
HEY!
WANNA COME PLAY IN THE SNOW WITH US?
VAIL
BEAVER CREEK
BRECKENRIDGE
KEYSTONE
HEAVENLY
NORTHSTAR
KIRKWOOD

Acute Emergencies and Diagnostic problems in Rheumatology

Dr Clare Higgens

Northwick Park hospital and St George's Hospital

London

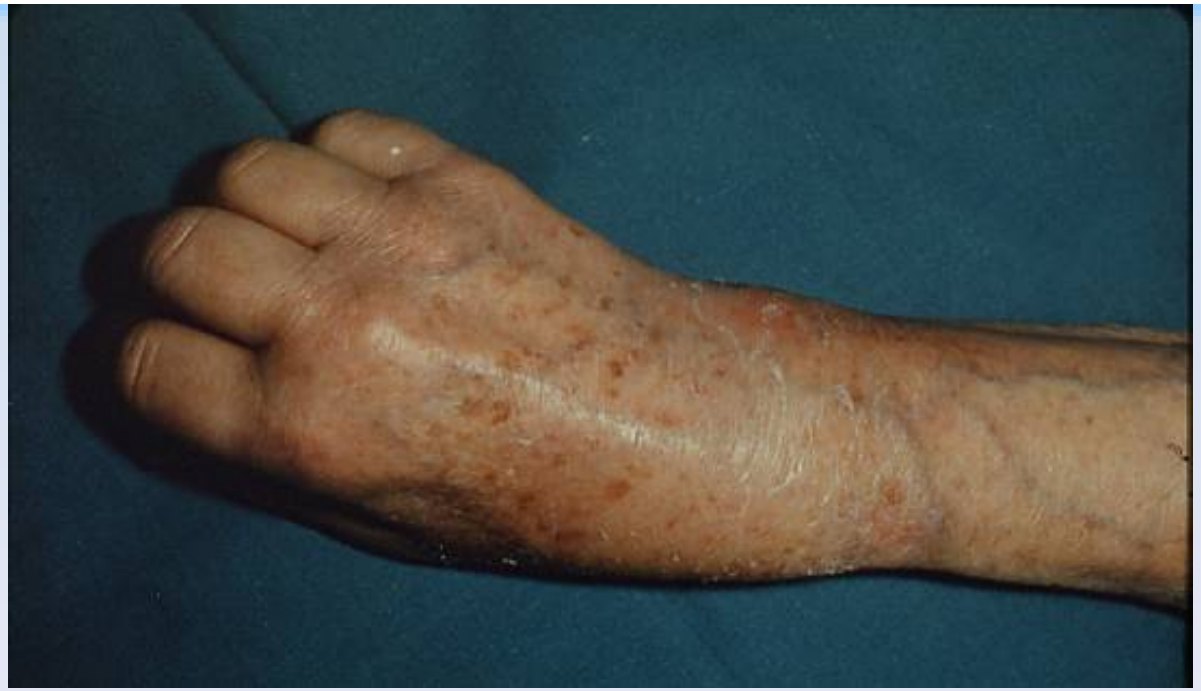
Acute Rheumatology.

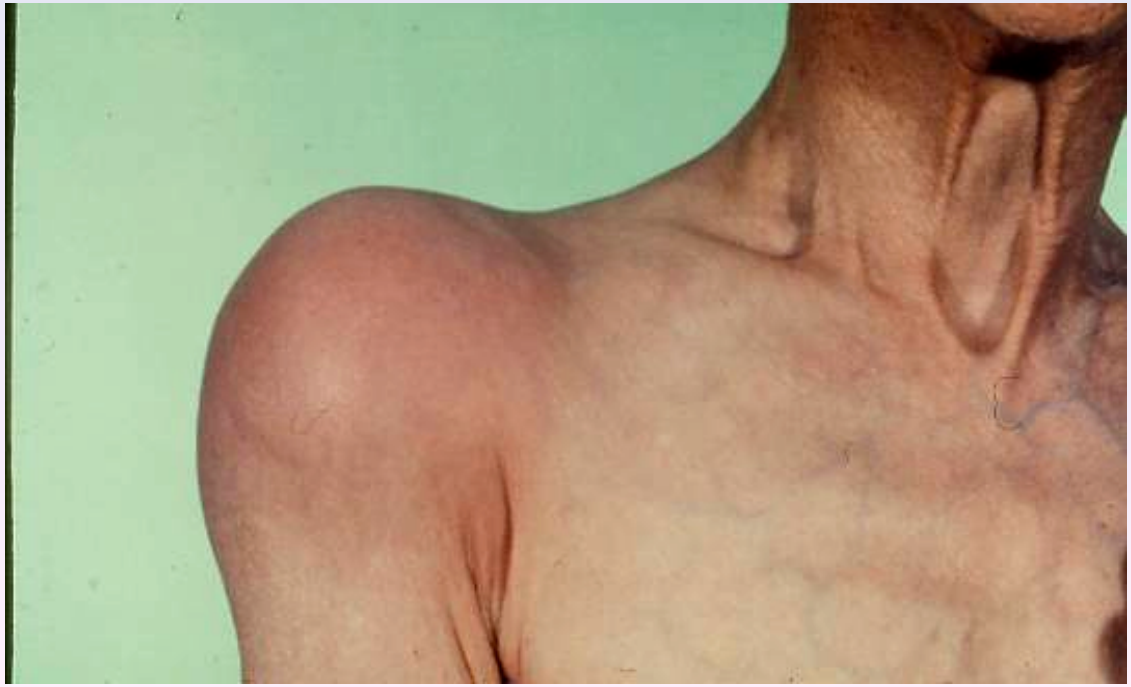
- The Acute Hot joint
- Inflammatory back pain..
- Systemic lupus erythematosus(SLE)
- Inflammatory muscle problems

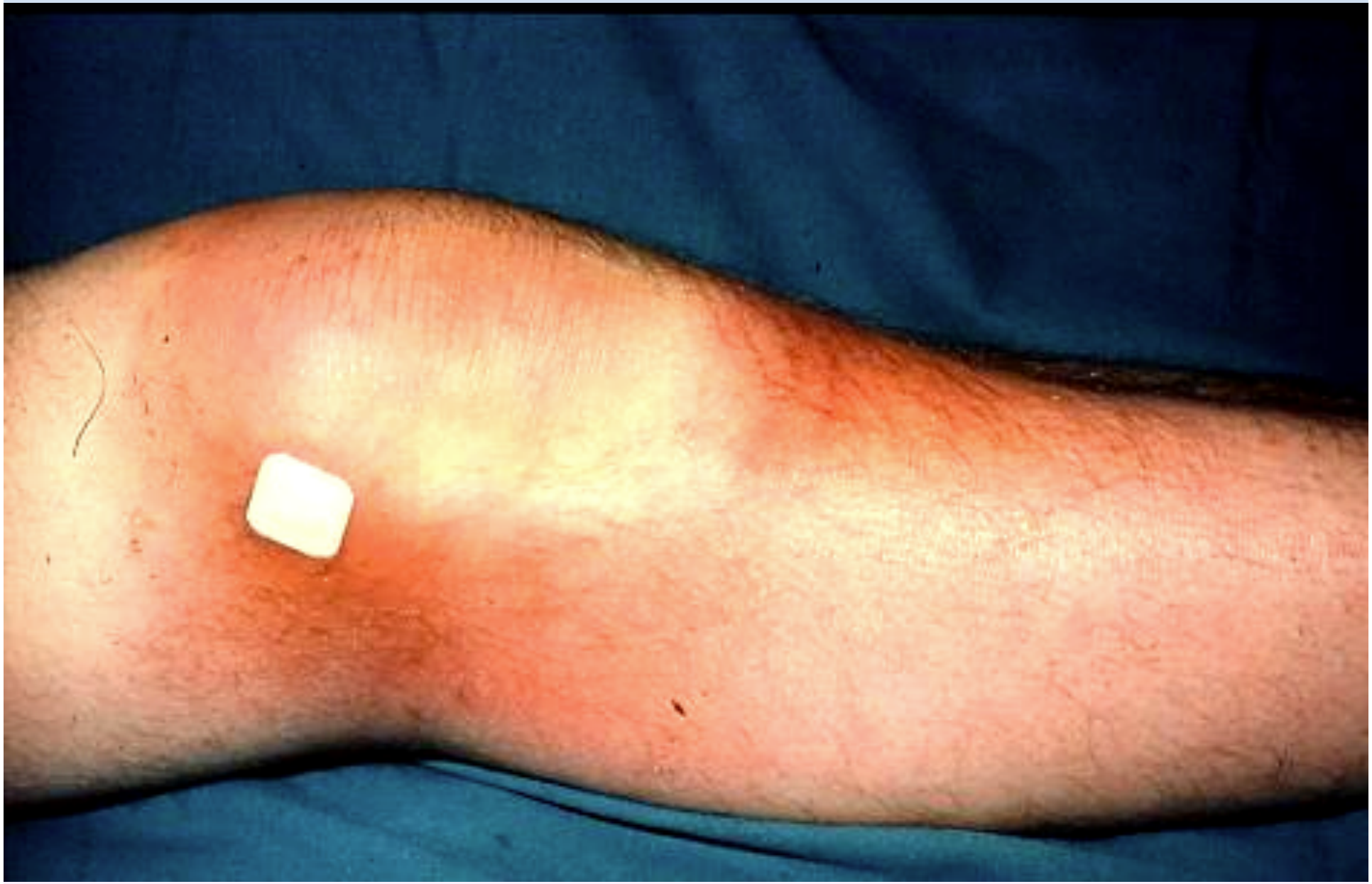
Auto antibodies in connective tissue disease

- When should we measure autoantibodies?

The Acute Hot joint !







Investigations that may help?

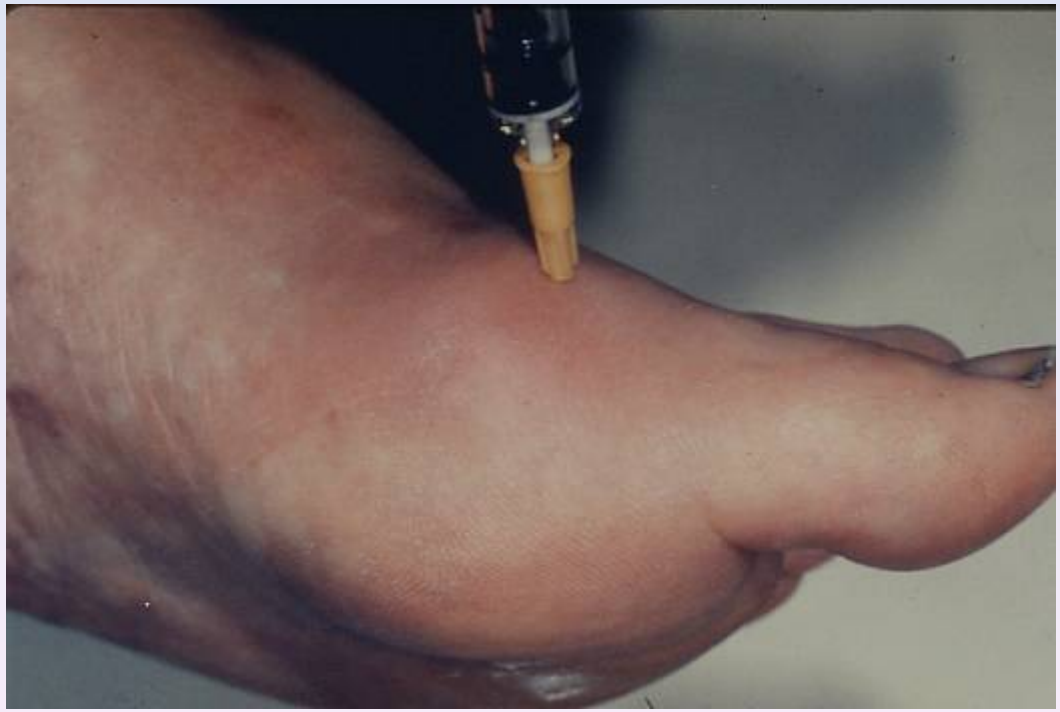
History and examination - Pyrexia,Rigors.

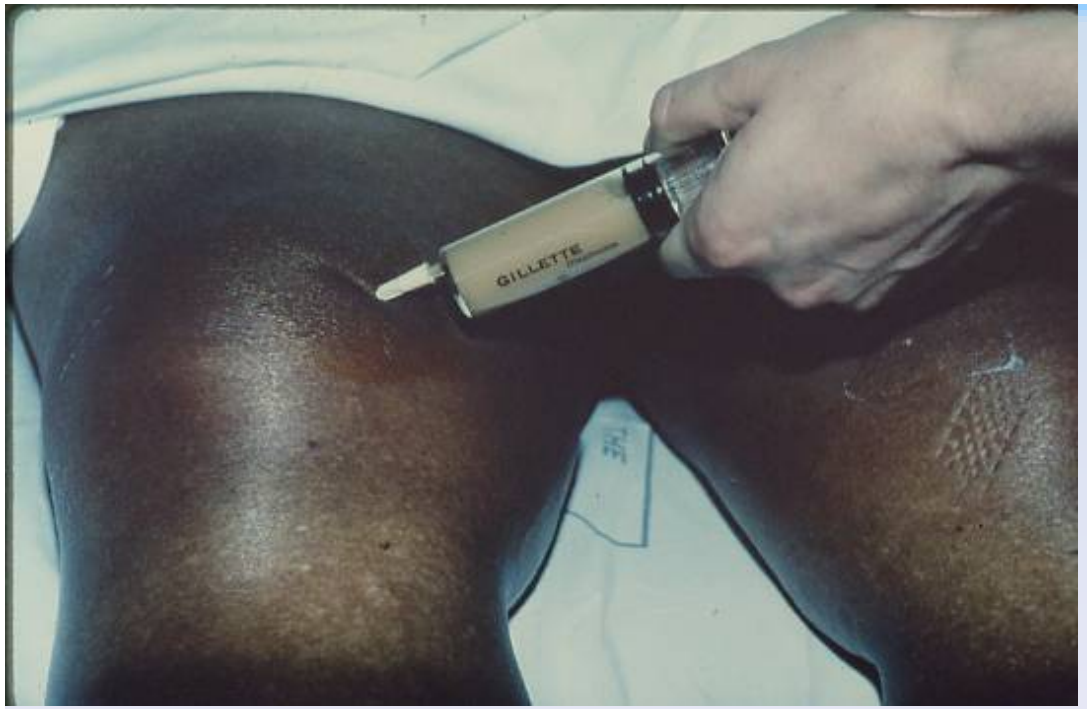
Blood tests

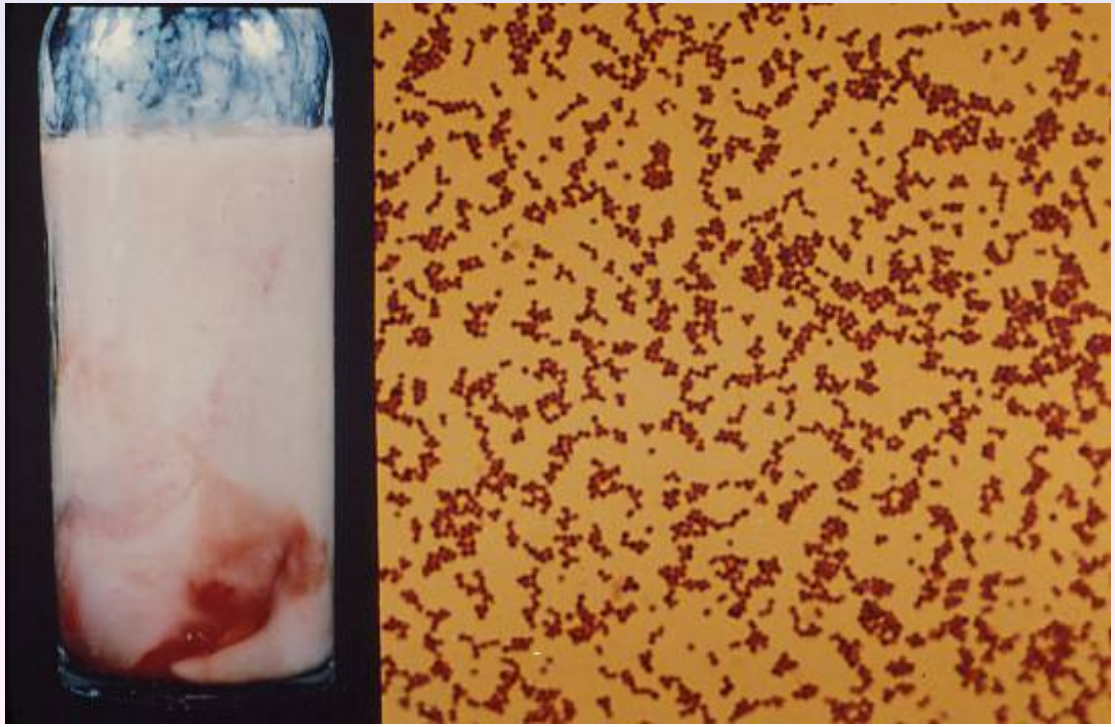
- Acute phase proteins-CRP/ ESR.
- Raised White cell count
- Serum uric acid
- Blood cultures

- Xrays ./ Ultrasound/ MRI.
- Aspiration of joint

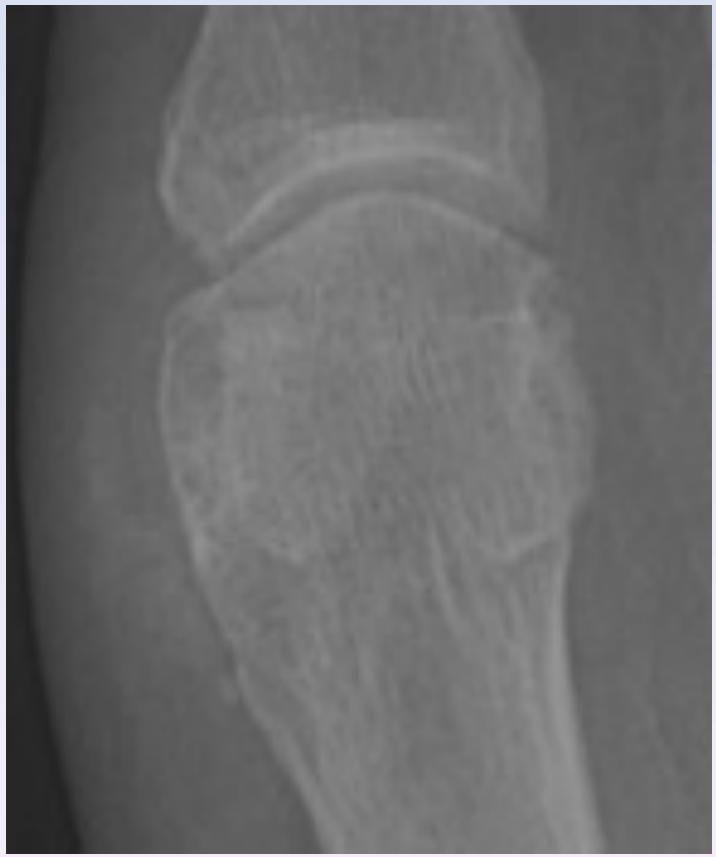
Should we aspirate this?




GILLETTE



What is the differential Diagnosis?



Acute crystal arthritis

- Urate crystals- gout
- Calcium pyrophosphate
  - Pseudo gout
- Hydroxyapatite
  - Milwaukee shoulder

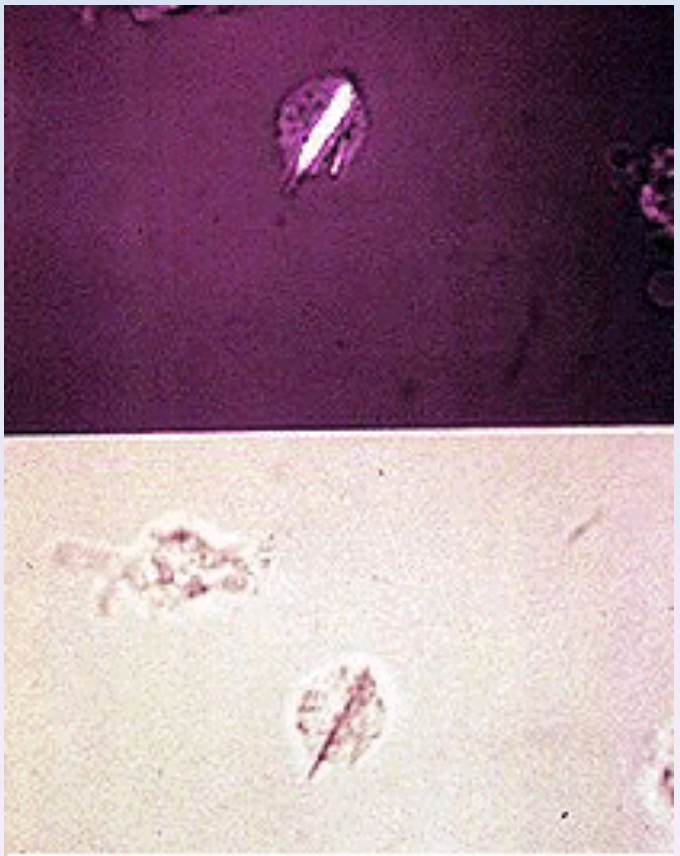
Septic arthritis

Osteomyelitis

New presentation of inflammatory arthritis

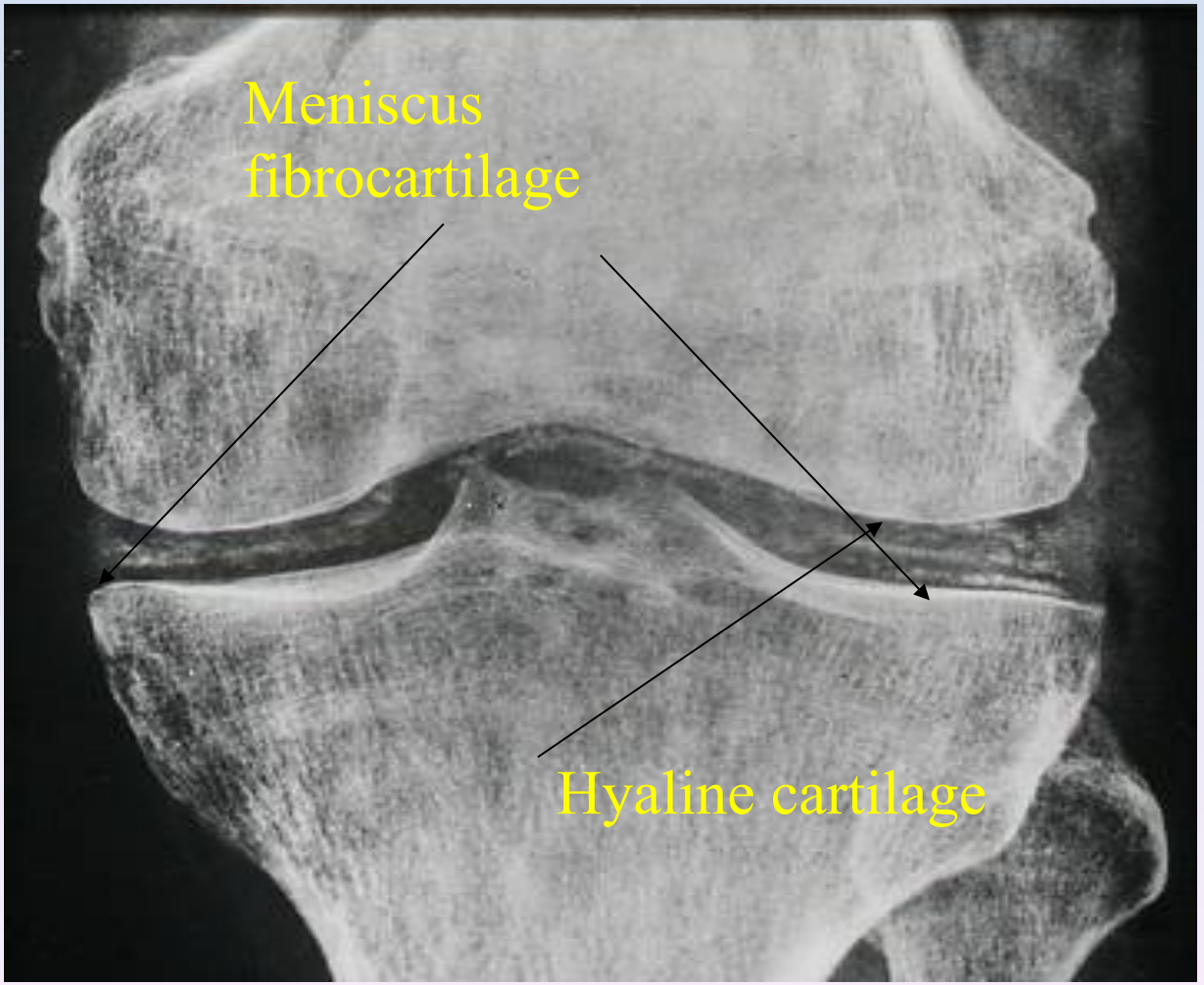
How should it be diagnosed?

- Do we need this?
- Do you know where to send it?



Reprinted from the Clinical Slide Collection on the Rheumatic Diseases, copyright 1991, 1995, 1997. Used by permission of the American College of Rheumatology.

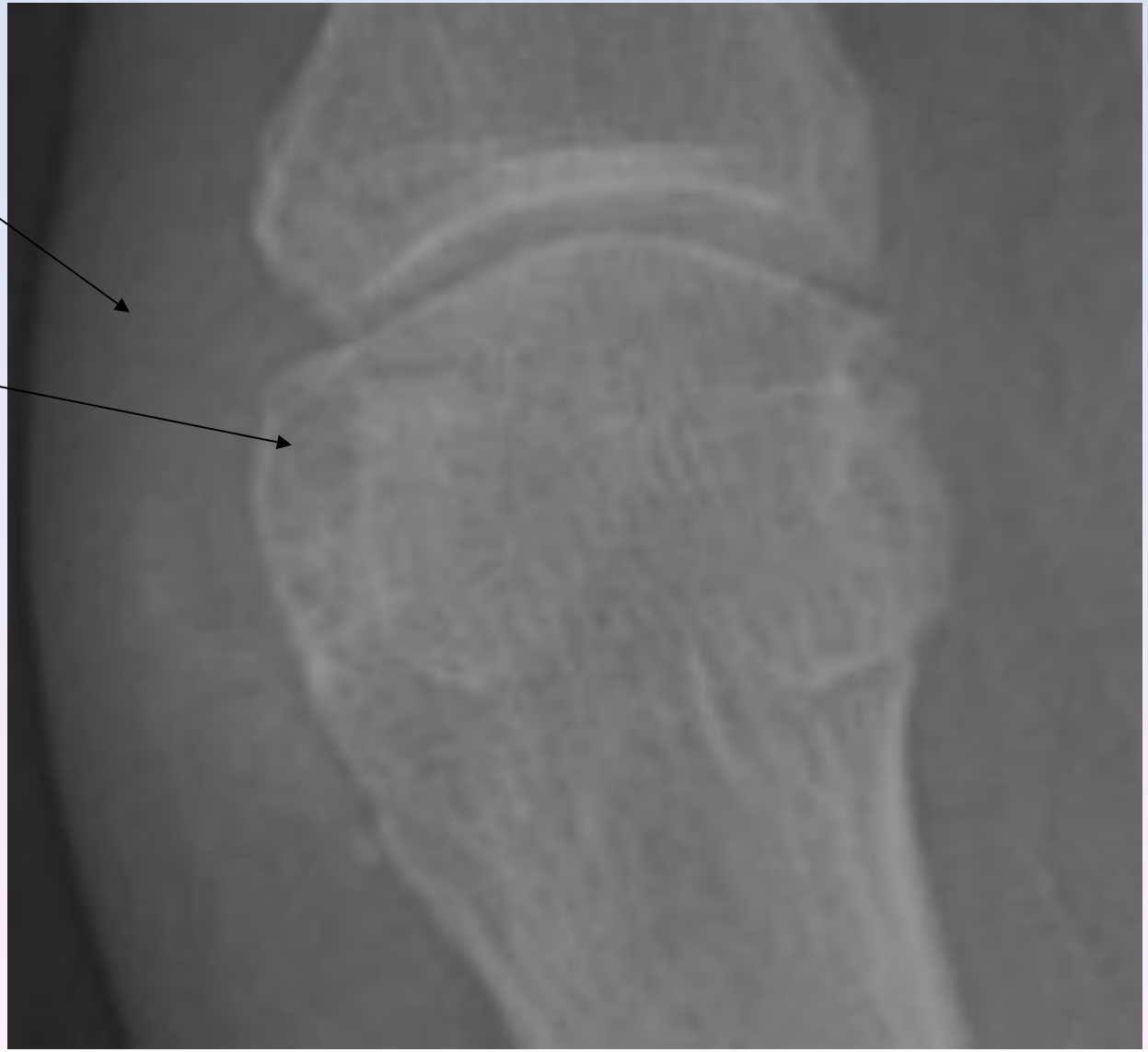
Calcium pyrophosphate arthropathy



CALCIFIED HYALINE AND FIBROCARTILAGE WITH LINEAR AND SPOTTY APPEARANCES AND WELL-PRESERVED JOINT SPACE

The Xray evidence of Gout

- Soft tissue calcification
- Subarticular erosion



Blood tests often don't help!

- Patient may be pyrexial,and unwell
- Raised CRP, raised ESR
- Raised WCC
- Serum urate may be normal during an acute attack of gout
- Important are Xrays, and aspiration
- Treat as septic arthritis just in case

Challenges with the Acute Hot Joint

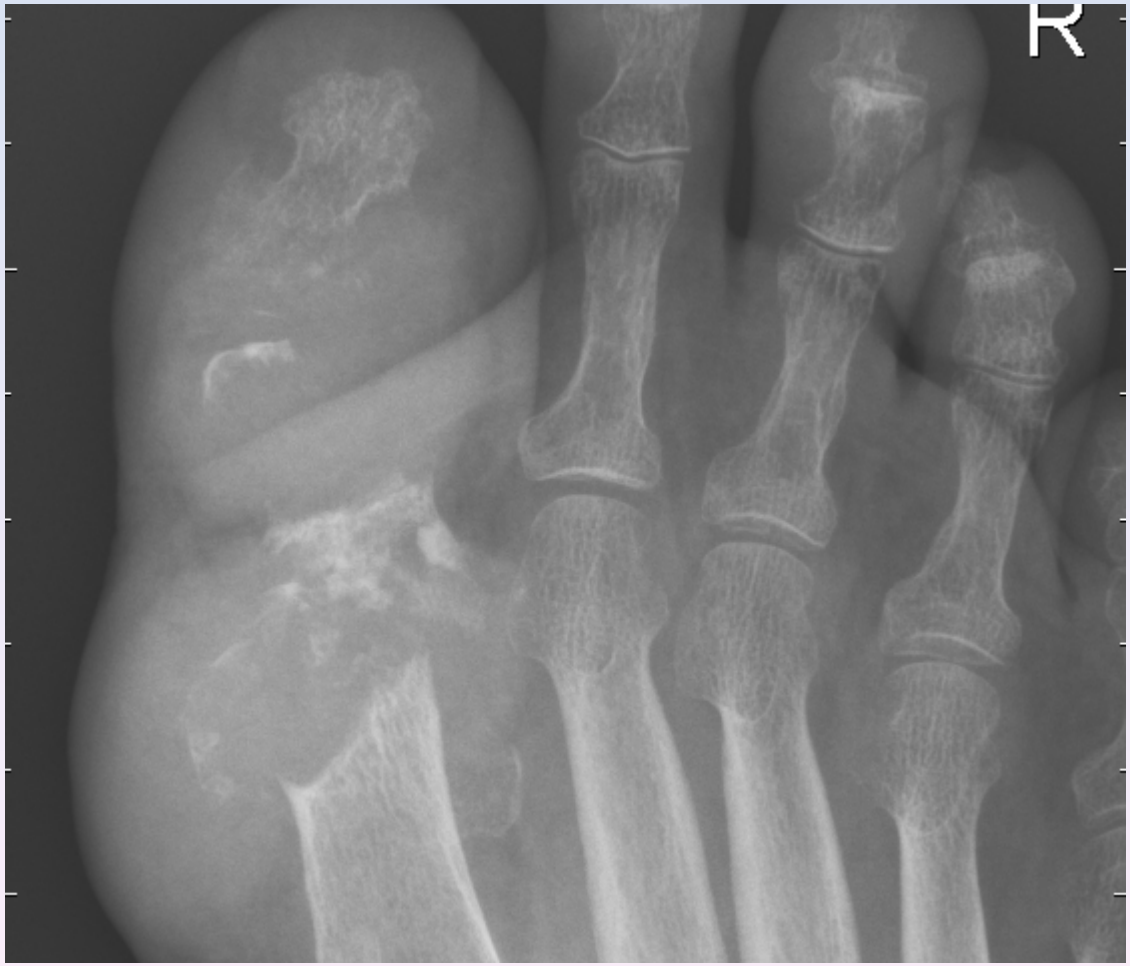
- Missing the acute septic arthritis
- Missing the osteomyelitis.
- Crystals not obtained from the joint.

If in doubt treat it as Septic arthritis until you have the aspiration back as clear

Challenges with the Acute Hot Joint

Diagnosis

??



Back Pain?

Have you got... The S factor?

Spinal pain & stiffness in a young adult

Spinal pain & stiffness lasting more than 3 months in a young adult could be inflammatory if you tick 4 out of 5 boxes:

- ☐ It started before the age of 40
- ☐ It started slowly: it did not come on suddenly
- ☐ You have noticed improvement with exercise
- ☐ There is no improvement with rest
- ☐ You experience pain at night (with improvement on getting up)

Endorsed by

PCR Primary Care Rheumatology Society

RCGP Royal College of General Practitioners

This could be inflammatory arthritis

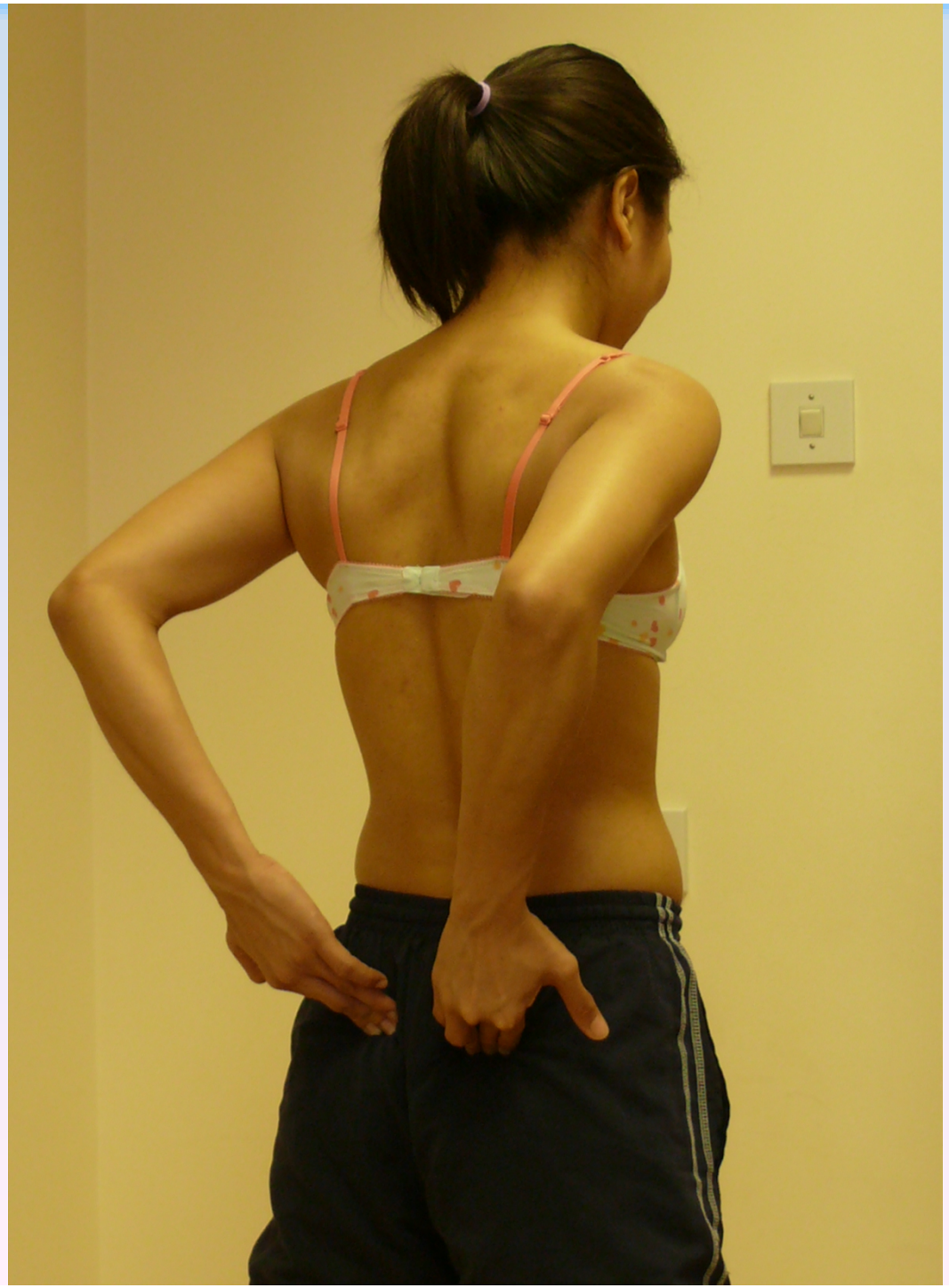
See your doctor now!
Delay can cause long term disability

For further information see www.arthritisresearchuk.org

Arthritis Research UK

Providing answers today and tomorrow

With recognition and special thanks to the Rheumatology Clinical Expert Group



Inflammatory back pain

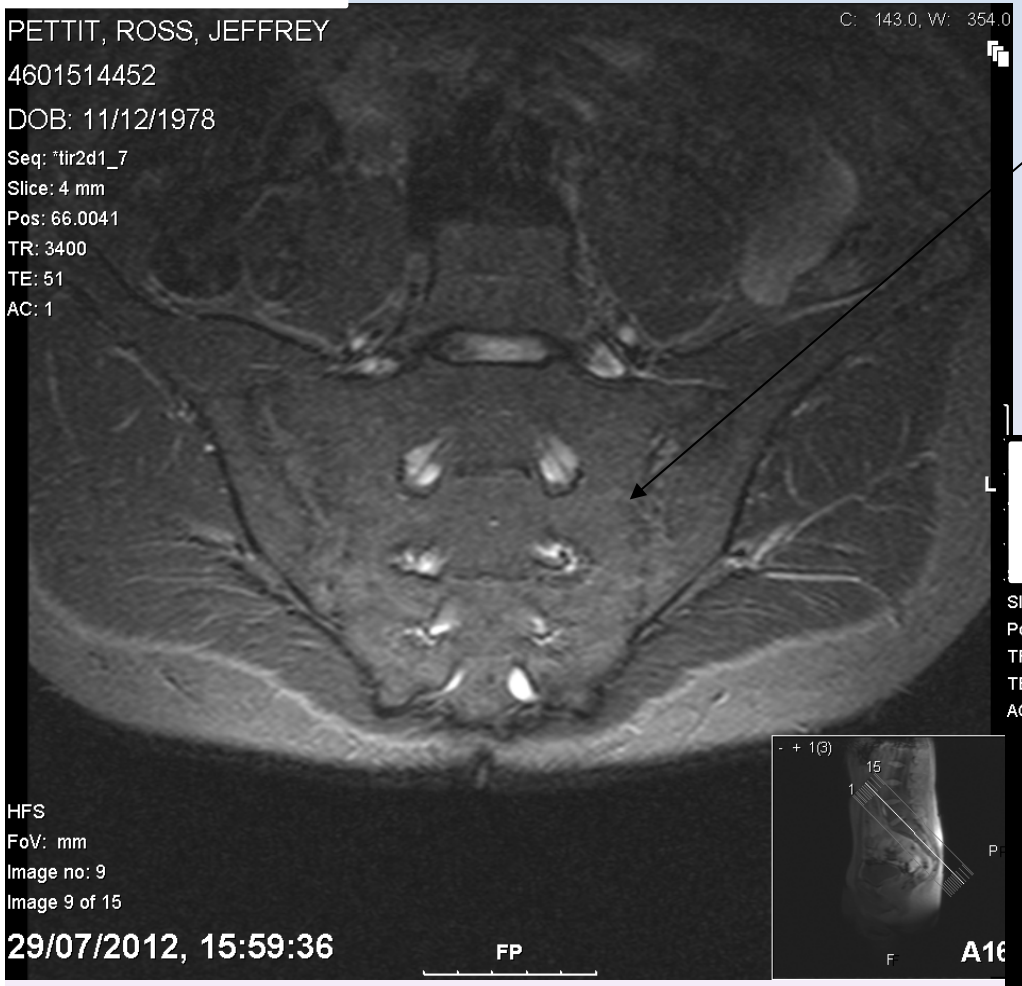
Back pain of more than 3 months duration is inflammatory if:

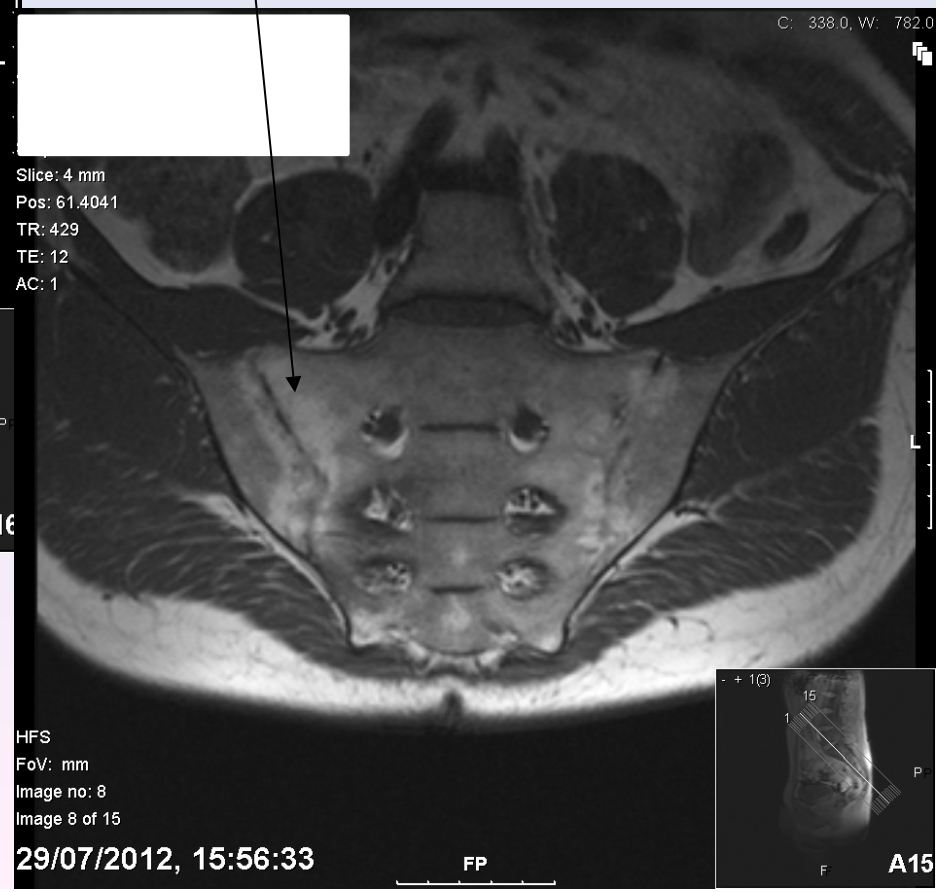
- Age at onset less than 40 years
- Insidious onset
- Improvement with exercise
- No improvement with rest
- Pain at night (with improvement on getting up)

The criteria are fulfilled if at least 4 of 5 parameters are present.

ASAS criteria SieperJ et al AnnRheum Dis 2009; 68:784-8

MRIs in Sacroili itis.





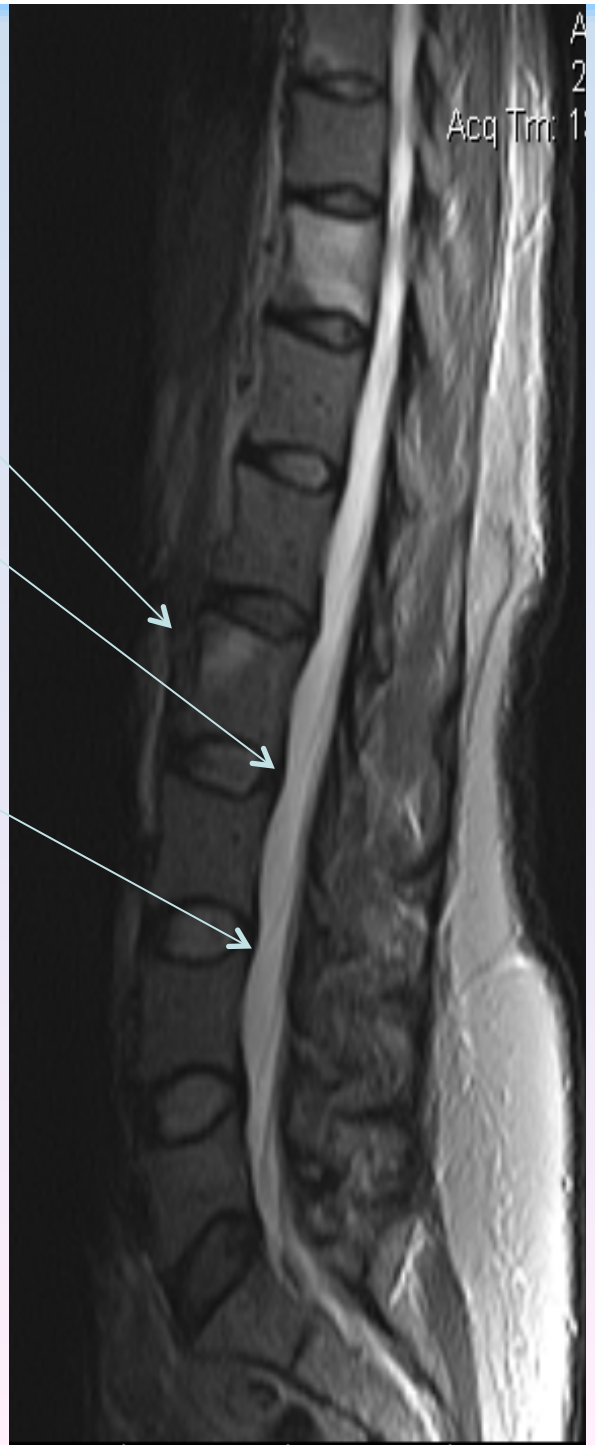
Erosions and inflammation.

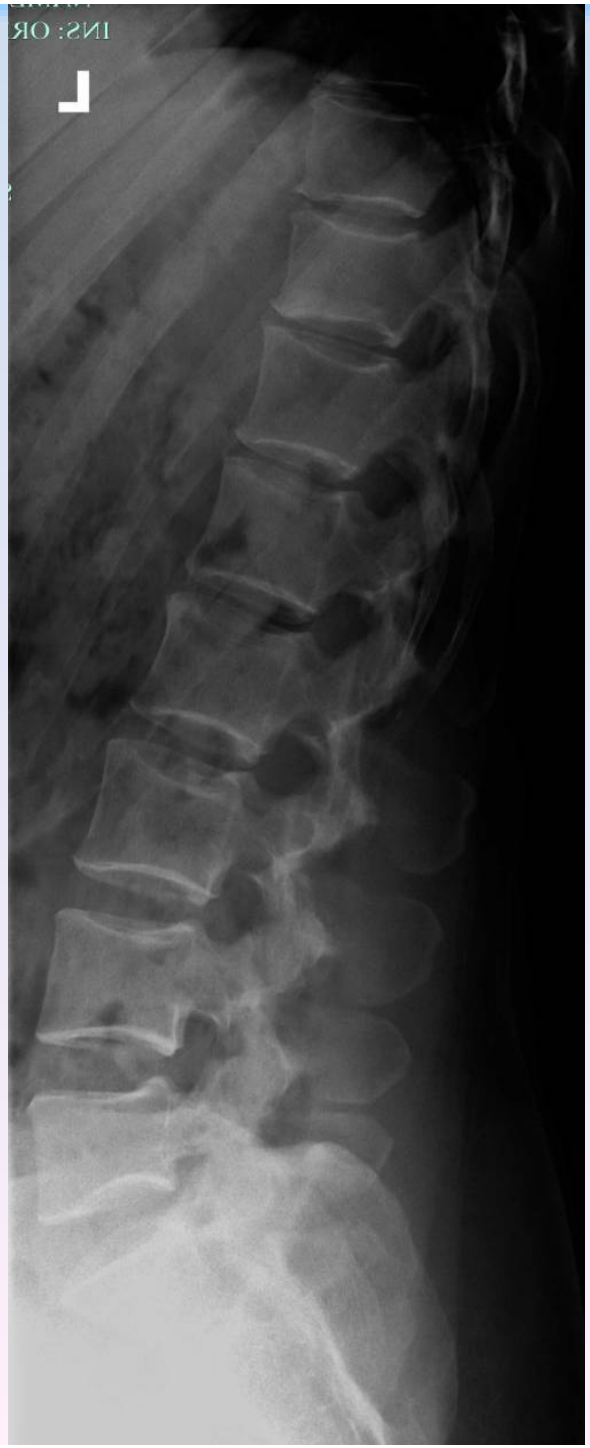
MRI/Xray

Romanus lesions

Syndesmophytes

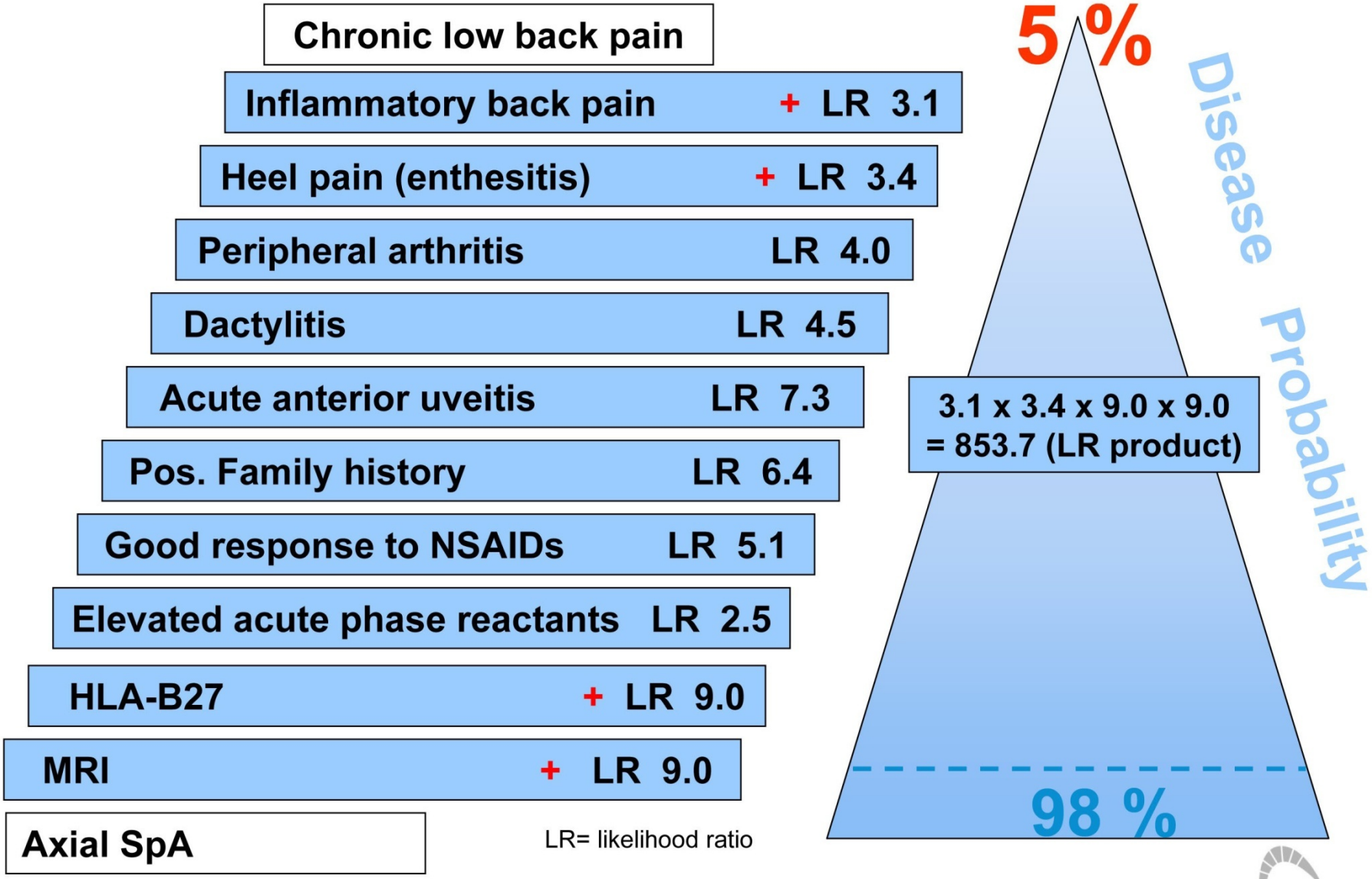
Ankylosis.





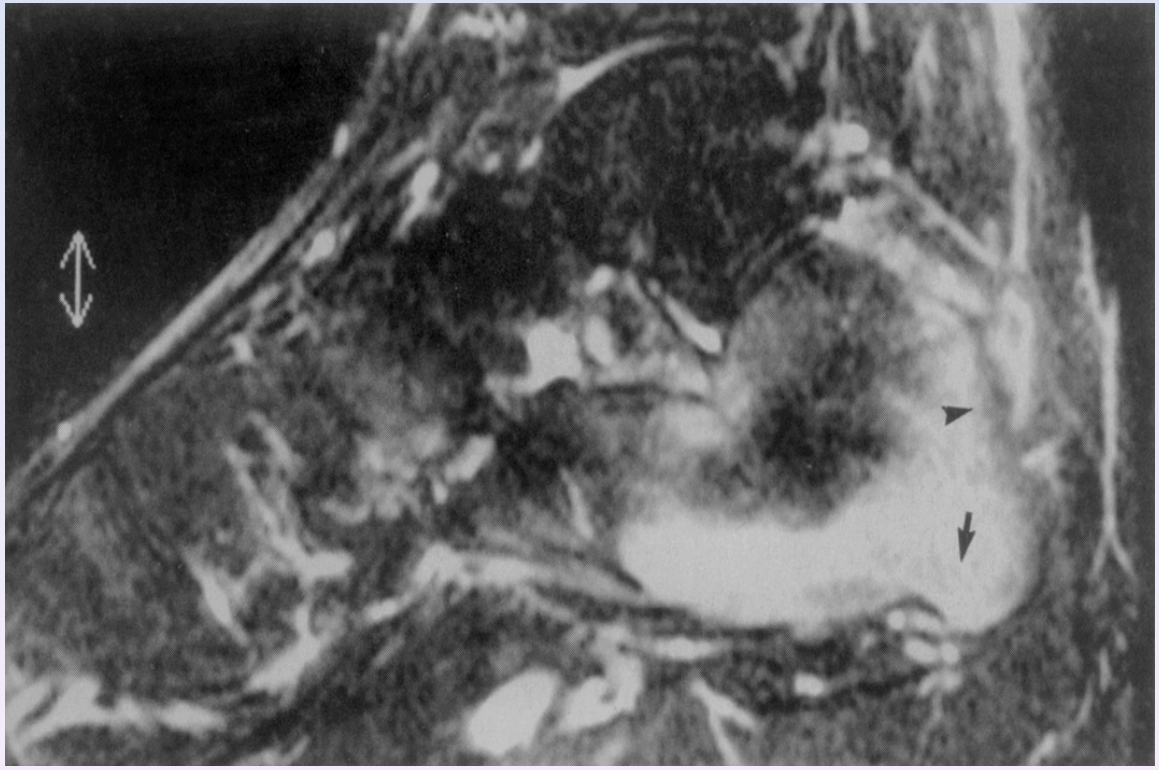
and 50% of people with AS have other associated problems.....

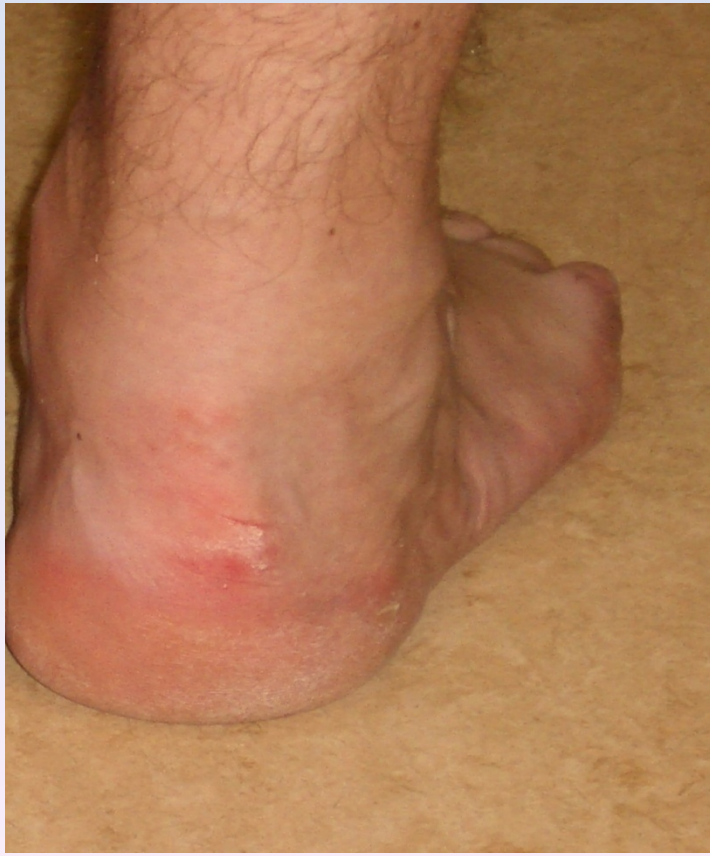
Diagnostic Pyramide for Axial Spondyloarthritis



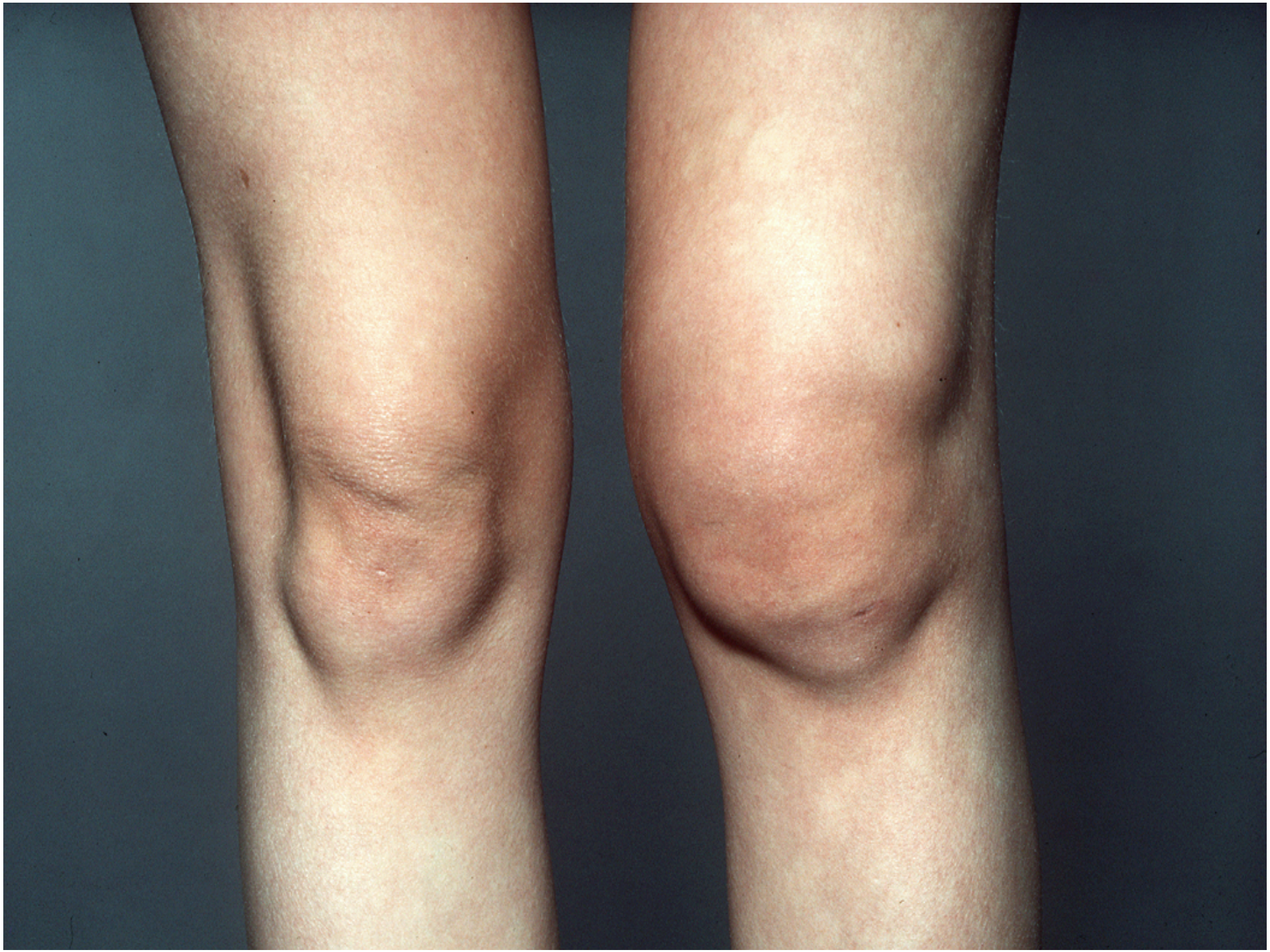
Rudwaleit M et al. Arthritis Rheum 2005;52:1000-8 (with permission)

Enthesopathy of the heel and tendo achilles.

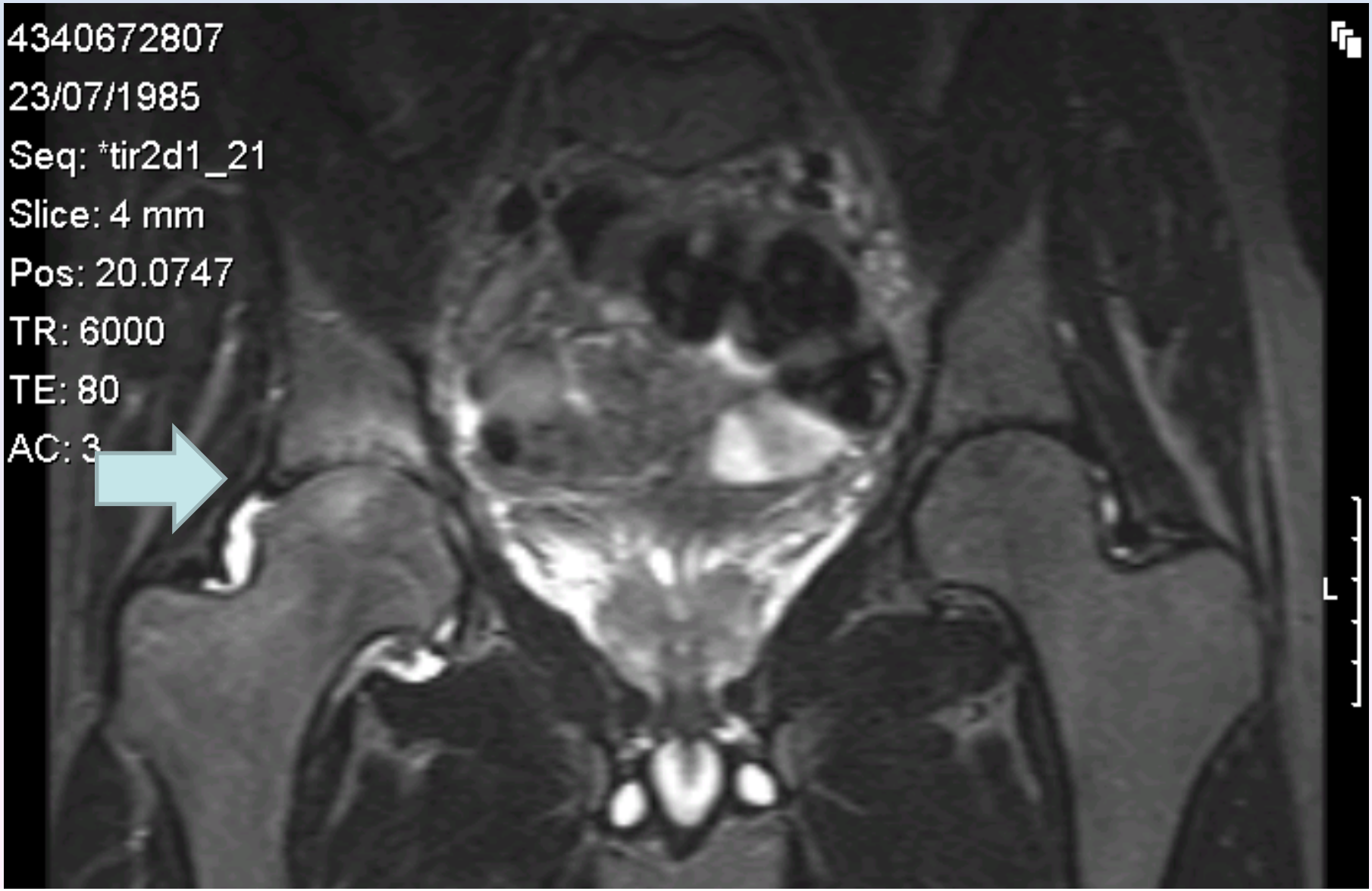




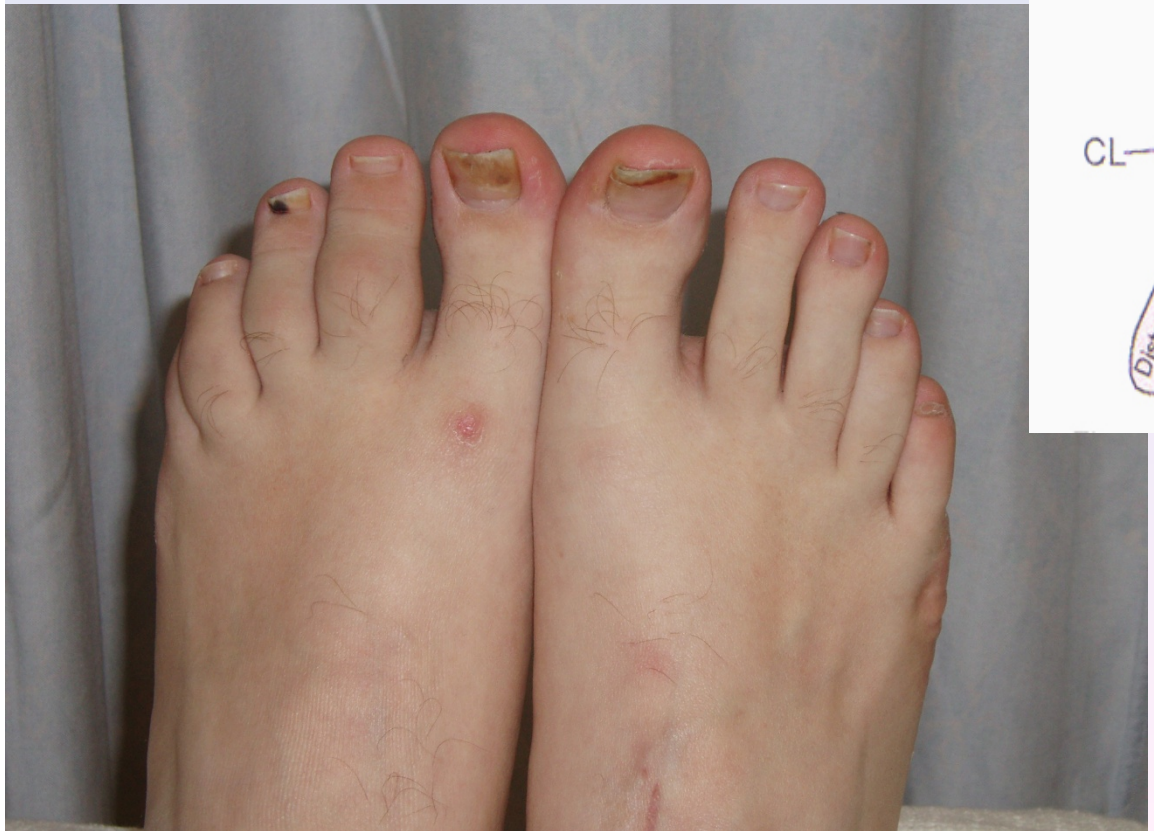
Marrow oedema and inflammation

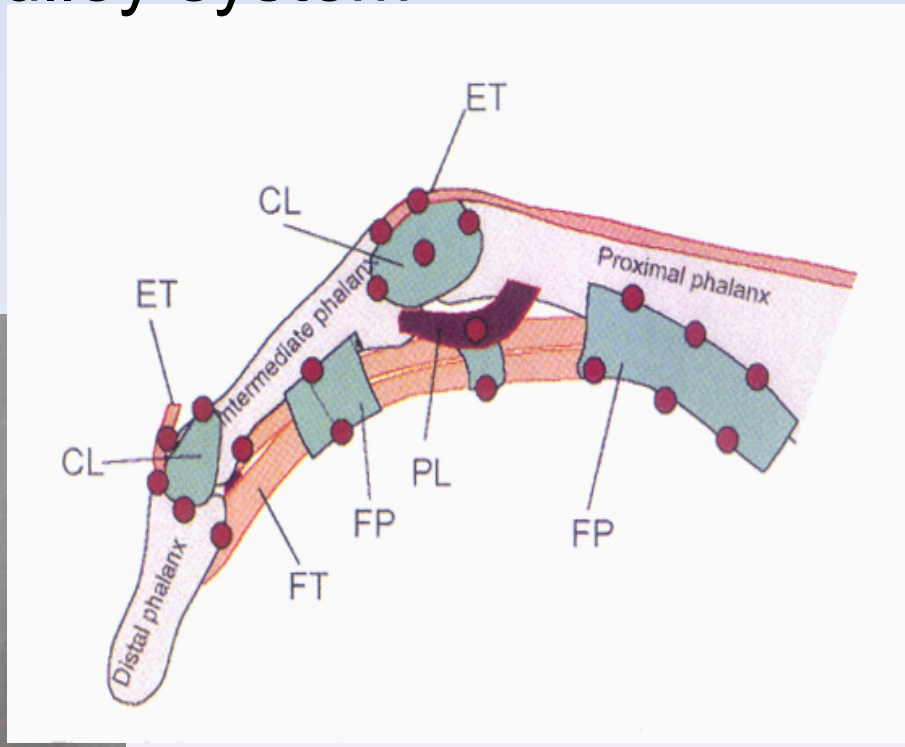


Inflammatory arthritis of the hip visible on MRI

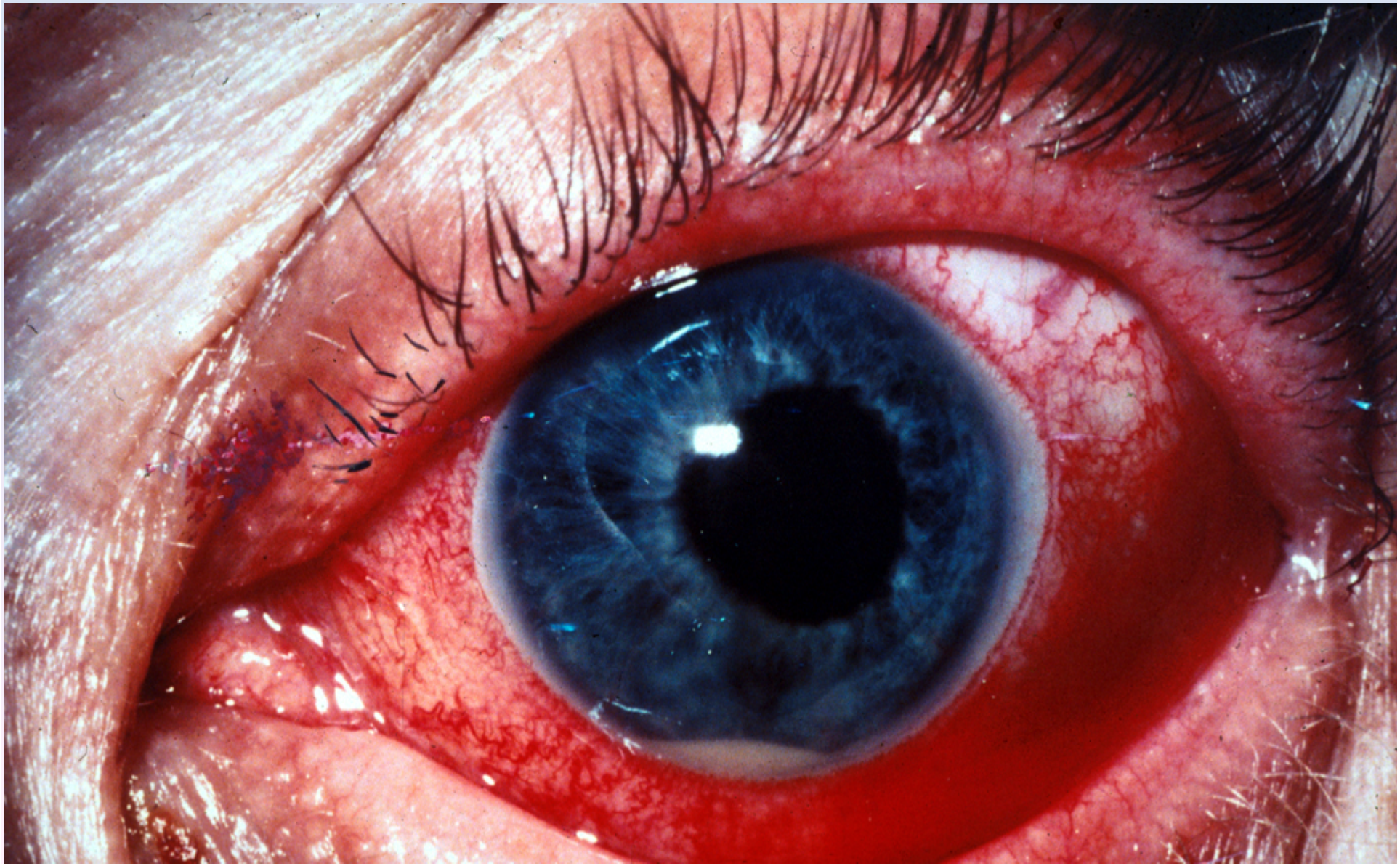


Dactylitis – sausage toes,inflammation of the joints and the tendon pulley system

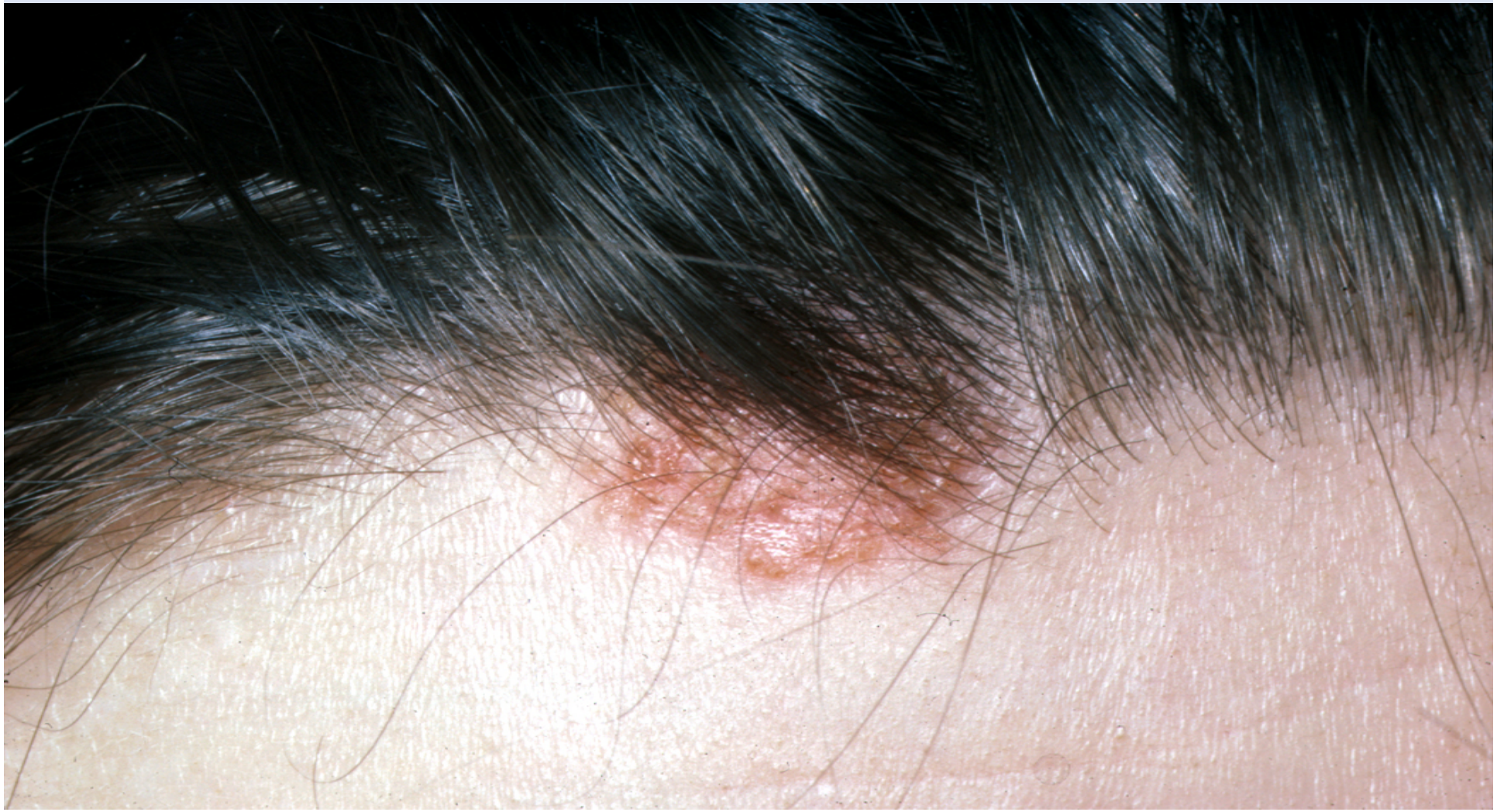




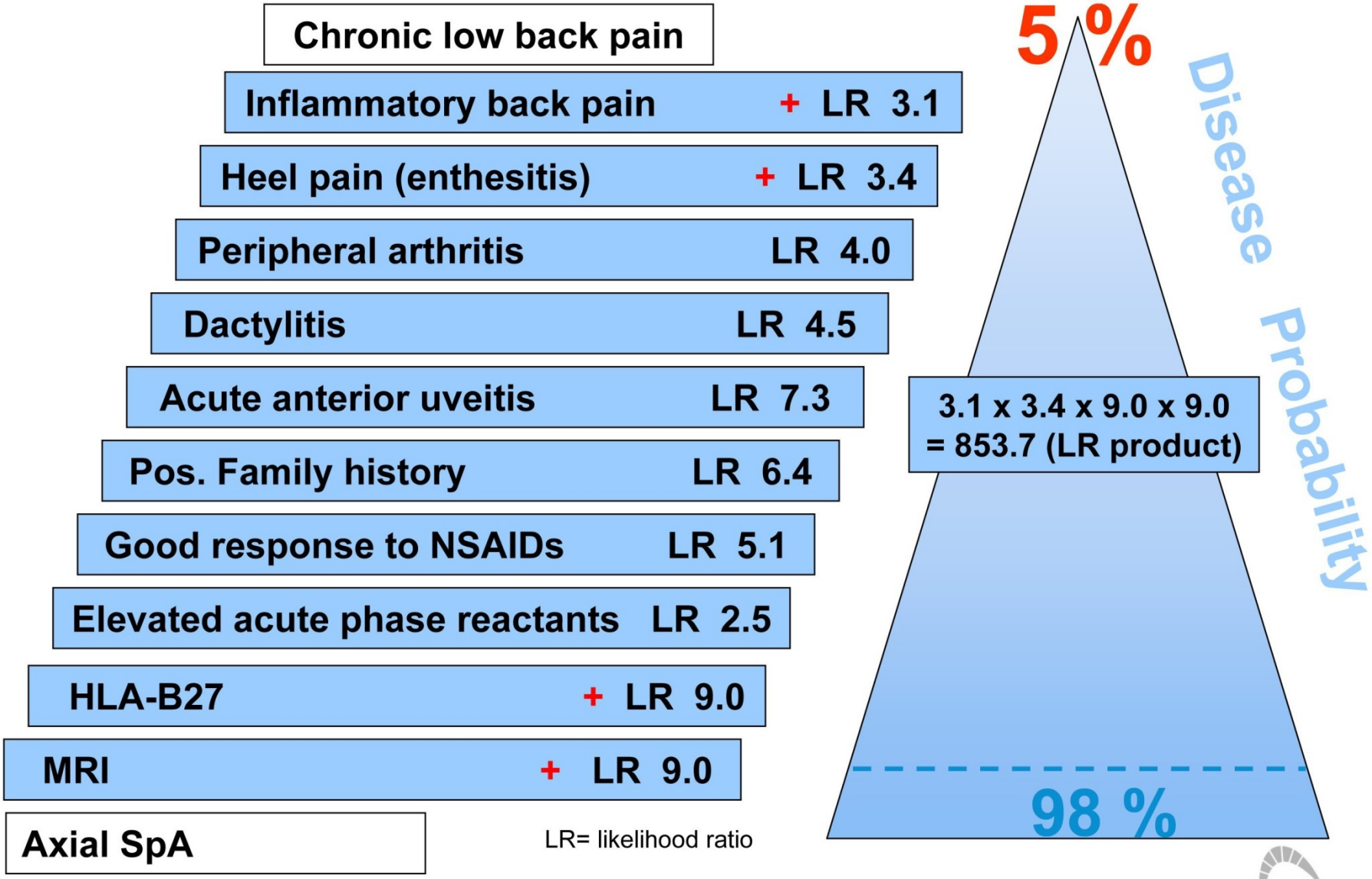
Acute anterior uveitis,with iritis and Hypopyon.



Psoriasis in the scalp- often missed.



Diagnostic Pyramide for Axial Spondyloarthritis

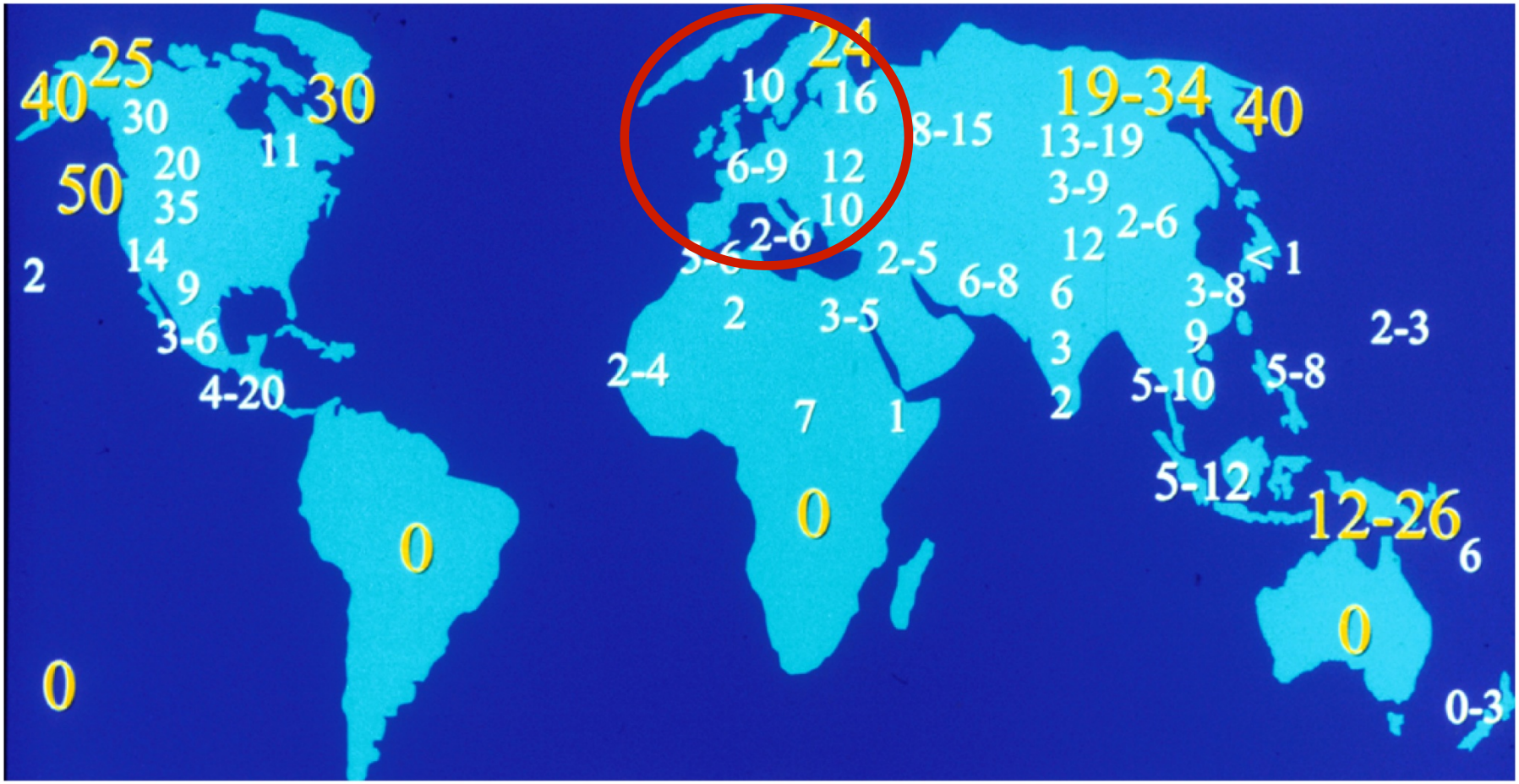


Rudwaleit M et al. Arthritis Rheum 2005;52:1000-8 (with permission)

Spondyloarthritides

- This group have a similar prevelence to RA
- They share common clinical lesions.
- Inheritance of HLA-B27 is common to all the SpA. The prevalence of these disorders relate to HLA-B27.
- Diagnosis of Ankylosing spondylitis is often delayed
- Identification of inflammatory back pain is very important in determining the diagnosis.
- Use of Anti- tumour necrosis factor biologic drugs has revolutionised the treatment of severe AS.

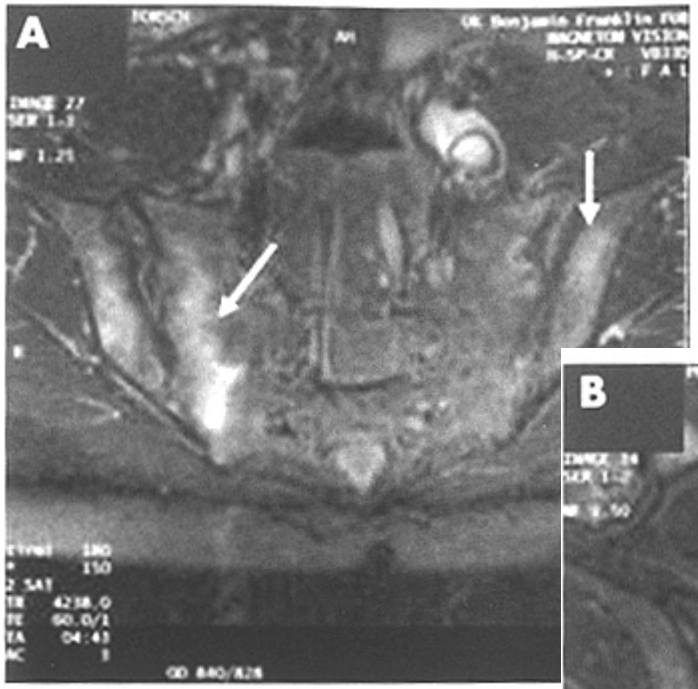
Percentage Prevalence of HLA-B27 in Indigenous Populations of the World



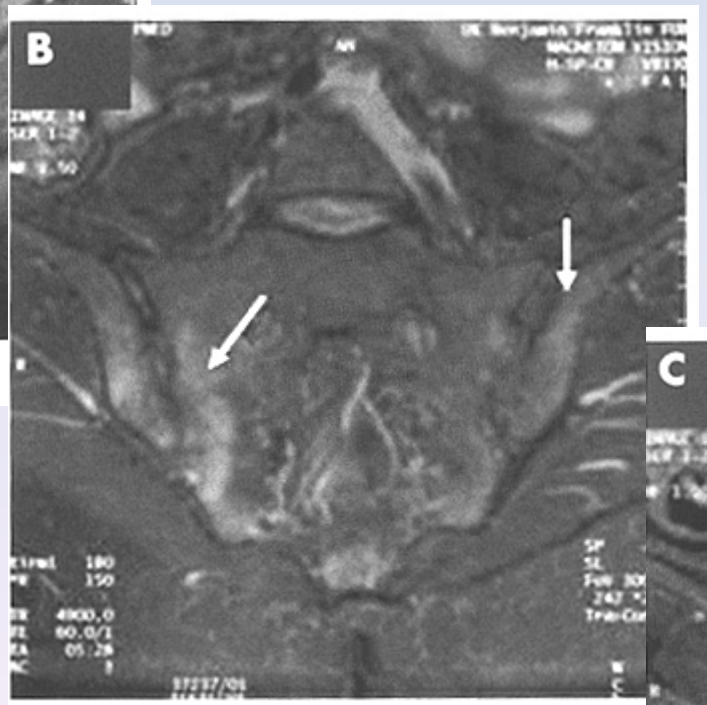
Khan MA Curr Opin Rheumatol 1995;7:263-9

ASAS

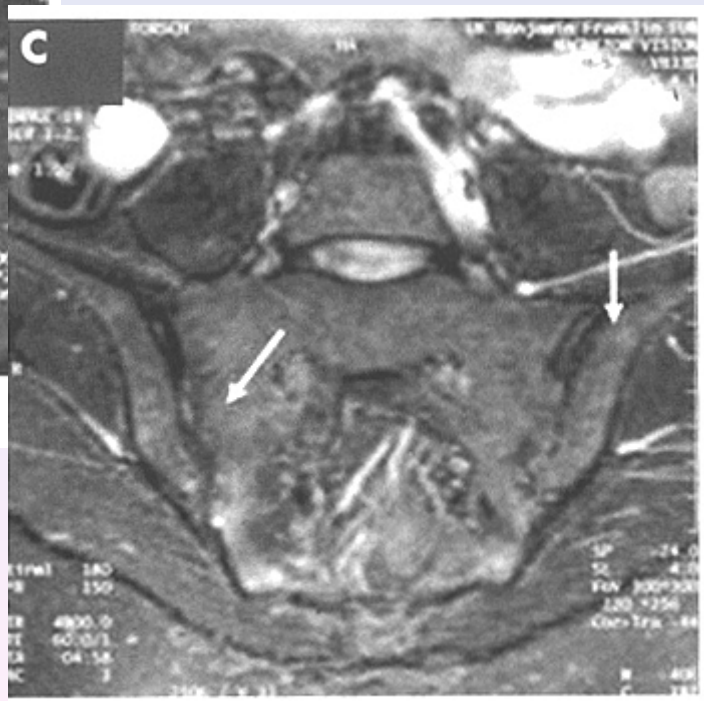
MRI changes improve with Treatment with anti TNF



At baseline



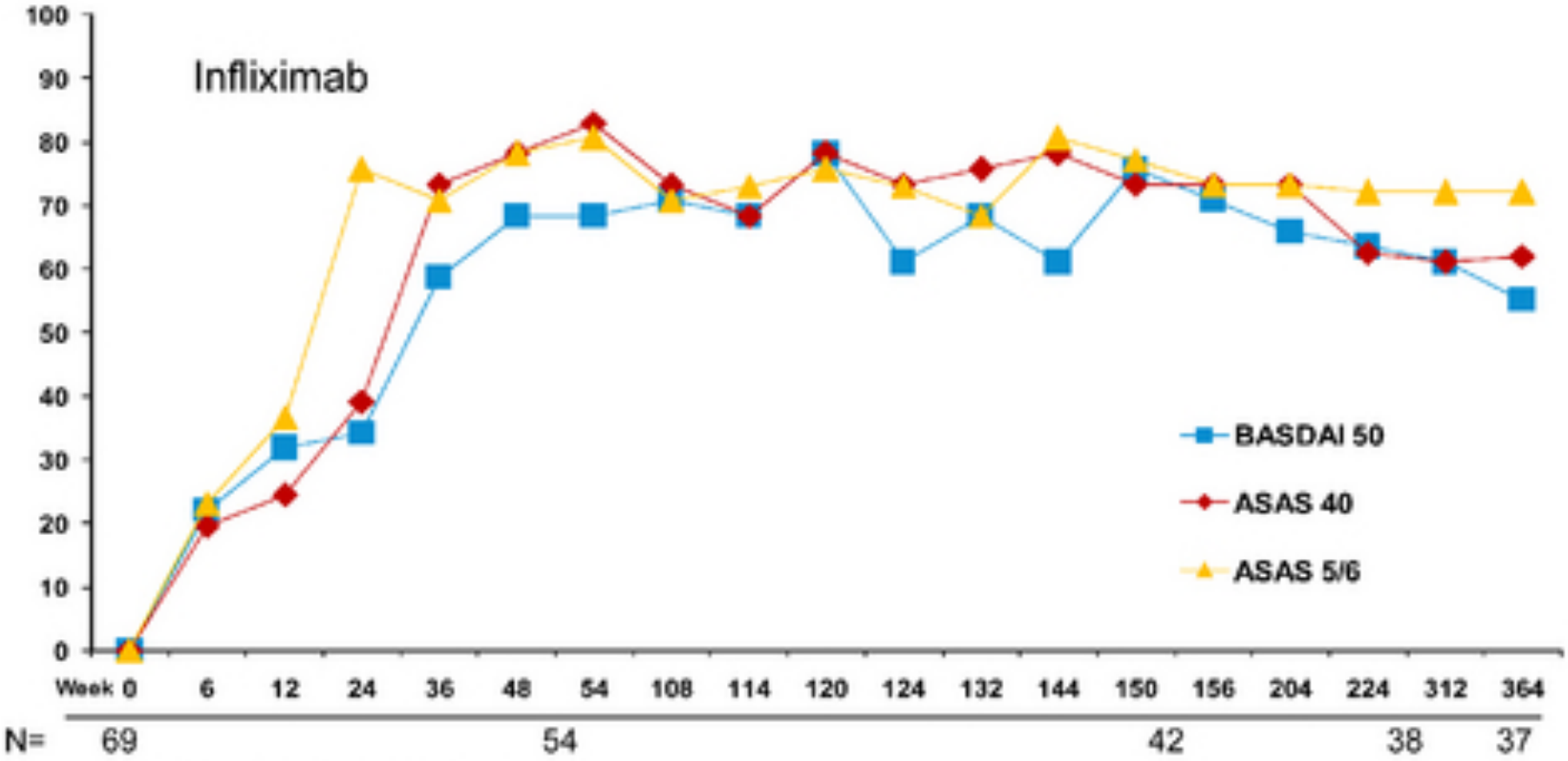
After 6 weeks



After 24 weeks

Rudwaleit M et al. Ann Rheum Dis 2005;64:1305

Longterm Clinical Efficacy of TNFα-Blocker in AS
Results over 7 years



N = number of patients on therapy

Braun J et al. Lancet 2002;359:1187-93
Braun J et al. Ann Rheum Dis 2008;67:340-5
Baraliakos X et al. EULAR 2008, Paris, FRI0290

ASAS

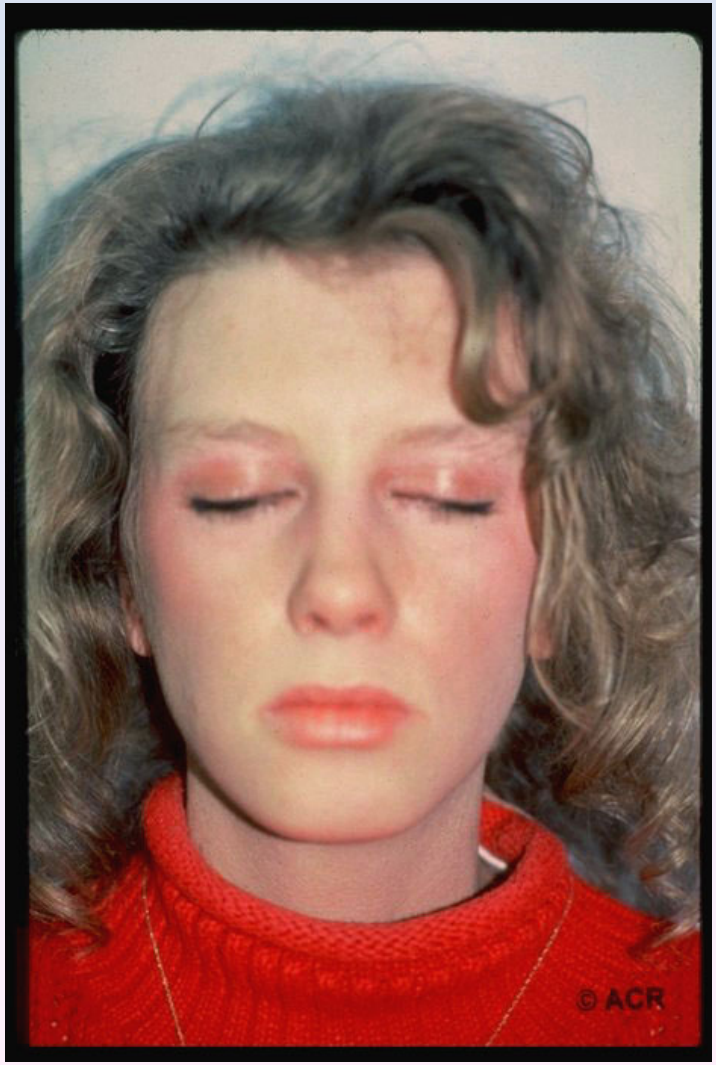
Connective tissue diseases.Acute presentations

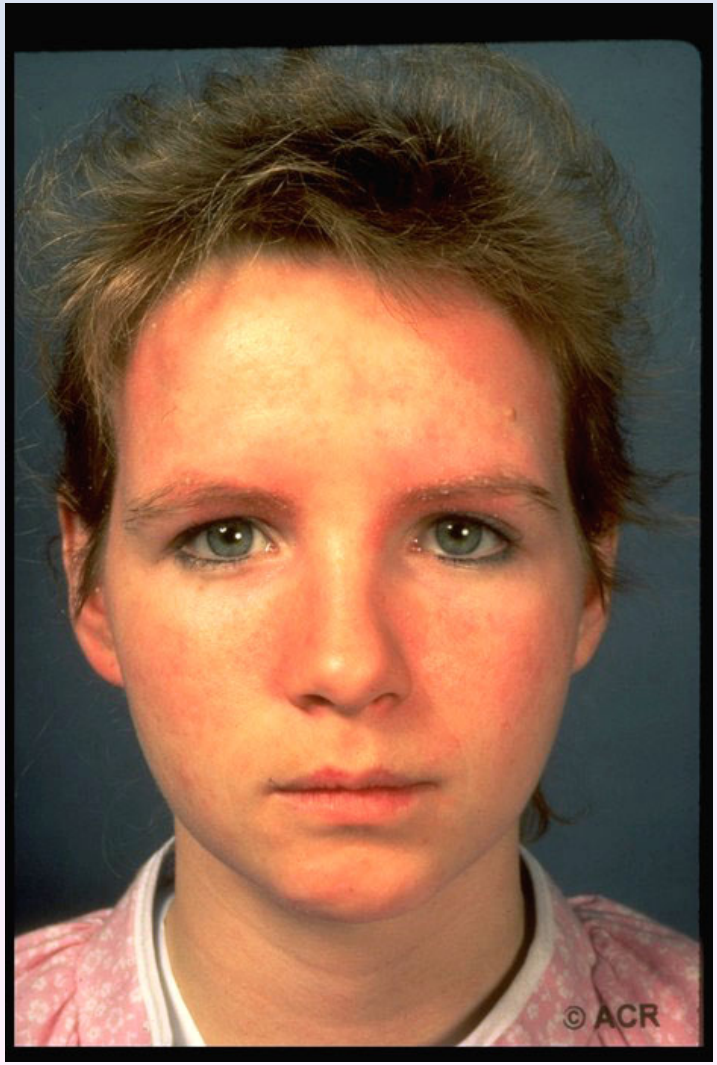
I can’t get out of my chair!

Mrs AU age 35 presented to the dept unable to get out of a chair with severe pain and weakness.

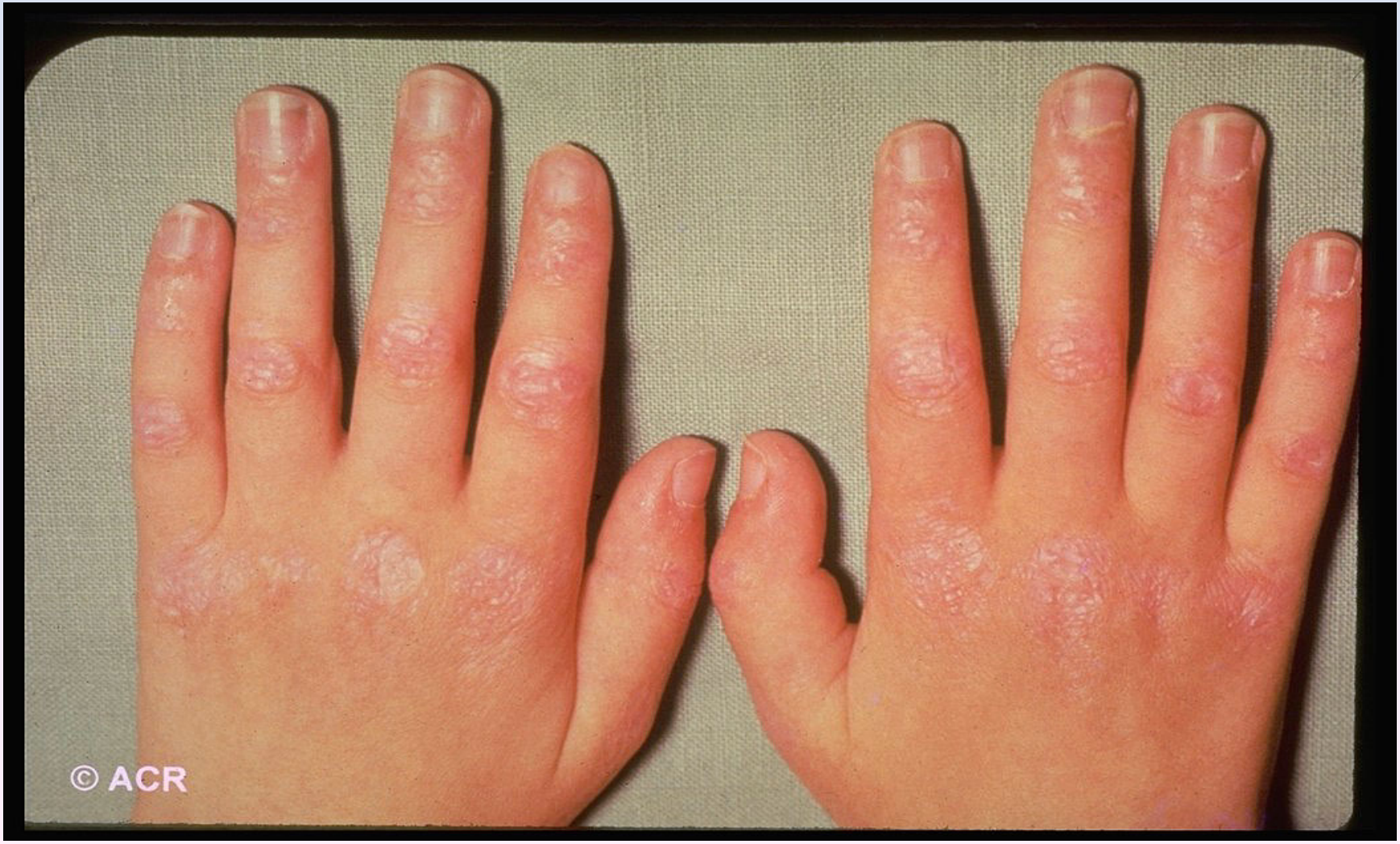
- Facial rash
- Rash on the hands and fingers
- Shortness of breath
- Weakness and muscle pain for 4 weeks
- ?Raynauds syndrome
- Generally unwell.
- Raised ESR, Raised muscle enzymes.
- Raised anti nuclear antibody 1/2500

Dermatomyositis - facial rashes

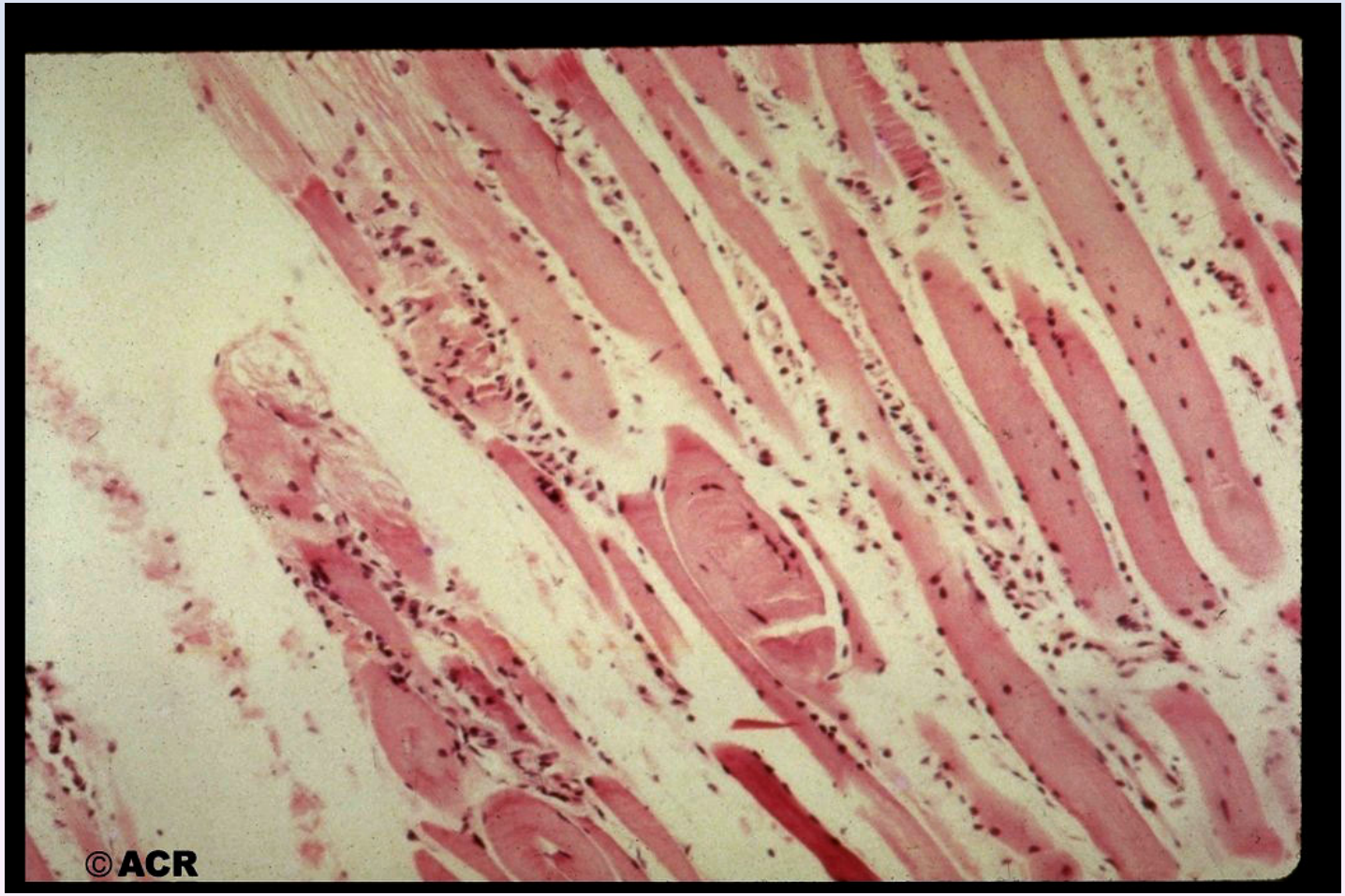




Dermatomyositis - Gottron's papules



Acute Myositis



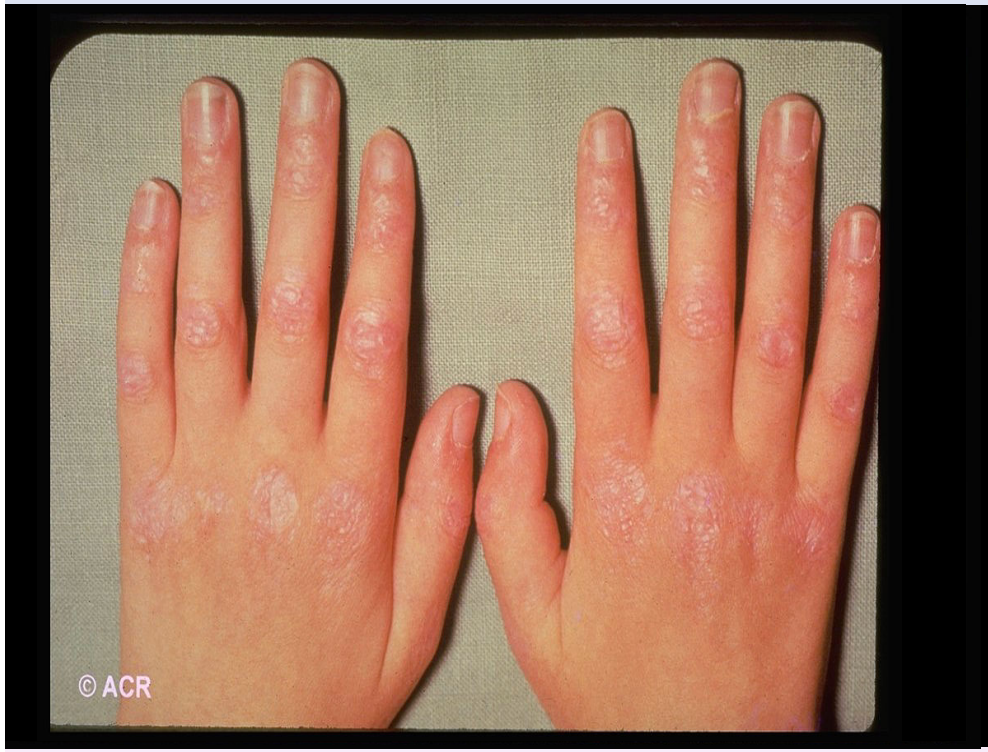
Dermatomyositis

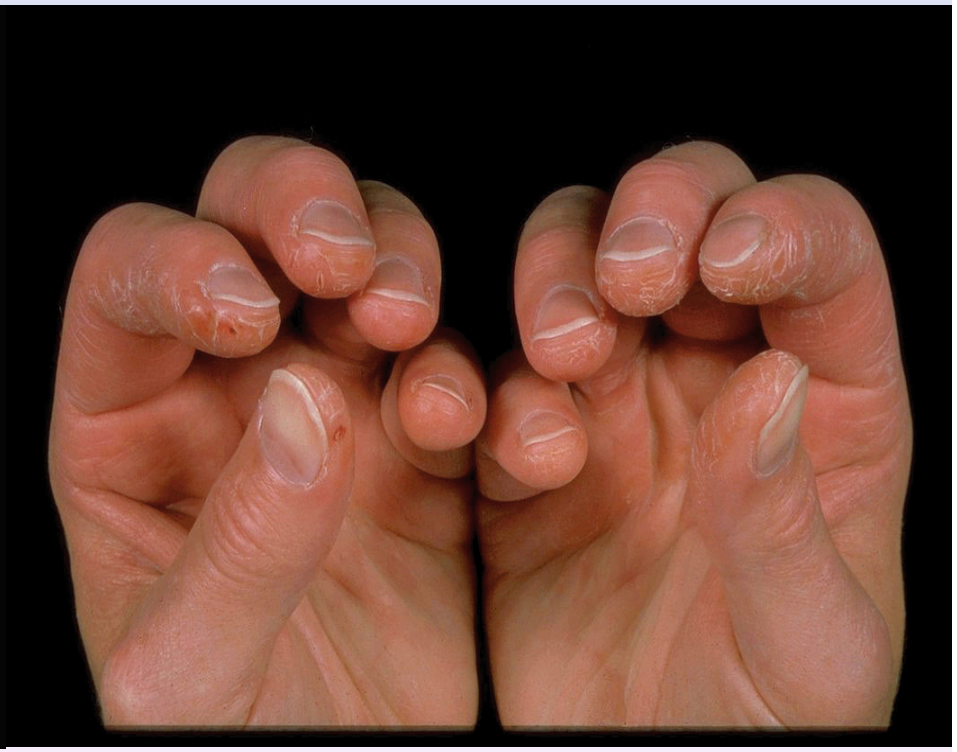
- Rash
- Abnormal muscle enzymes
- Abnormal muscle biopsy and electrical studies and MRI of the thighs.
- Autoantibodies- positive ANA and Extractable nuclear antibodies:--
- Treatment steroids and cyclophosphamide
- ,intravenous Immunoglobulin.
- Rituximab???

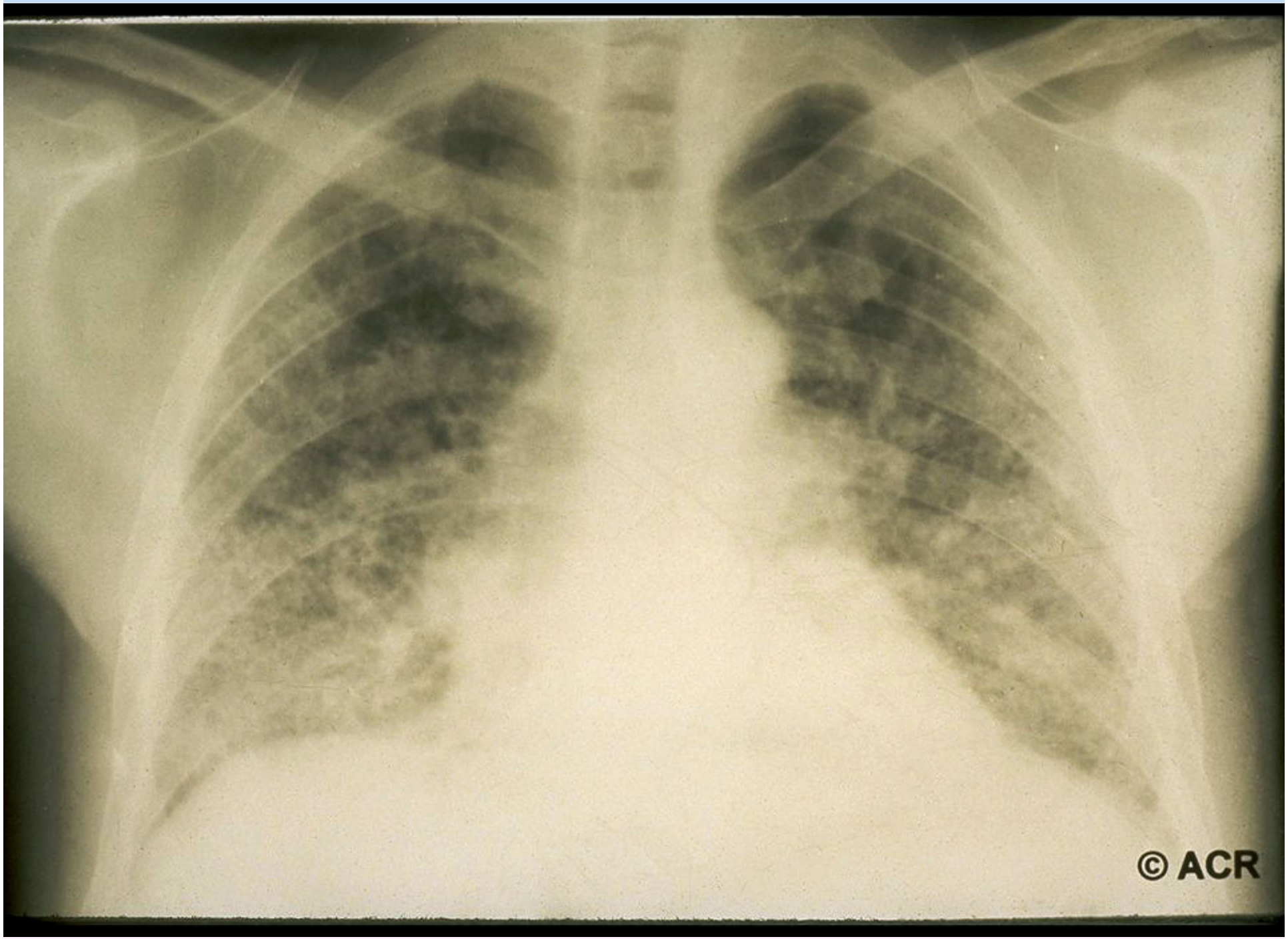
Myositis and anti synthetase syndrome

- Mechanic hands
- Myositis
- Lung involvement
- Anti Jo1 antibodies
- Other antibodies positive –anti trna synthetase (cytoplasmic antibodies)

Anti JO 1- mechanic's hands






© ACR

Myositis and anti synthetase syndrome

- Mechanic hands
- Myositis
- Lung involvement
- Anti Jo1 antibodies
- Other antibodies positive –anti trna synthetase

Connective tissue diseases.Acute presentations

Case Study AT

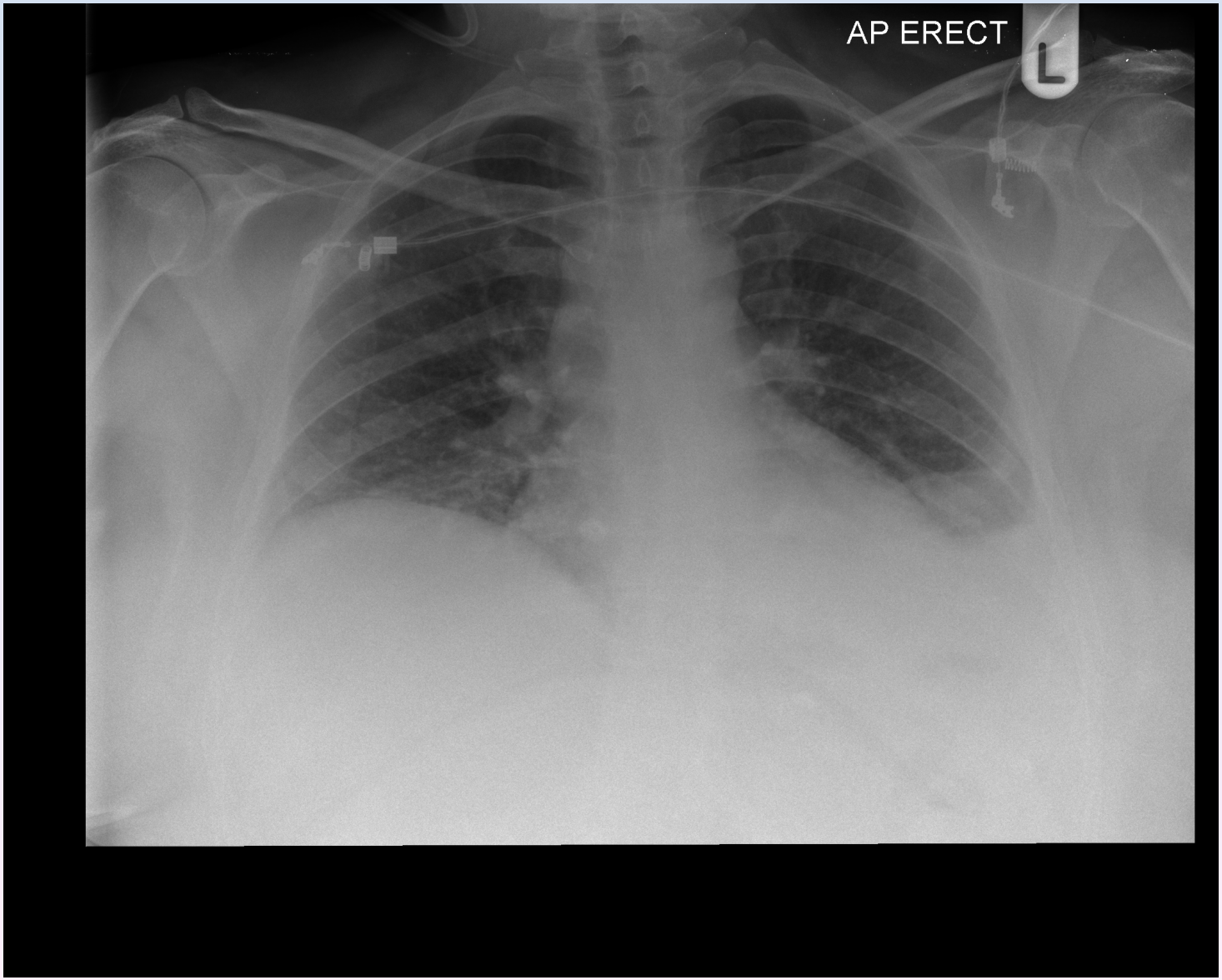
- 34yr old vegetarian Asian female
- presented via emergency dept.
- Vomiting, 5kg wt loss, night sweats
- Productive cough & left sided pleuritic chest pain.

- Initial Diagnosis? Pulmonary Tuberculosis? Pneumonia.

- Investigation. Hb 7.8g/dl(low).blood white cells $3.5x10_{9/}l$ (low)
- ESR 105mm/hr C reactive protein <4(n).
- O2 saturation 90% on air.

.

Chest Xray



Further history and investigations

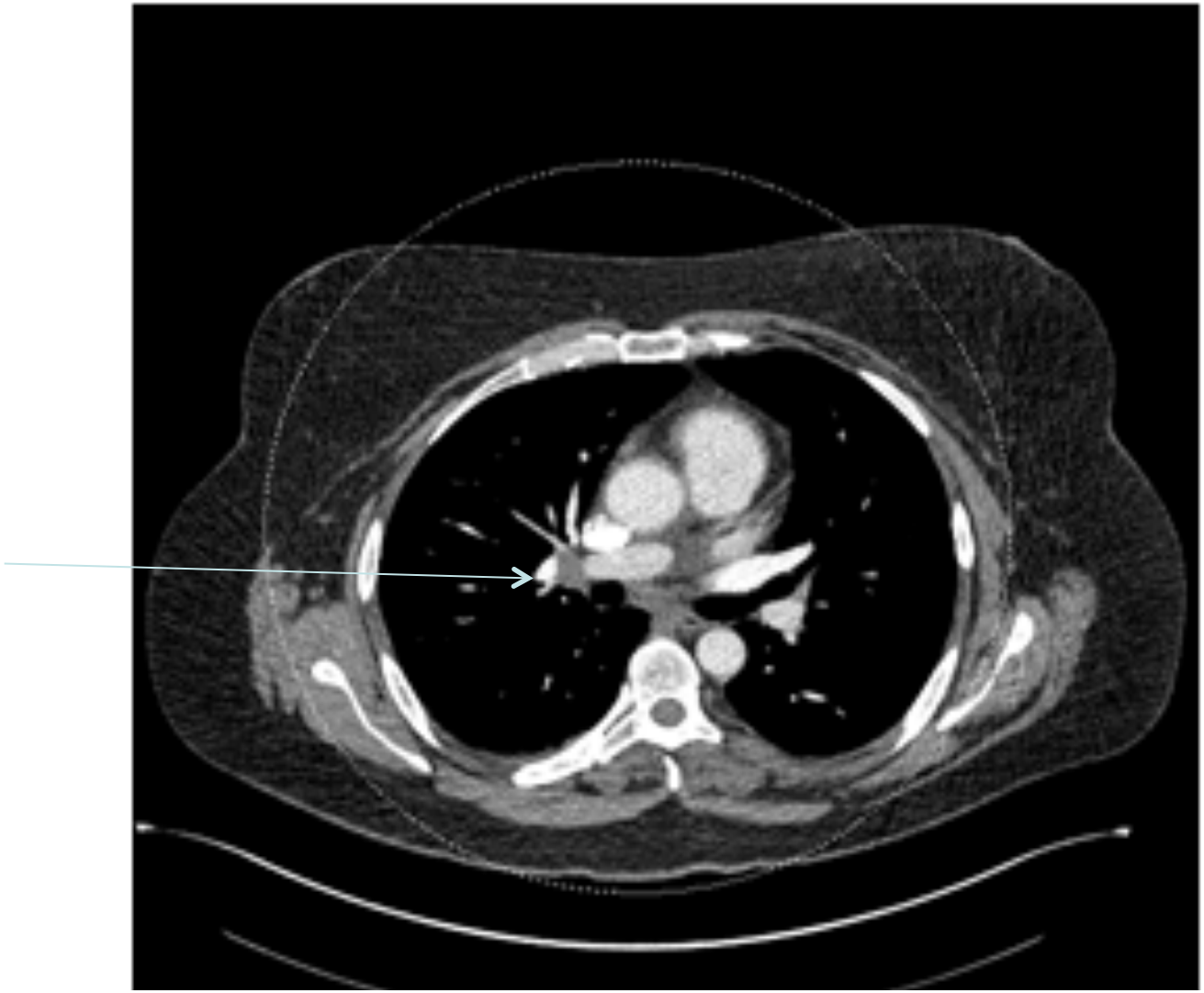
Admitted to having been investigated for late miscarriages in her 20s, and being anticardiolipin antibody positive.

Recent general malaise , facial rash.joint pains.

Ct scan showed pulmonary emboli.

Diagnosis –anticardiolipin syndrome and SLE

CT scan showing embolus



AT (2)

- Further investigations.ANA 1/2560 homogenous(very high)
- DNA binding .>300;(HIGH)
- IgG 26.7;IgA 6.9 IgM 2.4;g/l(raised)
- C3 0.3 C4 0.05;g/lComplements(-low)
- Coombs (+) creatinine 105umol/L 24hr urinary protein 2.35 grams/24hrs

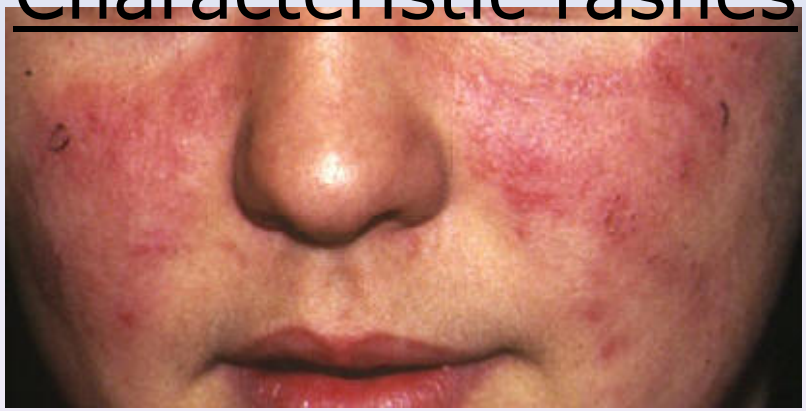
- Renal Biopsy WHO Class IV (Diffuse Proliferative Glomurulonephritis)
- Treatment Intravenous Methyl Prednisolone 1gram X3 and anticoagulation
- Dramatic recovery!

Recognizing SLE

"Typical bloods"

- Anaemia
- Lymphopaenia
- Normal/low platelets
- High ESR
- Low C3 and C4
- Autoantibodies

Characteristic rashes



Is it a connective tissue disease?

- Raynauds syndrome of recent onset.
- Non specific inflammation with no infection
- Screen for autoantibodies positive.(ANA/DNA)
- Raised ESR with normal C reactive protein.
- Low white cell count with low lymphocyte count and low platelets.
- Rashes.
- Multisystem disease.

Who Should I Screen for SLE?

- Fatigue? And generalised muscle pain?
- Is this SLE? Is it fibromyagia?
- The prevelance of SLE is low 40-50 per 100,000.
- Thus the vast majority of people with a low positive ANA do not have SLE(positive predictive value 11%)

Main symptoms of SLE

- Arthritis 84%
- Malar rash 58%
- Fever 52%
- Photosensitivity 45%
- Nephropathy 39%
- Serositis 36%
- Raynauds phenomenon 34%
- Neurological involvement 27%
- Oral Ulcers 24% Thrombocytopenia 22%
- ,lymphadenopathy,thrombosis,sicca syndrome < 20%

Normal Individuals with a positive antinuclear antibodies.

- 1/40 titre – 32% normal individuals.
- 1/80 titre -20% normals
- 1/160 titre- 5% normals.
- At the 1/160 dilution :

95% SLE positive

87% Scleroderma

74% Sjogrens syndrome

14% Rheumatoid arthritis

Antinuclear Antibodies

.

- Although 95% patients with SLE are ANA pos. the test is only 57% specific.ENAs are more specific.
- Also ANA positive with increasing age especially in women.
- Also relatives of patients with CTD may be positive
- ANA does not reflect disease activity and cannot be used to serially monitor the disease in SLE.

Tests for SLE if ANA positive

- Anti double stranded DNA antibodies.-97% specific. The titre reflects disease activity/response to treatment.
- Complement C3 and C4-reflect disease activity.
- ESR
- Immunoglobulins
- CRP ? Infection May rise in serositis.

Available Autoantibody tests to assist diagnosis of connective tissue diseases.

Extractable Nuclear antibodies (ENAs)

Sm in 15% patients with **SLE,** high specificity –neurolupus.

SS-A/ Ro 70 % of Sjogrens syndrome– low specificity .
35% of patients with **SLE .**
Congenital heart block.

SS-B/La- 40% **Sjogrens** and 15% **SLE**.

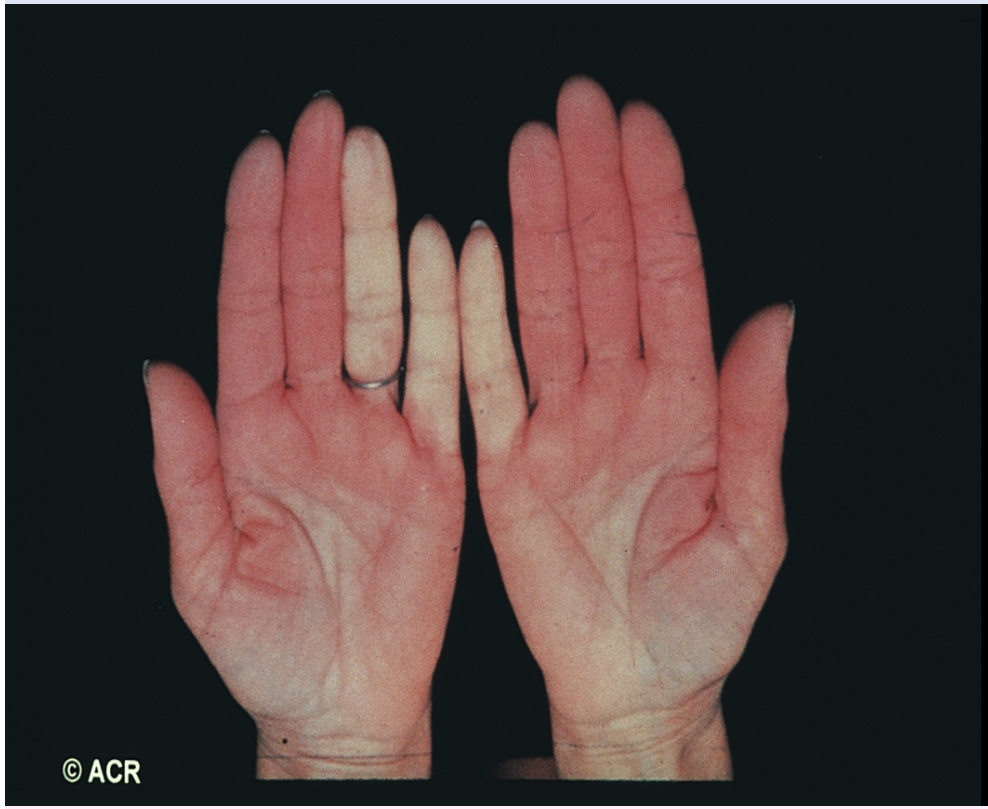
Scl-70 in 15% scleroderma high specificity- lung fibrosis.

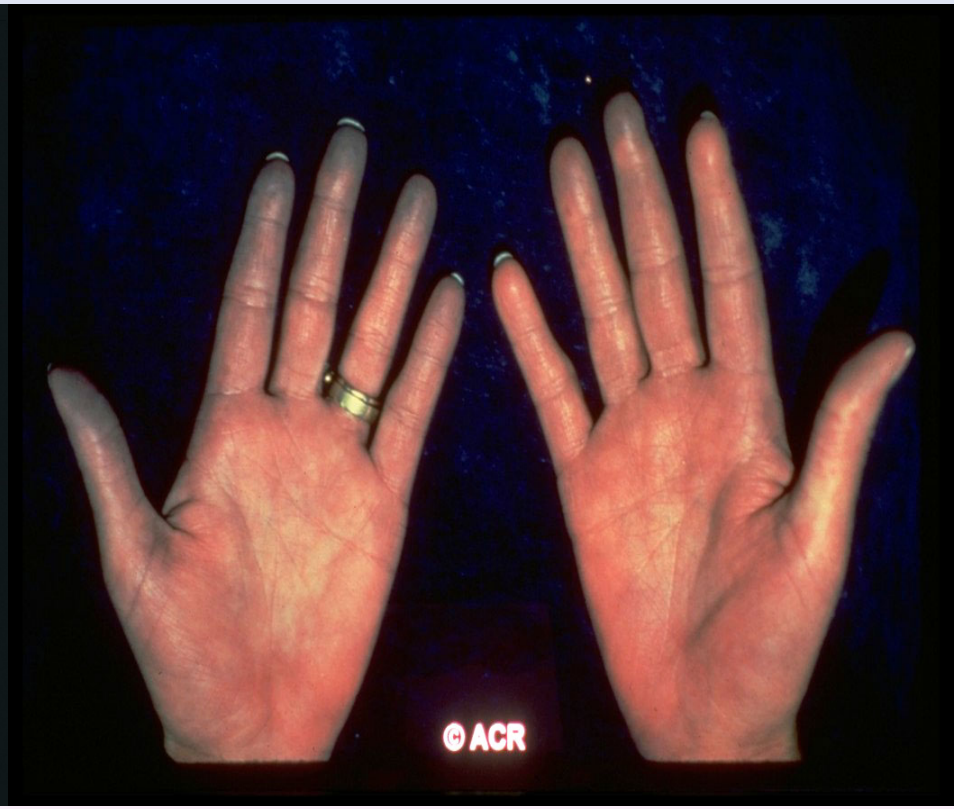
antiCentromere in 25% scleroderma mod-specificity-skin

Jo-1, anti synthetase abs.very specific + lung fibrosis and Polymyositis

Northwick park hospital Harrow

Raynauds





Small vessel ischaemia