



Medicine for Managers

Dr Paul Lambden BSc MB BS BDS FDSRCS MRCS LRCP DRCOG FIHSCM

Brucellosis

I happened to see a Veterinary Drama and a Medical Drama on successive weeks on the television and both of them featured a case of Brucellosis. Most people are aware of the name of the disease and yet very little is known generally about it. It is rare in the UK with fewer than 20 cases reported each year of the last decade, and most of those were acquired following exposure outside the UK itself.

The disease is acquired as an infection by the bacterium **Brucella**. The infection results from drinking unpasteurised milk, eating dairy products prepared from unpasteurised milk or from direct contact with and handling infected animals.

There are various Brucella species which infect cattle, goats, pigs, sheep and also dogs.

The disease is a zoonotic disease. A zoonosis is an infectious disease of humans caused by a bacterium, virus or parasite which can be transmitted from a non-human vertebrate to a human.

Brucellosis is one of the most widely spread zoonoses globally in endemic areas. In such areas it can present a public health hazard. It

affects men, women and children of all ages. Apart from consumption of infected dairy products, people working with animals are at risk and veterinary surgeons, dairy farmers, hunters, butchers and laboratory personnel working with animals are all vulnerable.

Spread of the infection between people is extremely rare.

In the UK there has been a significant increase in cases of **Brucella canis** in dogs in the last four years.

A total of 97 cases of the disease in dogs were reported between the start of 2020 and June 2023.

Most of these cases were in dogs imported from Eastern Europe or which had had contact with imported dogs.

In that time two cases of human Brucella have been confirmed in the UK, both in individuals who had high-risk exposure to infected dogs. In

general, however, the UK is officially considered to be Brucella-free.

Infection and Diagnosis

Brucella may be hard to diagnose because it may present as an intermittent vague set of symptoms including fever, joint pain and sweating, which may come and go.

The initial symptoms may appear up to two months after infection and may last months or even years.

The bacterium is acquired via the mouth, nose, eyes or a break in the skin. The infection then spreads to the lymph nodes where the bacteria multiply.

From the nodes, the bacteria may spread to involve the liver, kidneys, heart, brain and bones, causing swelling and damage.

It is usually transmitted by contact with infected tissue or body fluids of an animal as well as by consumption of unpasteurised dairy products or undercooked meat.

Diagnosis is from the history, the nature of symptoms and by testing for signs of the bacterium.

Because the disease has no distinctive features, it may be recognised as part of a screen of tests for a variety of infections.

The most effective way of diagnosing the disease is by culture of body fluid or tissue. The bacterium grows slowly and and test confirmation may take several weeks. Once diagnosed, further investigations to assess

extent and degree of damage may include tissue biopsy, X-rays, ultrasound and scans.

Management and Treatment

Brucellosis can be effectively treated but it requires the use of at least two antibiotics and it may be necessary to drain any abscesses that may have formed.

The management is of the infection itself with antibiotics and of the other symptoms such as fever or joint pain.

Despite treatment the symptoms may persist for some weeks.

Patients usually make a full recovery with antibiotics, but a prolonged course is required and, if not taken for long enough, the infection may recur. It is essential to take the whole course to avoid relapse

Antibiotic Therapy

- **Uncomplicated cases:** Commonly a course of **doxycycline** or **tetracycline** with **rifampicin** for at least six weeks
- **Cases with complications:** Usually **doxycycline** with **rifampicin** and either **streptomycin** or **gentamycin** for up to six months
- **Children:** Normally treated with **co-trimoxazole** combined with **rifampicin** or **streptomycin**

Complications of Brucellosis

Generally, complications only arise if the symptoms persist or the diagnosis is not made for a long time after onset. Damage from the

infection may be to any affected organ such as the joints (arthritis), the liver or spleen, the heart (endocarditis), the testes (orchitis) and the brain and spinal cord (encephalitis or meningitis).

Avoiding brucellosis

Mercifully, the infection is rare in the UK, but endemic in some other countries. Good principles are:

1. ***Do not drink*** unpasteurised milk or eat products made with unpasteurised milk
2. ***Cook meat*** fully and ensure surfaces and equipment where raw meat has been prepared are thoroughly cleaned
3. ***Be careful with dogs from abroad***

paullambden@compuserve.com