Rheumatology 101

Case 1

- A 29-year-old woman presented with a chief complaint of pain and swelling in multiple joints for the past 2 months that made it difficult to carry out her duties as a teacher.

- She has been experiencing increased morning stiffness and missed days of work because of her symptoms.

- Full review of systems was unremarkable. She gave birth to her first child 2 months ago

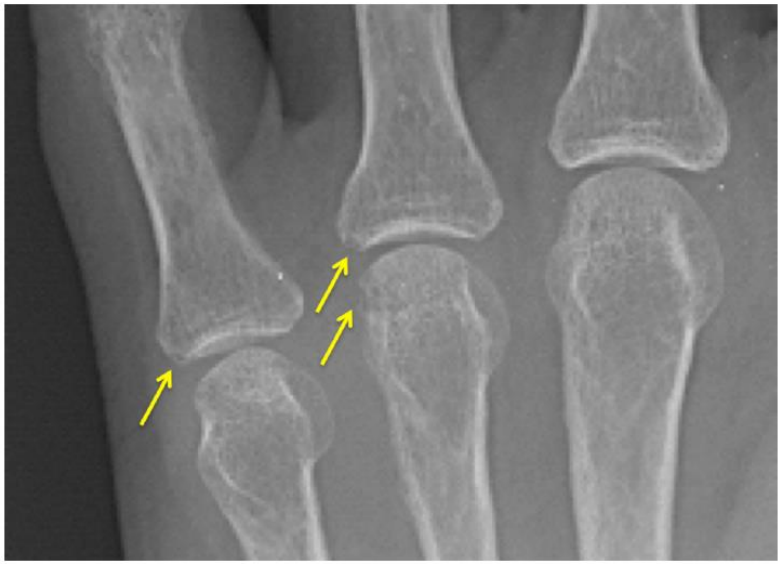
- Examination: warm tender swollen several PIP’s, MCP’s of both hands.
- No skin rashes
- Other wise, examination was normal.

Case 1: questions

- 1- What is the likely diagnosis?
- 2- What additional testing you need to do?

- Normal CBC, KFT, LFT
- ESR 35, CRP 10
- RF 100, ACPA >250

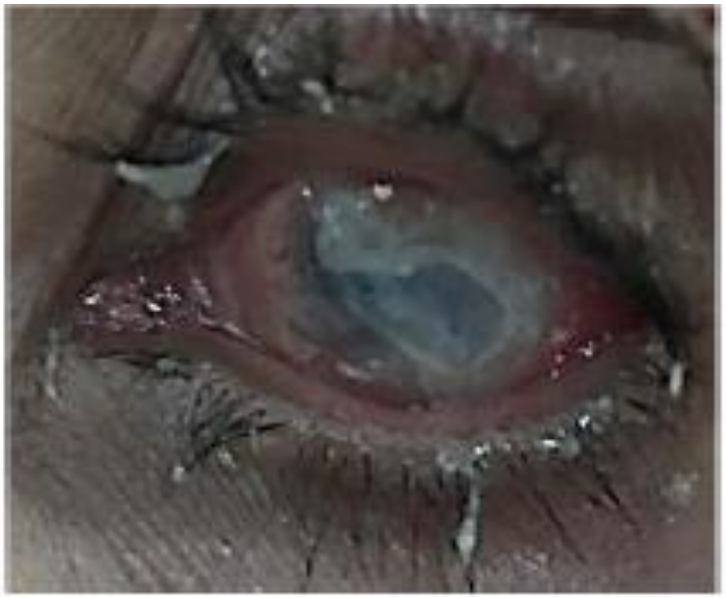
- Hands x rays



Case 2

- A 50 year-old woman came presented with pain and dryness in her left eye for 7 months, she also complained of progressive loss of vision in her left eye for 6 months that worsened for the past few days. She visited various physicians in her local area and she was kept on antibiotics for 7 months .

- Review of systems significant for dry mouth, pain in all small joints of her hands associated with morning stiffness of 30–45 minutes for the past year.



Case 2: questions

- 1- What is the likely diagnosis?
- 2- What additional testing you need to do?

- Hemoglobin 9
- ESR 90, CRP 25
- RF 100, ACPA >250
- Eye exam: scleromalacia perforans

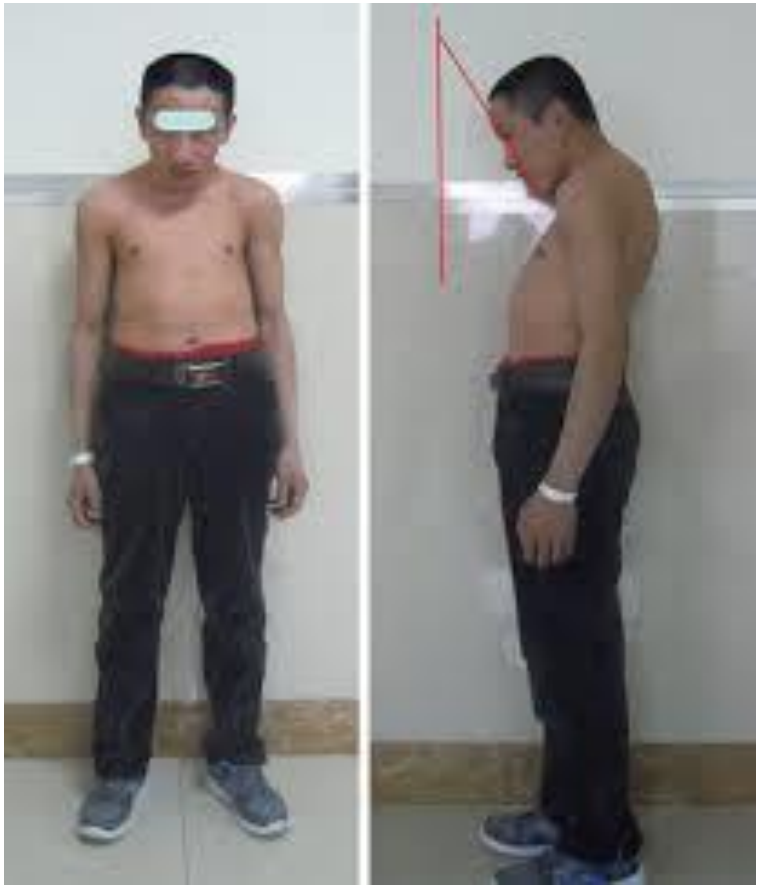
CASE 3

- A 40 year old male presents with a 10 year history of progressive pain and stiffness of the back. His back is very stiff in the morning for several hours and feels a little better after he moves around. He has noticed decreased ability to turn his head or bend his back. His hips bother him when he walks and his shoulders hurt when he tries to use his arms.

- Review of systems unremarkable besides severe daily fatigue, occasional palpitations and exertional dyspnea.

- He has GERD, otherwise healthy. He experienced red eye 6 months ago that was treated with eye drops.

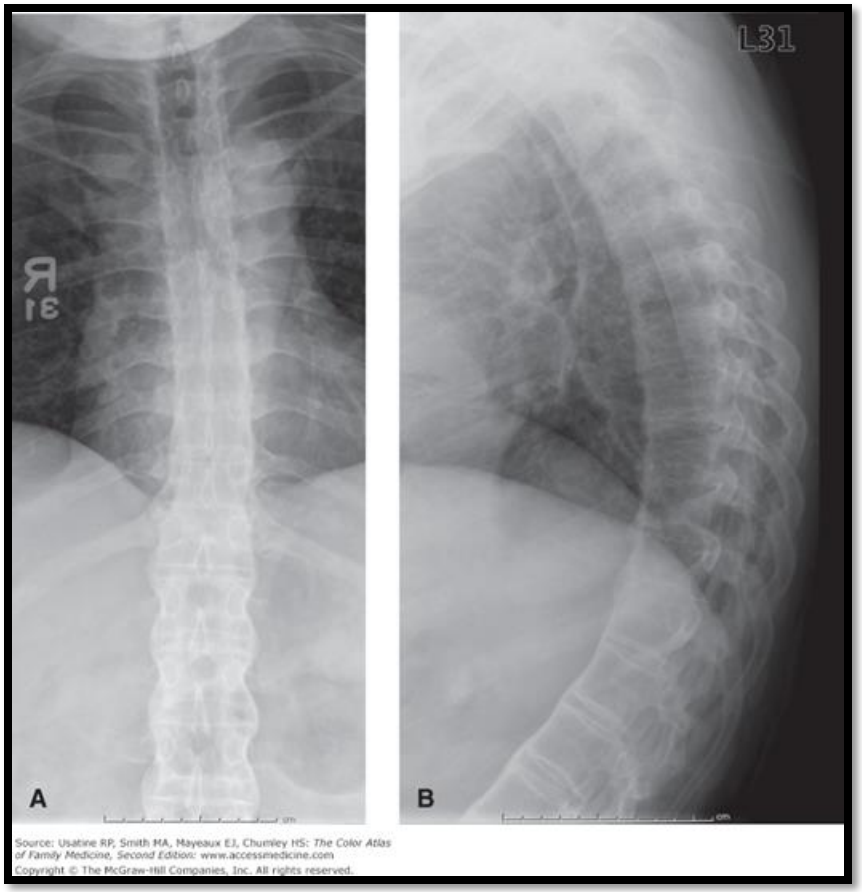
- Physical exam revealed very limited movement of the dorsal spine and decreased range of motion of the shoulders and hips.

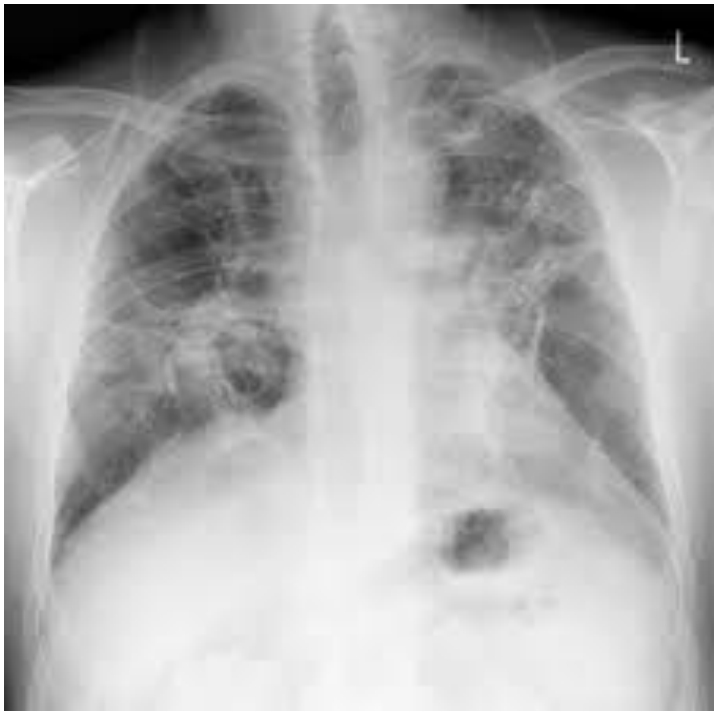


Case 3: questions

- 1- What is the likely diagnosis?
- 2- What additional testing you need to do?

- Labs: normal
- ESR 45
- CRP 25
- HLA B 27 POSITIVE

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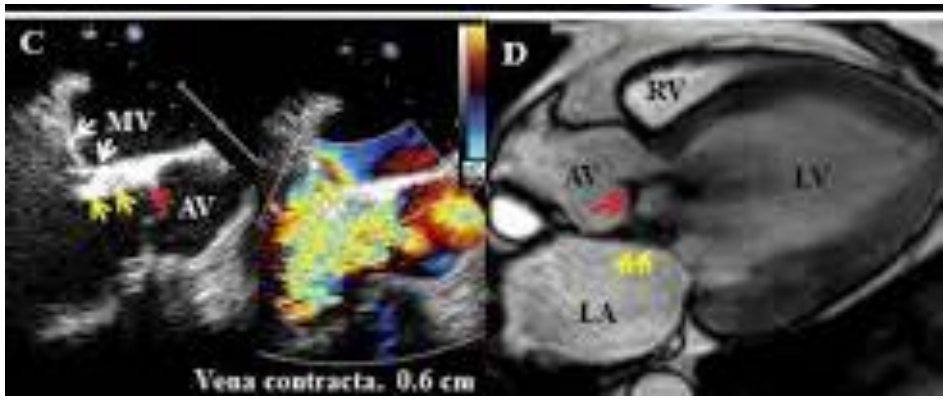
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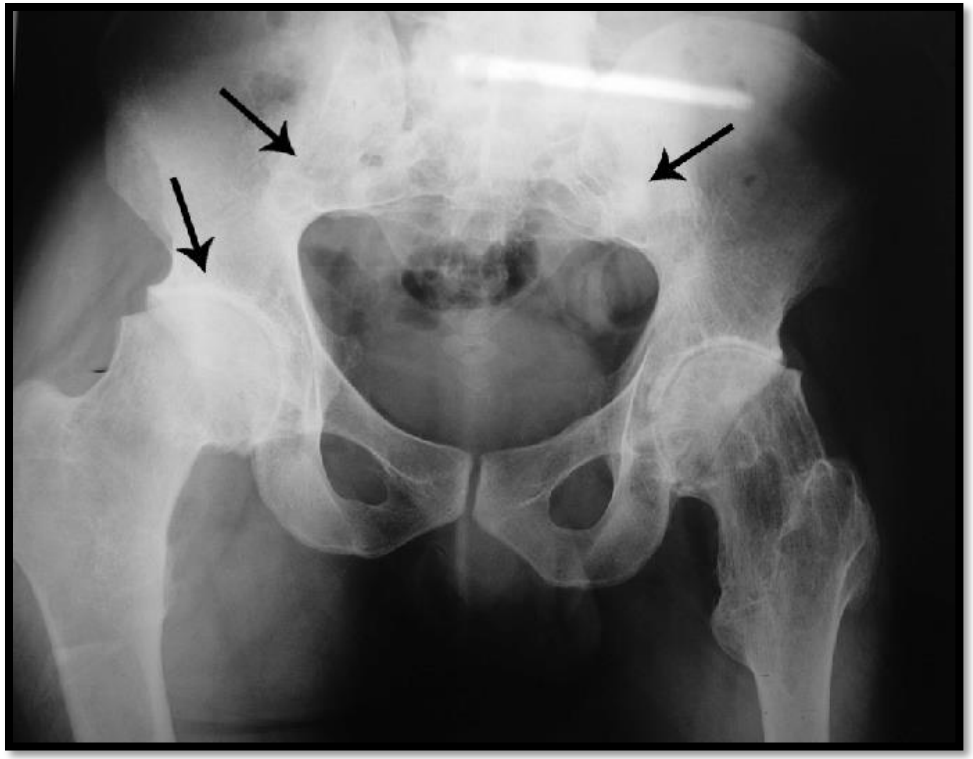
Vena contracta. 0.6 cm



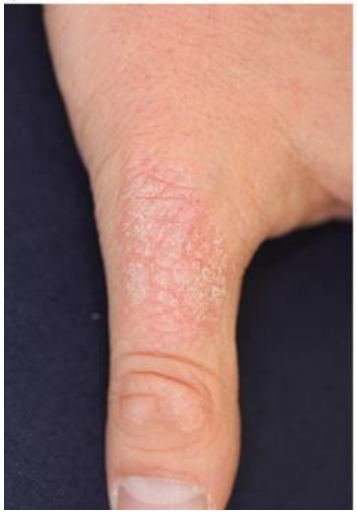
Case 4

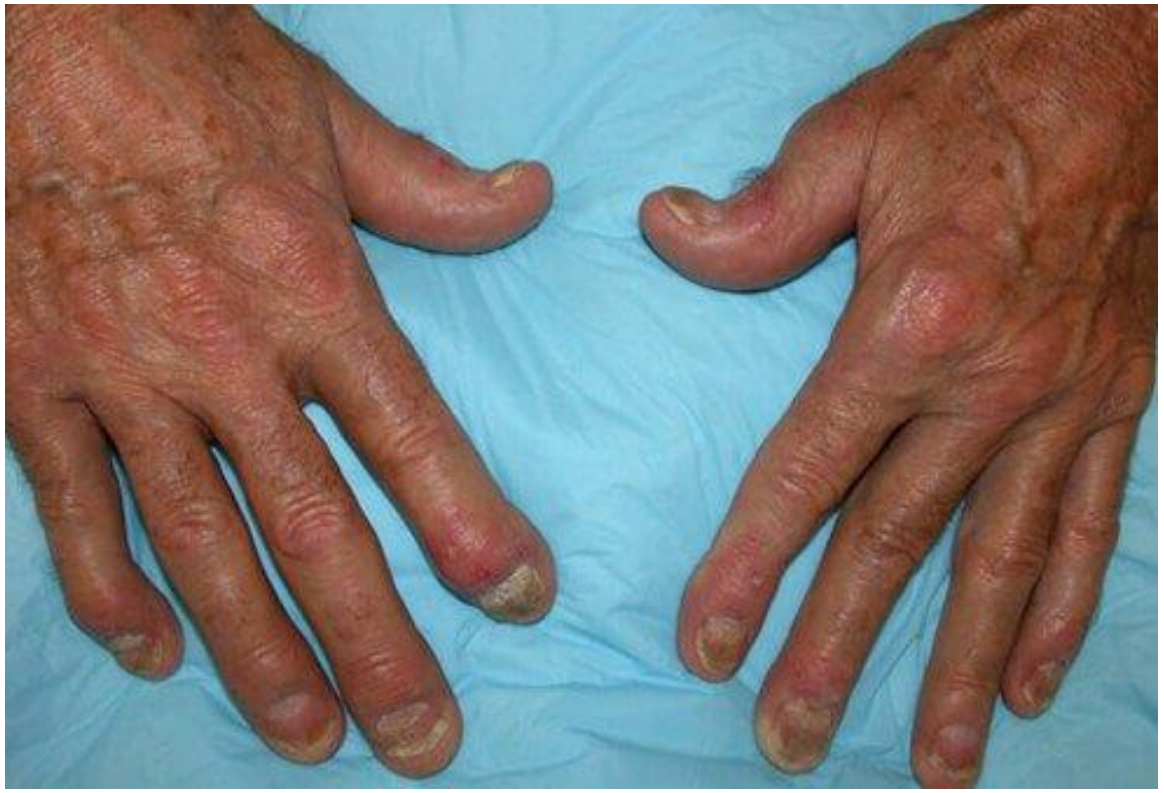
- 45-year-old man presented with complains of multiple joints pain for 2 years. Pain and red swelling involved the few PIP's and DIP's on both sides in addition to pain in both knees and the left hip. He reported 25 minutes of morning stiffness.

- He had been suffering from back pain occasionally since his 20's. Review of systems was other wise unremarkable

- He has hypertension, HLD and pre DM.

- His examination showed

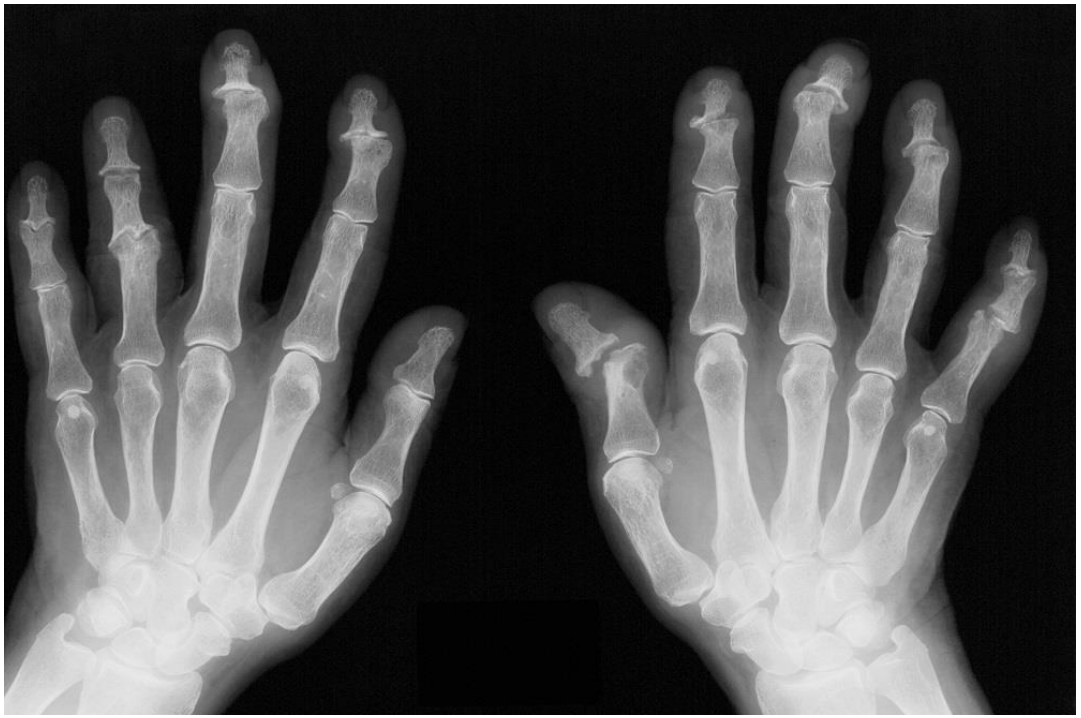


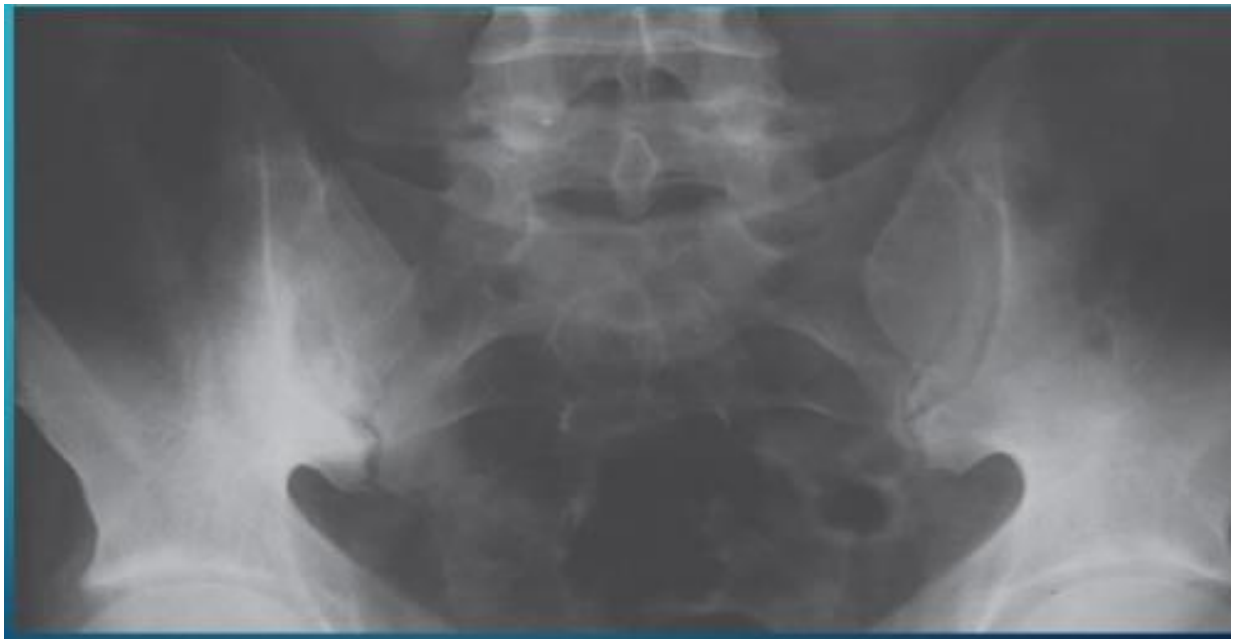


Case 4: questions

- 1- What is the likely diagnosis?
- 2- What additional testing you need to do?

- Labs: normal
- RF, ANA negative
- ESR 25
- CRP 8

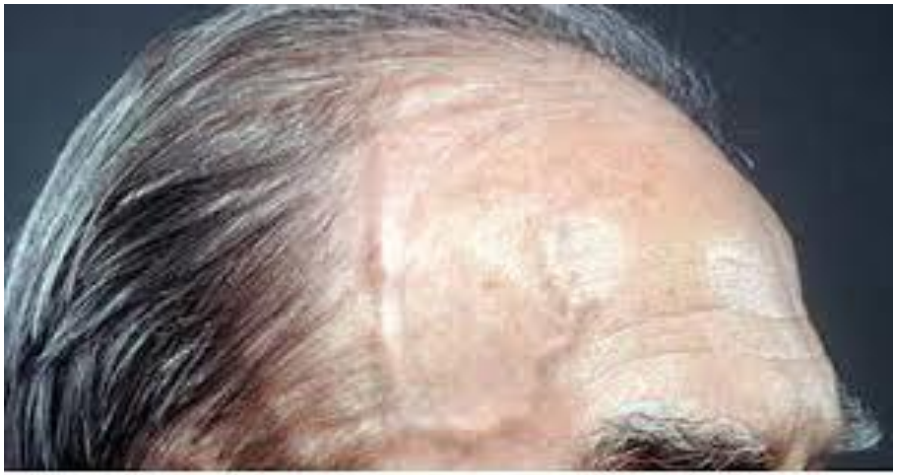




Case 5

- A 75-year-old male presented with headache of six weeks' duration. Pain was predominantly over the right hemicranium, with the maximum being over the right temple.
- Pain was excruciating in intensity. There was severe allodynia over the area. There was jaw claudication.
- Constitutional symptoms were present.
- About two weeks after the onset of headache, he developed blurred vision in the right eye.

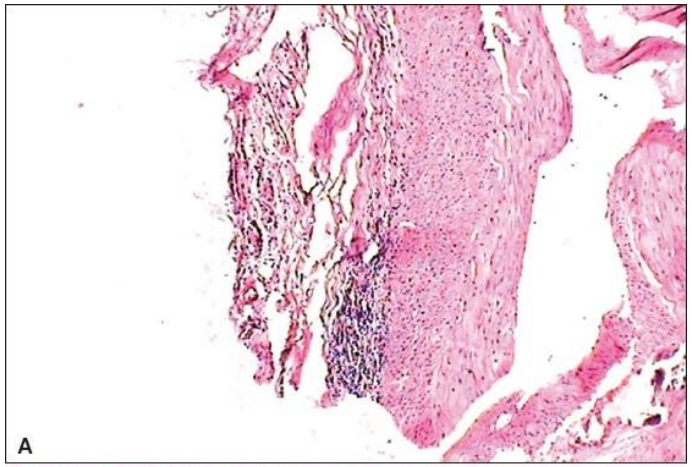
- Examination: tender TA with weak pulses

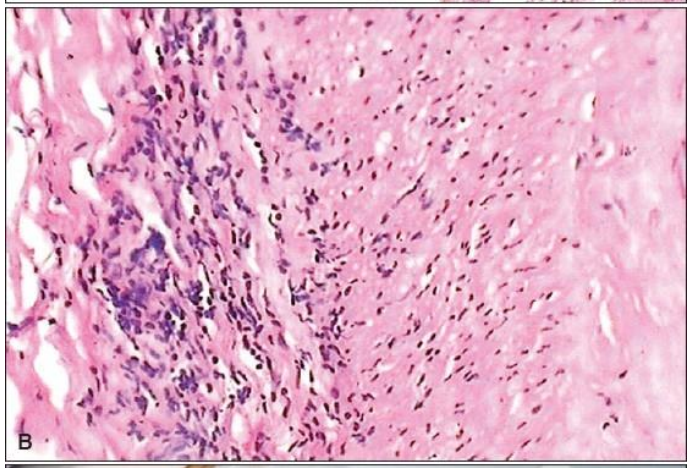


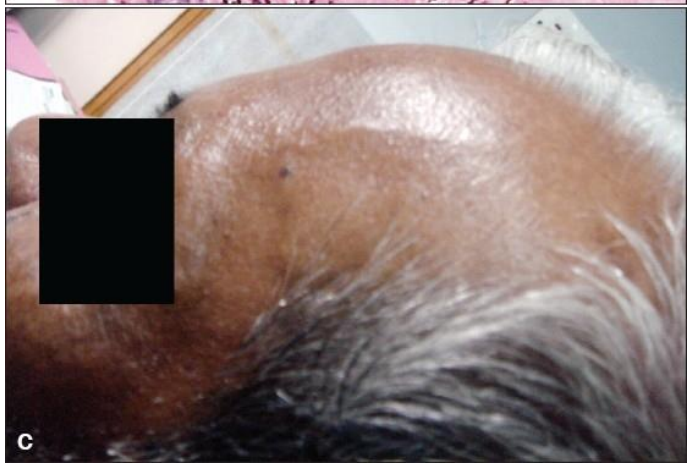
Case 5: questions

- 1- What is the likely diagnosis?
- 2- What additional testing you need to do?

- Labs: Hb 11, ESR 85. CRP 10
- Ophthalmological examination :anterior ischemic optic neuropathy (AION).
- Temporal artery biopsy: classic GCA





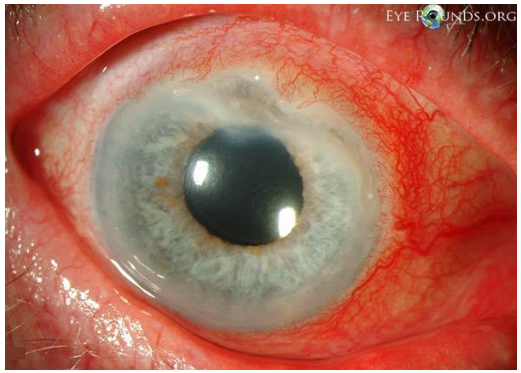


Case 6

- A 55 year old man presents with a 2-3 week history of fever, cough and migratory arthralgias. This was preceded by persistent nasal stuffiness and a mildly productive cough that on one occasion included bright red blood.
- Additionally, he reports recent malaise and fatigue, with mild dyspnea on exertion.
- For the past 4-5 days, he has had a painful, red left eye.
- He is a non-smoker, with no recent travel or exposures, and he denies cocaine or other drug use.
- He reports a 5-10 year history of recurrent sinus and ear infections that seem unresponsive to antibiotics and decongestants.

- Physical examination reveals an ill-appearing male, with a blood pressure of 140/90 and a pulse of 102, temperature is 101 degrees F.
- There is no skin rash or adenopathy. He is tender over the maxillary sinuses, and the left eye is injected and slightly swollen.
- Chest exam reveals decreased

breath sounds with rales in the upper lung fields.



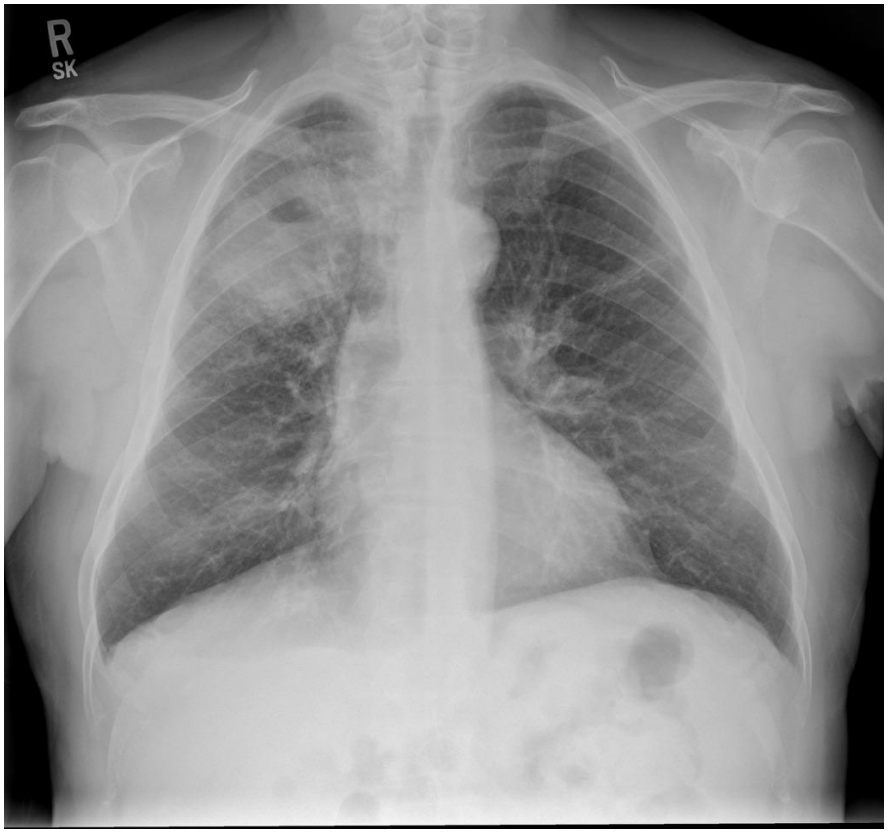
Case 6: questions

- 1- What is your differential diagnosis?
- 2- What investigations you want to request?

- R/O Systemic vasculitis, as well as infection, malignancy, and vasculitis mimics

- CBC with differential, UA, C3 and C4 complement levels, ESR, CRP
- Hepatitis Serologies and HIV
- PPD skin testing and sputum for AFB and fungal cultures
- Urine drug screen if drug use is suspected
- Serum antibody testing for ANA, RF, anti-GBM (Goodpasture's disease),ANCA (with antigen-specific anti-PR3 and anti-MPO if ANCA is positive)
- Biopsy of tissue to look for granulomatous inflammation with necrotizing vasculitis- the highest yield is found with lung biopsy (open or video-assisted thoracoscopic surgery)

- A chest X-ray reveals multiple, large pulmonary nodules in both upper lobes with cavitations in several areas.
- Sinus films show opacification of the left maxillary sinus.

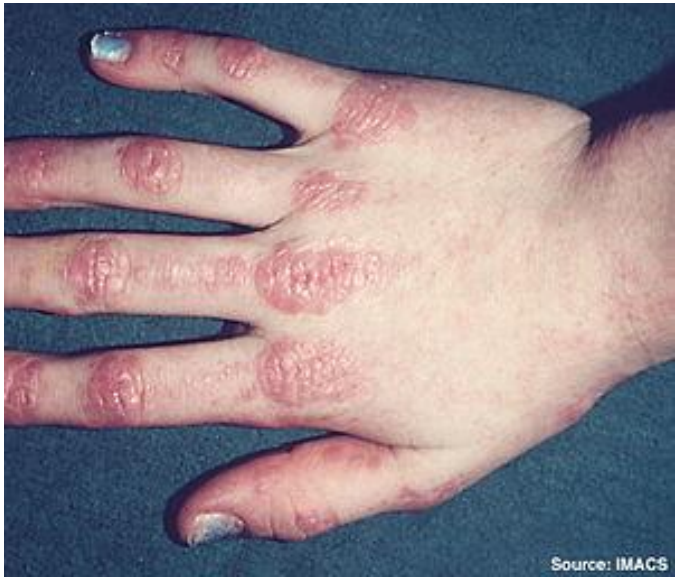


- Laboratory studies include a mild anemia and WBC of 12,200 with a slight left shift and no significant eosinophilia.
- A urinalysis reveals 2+ protein and 20-30 RBCs. Serum creatinine is 1.5.
- ANCA was positive at a titer of 1:1280 with cytoplasmic staining (c-ANCA), and anti-proteinase 3 (PR3) antibodies by ELISA were also positive
- Bronchoscopy revealed no obstructing lesions or bloody secretions. An open lung biopsy was performed, and tissue sections revealed granulomatous inflammation, necrotizing vasculitis, and multi-nucleated giant cells.

Case 7

- A 68 year old female presents with a several month history of progressive weakness and fatigue.
- Previously very active, she now notes difficulty arising from a chair or the toilet, lifting cooking pots off the stove and reaching for items above her head. Her husband has to assist her with dressing.
- She has difficulty swallowing and chokes easily if she is not careful.

- On examination, her vital signs are normal. She has to push herself out of the chair using her hands and requires assistance stepping up on the exam table. She was found to have rashes.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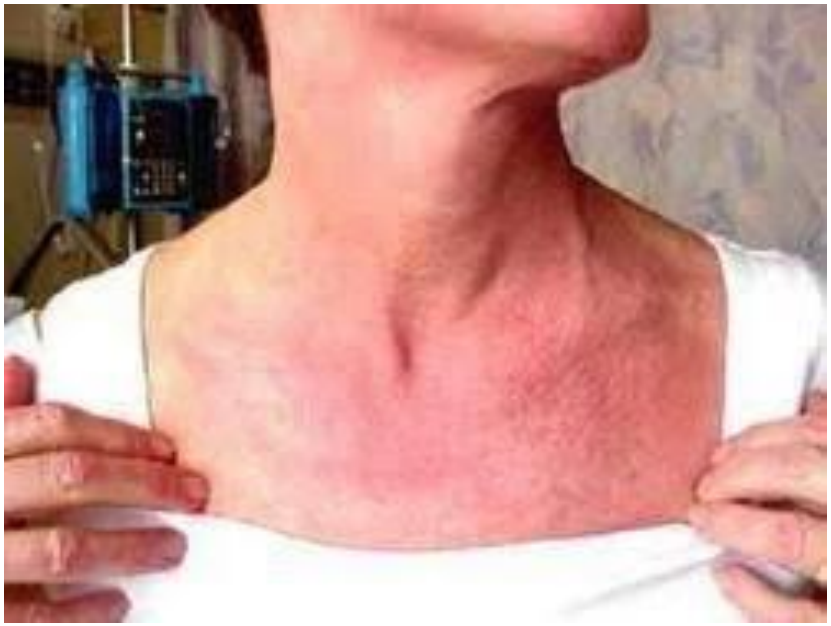


Case 7: questions

- 1- What do you think this patient has?
- 2- What investigations you need to order?

Laboratory tests:

- elevated creatine kinase of 3000 U/L (reference range: 30 – 220 U/L);
- AST is 180 U/L(reference range: 7 - 40 U/L) and
- ALT is 150 U/L (reference range: 0 – 45 U/L);
- Anti-nuclear antibody (ANA) and anti-Jo-1 antibody are negative.
- There is increased water content in the bilateral thigh muscles as demonstrated in this STIR MRI
- Electromyogram is consistent with an inflammatory myopathy while nerve conduction velocity testing is normal.
- Screening for malignancy: mammogram with breast mass

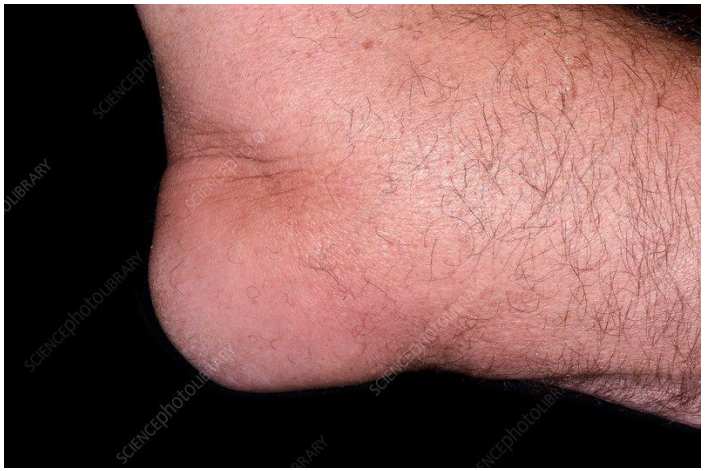
Case 8

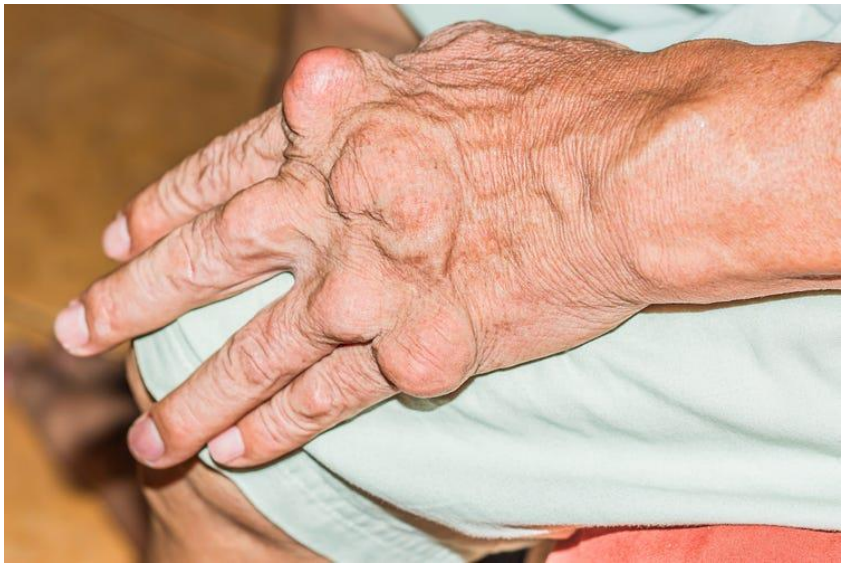
- A 78 year old man is seen in the clinic for a painful swelling of the left elbow. Over the past year 5 years, he has had several episodes of pain and swelling in his right knee and left foot, for which he received ibuprofen and once was treated with an antibiotic.

- He also has hypercholesterolemia and hypertension and is on simvastatin, hydrochlorothiazide and metoprolol.

- He drinks several beers a day but does not smoke.

- His elbow is shown in the picture.
- His exam is remarkable only for the appearance of his hands



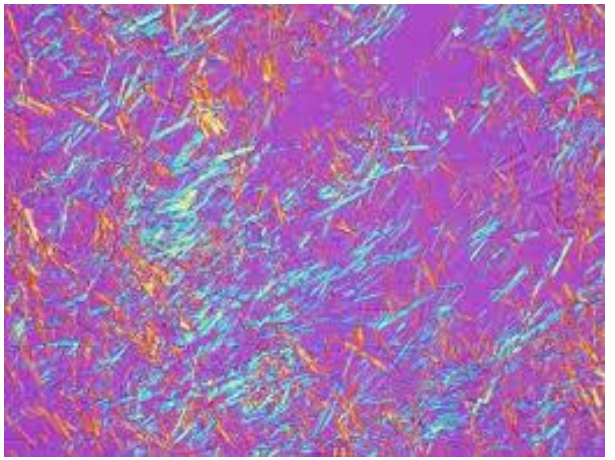


Case 8: questions

- 1- What is the likely diagnosis
- 2-What additional work up you may request
- 3- How are you going to treat the patient

Labs

- WBC 11.4/cu mm
- Hb 13.5 g/dL (
- Platelets 96/cu mm AST 65 U/L , ALT 64 U/L
- Creatinine 1.7 mg/dL
- ESR 86mm/hr
- Uric acid 10 mg/dl
- Synovial fluid from the elbow:

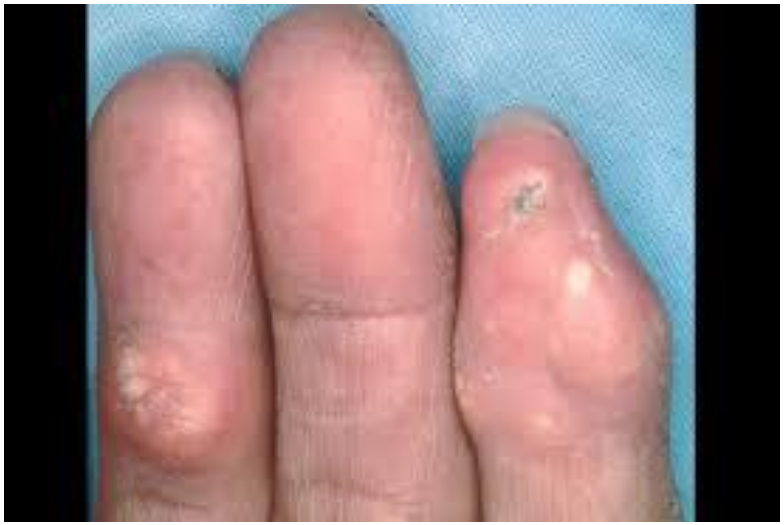


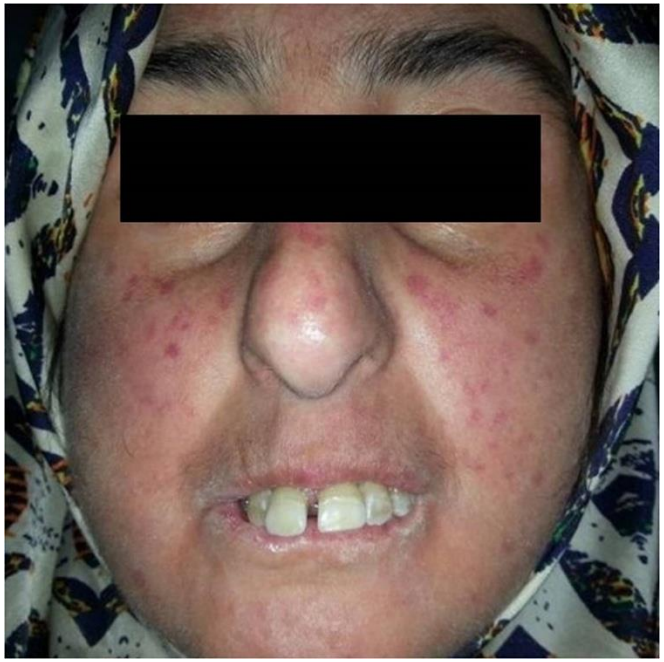
Case 10

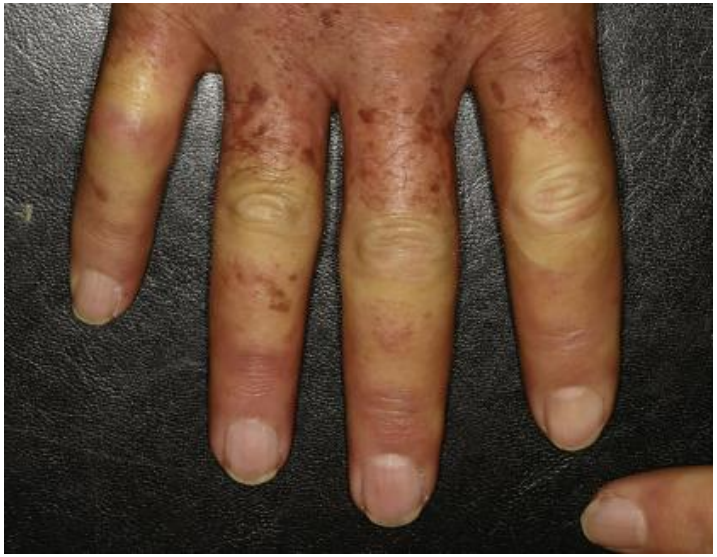
- A 45-year-old female presents to her primary care provider with pain and swelling in her hands or the past 5 years.

- She has been noticing that when her hands are exposed to the cold, they become pale and painful. When this occurs, the feeling may last for as long as 20 minutes before resolution, and following this, a painful warm sensation occurs. Symptoms have been worsening over the past winter.

- Upon further questioning, the patient reports GERD which occurs almost daily. She also reports numbness and tingling of her hands and small lumps on the pulps of her fingers.







- 1- What is the most likely diagnosis?
- 2- What additional history you may request?
- 3- What investigations you want to order?

Case 10

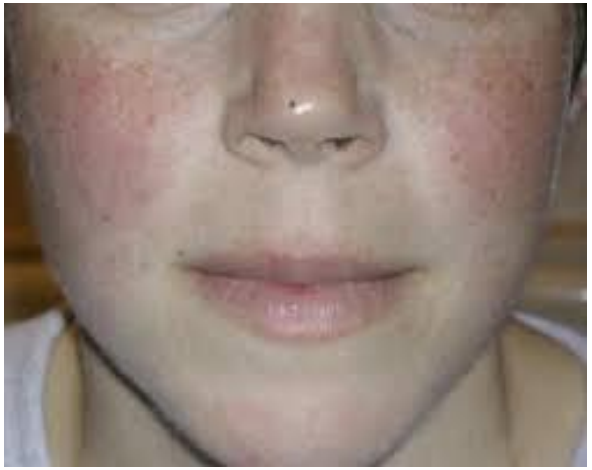
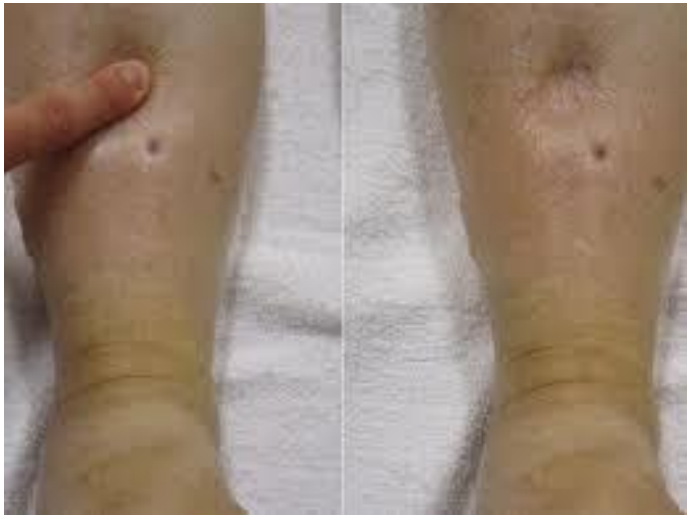
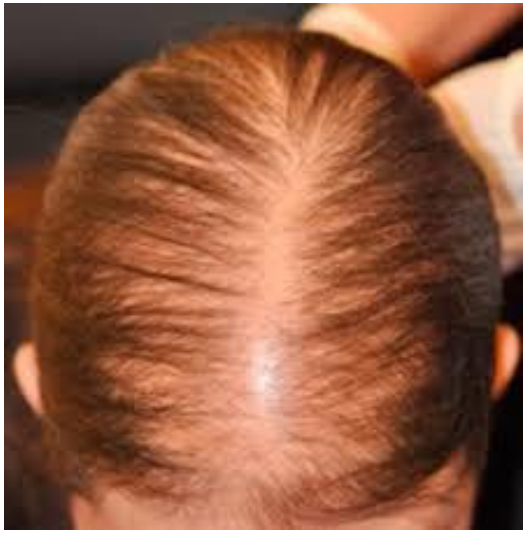
- Progressive exertional dyspnea
- CBC: mild anemia
- ANA: + 1:1280 CENTROMERE
- CXR. PFT, DLCO
- ECHO

Case 11

- A 19-year-old woman presented to the hospital with complaints of progressive shortness of breath, chest pain, and lower extremity edema over the past month.
- Additional complaints included alopecia, oral ulcers, and bilateral knee arthralgia.

- Thought?

- Significant findings on examination included elevated blood pressure (150/90 mmHg), malar rash, and diffuse anasarca.

- Her initial laboratory values were notable for hemoglobin of 9.0 g/dL, platelet count 116,000/µL, and serum creatinine 2.68 mg/dL with 3+ protein and 3+ hemoglobin on urinalysis.

Case 11: questions

- 1- What is the likely diagnosis?
- 2- What additional testing you need to do?

- 24-hour urine protein, 3 g

- Antinuclear antibody titer 1:2560 with homogenous pattern on immunofluorescence
- Anti-dsDNA antibody titer >1000 IU/mL
- Anti-Smith antibody, 142 units
- Anti-ribonucleoprotein antibody, 114 units
- Anti-Sjogren-syndrome-related antigen A, 121 units
- Anti-Sjogren-syndrome-related antigen B, 39 units
- Antineutrophil cytoplasmic antibody titer <1:20
- Complement C3, 36 mg/dL (normal range: 88-201 mg/dL)
- Complement C4, 6 mg/dL (normal range: 16-47 mg/dL)

- Kidney biopsy: diffuse proliferative glomerulonephritis with active crescents involving 7 out of 24 glomeruli on light microscopy(lupus nephritis class IV).

Case 12

- A 23-year-old female presented to the hospital because of chest pain.

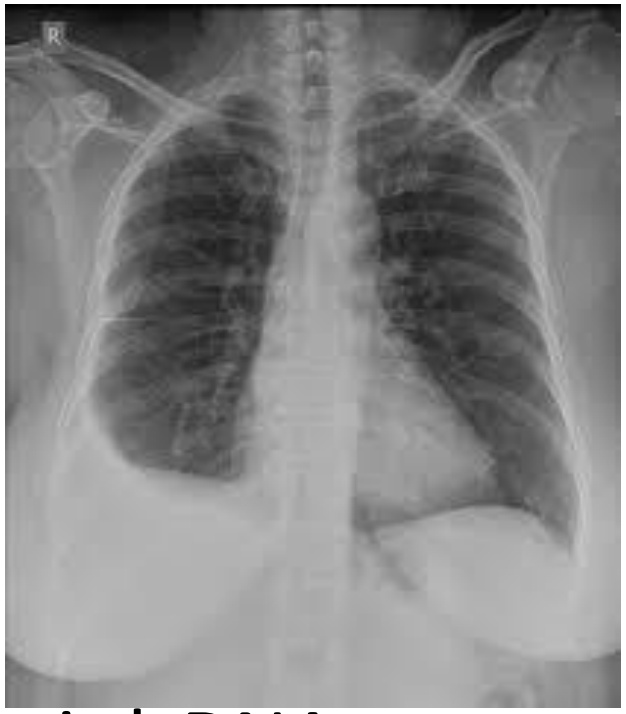
- She had been well till 3 weeks ago when she started to feel fatigued and had myalgia, dry cough and chest pain on right costophrenic region started 3 days before presentation. There was low grade fever .

- On review of system, she reported that her hair has been thinner than before and she had noted occasional painless mouth sores for the past 3 months.

- On examination ,the temperature was 37.9°C and pulse rate was 80 per min. The blood pressure was 125/82 mmHg, the patient was alert and well-orientated.
- Head and neck examination revealed pale conjunctiva, hair thinning, and few small cervical lymph nodes.
- Fine crackles were heard and vocal fremitus was decreased at the base of the right-side of lung.

Case 12: questions

- 1- What is the likely diagnosis?
- 2- What additional testing you need to do?



- CXR
- LABS: WBC 2.3(lymph 19%),
  Hb 8.5, platelets 250,
- ESR 50, ANA 1:320-speckle, anti-dsDNA negative, positive smith antibody, RF negative, and decrease of C3, C4 levels

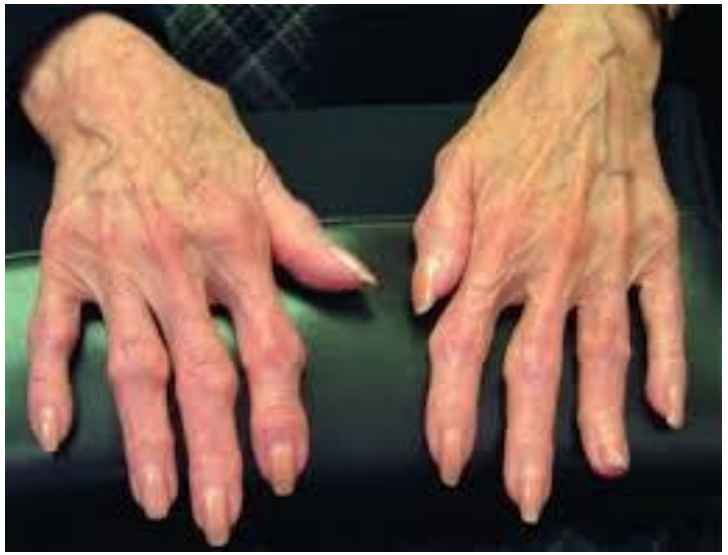
Case 13

- 46 years old and has generalized joints pain for many years. Her hips and hands are the most severely affected joints.

- Her health problems started at the age of 11, following a fall on a cross-country run. She was eventually diagnosed with Perthe's disease. She has 10 minutes of morning stiffness in her hands but her hips are always problematic. She is scheduled for right hip replacement. No swelling or redness of the joints. Using her joins and walking aggravates the pain.

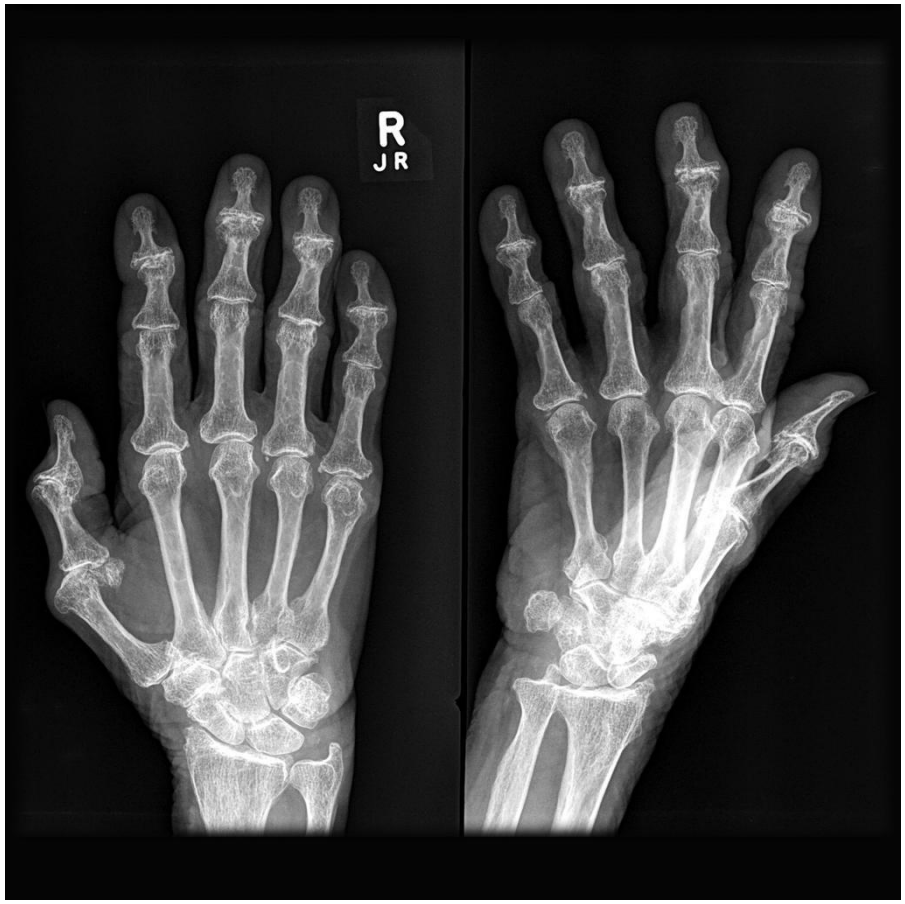
- Over the years , she has tried over 15 different analgesics and anti-inflammatory drugs.

- On examination:



Case 13: questions

- 1- What is the likely diagnosis?
- 2- What additional testing you need to do?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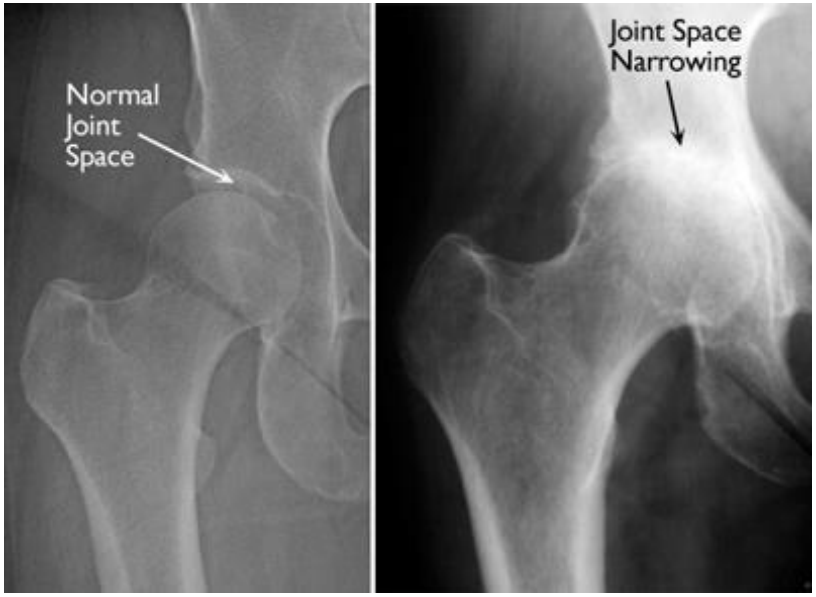
Normal
Joint
Space
Joint Space
Narrowing

Case 14

- A 28 year old woman comes to clinic for evaluation of diffuse pain. The patient complains of widespread myalgias and arthralgias for the past 3 months.

- The pain is aching in quality and is becoming severe. It interferes with her activities such as cleaning the house and shopping. She also complains of fatigue but has no difficulty with sleep or morning stiffness.

- A review of systems is negative for weight loss, fever, rash, paresthesias, weakness, joint swelling, and Raynaud's phenomenon.
- The patient does complain of dry skin and mild constipation.

- The patient has no significant prior medical history and takes no medications, but she takes many over the counter vitamins and supplements.

- The general medical examination is unremarkable. There is some tenderness on palpation of the joints and muscles but no joint swelling, warmth, or effusion. There is no rash and the neurologic examination is intact except for a delay in the relaxation phase of the deep tendon reflexes.

Case 14: questions

- 1- what is the differential diagnosis?
- 2-What tests may be helpful in making a diagnosis?

- The differential diagnosis of diffuse arthralgias and myalgias includes the onset of an inflammatory rheumatic disease such as systemic lupus erythematosus or rheumatoid arthritis, a soft tissue syndrome such as fibromyalgia, somatization disorder or depression, endocrinopathy, infection such as a viral arthritis or Lyme disease, and toxic or drug reaction.

- Dry skin, constipation, fatigue, myalgias, and arthralgias are possible manifestations of hypothyroidism. Delayed relaxation phase of the deep tendon reflexes is also consistent with a diagnosis of hypothyroidism.

- Thyroid function tests should be requested.
- Other useful tests may include ESR, CRP, CBC, Chemistry, CPK
- Anti-nuclear antibody (ANA), and Rheumatoid Factor (RF) if abnormal labs or other clues in history.

- THE END