

Case 19.1

At the town clinic in rural Arizona you receive a patient suffering from fever, chills, and a headache. He is a forty-year-old Caucasian male. He works as the local auto mechanic and says his symptoms began two days ago. When the symptoms began, he figured it was a cold he had caught while on an overnight hunting trip for rattlesnakes and small game. But now he feels much worse than any cold or flu ever made him feel.

You ask him to tell you more about the trip in detail. He says he and a friend went together. They hunted primarily for snakes, but killed two jackrabbits, which he had skinned and cooked himself, for dinner. Most of the trip was spent hiking and searching for snake lairs in the foothills. He had consumed nothing found in the foothills besides the rabbit meat and some prickly pear cactus. All other food and water was carried in their backpacks. Neither he nor his partner had been injured in any way, and they had only the usual number of mosquito, flea, and tick bites. He had to remove a particularly tenacious tick from his forearm with a tweezers. They had also bathed in a shallow pool near a stream.

Question 1. Can bacteria causing his symptoms be contracted from rabbits, and if so, which?

- A) *Francisella*
- B) *Yersinia*
- C) *Brucella*
- D) *Borrelia*
- E) *Listeria*

Question 2. Which of the bacteria on your list can be contracted from insects? (For the purposes of this question, consider the tick an insect).

Question 3. Which can be contracted from swimming or washing in natural bodies of water?

Question 4. Should you consider plague as a valid part of your differential diagnosis for the patient under consideration? Yes/No, why?

Question 5. Plague is a bacterial disease endemic to the Southwest. What fungal disease is uniquely endemic in this part of the country

Case 19.2

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Question 2. Could this patient be suffering from coccidioidomycosis? Yes/No, why?

Question 3. After narrowing it down to tularemia or plague. Explain how infection with these organisms takes place?

Question 4. Where did the organism enter the body? What was the source of the disease? Explain.

Question 5. What is the major virulence determinant of *F. tularensis*?