Closing the Brief Case: Cough in an Immunocompromised Patient

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KEYWORDS pneumonia, Brucella, Haemophilus, satellite test, urease test

ANSWERS TO SELF ASSESSMENT QUESTIONS

1. An organism grows well on chocolate agar but poorly or not at all on blood agar. What is the first mandatory step when a Gram stain reveals a tiny, Gram-negative coccobacillus?
   a. Tape the plate, and perform further workup within a biosafety cabinet.
   b. Identification using automated systems
   c. Catalase test
   d. Oxidase test

Answer: a. Because the list of potential microorganisms includes Brucella and Francisella, it is required to tape the plates and perform any further workup within a biosafety cabinet.

2. What is the most common mode of transmission of Brucella among laboratory workers?
   a. Contact
   b. Ingestion
   c. Aerosol
   d. Fomites

Answer: c. Brucella infection in the general population is commonly acquired through occupational exposure, contact with animals, or ingestion of unpasteurized dairy products. However, among laboratory personnel, the most common mode of transmission is aerosol.

3. What is the result of the urease test in strains of H. influenzae?
   a. Rapidly positive in <4 h
   b. Positive at 24 h
   c. Negative
   d. Variable

Answer: d. The urease test is variable (can be positive or negative) in H. influenzae. It is typically rapidly positive in <4 h in genera such as Proteus, Helicobacter, and Brucella. It is also typically positive at 24 h in some Haemophilus species, such as H. aegyptius and H. haemolyticus, and is less frequently reported as rapidly positive (unlike the strain reported in this case).
TAKE-HOME POINTS

- *Brucella* is a relatively rare infection, with <120 cases in the United States per year, and due to its microbiologic characteristics, it can potentially be confused with *Haemophilus*.
- The urease test is typically rapidly positive in genera such as *Brucella*, *Proteus*, and *Helicobacter*. However, it can be variable in species of *Haemophilus*.
- Clinical microbiologists should have an understanding of the technical principles that are necessary for both recognition and management of a potential biological threat.