

47 - Photo Opportunities: Images You Should Know for the Exams

Speaker: John Bennett, MD




PHOTO OPPORTUNITIES: IMAGES YOU SHOULD KNOW FOR THE EXAMS

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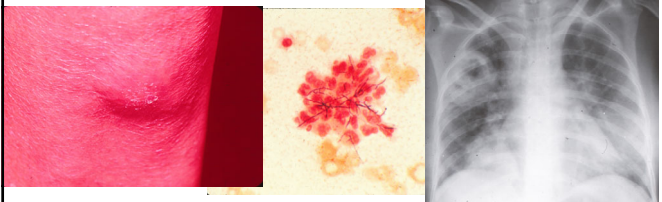


DISCLOSURES OF FINANCIAL RELATIONSHIPS WITH RELEVANT COMMERCIAL INTERESTS

 • None

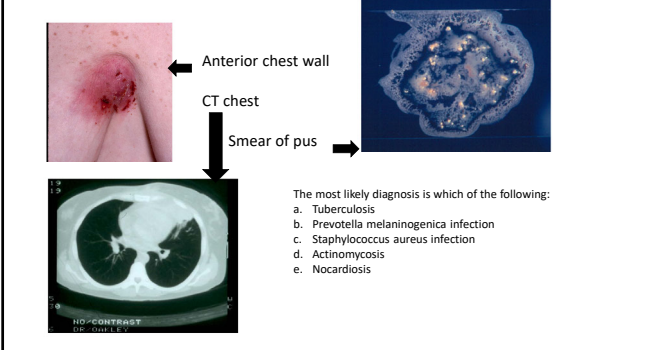
A 65 yr old woman receiving high dose prednisone for breast cancer metastatic to bone was admitted for fever and cough of two weeks' duration. She was found to have cavitary lung lesions and a skin abscess on her abdomen. Aspirate of the lesion showed branching Gram positive bacilli. The most likely result of culture is which of the following:

- Actinomyces neuii
- Rhodococcus equi
- Aggrigatibacter actinomycetemcomitans
- Nocardia nova
- Mycobacterium chelonae



A 53 yr WF from a W. Virginia presented with a draining sinus over her right lower parasternal area of six weeks duration. She had lost about 15 pounds of weight, chronic dry cough and low grade fever. She had felt a little better with two ten-day courses of Keflex but the drainage had never stopped. Chest xray and CT showed a contiguous infiltrate in the right middle lobe.


- She had been unemployed, lived on a farm, took care of horses, chickens and dogs. She had a history of alcohol and tobacco abuse. No sick contacts.
- Physical examination was otherwise normal. CBC showed a WBC of 12,500 and a hematocrit of 32%. Images of her chest, her CT and pus from the draining sinus are shown on the next slide.



The most likely diagnosis is which of the following:

- Tuberculosis
- Prevotella melaninogenica infection
- Staphylococcus aureus infection
- Actinomycosis
- Nocardiosis

This 40-year-old crab fisherman working in the Chesapeake Bay waters came in with low grade fever and a painful rash on his hand of three days' duration. He cut his hand several days ago on a crab spine.



The probable organism is which of the following:

- Curved gram negative rod
- Seagull-shaped gram negative rod
- Gram positive coccus
- Gram positive bacillus

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This 16-year-old Navajo child was brought to the Four Corners Hospital in Arizona because of high fever and the lesions shown. He looks quite ill.

His mother thought he might have been bitten by a rat while he was sleeping, because he awoke crying of pain in the abdominal lesion and had seemed to be playing normally the day before. She had seen a dead rat in the garage a few days prior.

On exam, he had a temp of 40°C and the lesions seen. Both the lesion and the axillary area was very tender. Gram stain of the skin lesion found no organisms. The most probable cause is which of the following:


- A. Streptobacillus moniliformis
- B. Spirillum minus
- C. Eikenella corrodens
- D. Yersinia pestis
- E. Pasteurella multocida



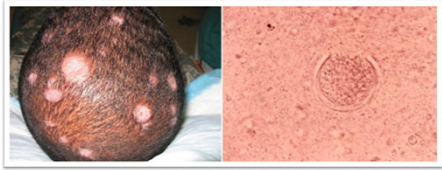
QUESTION #6

An 18-year-old male had the acute onset of sore throat, followed in two days by high fever. On presentation in the emergency room he was acutely ill, with a temperature of 105°F. Chest x-ray, followed by the CT shown here, showed a nodule in the left lower lung field. Swelling and tenderness in the right anterior cervical triangle led to the CT with IV contrast shown here. Blood cultures were likely to reveal which of the following:

- A. Aerobic Gram positive rod
- B. Aerobic Gram negative rod
- C. Anaerobic Gram positive rod
- D. Anaerobic Gram negative rod
- E. Endemic mycosis



This 21-year-old African American male college student in Tucson, Arizona was seen because of low grade fever, malaise and scalp lesions progressing over the past 3 weeks. He had visited Nogales, Mexico with some of his fraternity brothers six months earlier and had sex with a prostitute. About a month ago, he was drunk at a party, fell into a pond and required resuscitation. A skin biopsy is shown below.




The most likely etiologic agent is found in which of the following locations:

- A. Pond scum
- B. Dirt
- C. Genital lesions
- D. Bat droppings
- E. Pigeon droppings

75 yr woman from Brazil had a fat transplant from buttocks to both cheeks for cosmetic reasons. Four months later she presented with slowly progressive painless swelling in the operative sites. Most probable cause is:

- A. Idiopathic nodular panniculitis
- B. Phaeoiphomycosis
- C. Nocardia brasiliensis
- D. Botryomycosis
- E. Mycobacterium chelonae



Question #13

This 67-year-old man was brought to the hospital by the police in Washington, DC in because he was sleeping on a grate in bitter cold weather and, when asked to move along by the police, began muttering incoherently. In the emergency room he was combative and had to be restrained. He was admitted for observation and had numerous skin lesions such as the one shown.

Which of the listed tests is most likely to be informative?

- A. Wet mount of skin scraping
- B. Fungal culture of skin scraping
- C. Acid fast smear of skin scraping
- D. Serum VDRL
- E. HIV ELISA




Question #15

This is the stool examination of a 72-year-old Caucasian West Virginia coal miner was referred for an unexplained eosinophilia of 18% with a normal WBC of 8,000. He had retired from the mines 18 years ago and spent most of his time gardening at home. He had been receiving isoniazid, rifampin, and ethambutol for tuberculosis for six months and the referring physician did not want to stop his antituberculous medication to see if the eosinophilia would go away.

The likely source from which he picked up this organism is which one of the following:

- A. Poorly cooked pork
- B. Fecally contaminated ground water in the mines
- C. His dog
- D. Insect bite



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This 35yr Peruvian woman with chronic myelogenous leukemia in blast crisis was admitted for allogeneic hematopoietic stem cell transplantation from her sister. On admission, this extensive painful rash was found on the gluteal area of her buttocks. She complained that the area had been painful for several days at the hospital in Peru where she was awaiting transfer to NIH but she was not certain when the rash started. She was afebrile but weak and markedly granulocytopenic from prior chemotherapy. The most likely diagnosis is which of the following

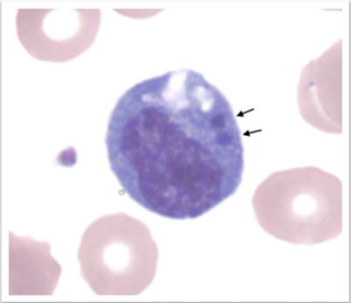
A. Herpes zoster
 B. Herpes simplex
 C. Ecthyma gangrenosum
 D. Aspergillosis




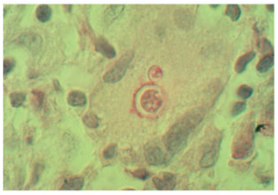
Question #24

The patient with this peripheral blood smear was bitten by a:

A. Deer tick
 B. Dog tick
 C. Deer fly
 D. Kissing bug (triatome)



Question #27


A 55-year-old recent immigrant from Brazil and former banana plantation foreman had facial lesions which had not responded to cephalosporins. PAS stain of biopsy is shown. What is the probable organism?

A. *Rhinosporidium seberi*
 B. *Paracoccidioides brasiliensis*
 C. *Treponema pallidum* subsp *pertenue*
 D. *Leishmania brasiliensis*
 E. *Klebsiella pneumoniae* subsp *rhinoscleromatis*

Question #30

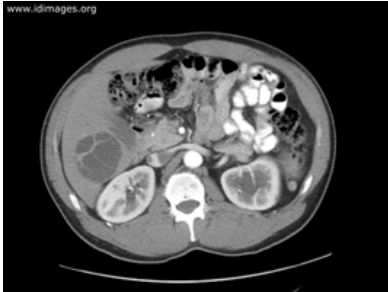
This 44-year-old man with AIDS has an organism in his skin. Which is most likely site for infection to spread?

A. Conjunctiva
 B. Buccal mucosa
 C. Brain
 D. Blood stream
 E. Draining lymph nodes




50 yr old man had this CT done because of RUQ pain after an auto accident. He was afebrile and had normal WBC and liver function tests. He had immigrated from rural Greece 10 years earlier. He often ate food his family sent from Greece. The probable source of the lesion is:

A. Dog stool
 B. Colon cancer
 C. Human stool
 D. Smoked Greek sausage
 E. Soft cheese from Greece



40 yr old woman from Dominican Republic found to have hypopigmented confluent patches on her back on routine physical exam. Sensation of light touch seemed diminished over the lesions. Punch biopsy of the skin showed well formed epithelioid granulomata. Fite stain for acid fast bacilli was negative. Which of the following is the most likely to be helpful in diagnosis:

a. Fite stain on more sections
 b. Repeat biopsy for mycobacterial culture
 c. Silver (GMS) stain of the biopsy for fungi
 d. Blood test for angiotensin converting enzyme (ACE)
 e. Skin scraping for wet mount microscopy



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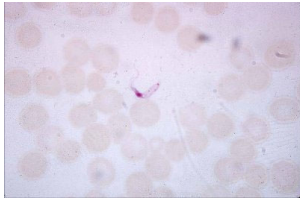
A previously healthy young female had the onset of pain in her calf and a red, tender rash on her calf. She was unaware of preceding trauma. In the photo, the bleeding was from an unsuccessful needle aspirate. She was given cephalexin but the progressively excruciating pain increased and came to the emergency room about 48 hours after onset. Her vital signs were normal except for a temperature of 102. There was no rash outside the calf, which was red, tensely swollen and tender. A soft tissue film showed no gas. WBC was 15,000 with 80% PMN and 5% bands



The clinical presentation is most consistent with which of the following:

- A. Streptococcus pyogenes
- B. Clostridium perfringens
- C. Staphylococcus aureus
- D. Mixed infection with anaerobes and aerobic bacteria
- E. Vibrio vulnificans

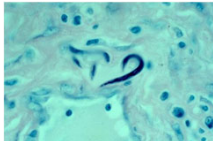
A 56-year-old car salesman from Birmingham, AL, returned two weeks ago from a photo safari in an East African game park, and presented with fever, intermittent mildly pruritic rash, malaise, and easy fatigue of one week's duration. A blood smear is shown below.



He was bitten by

- A. Fly
- B. Flea
- C. Mosquito
- D. Kissing bug
- E. tick

5. This 25-year-old female Peace Corps worker returned from a year of service in Nigeria. She felt well but had developed a pruritic, maculopapular rash while in Nigeria that was diagnosed on return home as eczema but did not resolve with topical steroids and interfered with sleep. On exam, she had an asymptomatic subcutaneous nodule near her left elbow that had been present for several weeks. Biopsy of the nodule is shown.



If not appropriately treated, she may return with which of the following:

- | |
|---------------------------|
| A. Keratitis |
| B. Lymphedema |
| C. Eosinophilic pneumonia |
| D. Encephalitis |

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A 23-year-old Chilean male returned to the United States after a week's vacation back home, during which he went to the Western part of Peru, which is dense jungle, for white water rafting. He was not ill during the week, though he had numerous insect bites during the rafting trip. About two weeks after his return, he noted a pruritic red papule on this arm, which enlarged slowly and ulcerated. There were no systemic symptoms, no pus and no lesions anywhere else on his body. He had been given cephalexin for one week with no response. A punch biopsy showed chronic inflammation with abundant histiocytes, plasma cells and lymphocytes but no giant cells. Special stains for bacteria and fungi were negative. Culture grew no fungus over four weeks and only skin flora on bacterial culture. Mycobacterial cultures at 30°C were negative at four weeks.



WHAT WAS THE LIKELY SOURCE OF INFECTION?

- A. Kissing (reduviid) bug
- B. Contaminated water
- C. Thorny bush
- D. Sandfly bite
- E. Mosquito bite

This 50-year-old man had been working in Massachusetts as a caretaker at a Nantucket golf course, mowing the lawn and trimming the bushes during the past three weeks of the summer. He developed a painful ulcerated lesion on his hand, soon associated with high fever, painful axillary adenopathy on the same arm and a dry cough.



WHAT IS THE LIKELY SOURCE OF THIS INFECTION?

- A. Disposing of a dead squirrel
- B. Cleaning the swimming pool
- C. Nicking his hand on a rusty nail
- D. Scratch from his roommates kitten
- E. Thorn from decaying vegetation

This rash was found on a stuporous adult one morning. He had appeared well the night before other than some "flu like" symptoms. :



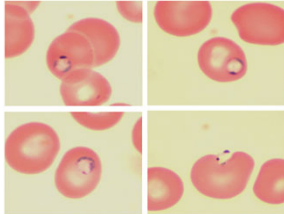
Blood cultures of this patient are likely to grow which of the following

- A. Gram negative cocci
- B. Gram positive cocci
- C. Gram negative bacilli
- D. Gram positive bacilli

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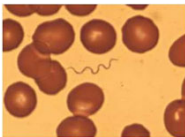
A 40-year-old patient with HIV (CD4= 200) has just returned from a beach vacation in New York State and now presents with fever, profound shock, and a hemoglobin of 6g/dl. He is intubated and started on pressors. Lab values suggest severe hemolysis. His peripheral smear is shown in the figure



The treatment of choice for the most likely cause of this patient's illness is

- | |
|--------------------------------------|
| A. Doxycycline |
| B. Imipenem |
| C. Atovaquone and azithromycin |
| D. Mefloquine |
| E. Artemether-lumefantrine (Coartem) |

You are called to see a patient in the ICU in Washington, DC with ARDS (adult respiratory distress syndrome). The patient is a previously healthy woman who had been recently seen in the ER after presenting in April with fever, chills, myalgias, and dehydration. She had just returned from her country cabin in the rural California mountains. Because her evaluation was non-specific other than mild LFT abnormalities, she was rehydrated and sent home without antimicrobial therapy. The next day she returned to the ER and was readmitted with fever, hypotension, and respiratory failure. Laboratory testing revealed a WBC of 3400/ μ L, hemoglobin level of 11.4 g/dL, and platelet count of 19000/ μ L. The following was seen on peripheral smear (see photo):



The most likely reservoir of this pathogen was:

- | |
|------------------|
| A. Another human |
| B. Aquatic birds |
| C. Lake Fish |
| D. Rodents |
| E. Deer |

