Use of Veterinary Vaccines Associated with Illness in a Man

Sir—We read with interest the articles by Berkelman [1] and Weil et al. [2], and we wish to report a case of human illness associated with the use of vaccine strain *Brucella mellitensis* REV 1. The patient was a 76-year-old man. His medical history included arterial hypertension, herpes zoster, nonsteroidal anti-inflammatory drug-induced digestive hemorrhages, and a total knee replacement, which was performed 5 years before his current visit.

The patient presented with inflammatory prosthetic knee pain associated with swelling of the joint. No other local or general syndrome involving fever was present. A nonspecific, self-limited episode of fever syndrome lasting for 1 week had occurred 45 days before presentation. The patient later reported that he had handled, sacrificed, and eviscerated 2 lambs at his farm, which is located in an area where brucellosis is endemic.

Initial examination had been performed at another hospital and revealed a globular sedimentation rate (GSR) of 73 mm/h (normal value, ≤20 mm/h), a C-reactive protein (CRP) level of 39.9 g/dL (normal level, ≤10 g/dL). The *Brucella* titer was found to be 1:320 by agglutination testing and 1:640 by Coombs testing. No treatment had been given.

On the basis of the patient’s referral data, the surgeon at our hospital performed an additional serological study, the results of which were as follows: hematology findings were normal; GSR, 73 mm/h; CRP level, <0.5 g/dL; *Brucella* titer (by agglutination test), 1:1280; and glucose level, 13 mg/dL. Synovial fluid analysis revealed 50 cells/mm³, of which 80% were polymorphonuclear cells. Results of blood culture were positive for *Brucella* species, which was identified as REV 1 (vaccine strain) *Brucella mellitensis*.

After assessing the stability of the patient’s prosthesis, antibiotic treatment with doxycycline and rifampin was initiated, on the basis of previous experience with nonprosthetic cases. The patient’s condition improved satisfactorily, and he was discharged, subject to clinical and analytical follow-up. After receipt of 6 weeks of treatment, clinical evolution was favorable, until 1 year later, when the patient reported a painful lump on the prosthetic knee. No general fever syndrome was present. Arthrocentesis and synovial fluid culture were again performed, revealing the presence of the same species of *Brucella*. We contacted the Department of Animal Health of the University of Zaragoza (Zaragoza, Spain) and were told that the strain was unresponsive to aminoglycosides; thus, we decided to administer antibiotic treatment with rifampin, doxycycline, and levofloxacin, together with surgical cleansing.

The patient was asymptomatic at the time of communication, 2 years later, and had a good prosthetic function. Antibiotic treatment for a 6-month period was effective. The use of modified germs for the treatment of cattle may cause certain agents to enter into the human cycle and lead to pathology. We have no experience in this field, and such situations are unknown to us.

This case is an example of transmissions that could occur when live germs are used in animal vaccines. The drug susceptibility characteristics for such events are anomalous. We should remain alert and be prepared for potentially similar cases in the future.

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References


Delayed Discovery of Linezolid-Resistant, Vancomycin-Resistant *Enterococcus faecium*: Lessons Learned

Sir—In reference to the study by Rahim et al. [1], we report what we believe to be yet another case of infection with linezolid-resistant, vancomycin-resistant *Enterococcus faecium* (LRVREF) in the United States in which the patient did not have prior exposure to linezolid, along with a cautionary note about revisiting the microbiology data reporting practices.

Our patient was an 81-year-old woman with multiple serious medical comorbidities. She had been treated several months earlier with a 6-week course of intravenous vancomycin for methicillin-resistant *Staphylococcus aureus* (MRSA) septic arthritis, and she was readmitted for “general decline and further decrease from baseline.” At admission, joint aspirates cultures yielded MRSA, and urine cultures yielded vancomycin-resistant *E. faecium*. The patient was initially treated with linezolid; she continued receiving this therapy because she refused placement of intravenous lines. Shortly thereafter, the patient died after being classified as “comfort care only,” in accordance with her and her family’s wishes. Unfortunately, we serendipitously “discovered” this resistant isolate after the fact during the preparation of our annual antibiogram. Although the LRVREF isolate did not change the eventual outcome for our patient (several urine cultures were negative for LRVREF), this provided an opportunity for the microbiology, infection control, and pharmacy sections at our institutions to learn several lessons.
Our microbiology laboratory began using updated Microscan plates (Dade Behring) in December 2002, allowing susceptibility testing for newer agents, including linezolid. Our institution, like many others, masks susceptibility data in the hospital computer system for several restricted antibiotics, including linezolid, with data openly reported only when resistant organisms are isolated. However, many laboratory staff have minimal familiarity with linezolid, and given the rarity of resistant cases of linezolid resistance (no prior cases in our institution), the attending physician, infection control section, and pharmacy were not alerted, and susceptibility data (i.e., MIC of linezolid, >4 µg/mL) remained masked on the hospital computer system. Upon discovery during annual antibiogram preparation, we launched an immediate investigation and implemented some triggers to prevent a recurrence. New “smart” software (Alert) for LabPro/Microscan (Dade Behring) was installed, which allows for timely retrieval of data on resistant isolates. It provides an opportunity for laboratory personnel to generate a report each morning for isolates meeting preprogrammed resistance criteria and ensures that resistance data for restricted antibiotics are unmasked in the hospital computer system. This unmasking would alert the physician and unit pharmacist if the patient was receiving therapy with an inappropriate antibiotic. It also helps inform patient care areas about highly resistant organisms so appropriate infection-control measures may be taken. Unfortunately, the delay in detection resulted in disposal of the LRVREF isolate before we could conduct confirmatory and advanced molecular analysis. Concurrent detection with the new software will allow us to pursue advanced testing of any suspect isolates.

Lessons learned from this case may also be applied to other resistant isolates. The new software prevents laboratory technicians from having to sift through monotonous data to find information about resistant isolates. It also has significantly enhanced communication between the microbiology, infection control, and pharmacy sections. This automation may be especially significant, because the SENTRY antimicrobial surveillance data for January 2001–June 2002 showed emergence of linezolid resistance in 8 isolates (4 E. faecium isolates) among the 9833 isolates surveyed [2].

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References

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