

13.3

ZOONOSES

SCENARIO

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▶ Mr and Mrs S run a small caravan park. They have a little “petting” area with some rabbits and guinea pigs in a pen that people can lean over and stroke. They bring you the body of the second rabbit that has died in recent days for a post-mortem. You find multiple granulomatous lesions that, after culturing, are found to contain *Yersinia pseudotuberculosis*. This bacteria can cause disease in humans, which occasionally can be very serious, particularly in immunosuppressed people. Direct zoonotic transmission from rabbits has been reported, but there is a lack of information about the zoonotic potential in this type of setting. The other animals appear healthy at the moment.

What should you do?



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13.13 Mr and Mrs S keep and breed multiple animals for the petting zoo they run. You have just diagnosed a notifiable disease in one of their animals.

PHOTO ANNE FAWCETT

RESPONSE

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▶ Once alerted to the diagnosis by the laboratory results, you should research this unusual disease in your textbooks and online. You would discover that although *Yersinia pseudotuberculosis* does not appear to be a common pathogen in domestic rabbits (Meredith & Redrobe 2002), it can nevertheless occur. This enteropathogenic bacterium normally causes signs such as weight loss, lethargy, abdominal masses (presumably the granulomatous lesions in this case), hyperthermia and leukocytosis, and is spread by faecal contamination of the environment. However, the disease is normally self-limiting and the prognosis generally good (Cousquer & Meredith 2014). The fact that the disease has already proven fatal to two rabbits in this case should therefore stimulate you to question this diagnosis. You should first check with the laboratory about the specificity or false positive rate for this test. Although few if any tests have a 100 per cent specificity/ 0 per cent false positive rate, if the test parameters are close to these levels the results may be considered highly reliable. If not, you should ask the laboratory whether any more accurate tests might be available, following this initial screening test. And although the remaining animals appear healthy, they should be rechecked for clinical signs of this disease. The guinea pigs are also at risk (Quesenberry & Boschert 2011). If in doubt a blood test for leukocytosis could be considered. If the diagnosis remains probable or even reasonably possible, then a precautionary approach would be wise, given the potentially serious consequences of this disease for some affected animals, and its zoonotic risk.

Additionally, the fact that two rabbits have probably already died from a disease not normally fatal should trigger a search for concurrent illnesses

or pathogens, including a check of general husbandry, preventative healthcare measures including parasiticides, and the general health status of the remaining animals.

The owner should be advised about treatment of the remaining animals, which is normally by supportive care. Particular attention should be paid to diet and feeding. The owner should be advised that loss of appetite and consequent loss of normal bowel movements can be very serious in rabbits, and requires early veterinary intervention should it occur. Until the disease has demonstrably resolved, and the environment has been disinfected, sensible precautions should be implemented, including gloves, hand-washing, and the provision of care by people who are not otherwise suffering from concurrent illnesses or immunocompromise.

Although uncommonly transmitted to humans from domestic rabbits, such transmission is possible, most commonly through foodborne routes. Far East scarlet-like fever usually manifests. Signs include fever and right-sided abdominal pain, which can mimic appendicitis. Signs typically resolve without treatment, but disease can be more serious and treatment necessary in complex cases or immunocompromised patients (Jani 2013).

Accordingly, you should alert the owners to the risk of zoonotic transmission, and this information. Any owners or family members who experience possible symptoms, or are at risk of developing more serious disease due to concurrent illness or immunocompromise, should be advised to consult their doctor. The health status of members of the public who might come into contact through petting is unknown, so to prevent ongoing risk the surviving animals should be isolated from the public until the disease has demonstrably resolved.

Given that this disease does not normally cause serious signs in humans it might seem

tempting to skip this advice. However, given the potential for serious human disease, this would be unethical. Proffering this advice, and recording in the clinical notes that it has been provided, would also provide a legal defence, in the unlikely event that the client or another affected person attempted to initiate action against you for failing to warn of the risks. Such “defensible practice” is a necessity of contemporary veterinary practice, and should be instinctive for experienced veterinarians.

Technically speaking, other options are available in this case, including euthanasia and no treatment. While euthanasia of all surviving animals and decontamination of cages would indeed eliminate the risks to humans, it would be contrary to the interests of the surviving animals, who appear to be healthy and presumably have the potential to enjoy a good life. Should closer examination of the remaining animals reveal a level of clinical disease, the owner should be strongly encouraged to isolate and treat the rabbits as advised previously, given the clear risks to animal welfare and, potentially, to human health.

||||| IN this scenario the author advises the veterinarian to gather as much information as possible by:

- Researching the disease.
- Confirming the diagnosis.
- Advising of the risk and hazard of human transmission and recording any advice given.
- Considering the welfare implications for animals.

One potential approach to this dilemma is to weigh up the interests of all stakeholders (the owners of the petting zoo, the animals, the veterinarian, the clients of the caravan park and the wider public, for example). In the case of a serious,

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WHAT WOULD YOU DO?

notifiable disease, culling animals humanely may be justified on utilitarian grounds. Should the owners become infected in the course of treating their animals, the consequences may be devastating. Similarly, should other animals become infected the consequences may be devastating for them.

Isolating the animals in a hospital setting may reduce this risk, as long as risks to veterinary hospital staff can be managed.

Another interesting element to managing zoonotic diseases like *Yersinia pestis* is that these are notifiable diseases in some regions. Reporting a disease to the relevant health authorities is a requirement which legally overrides the veterinarian's obligation to maintain client confidentiality. Client confidentiality is discussed at greater length in sections 7.1 and 13.5.

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What would you do?

How would you approach a feline patient that you diagnose with dermatophytosis in a shelter? The cat has mild, scaly skin lesions on its ears and chin, but is not at all bothered by these and is otherwise healthy on examination. In this case, the shelter is full to capacity, and has a policy of only rehoming healthy animals.

ONE Consider what information you will need to make your decision.

ONE What is your ethical justification for this decision?



△ 13.14 Ringworm in humans is highly contagious but rarely serious.

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