

AS pelvis X ray

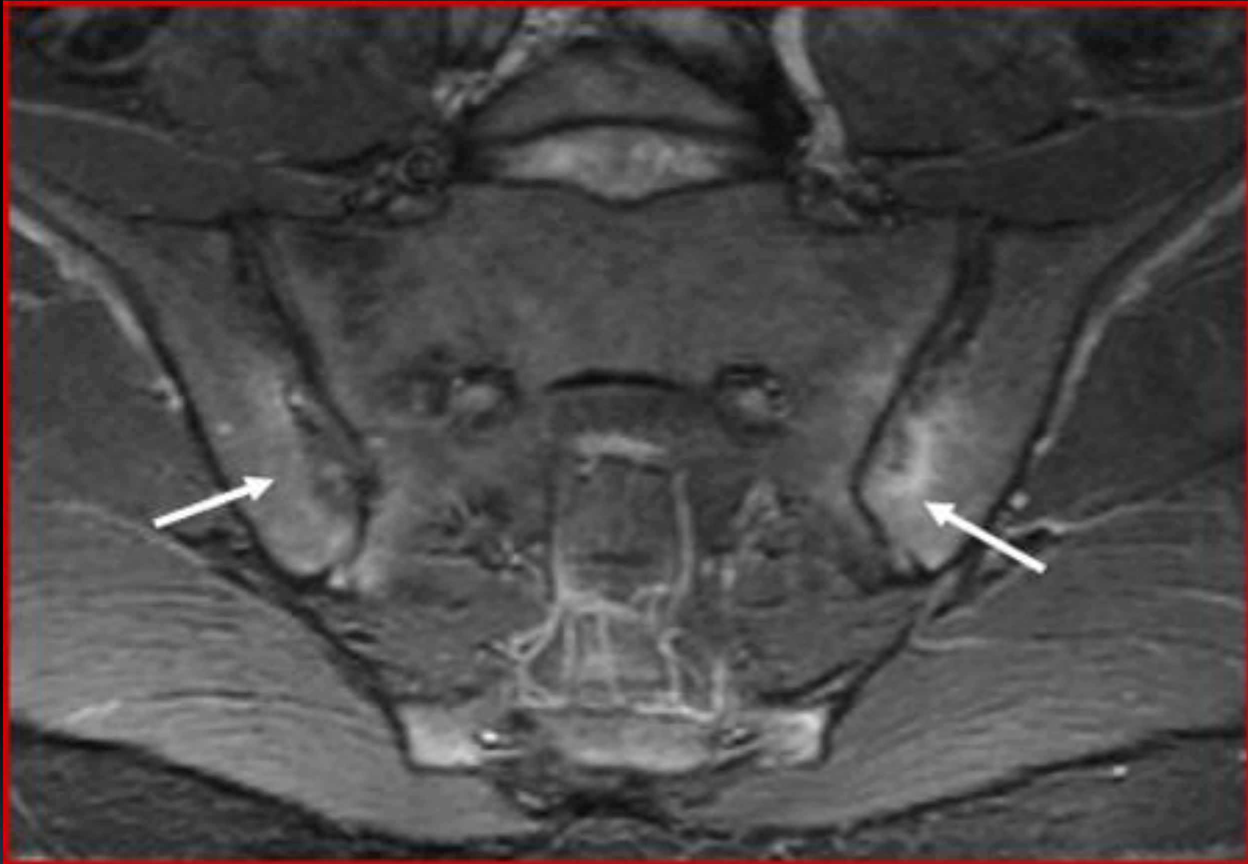






MRI

- Acute sacroiliitis, spondylitis, and spondylodiscitis
- Acute inflammation of the entheses, bone, and synovium
- Detect early inflammation and accurately visualize cartilaginous and enthesal lesions
- If X-ray negative and high index of suspicion then f/u with an MRI



AS

- *Most common cause of inflammatory back pain in young adults*

- Prevalence: 150 per 100,000
- Age of onset: < 40 years of age (average 26 yrs)
- M:F ratio 3:1

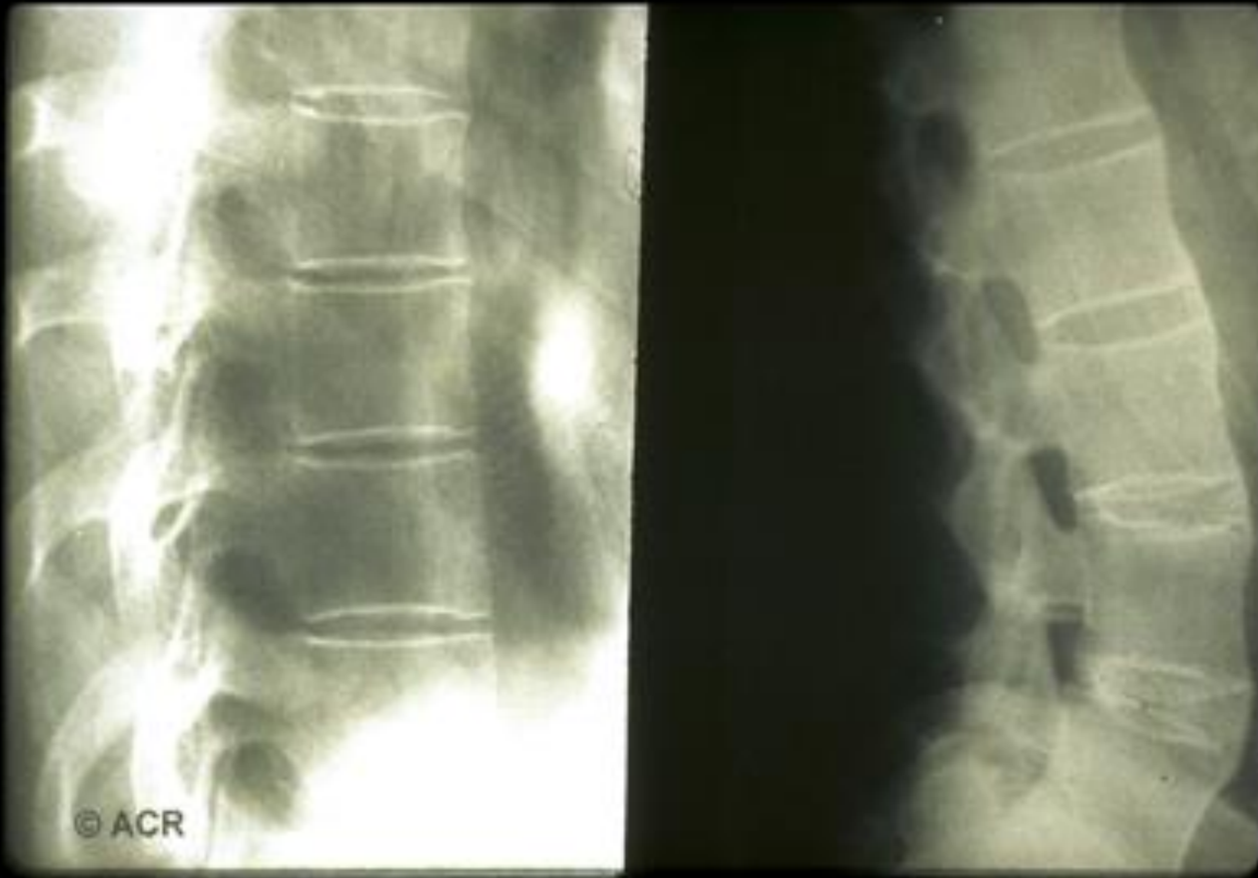
- Back pain (insidious onset)
- Duration longer than 3 months
- Associated with morning stiffness
- Improves with exercises
- Decreased spinal movements
- Enthesopathies

Ankylosing spondylitis

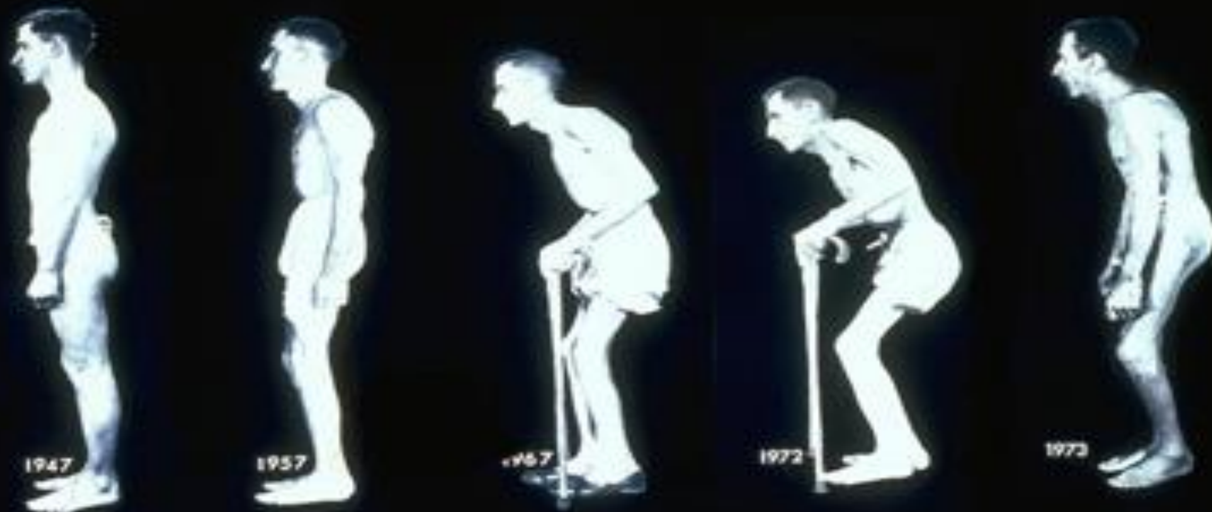
- Sacroiliitis and spondylitis
- Bamboo spine- ossification of the annulus fibrosus
  - Occurs from the lumbosacral region proximally
- Enthesitis
- Peripheral arthropathy

- Do not fit into another category

AS spine X ray



Progressive spinal changes in AS



Ankylosing spondylitis

A Aortic insufficiency, ascend. aortitis, conduction defects, etc

N Neurologic: atlantoaxial subluxation & cauda equina syndrome

K Kidney: secondary amyloidosis

S Spine: cervical fracture, spinal stenosis

O Ocular: anterior uveitis (25-30% of pts)

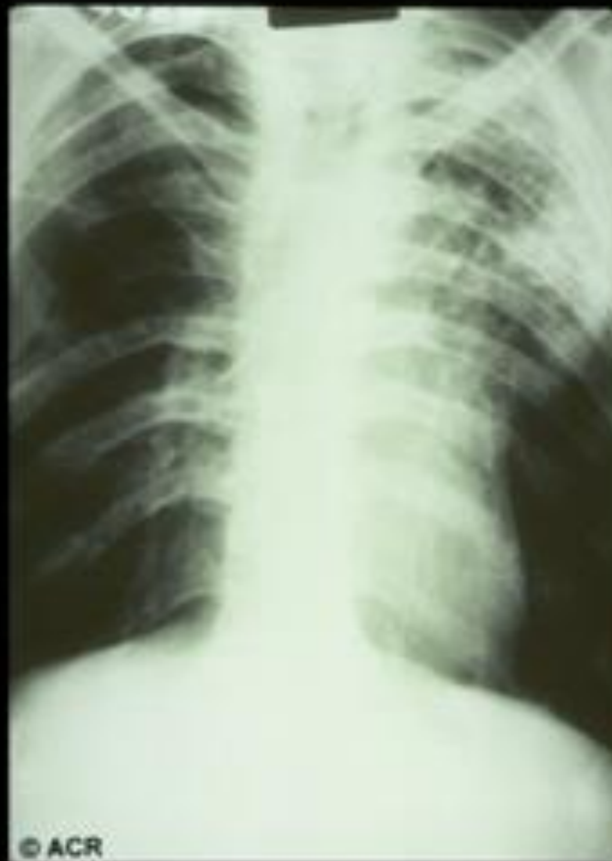
P Pulmonary: upper lobe fibrosis, restrictive changes

N Nephropathy (IgA)

D Discitis

In addition, 30-60% of pts have asymptomatic -colitis

Atypical fibrosis on CXR



Reactive Arthritis

- Autoimmune process that develops 1-3 weeks after bacterial infection
- Associated w/ C. trachomatis, gastroenteritis-SSYC
- “can’t see, can’t pee, can’t climb a tree”
- Tx underlying infection, if continues may need analgesics, steroids or immunosuppressants
- PE-Keratoderma blennorhagica, oral or genital ulcers, conjunctivitis

Reiter's syndrome and Reactive arthritis (ReA)

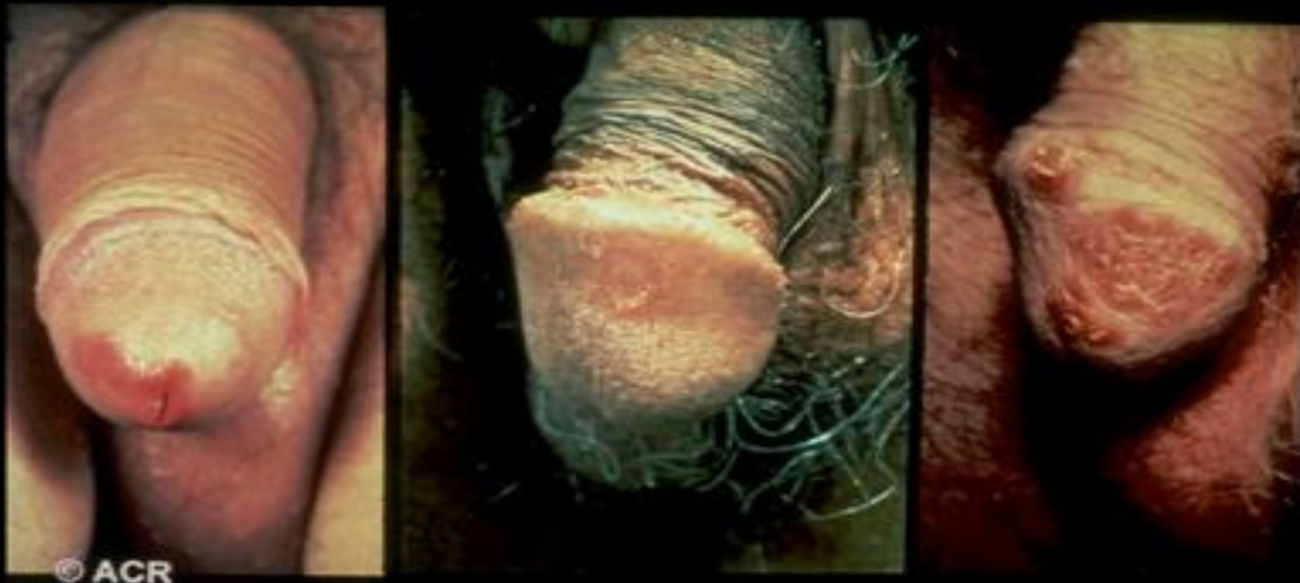
- Infectious trigger factor:
  - Enterogenic: Shigella, Champylobacter, Yersinia, Salmonella
  - Genito-urinary: Chlamydia, Gonococcal
  - Others: Ureaplasma, Clostridium difficile

Reiter's syndrome and Reactive arthritis (ReA)

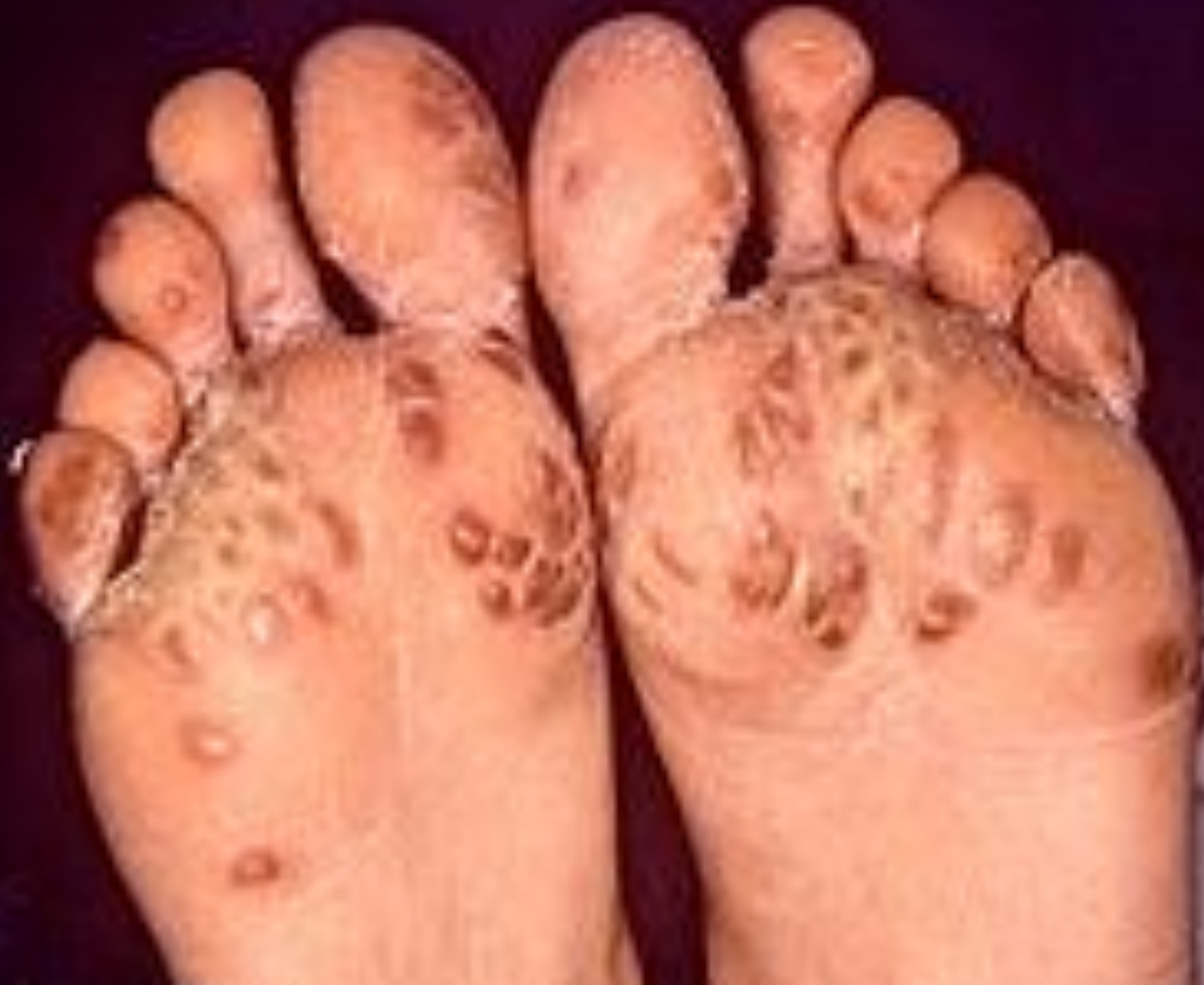
- Prevalence: 16 per 100,000
- Primarily young adults, aged 20-40 years
- M:F ratio 1:1 for enterogenic reactive arthritis
- M>F ratio for urogenital reactive arthritis
- Rare in children and uncommon in Blacks

- Arthritis
  - Mono-or oligo-arthritis (< 5 joints)
  - Sacroilitis
  - Spondylitis
  - Enthesitis
- 80% resolve within 12 months

Balantitis

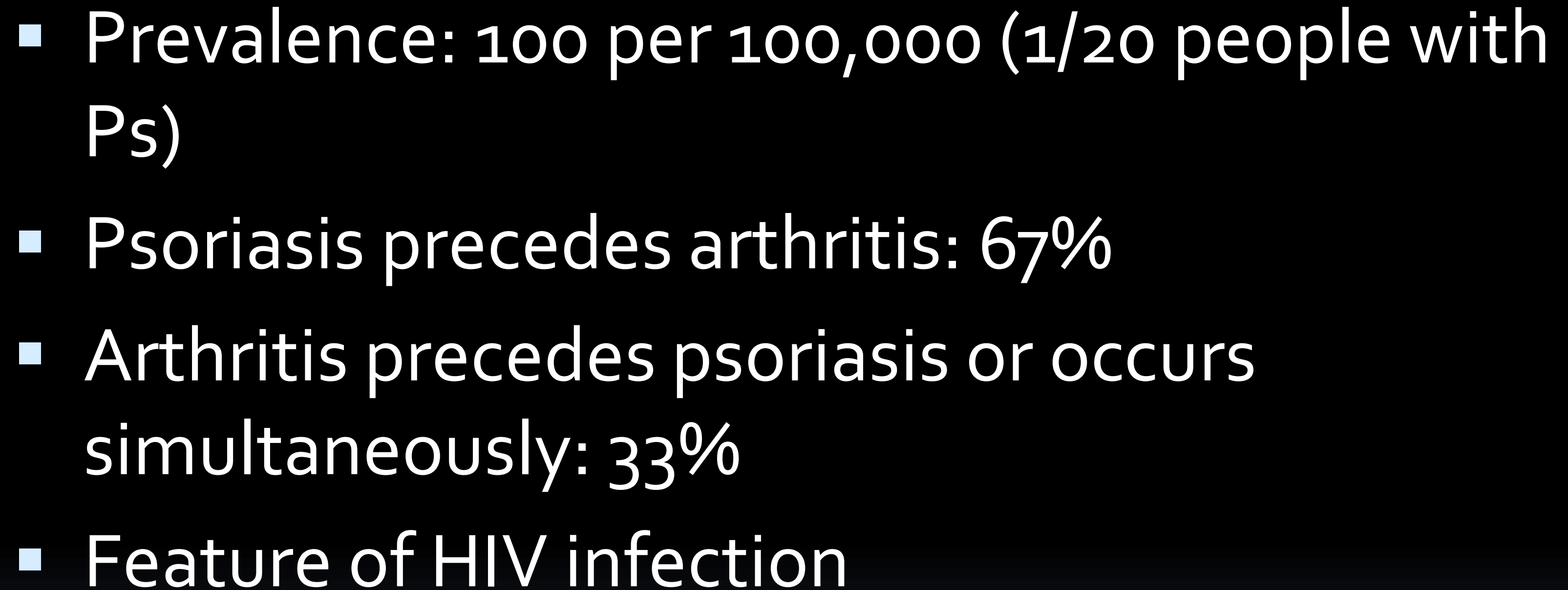


Keratoderma Blenorhagicum



Psoriatic Arthritis

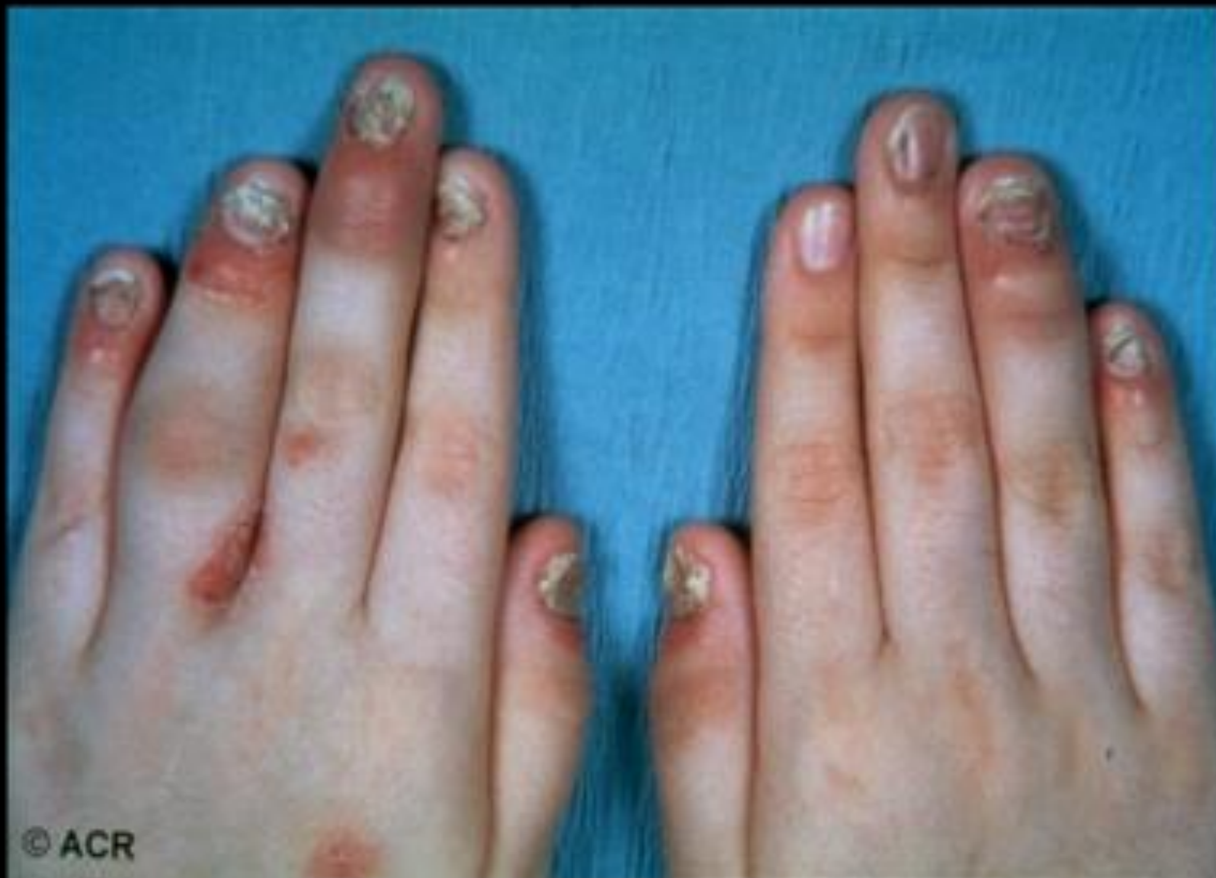
- May be present with or without skin findings
  - Look for hidden psoriasis-behind ears, hairline, nail pitting
  - May precede skin findings
- Arthritis does NOT correlate with skin findings
- May cause RA-like arthritis
- Dactylitis common


Prevalence: 100 per 100,000 (1/20 people with Ps)
Psoriasis precedes arthritis: 67%
Arthritis precedes psoriasis or occurs simultaneously: 33%
Feature of HIV infection

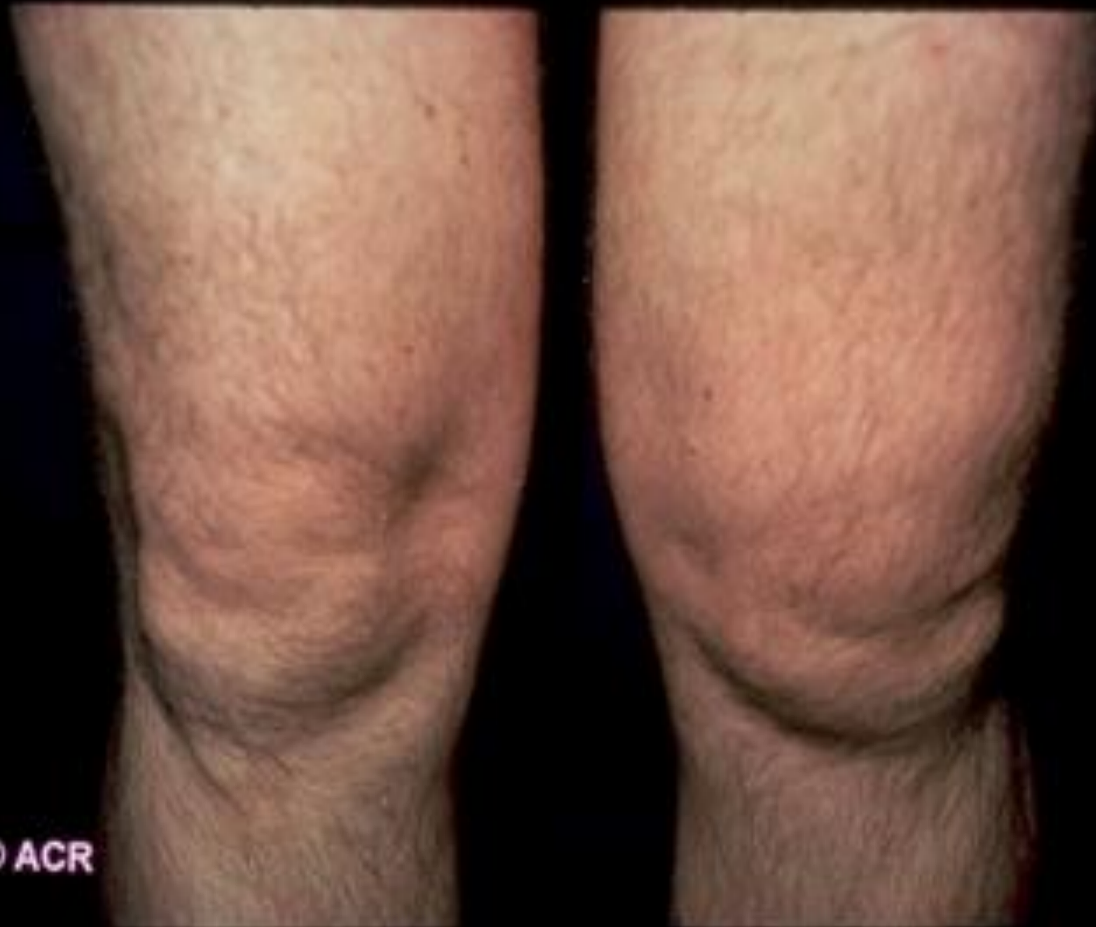
Psoriatic Arthritis

- 5 presentation types
- **Asymmetrical oligoarticular arthritis**
  - **dactylitis**
- **Symmetrical polyarthritis**
- **Distal interphalangeal arthropathy**
  - **Nail involvement**
- **Arthritis mutilans**
  - **Telescoping motion, opera hands**
- **Spondylitis with or without sacroiliitis**

Psoriatic hands

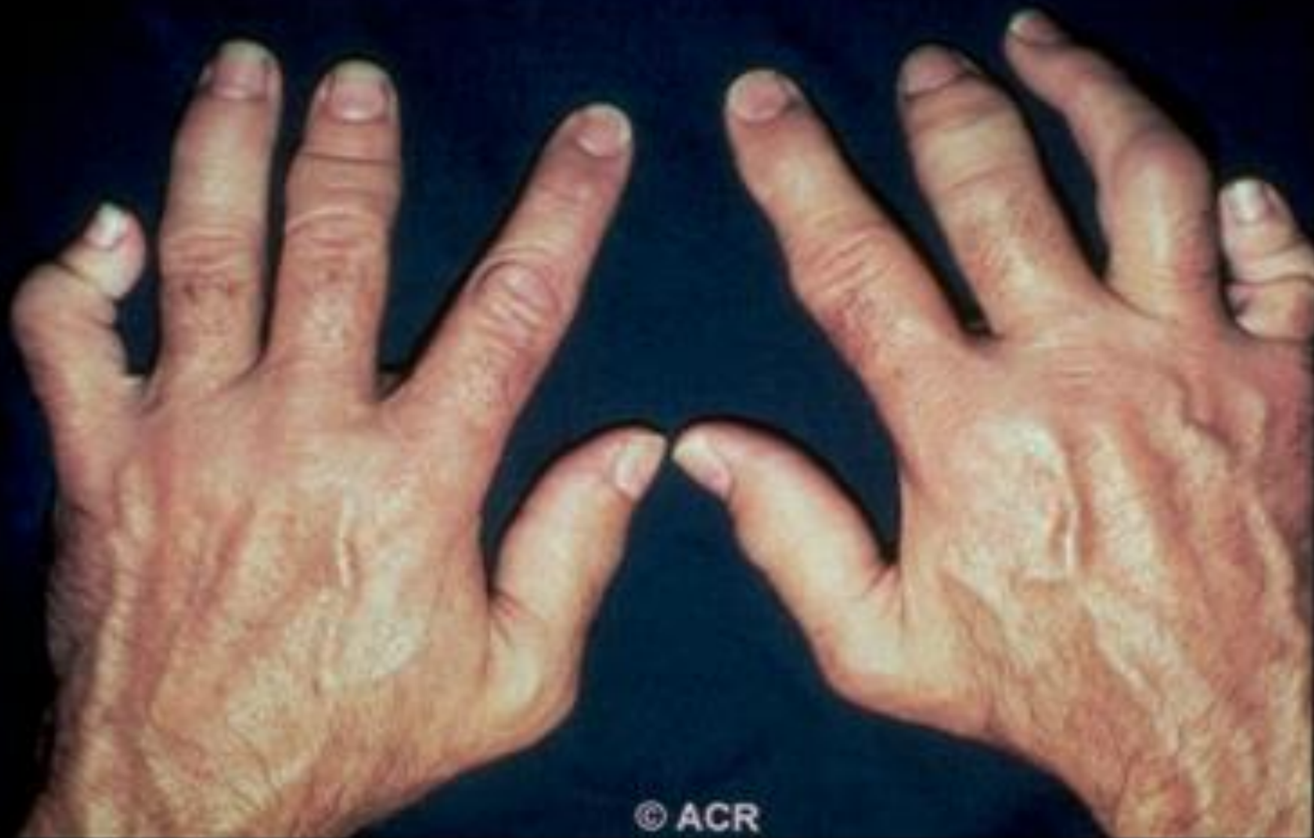


Asymmetrical arthritis



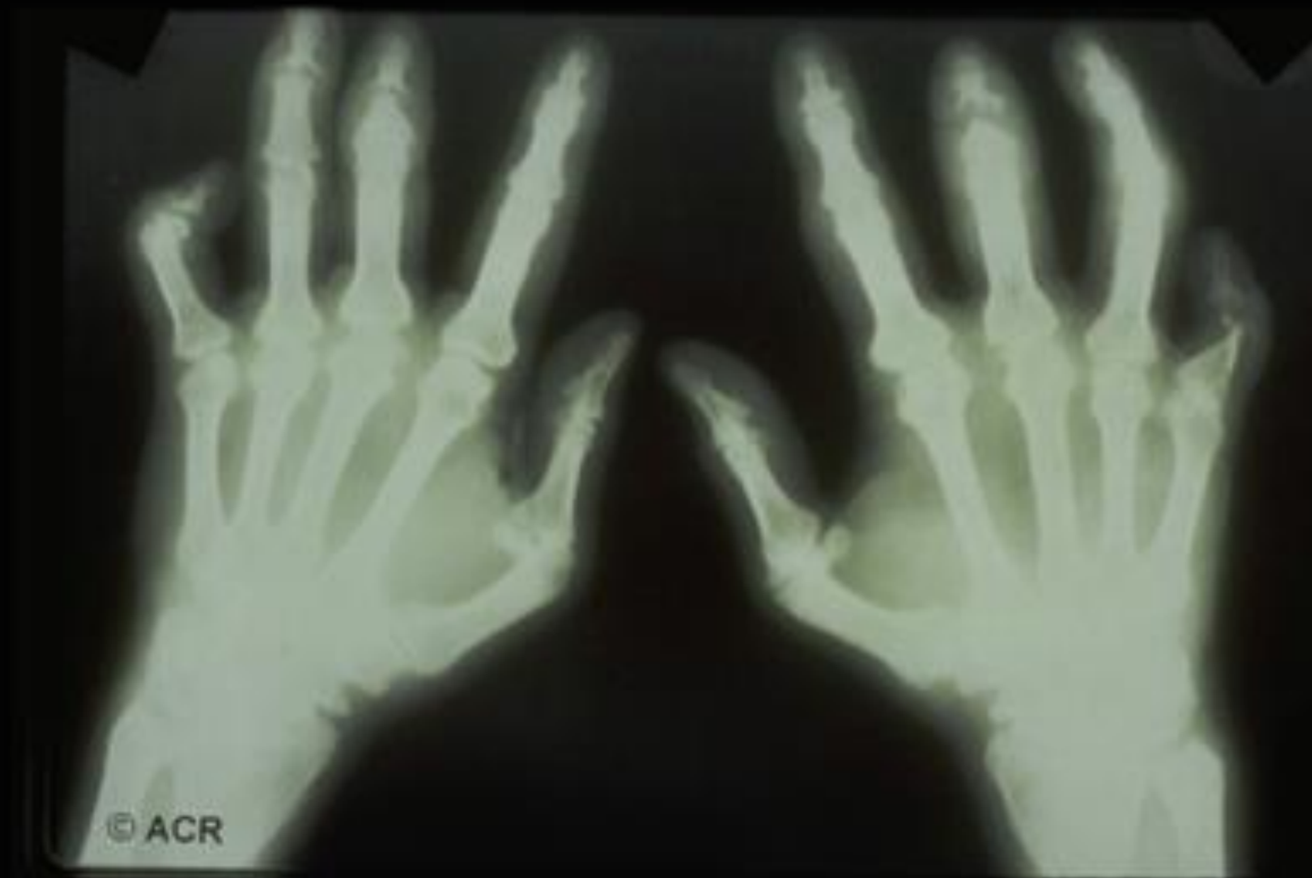
Arthritis mutilans

"telescoping' of digits"

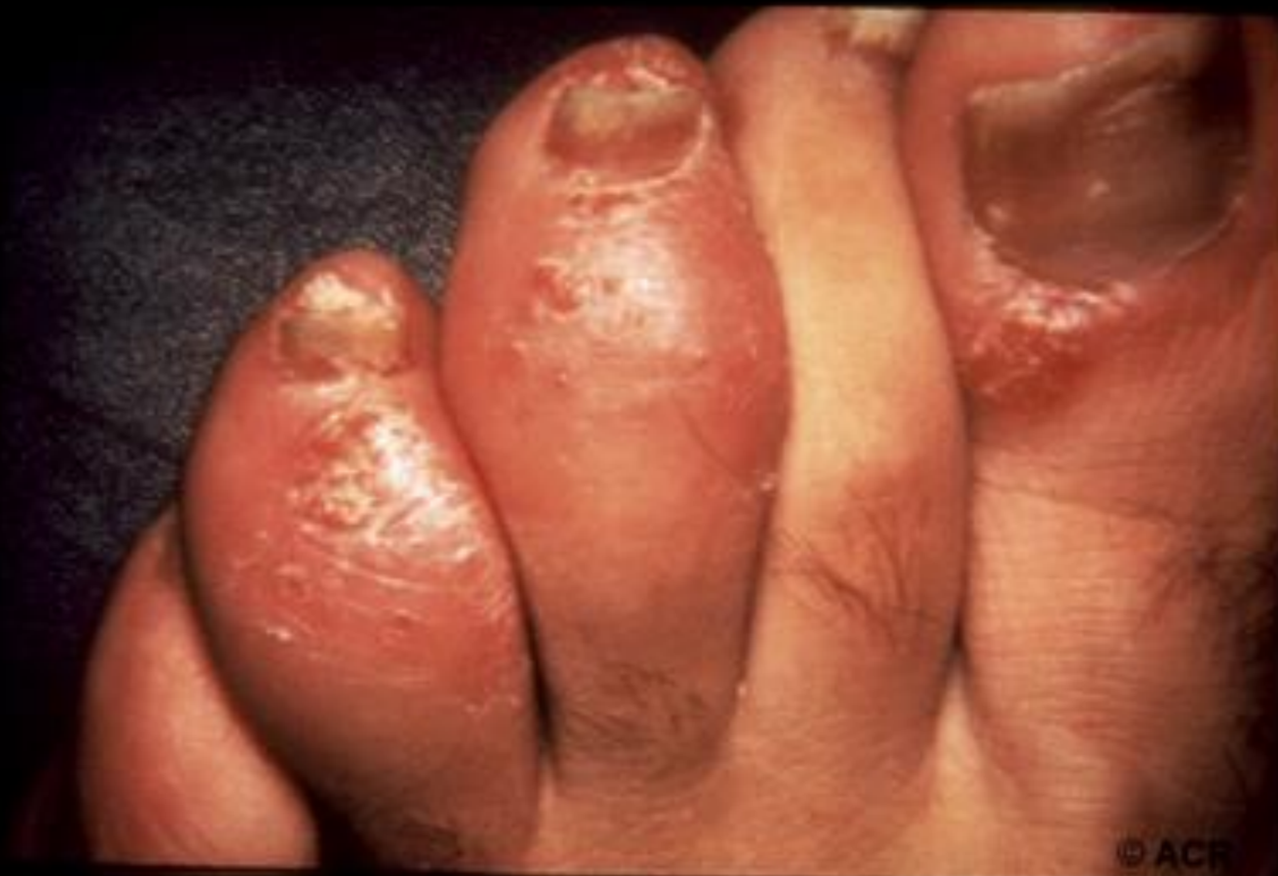


Arthritis mutilans

osteolysis of involved joints

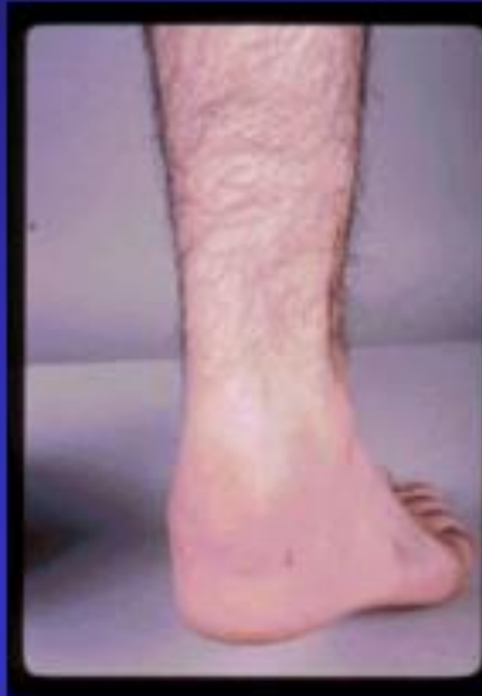


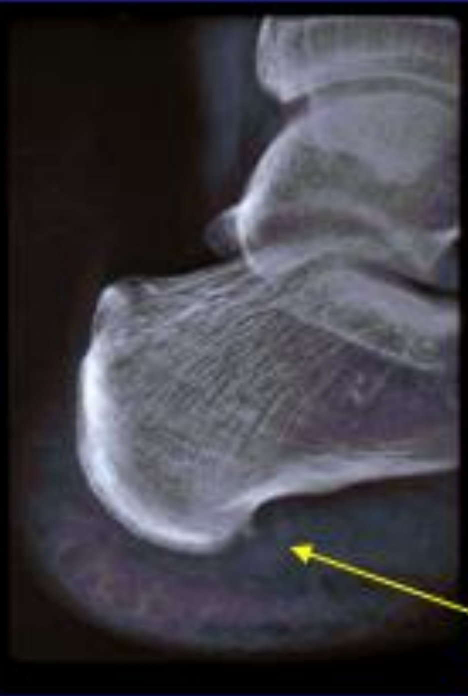
“Sausage digits”

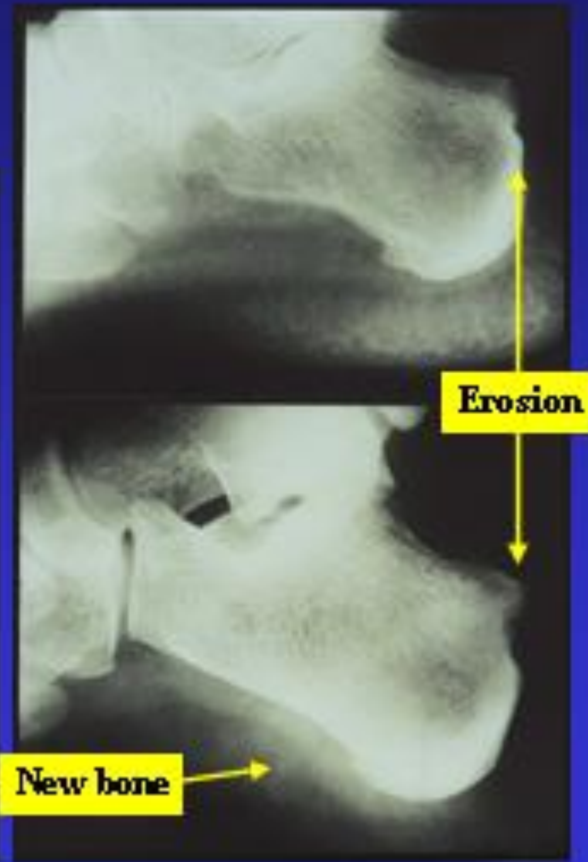


Spondyloarthropathies

Enthesopathy



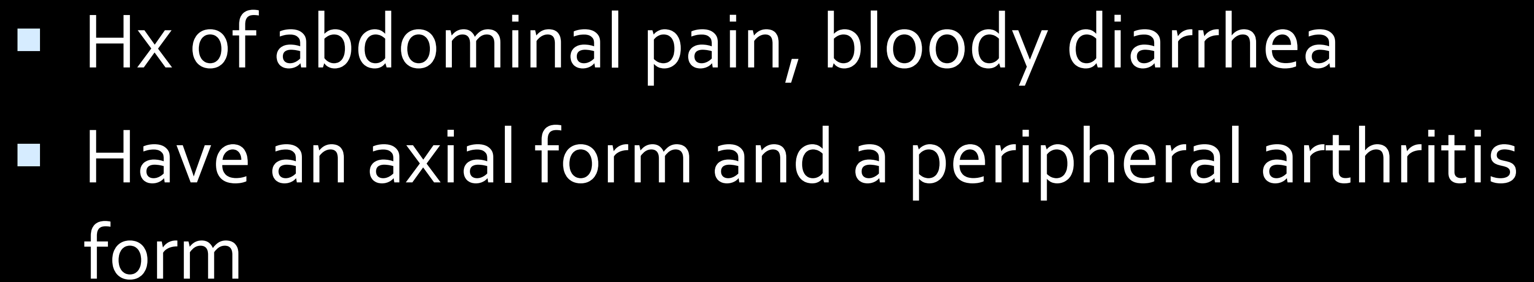




Enteropathic arthritis

- What bowel diseases are associated?
  - Idiopathic, inflammatory bowel disease (UC, CD)
  - Microscopic colitis and collagenous colitis
  - Whipple's disease
  - Gluten-sensitive enteropathy (celiac disease)
  - Intestinal by-pass arthritis

IBD-related SpA

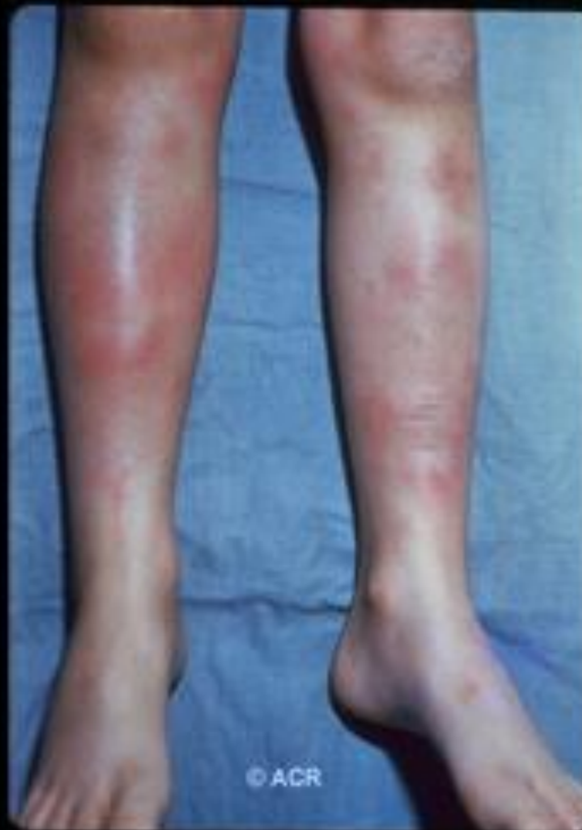

Hx of abdominal pain, bloody diarrhea
Have an axial form and a peripheral arthritis form

Enteropathic arthritis

- Prevalence: 5 per 100,000
- M:F ratio 1:1
- Children= adults

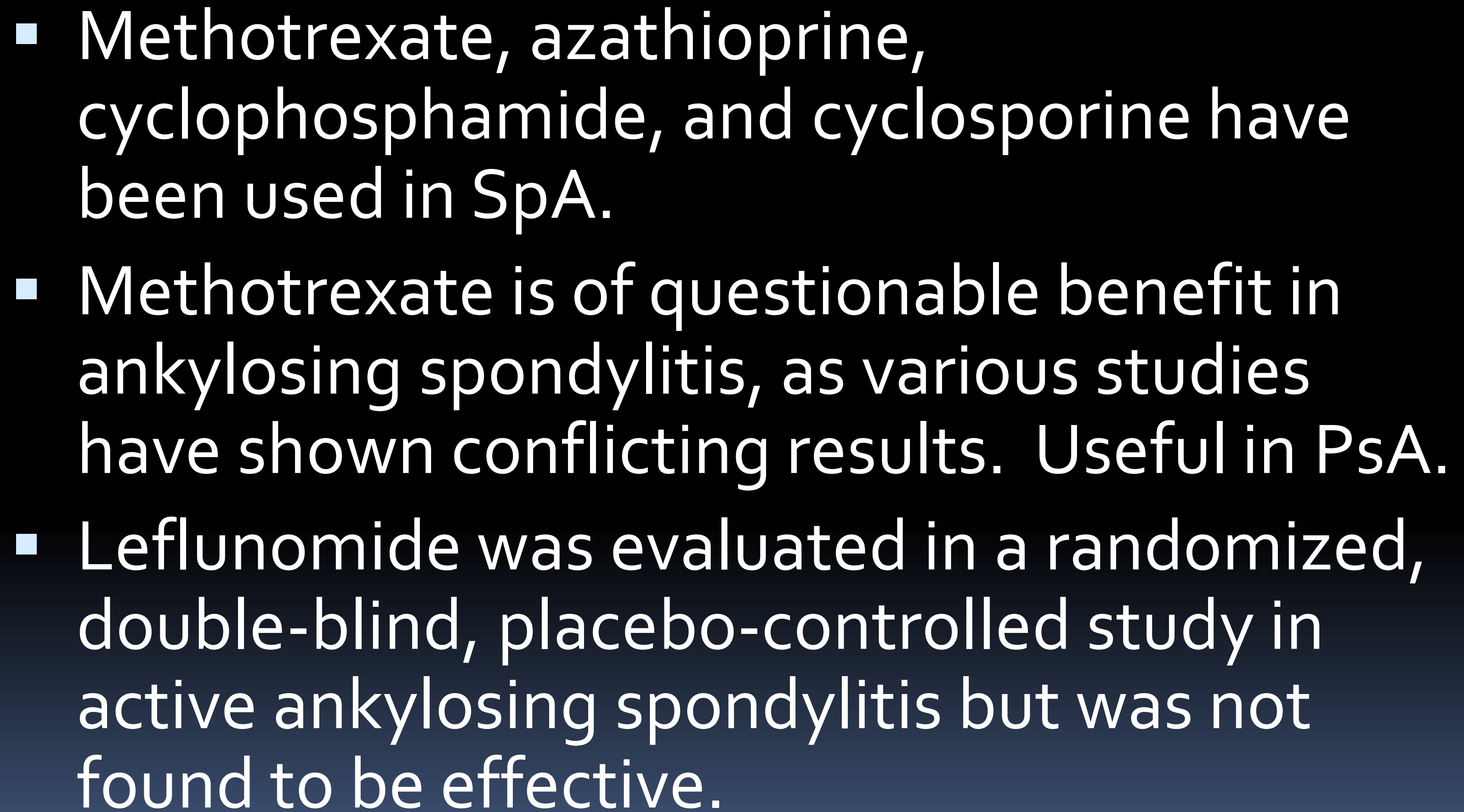
- Arthritis: acute onset, migratory, asymmetric, oligo-articular (< 5 joints)
- Extra-articular: uveitis, erythema nodosum, aphthous stomatitis, pyoderma gangrenosum

Erythema nodosum



Treatment

- NSAIDs
- Sulfasalizine
  - SE: rash, nausea, diarrhea, and agranulocytosis (rarely)
- TNF-α antagonists
  - Etanercept, infliximab, adalimumab, golimumab
  - Screen for latent TB, hepatitis B, and HIV infection prior to starting therapy
- Corticosteroids-short-term or intra-articular


Methotrexate, azathioprine, cyclophosphamide, and cyclosporine have been used in SpA.
Methotrexate is of questionable benefit in ankylosing spondylitis, as various studies have shown conflicting results. Useful in PsA.
Leflunomide was evaluated in a randomized, double-blind, placebo-controlled study in active ankylosing spondylitis but was not found to be effective.

- F/U includes assessment of fatigue, back pain, mobility, synovitis and enthesitis
- Surgery is occasionally useful to correct spinal deformities or to repair damaged peripheral joints.
- Physical therapy, including an exercise program and postural training, is important to maintain function.

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- *Dr Priyanka Murali*