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Answer to Photo Quiz: *Francisella tularensis*

(See page 2085 in this issue [doi:10.1128/JCM.00075-11] for photo quiz case presentation)

The morphology of very small Gram-negative coccobacilli growing slowly only on chocolate agar prompted further testing to specifically rule out a select agent. Rapid tests, as outlined in the ASM Sentinel Level Laboratory Testing Protocol (1), showed the organism to be weakly catalase positive, oxidase negative, and beta-lactamase positive. The organism was urease negative and did not produce satellite colonies around *Staphylococcus aureus* on blood agar. On the basis of these results, the isolate was reported as a presumptive *Francisella* species and referred to the nearest Laboratory Response Network (LRN) Reference Laboratory, in this case, the Kentucky Public Health Division of Laboratory Services, where the organism was definitively identified as *Francisella tularensis* by PCR.

Tularemia is an uncommon human disease in most parts of the United States and can present diagnostic challenges that may delay identification and appropriate treatment. The most common form of the disease, ulceroglandular tularemia, typically presents as a skin ulcer at the site of an arthropod bite, high fever, and swelling of regional lymph glands. Despite the history of tick exposure, tularemia was not initially suspected in this case due to the more cellulitic pattern of erythema, lack of regional lymphadenopathy, and apparent failure to respond to doxycycline. While serology has long been the mainstay of laboratory diagnosis, negative results early in the course of infection are common (4) and patients on antibiotic therapy may remain seronegative (3). Definitive diagnosis is by culture, although this too frequently gives negative results due to the fastidious nature of the organism.

Rapid recognition of *F. tularensis* in the laboratory is critical to reduce the likelihood of transmission to laboratory personnel from exposure to easily aerosolized cultures. Rapid recognition is often hampered by the organism's slow growth and resemblance to *Haemophilus* species. The presentation of very tiny coccobacilli should alert staff to seal all plates and to perform any additional manipulation in a biological safety cabinet until *Francisella* can be ruled out (1). Isolates should be forwarded to an LRN Reference Laboratory for confirmatory identification. Prophylactic doxycycline or ciprofloxacin should be offered to laboratory workers with potential high-risk exposure (2).

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Alan D. Junkins
Norton Healthcare
Louisville, Kentucky

James W. Snyder*
University of Louisville Hospital
Louisville, Kentucky

*Phone: (502) 852-1777
Fax: (502) 852-1771
E-mail: james.w.snyder@louisville.edu