

### FELLOW CHALLENGE MARCH-APRIL 2005 DIAGNOSTIC EXERCISE

This is a diagnostic laboratory/radiographic exercise for pediatric rheumatic diseases and diseases that mimic these disorders. Rheumatic diseases follow distinct patterns of presentations and labs. The trick is becoming very familiar with these clinical patterns.

Learning goals of matching exercise:

- 1) To be able to recall the definitive, classic diagnostic lab results for each pediatric rheumatic disease.
- 2) To be able to distinguish between definitive diagnostic lab results and suggestive (but not definitive) lab results.
- 3) To be able to recognize the typical lab/radiographic results of conditions that mimic rheumatic diseases.

See instructions below.

<u>Disease presentation</u>	<u>Laboratory results</u>
A. Malar rash, rash on palate, red spots on hands, swollen PIP's in 12 year old girl. _____	1. WBC 35,000, Hgb 8.1, ESR 110, CRP<0.2 platelets 894,000
B. Fever, abdominal pain, foot drop, nodules. in 12 year old boy. _____	2. WBC 6,000, Hgb 10.1, ESR 7, platelets 255,000, ANA 1:40, RF neg
C. 16 yr old female teen with cool, purple hands. The rest of physical exam is normal. _____	3. Normal CBC, ESR 21 mm/hour, U/A neg, ANA +1:320, anti-Scl +
D. 7 year old boy with a red, swollen ankle with a history of a circular rash 3 months _____	4. Normal CBC except 15% eosinophils, skin biopsy reveals many dermal eosinophils. The serum IgG is very elevated.
E. 2 year old with a swollen knee for 3 months. _____	5. Synovial fluid reveals 95,000 WBC, 80% polys, glucose <50% serum glucose, protein 6.5 g/dl, gram stain +, culture +
F. Febrile 6 month old with a very painful range of motion of the right hip _____	6. Urinalysis 4+ protein, small blood, 20-25 rbc's/hpf, creatinine 3.1, +ANA and anti-DNA, platelets 95,000, kidney biopsy DPGN; albumin 1.6
G. 14 yr old male with hard, wooden feel to his arms and calves for 8 months. _____	7. WBC 30,000, Hgb 9.2, ESR 140, U/A 2+ blood, abdominal MRA=celiac aneurysms
H. 9 year old girl presents with cool hands, tight	8. AP/frogleg hips reveals displaced epiphyses medially and laterally.
	9. CBC, U/A normal, ESR 15, CPK 499 aldolase 12.9; no EMG, biopsy done
	10. CBC, U/A, Chemistries, ESR all normal. C3, C4 normal, ANA +1:160, ANA profile negative (Anti-DNA, Anti-Sm, etc.)
	11. CBC, U/A 20-25 rbc/hpf, ESR 28, ANA negative, C3 144, C4 28, skin biopsy leukocytoclastic vasculitis with + IgA

- fingers, and heartburn. \_\_\_\_\_
- I. 3 yr. old is sent to you for 2 months of fever, a rash, and limited wrists and elbows.  
\_\_\_\_\_
- J. 7 year old has decreased activity, rash on eyelids and knees, and swollen PIP's  
\_\_\_\_\_
- K. An 8 year old has very swollen, boggy fingers, knees, wrists, and ankles as well as uveitis. Papules are noted on the thigh. \_\_\_\_\_
- L. A 3 year old has a swollen left third PIP, right fifth PIP, left second toe, and right third toe. Her mother has a rash.  
\_\_\_\_\_
- M. A 6 year old has a swollen knee and ankle on and off for 1 month. She wakes up with severe pain at night; She cannot walk at times and is taken to the ER several times. Her pains are worsening.  
\_\_\_\_\_
- N. A 14 year old has had 3 months of fatigue and chest and back pain. She is SOB at times and is losing weight.  
\_\_\_\_\_
- O. A 13 year old girl has felt tired 6 months after a screening U/A showed blood. She has headaches; the B/P measurement is 155/95. She develops pedal edema.  
\_\_\_\_\_
- P. A 5 year old develops severe abdominal pain and is admitted. His ankles are swollen and he won't walk. A rash evolves from papules to petechiae to purpura.  
\_\_\_\_\_
- Q. A 8 year old develops intermittent leg and hip pain. He gets better for a month, then worsens. An orthopedist diagnoses transient synovitis. His pain worsens, he becomes SOB. He is brought to you and refuses to walk.  
\_\_\_\_\_
- R. A thirteen year old has been limping for 1 year. Your exam reveals decreased hip range with some pain.  
\_\_\_\_\_
12. WBC 3800, 42% segs, 52% lymphs  
2% atypical lymphs, Hgb 9.1, platelets 184,000, ESR 92, LDH 2x normal
13. CBC, U/A normal, ESR 33, ANA +1:320
14. WBC 36,000, 67% segs, Hgb 8.9, platelets 950,000, ESR 102, aldolase ferritin 10x normal.
15. CBC, U/A normal, ESR 45, ANA negative HLA-B27+, mild hip joint space narrowin
16. Hgb 10.4, rest of CBC normal, ESR 76 U/A negative, chemistries normal, CXR negative, chest doppler subclavian/carotid stenosis-confirmed by angiogram.
17. CBC, U/A normal, ESR 45, CPK 4900, LDH and AST 8x normal, aldolase 25. EMG shows sharp spikes and low amplitude, muscle biopsy: perifascicular myopathy with perivascular infiltrate.
18. CBC normal, ESR 59, U/A negative ACE 3x normal, lysozyme 2x normal skin biopsy: non-caseating granuloma.
19. CBC, U/A, chemistries normal. ESR 55, ANA +1:80, Lyme Elisa elevated; 8 IgG bands detected on Western Blot
20. CBC, U/A, Chemistries normal, ESR 51 ANA +1:160, RF and Lyme negative, Synovial fluid 15,000 WBC, SF glucose normal, SF protein 5.2, gram stain and culture negative, knee radiograph normal arthroscopy biopsy: lymphocytic infiltrate
21. WBC 5,000, Hgb 12.1, platelets 87,000, ESR 79, CRP <0.2, U/A 2+ protein, ANA + 1:2560, C3 37, C4 8, anti-B2GP1 +, ANA profile negative.
22. Hgb 8, ESR 122, rest of CBC normal, ANA negative, C3 144, C4 35, U/A normal, CXR fluffy infiltrates; admitted c-ANCA 5X normal, lung biopsy noted granuloma.
23. WBC 7800, diff normal, Hgb 11, platelets 368,000, ESR 87, bone scan increased uptake humerii and femurs, MRI femurs impressive marrow edema; long bone x-rays show lytic lesions in distal femurs. A CXR reveals a large right upper lobe mass.

**Basic Instructions:**

Answers are numbered 1-23. Answers should be noted as definite or suggestive.

D= Definitive and sufficient for diagnosis of one rheumatic disease

S= Suggestive but not definitive-may fit several diseases or hint at one disease more than others.

Please add your best guess as far as the disease or diseases that you think is most compatible with the presentation and the lab.

Example answers to put in a blank: 1D (Lab results 1, definitive )-possible diagnosis=lupus, 5S (Lab results answer 5, suggestive but not definitive) diagnoses=Lyme and JIA

Detailed instructions:

One useful approach to this exercise is to take each answer (1-23) and see if it fits well with a presentation (A-R) or more.

Place each lab result answer (1-23) in the blank below the presentation description (A-R) that is appropriate for that presentation. Each presentation may have several answers; also, not every lab answer must be used. Some presentations may have no definitive lab results as the diagnosis is made purely on clinical grounds, a "clinical diagnosis". But they may have suggestive lab results. There will be some lab result answers that are suggestive of several diseases but not definitive for any one disease. All suggestive lab results should be assigned to the appropriate presentation. One presentation could end up with 2, 3, 4, or 5 suggestive lab answers.

Scoring: 1 point for each component of a correct answer (1D lupus=3 points). Highest point total is the winner. The winner will be announced in the next issue. These type of exercises are not perfect as far as the one and only best answer but we will do our best. We will publish our answers with explanations in the May-June PROJ.

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