

PathMD™: Board Review Letter

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Microbiology

Volume 3, Number 5

1. The parasite egg in image 1 was identified. What parasite has a high incidence of being found in association with the one in the image?

- a) *Isospora belli*
- b) *Entamoeba histolytica*
- c) *Giardia lamblia*
- d) *Dientamoeba fragilis*

2. The organism in image 2 (Sabouraud dextrose plate) was cultured from lung tissue obtained from an organ transplant patient. What is the organism?

- a) *Mucor spp.*
- b) *Histoplasma capsulatum*
- c) *Aspergillus fumigatus*
- d) *Aspergillus terreus*

3. The organism present on this older blood agar plate (image 3) was cultured from the CSF of an elderly man who had meningitis. Which of the following is NOT seen with this organism?

- a) The colonies are bile soluble.
- b) The organism is positive for pyrrolidonyl peptidase (PYR).
- c) The organism is sensitive to optochin.
- d) Both a and c.

4. Image 4 is that of a test used to presumptively identify a catalase-negative streptococcus with characteristic hemolysis. Which organism is streaked perpendicular (identified by arrow) to the presumptive organism (presumptive - the unknown organism being tested)?

- a) *S. aureus*
- b) Group A Streptococcus (*S. pyogenes*)
- c) Group D Streptococcus
- d) *Enterococcus spp.*

5. The organism seen in image 5 is that of mycobacterium growing on a plate. Which of following mycobacteria show this morphology?

- a) *M. simiae*
- b) *M. marinum*
- c) *M. szulgai*
- d) *M. tuberculosis*

6. See image 6 of a peripheral blood smear. You obtain the history that this patient lives on the Northeast Coast with her family, and none of them have strayed far from that area. She recently developed fever, malaise, anorexia, and fatigue. What is the most likely diagnosis?

- a) *Ehrlichia chaffeensis*
- b) *Babesia microti*
- c) *Plasmodium falciparum*
- d) *Borrelia recurrentis*

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7. *Mycobacterium szulgai* has an interesting characteristic. The organism is a ____ @ 25°C and a ____ @ 37°C.

- a) non-photochromagen; photochromagen
- b) photochromagen; non-photochromagen
- c) scotochromagen; photochromagen
- d) photochromagen; scotochromagen

8. You get a call from a clinician who insists on ordering a “*Legionella pneumophila* antigen” on a urine specimen because the team highly suspects this organism, has already started the patient on treatment, and would like to rapidly confirm their clinical diagnosis; however, you find out that no other microbiology test was ordered. What do you tell the clinician?

- a) The urine antigen test is a tedious test that takes several days to perform. Same-day results are not possible. Culture should also be considered.
- b) The *Legionella pneumophila* antigen test only detects serogroup 1. A negative urine antigen test does not mean that the patient does not have Legionella. Culture should also be considered.
- c) The results of the urine antigen test are affected by therapy; therefore, since the patient has already started treatment, a negative result does not necessarily mean the patient did not have Legionella. Culture should also be considered.
- d) The urine antigen test is not really a specific test. There is a lot of cross-positivity with *Streptococcus pneumoniae* in patients who are bacteremic. Culture should also be considered.

9. What obvious morphologic characteristic distinguishes *Bacillus anthracis* from *Bacillus cereus*?

- a) *B. anthracis* is non-motile.
- b) *B. cereus* is non-motile.
- c) The spores of *B. anthracis* are present on the terminal ends of the organism.
- d) The spores of *B. cereus* are present on the terminal ends of the organism.

10. Which of the following viruses are non-enveloped?

- a) Parvovirus
- b) Hepatitis A
- c) Papovavirus
- d) all of the above

Notes for question set:¹

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