26-year-old male with arthritis

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Med/Peds
(Originally created: January 2012)

HPI

- 26-year-old male, previously healthy
- 2-weeks earlier:
  - diarrhea, +blood, +mucus, +urgency
  - body aches
  - Had similar symptoms 6 months prior, but resolved
- Now has severe pain in left hip and knee
- Unable to bear weight
- Also his hands got really red, warm and swollen last night
- His left hand hurts more, and it's hard to make a fist
- It hurts when he flexes his wrists

PMHx

- Low back pain
  (started with old baseball injury)

PSHx

- None

Allergies

- None

Medications

- Occasional NSAID

Social Hx

Very athletic, has been division 1 pitcher, minor league pitcher. Had recurring overuse injuries to the right shoulder and elbow. Now is running baseball camps. Also a firefighter and EMT. Traveled to Mexico 1 year ago. 40 lifetime sexual partners. Has a girlfriend, not using condoms. No cigarettes or IV drug use. Social alcohol use.

What other questions do you have for the patient?

Have you started a DDx?

ROS

HEENT: no headaches, no conjunctivitis. no dry eyes or mouth. No oral ulcers.
Neck: no lumps or bumps. no focal swelling
Chest: no chest pain or palpitations. no dyspnea or cough.
Abd: no abdominal pain. no nausea or vomiting.
MSK: pain in the right upper back, between the spine and shoulder blade. He tends to feel like he has to crack his back all the time and he's worried people think he has Tourette's. He has had back pain off/on for 3 years. He thinks it's related to an old baseball injury. Stiffness is worst in the AM, when getting out of an airplane or car. No sausage digits.
GU: No genital ulcers
Neuro: no focal weakness, no tingling/numbness.
Skin: no rashes, never had psoriasis

Any changes to your DDx?

What will you focus on for physical exam?

Physical Exam

BP 151/91 | Pulse 96 | Temp(Src) 98.1 °F (36.7 °C) (Oral) | Resp 18 | SpO2 95%

Gen: Pleasant Caucasian male, NAD
HEENT: MMM, no OP erythema or lesions. Sclerae anicteric.
Neck: Supple
CV: RRR no m/r/g. Radial pulses 2/2 bilat, cap refill < 2 sec.
Pulm: CTAB no w/r/r
Abd: Soft, NT/ND. +BS, no HSM, no masses.
Back: No midline tenderness. TTP over right rhomboid muscle area. TTP over left SI joint area.
Ext: There is effusion and synovitis as well as pain with pROM in the MCP joints of the left hand digits 2, 3 and 4. TTP in the interjoint spaces of left palmar digits with evidence of flexor tenosynovitis of II,III, IV. There is effusion of the wrists bilaterally, with decreased ROM in all directions secondary to pain, L>R.(flex 40, ext 30 degrees). Elbows and shoulders without effusion and ROM is normal. No nodules. No effusion or TTP in feet and ankles, with normal ROM. Left knee moderate effusion, with mild TTP along joint line and patella compression. Flex to 70 deg with stress pain. Able to accept passive flexion of the hip to at most 40 degrees due to pain. Unable to tolerate any internal or external rotation of the hip. Log roll elicits pain. Right hip and knee without effusion, with normal ROM.
Skin: No concerning lesions. Nails appear normal.
Neuro: Alert and oriented to person, place, time.

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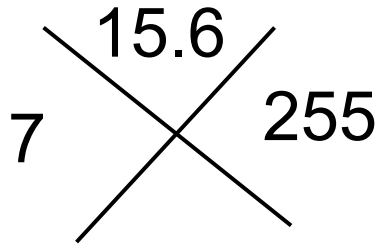
Neuro: Alert and oriented to person, place, time.

Data

MRI hip
Moderate effusion, with minimal synovitis

Aspiration hip
WBCs 29,400
N 78%, L 11%
Cx NG

Aspiration knee
WBCs 3500
N 79%
Cx NG



CRP 11.1
ESR 43

BMP normal
Liver panel normal
Coags normal
HIV negative
BCx NG

Was that data helpful, not helpful?

29,400 WBCs, is that infected?

Anything else you'd want?

Categories of synovial fluid based upon clinical and laboratory findings

Measure	Normal	Noninflammatory	Inflammatory	Septic	Hemorrhagic
Volume, mL (knee)	<3.5	Often >3.5	Often >3.5	Often >3.5	Usually >3.5
Clarity	Transparent	Transparent	Translucent-opaque	Opaque	Bloody
Color	Clear	Yellow	Yellow to opalescent	Yellow to green	Red
Viscosity	High	High	Low	Variable	Variable
WBC, per mm3	<200	200-2,000	2,000-100,000	15,000->100,000*	200-2,000
PMNs, percent	<25	<25	≥50	≥75	50-75
Culture	Negative	Negative	Negative	Often positive	Negative
Total protein, g/dL	1-2	1-3	3-5	3-5	4-6
Glucose, mg/dL	Nearly equal to blood	Nearly equal to blood	>25, lower than blood	<25, much lower than blood	Nearly equal to blood

* Lower part of range with infections caused by partially treated or low virulence organisms.

Synovial Fluid Analysis Characteristics

	Volume (mL)	Viscosity	Clarity	Color	WBC/mm³
Normal	< 3.5	**High**	Clear	Colorless/ Straw	< 150
Noninflammatory	> 3.5	**High**	Clear	Straw/ Yellow	< 3000
Inflammatory	> 3.5	Low	Cloudy	**Yellow**	> 3000
Septic (purulent)	> 3.5	Mixed	**Opaque**	Mixed	> 50,000
Hemorrhagic	> 3.5	Low	Mixed	**Red**	**Similar to blood level**

1. Sholter, *et al.* Synovial fluid analysis and the diagnosis of septic arthritis. *Up To Date*. 11/29/2010.
2. Medscape http://reference.medscape.com/features/slideshow/arthro-practice

DDx

- Spondyloarthitis
  - Enteropathic spondyloarthritis
  - Ankylosing spondylitis
- Reactive arthritis (formerly Reiter's)
- Whipple's
- Behçet's
- Parvovirus
- Hepatitis B or C
- Rheumatoid arthritis
- SLE
- Infectious arthritis

GI:
Consulted, recommend flexible sigmoidoscopy

Findings:
A diffuse area of moderately eroded, friable (with contact bleeding), granular, inflamed and ulcerated mucosa was found in the recto-sigmoid colon. Biopsies were taken with a cold forceps for histology.

Impression:
Patient with recurrent bloody stool and now joint swelling.
- Preparation of the colon was fair.
- diffusely eroded, friable (with contact bleeding), granular, inflamed and ulcerated mucosa recto-sigmoid colon. Finding most consistent with ulcerative colitis. This was biopsied.

Enteropathic Spondyloarthritis

secondary to Ulcerative Collitis

Spondyloarthropathies

- Enthesitis
  - Inflammation of entheses, where tendons insert into bone
  - Common sites: achilles tendon, plantar fascia
- Seronegative
  - Not associated with RF
- Related diseases:
  - psoriatic arthritis
  - reactive arthritis
  - enteropathic spondyloarthritis
  - ankylosing spondylitis

Box 1 Modified New York criteria for ankylosing spondylitis (1984)[3]

- Clinical criteria:
  - Low back pain and stiffness for more than 3 months that improves with exercise, but is not relieved by rest.
  - Limitation of motion of the lumbar spine in the sagittal and frontal planes.
  - Limitation of chest expansion relative to normal values correlated for age and sex.
- Radiological criterion:
  - Sacroiliitis grade ⩾2 bilaterally or grade 3–4 unilaterally.

Definite AS if the radiological criterion is associated with at least one clinical criterion

Sieper, *et al.* The Assessment of SpondyloArthritis international Society (ASAS) handbook: a guide to assessspondyloarthritis. *Ann Rheum Dis.* 2009, June.

Box 2 Amor criteria for spondyloarthritis[4]

Criterion	Points
Clinical symptoms or past history:	
Lumbar or dorsal pain during the night, or morning stiffness of lumbar or dorsal spine	1
Asymmetric oligoarthritis	2
Buttock pain	1
if affecting alternately the right or the left buttock	2
Sausage-like toe or digit (dactylitis)*	2
Heel pain or any other well defined enthesiopathy (enthesitis)*	2
Iritis	2
Non-gonococcal urethritis or cervicitis accompanying, or within 1 month before, the onset of arthritis	1
Acute diarrhoea accompanying, or within 1 month before, the onset of arthritis	1
Presence or history of psoriasis, balanitis, or inflammatory bowel disease (ulcerative colitis or Crohn disease)	2
Radiological finding:	
Sacroiliitis (grade ⩾2 if bilateral; grade ⩾3 if unilateral)	3
Genetic background:	
Presence of HLA-B27, or familial history of ankylosing spondylitis, Reiter syndrome, uveitis, psoriasis, or chronic enterocolopathies	2
Response to treatment:	
Good response to NSAIDs in less than 48 h, or relapse of the pain in less than 48 h if NSAIDs discontinued	2

*Terms were added by the authors for clarification, not in the original publication. HLA, human leukocyte antigen; NSAIDs, non-steroidal anti-inflammatory drugs. A patient is considered to have spondyloarthritis if the sum of the point counts is 6 or more. A total point count of five or more classifies for probable spondyloarthritis.

Sieper, *et al.* The Assessment of SpondyloArthritis international Society (ASAS) handbook: a guide to assessspondyloarthritis. *Ann Rheum Dis.* 2009, June.

Box 3 European Spondyloarthropathy Study Group (ESSG) criteria[5]

Inflammatory spinal pain

or

Synovitis
- Asymmetric or
- Predominantly in the lower limbs

and

One or more of the following variables:
- Positive family history
- Psoriasis
- Inflammatory bowel disease
- Urethritis, cervicitis, or acute diarrhea within one month before arthritis
- Buttock pain alternating between right and left gluteal areas
- Enthesopathy
- Sacroiliitis

Box 4 ASAS criteria for classification of axial spondyloarthritis (to be applied in patients with chronic back pain and age at onset of back pain <45 years)[6]

ASAS classification criteria for axial spondyloarthritis (SpA)

In patients with ≥3 months back pain and age at onset <45 years

Sacroiliitis on imaging*
plus
≥1 SpA feature#

or

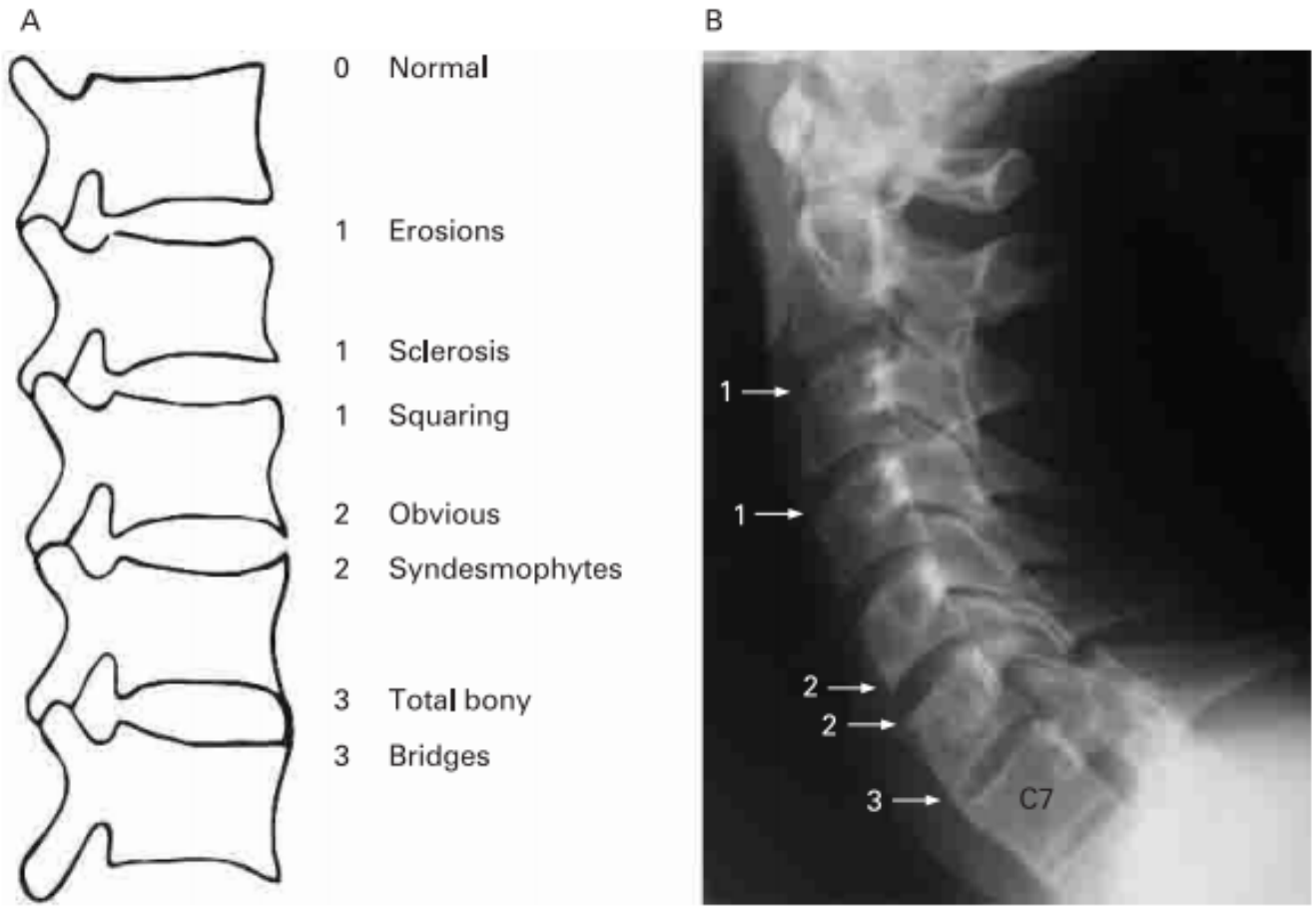
HLA-B27
plus
≥2 other SpA features#

#SpA features
- inflammatory back pain
- arthritis
- enthesitis (heel)
- uveitis
- dactylitis
- psoriasis
- Crohn's/colitis
- good response to NSAIDs
- family history for SpA
- HLA-B27
- elevated CRP

*Sacroiliitis on imaging
- active (acute) inflammation on MRI highly suggestive of sacroiliitis associated with SpA
- definite radiographic sacroiliitis according to mod NY criteria

Sieper, *et al.* The Assessment of SpondyloArthritis international Society (ASAS) handbook: a guide to assessspondyloarthritis. *Ann Rheum Dis.* 2009, June.

Figure 45 Modified Stoke Ankylosing Spondylitis Spine Score (mSASSS).[15 16] A total of 24 sites are scored on the lateral cervical and lumbar spine (A): the anterior corners of the vertebrae from lower border of C2 to upper border Th1 (including) and from lower border of Th12 to upper border of S1 (including). Each corner can be scored from 0 to 3, resulting in a range from 0 to 72 for the total mSASSS. B: example of scoring according to the mSASSS. 0 = normal; 1 = sclerosis, squaring or erosion; 2 = syndesmophyte; 3 = bony bridge.



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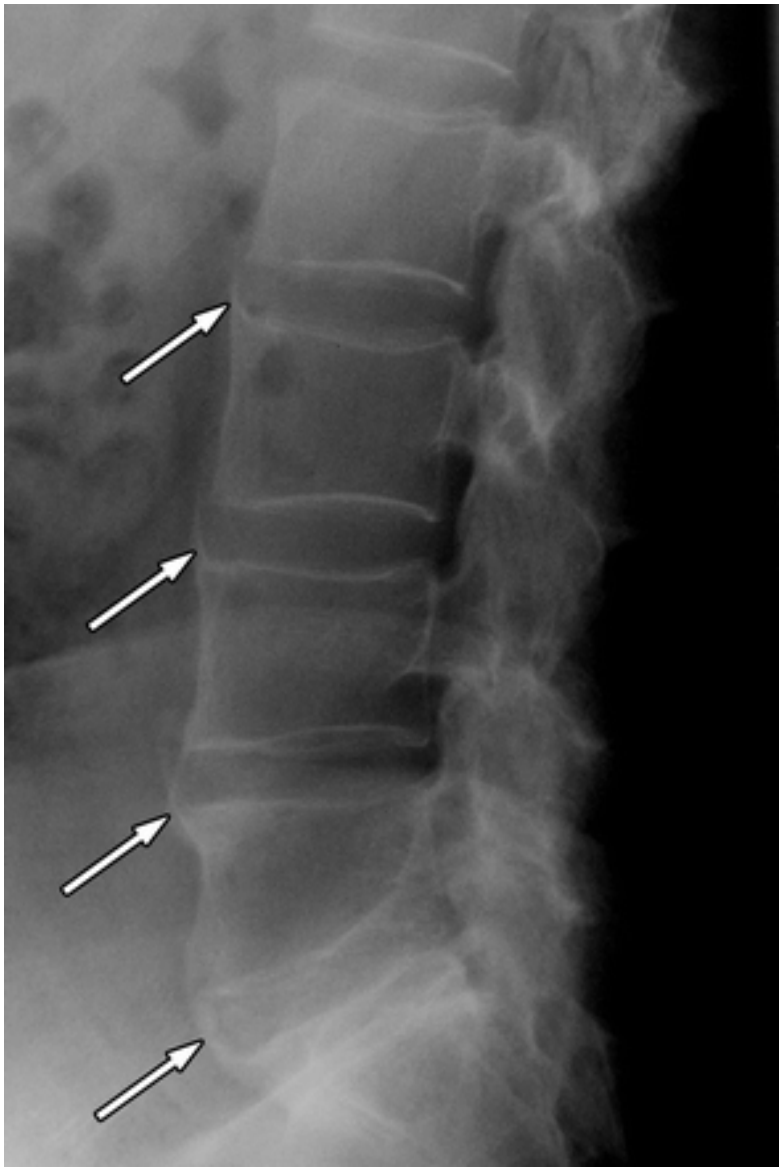
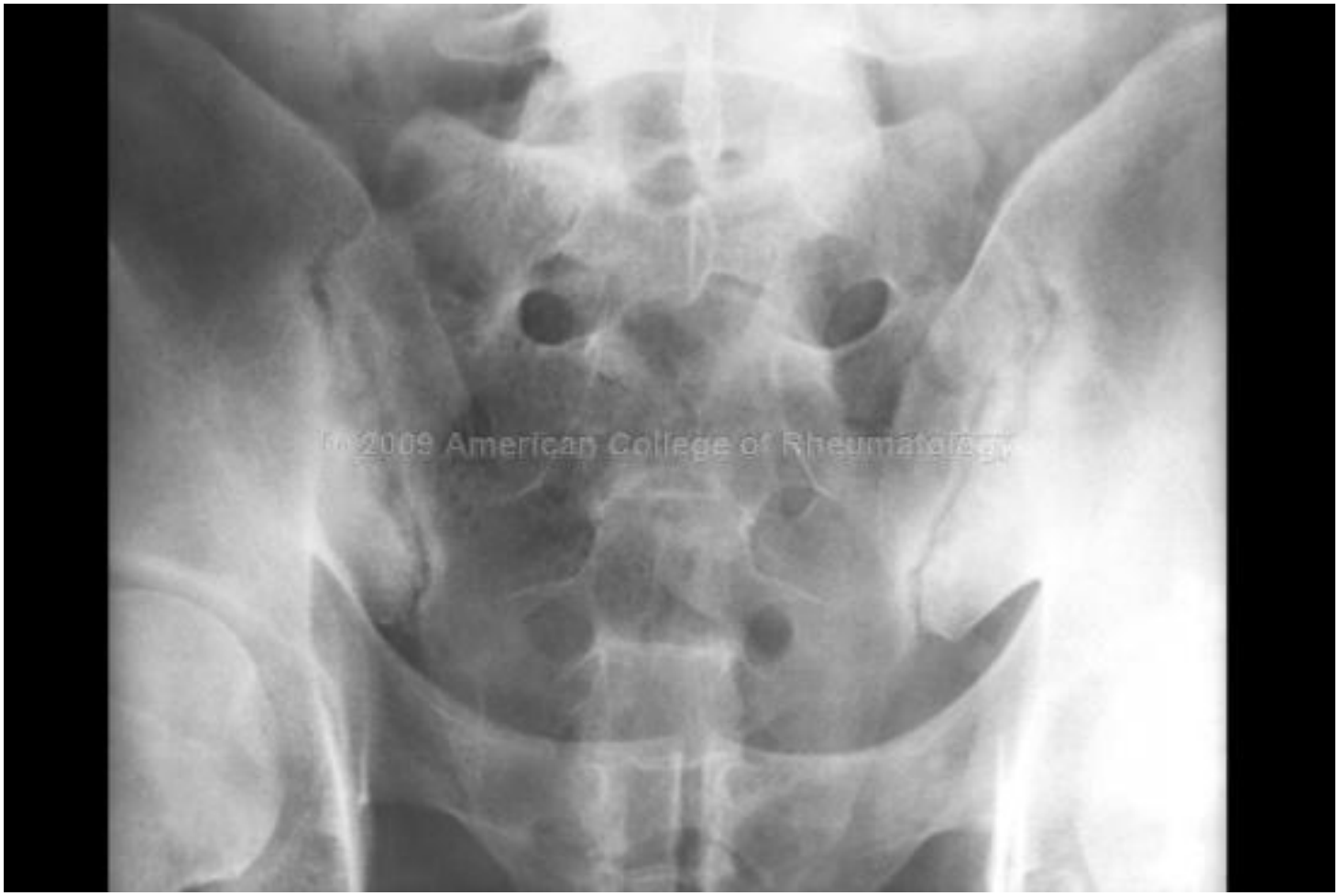
Shiny corner sign

Bridging syndesmophytes



Hermann, *et al*. Spinal Changes in Patients with Spondyloarthritis: Comparison of MR Imaging and Radiographic Appearance. *Radio Graphics*. 2005 May. 559-69.



XR pelvis

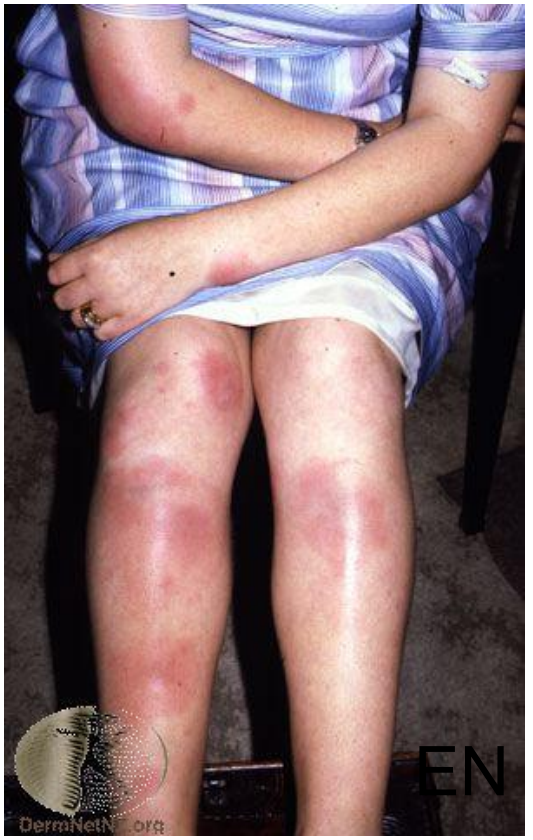
Ferguson View

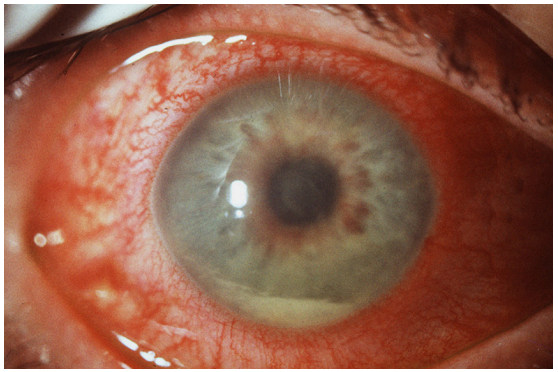
Patient supine, aimed caudocephalad

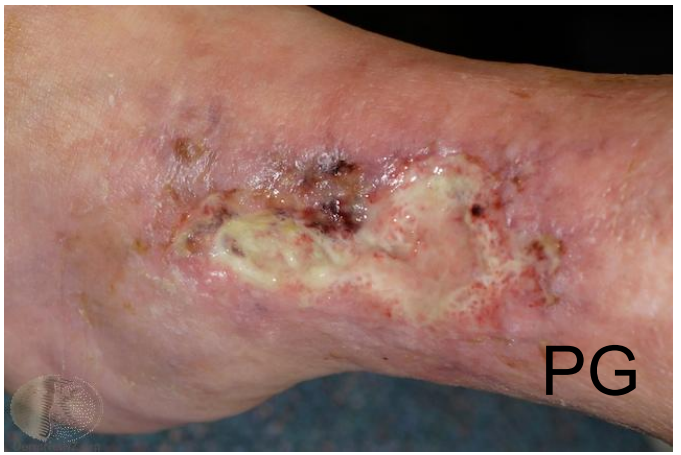
Rheumatology Image Bank. http://images.rheumatology.org/viewphoto.php?imageId=2862764

Enteropathic Spondyloarthritis

- Accompany the inflammatory bowel diseases (IBD)
  - Crohn's disease
  - Ulcerative collitis
- Arthritis occurs in 10-20%
- Extra-articular symptoms
  - erythema nodosum
  - pyoderma gangrenosum
  - acute anterior uveitis (up to 11%)
  - oral ulcers
  - low grade fever







http://www.dermnetnz.org/
http://medlibes.com/entry/anterior-uveitis

Enteropathic Spondyloarthritis

Peripheral arthritis

- Pauciarticular
- asymmetric
- No HLA-B27 association
- Colectomy for UC can be associated with arthritis remission

Axial arthritis

- Does not parallel activity of bowel disease
- Associated with HLA-B27
- Surgical therapy for UC has no effect

Diagnosis

A clinical diagnosis (aformentioned)

Some helpful data:

- Hgb - anemia seen secondary to bowel disease
- CRP, ESR - usually elevated if disease active
- RF and ANA - typically negative

- X-ray SI joints

Treatment

- NSAIDs
- Steroids
- Sulfasalazine - has some effect on peripheral arthritis (not axial)
- Intra-articular steroids
- TNF inhibitors

Back to our patient...

- Initially treated with methylprednisolone 50mg IV daily x 3
- Transitioned to prednisone 60mg PO daily
- Started on diclofenac 75 mg BID
- Showed significant improvement on HD#5
  - able to walk without pain
  - swelling/redness in hands and wrists gone
  - back felt the best it had in 3 years
- Started on mesalamine for UC
- Drew TMPT in anticipation of starting azathioprine

- Planned follow up in Rheumatology and GI clinics

Thanks

Access this talk again at:

http://keithmurphy.org/talks