Unusual Route of Transmission for *Brucella abortus*

Brucellosis is a zoonotic disease that occurs primarily through contact with infected animals or animal products. Person-to-person transmission of brucellosis is a rare occurrence. A MEDLINE search (1966–1997) revealed only seven reports concerning the sexual transmission of *Brucella melitensis* [1–4]. There are no reports on *Brucella abortus* transmission associated with sexual intercourse. We describe an infection due to *B. abortus* probably acquired via sexual contact in a young Austrian couple.

A 25-year-old man was admitted to our hospital because of fever (temperature, ≤39°C), malaise, headache, arthralgia, and a 6-kg weight loss. His symptoms began 3 months before hospital admission, when he returned from a trip to Syria where he had consumed fresh goat’s milk cheese. Symptomatic treatment consisted of paracetamol and mefenamic acid. Six weeks later therapy was supplemented with roxithromycin, 300 mg/d, but chills and drenching sweats continued. On admission he was in moderate distress. Laboratory studies revealed a WBC count of 5.3 × 10⁹/L and a C-reactive protein level of 10.7 mg/dL (normal level, <1.0 mg/dL). A peripheral blood smear was negative for malaria parasites. Results of agglutination tests for antibodies to *Salmonella* species were negative.

A routine blood culture (Vital Aer and Vital Ana, bioMérieux, Marcy l’Etoile, France) was positive for *B. abortus*. The serum agglutination test for *Brucella* antigen was positive (titer, 1:1000). Therapy with doxycycline, 400 mg/d, and rifampin, 600 mg/d, was instituted. Within a few days the patient’s condition improved, he became afebrile, and his C-reactive protein level had returned to normal.

Two months after the onset of the patient’s condition, his girlfriend developed the same symptoms: fever, drenching sweats, arthralgia, and cervical lymphadenopathy. Five weeks after the onset of her symptoms, she was admitted to a hospital, where a blood culture was positive for *B. abortus*. She received rifampin and co-trimoxazole because of a known hypersensitivity to doxycycline. She recovered without complications.
Culture-proven acute brucellosis was diagnosed in both the patient and his girlfriend. Although the young man had a history of travel to Syria and recalled the consumption of unpasteurized dairy products, his girlfriend had not been to the Middle East and denied any ingestion of imported cheese or milk. In Austria as well the rest of the European Community, cattle, goats, and sheep are free from infection with B. abortus. Dairy products are produced almost exclusively from pasteurized milk and are subjected to routine quality and microbiological testing.

Brucellosis in humans occurs primarily as a result of occupational exposure; close contact with infected animals is the main route of infection. Other important means of transmission are the ingestion of contaminated dairy products, inhalation of infectious aerosols, blood transfusion, or exposure to Brucella in microbiological laboratories. Possible sexual transmission has been documented for B. melitensis [1–4]; B. melitensis was isolated from the sperm of one patient [5].

To our knowledge, we describe the first case of possible sexual transmission of B. abortus in humans. Although the young man contracted brucellosis via ingestion of contaminated food in the Middle East, his girlfriend had no risk factors predisposing her to B. abortus infection. Given that the couple had unprotected sexual intercourse, sexual transmission is the most likely route of infection. Our observations, in accordance with previous published reports concerning B. melitensis, support the theory that person-to-person transmission is possible for B. abortus.

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References

Detection of Francisella tularensis in Clinical Specimens by Use of Polymerase Chain Reaction

A 37-year-old man presented with an ulcerated lesion on his left lower leg, which developed 1 week after removing an engorged tick. He was febrile (temperature to 39°C), and his left femoral lymph nodes were enlarged and tender. A biopsy of the ulcer was performed; one-half of the biopsy specimen was taken to the laboratory for culture, whereas the other half was stored at −20°C. Intravenous doxycycline (100 mg q12h) was administered to the patient. He defevered, and on the second hospital day he was discharged; he continued to receive oral doxycycline. The patient returned to the clinic 2 days after discharge with enlarging left femoral lymph nodes from which 25 mL of purulent material was aspirated (aspirate 1). He returned to the clinic 12 days after discharge with persistently swollen left femoral lymph nodes, from which purulent material was again removed (aspirate 2). He received oral doxycycline therapy for 4 weeks, with complete healing of the ulcer and resolution of the lymphadenopathy. Culture of the skin biopsy specimen yielded a single colony of Francisella tularensis. Agglutinating antibodies to F. tularensis, undetectable at the time of hospitalization, were present in convalescent sera at a dilution of >1:2,560.

DNA was extracted from a culture of the F. tularensis isolate, from whole blood, from the skin biopsy specimen, and from both lymph-node aspirates by using standard methods [1]. PCR analysis was done using the genus-specific oligonucleotide primers FTS-8 and FTS-12 from the 16S rDNA sequence of F. tularensis, and yielded a 714-bp fragment [2]. PCR was done with initial melting for 5 minutes at 94°C, followed by 30 cycles at 94°C for 30 seconds, 60°C for 30 seconds, 72°C for 30 seconds, and finally a 5-minute extension at 72°C after the last cycle. The reaction volume of 50 µL contained 1.5 mM MgCl2, 200 µM dNTPs, 1 µM of each primer, and 0.25 µL Taq polymerase, 5 µ/µL (Promega, Madison, WI). A PCR reaction that was done using the skin biopsy specimen yielded an additional fragment of 366 bp. No PCR amplification was observed from whole blood or lymph-node aspirates.

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Figure 1. PCR analysis of Francisella tularensis DNA. Lane 1, 100-bp molecular weight marker ladder (thin arrow at 500 bp). Lane 2, patient’s whole blood. Lane 3, Francisella tularensis isolate. Lane 4, skin biopsy specimen; Lane 5, aspirate 1. Lane 6, aspirate 2. (Bold arrow, 714-bp fragment).