Yersinia in gamebirds

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continues the series on diseases affecting gamebirds.

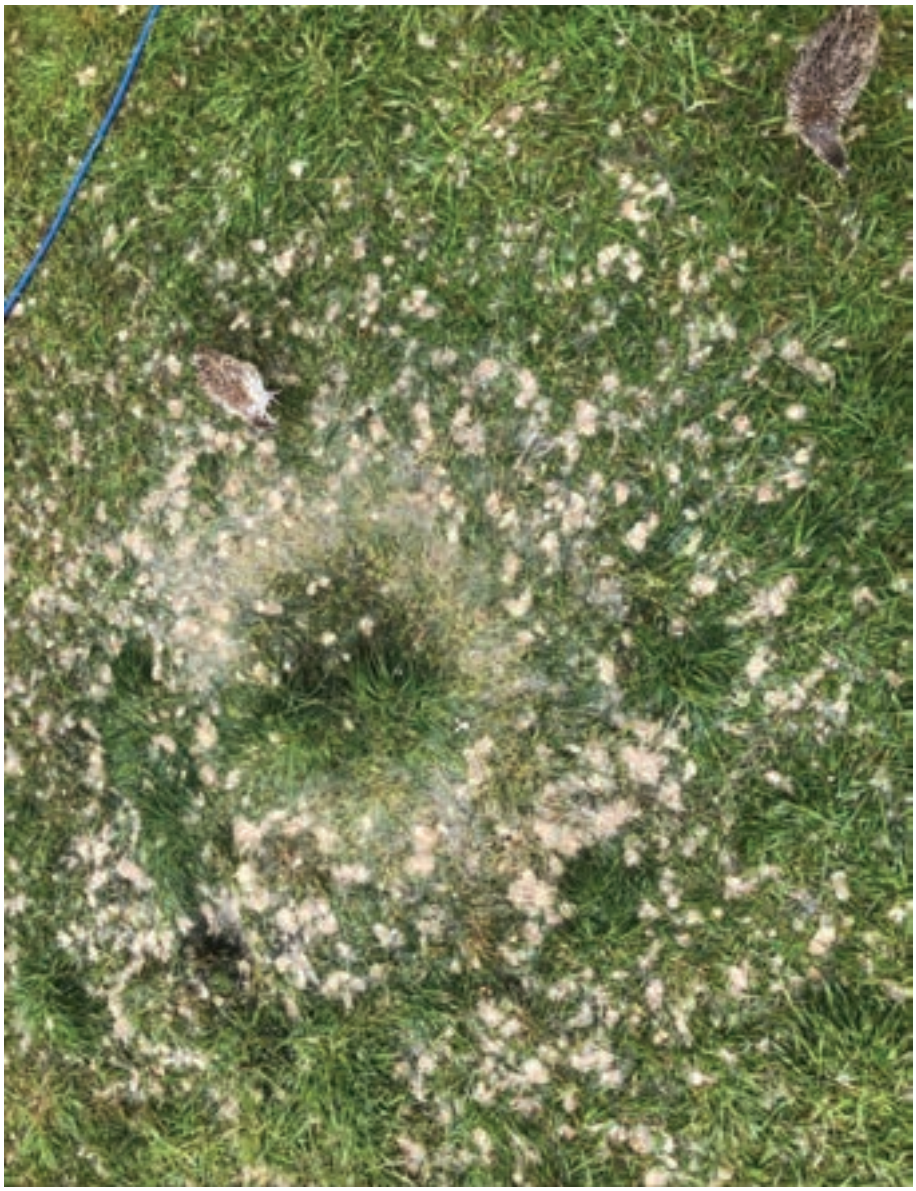
***Yersinia pseudotuberculosis* is perhaps a little known bacterial disease in gamebirds, but does crop up from time to time and can cause quite significant losses if not identified and treated in time.**

It is a disease that is recognised as a zoonotic enteric infection that has its natural reservoirs in farm animals, wild rodents, rabbits, deer, and birds, including turkeys, ducks, geese, pigeons, pheasants, and canaries. It is transmitted among animals by the faecal-oral route. Humans can acquire it by ingesting foods or water contaminated by animal faeces so it is important to identify it quickly if you are unlucky enough to have infected birds. In the human it causes usually mild, self-limited illnesses of intestinal inflammation and diarrhoea but can produce serious sepsis and abscesses in immunocompromised hosts.

In the past decade, its genome has been elucidated through interest in this bacterium as the ancestor of the 'plague' bacillus *Yersinia pestis*, with which it shares more than 90% of its genes!

I have only ever seen it in partridge and pheasant poults that are being grass reared. Where I have been able to identify cause in gamebirds there has usually been some contamination of the ground/fields on which the birds are being reared, and usually fairly recently (months), with animal manure, especially from pigs which are known from studies to carry this disease with no signs of infection. However, at times I have not identified a link at all and cases seem just to appear – presumably carried in by rodents or wild birds.

Aerial shot *Yersinia* diarrhoea.



Clinical signs and diagnosis

The most common presentation I have seen in partridges is what we now call 'sleepy partridge syndrome'. The birds walk around quietly (quietness being the first sign of illness often in this species), are often in good condition, and not at first experiencing any mortality. On post-mortem in the early stages not a lot can be seen. Between two and five days later (sometimes longer) the classic tubercular-type abscesses appear as nodules of yellow pus in the peritoneum, in the air sacs, sometimes embedded in the gut wall, and sometimes even eating away at the bones of the spine.

Pheasants seem to bypass the sleepy stage and just look ill, then after two to four days there can be the most amazing white chalky diarrhoea everywhere (see aerial shot left), and 12 to 24 hours after that the abscesses can clearly be seen on the gut wall and in the air sacs (see left hand picture opposite). The pheasants seem to have more cases of abscesses in the bones than partridges (see right hand picture opposite). I have been astounded by how much infection some birds will tolerate, while others die quickly with little to be seen. Losses can be quite dramatic, as can (fortunately) response to treatment.

Laboratory diagnosis is useful, although fairly complex testing is required; and cultures can, and should, be tested for antibiotic sensitivity in case of selected treatment failing. Diagnosis is not

Images: Mark Elliott

Above left: Yersinia abscesses in and around air sacs and intestines. Above right: Yersinia abscesses in spine and air sacs.

available by culture at the time patients have their acute illness with abscess formation and they must be treated as promptly as possible to prevent losses. The choice of antibiotics is a best guess and/or based on local experience of cases.

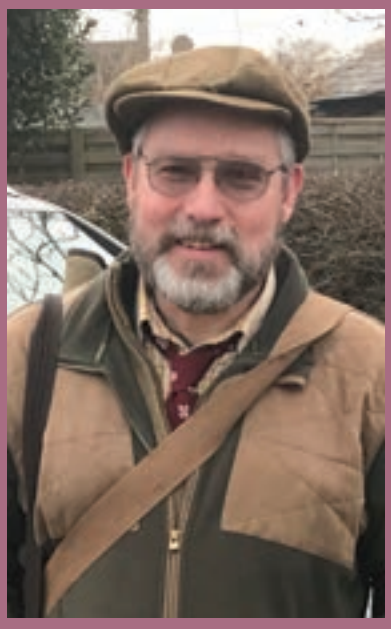
Treatment

We know that generically isolates of *Y pseudotuberculosis* have shown susceptibility to ampicillin, cephalosporins, tetracycline, trimethoprim-sulfamethoxazole, chloramphenicol, fluoroquinolones, and aminoglycosides, so one of these will be your vet's choice. Cultures can point to a better antibiotic if response to treatment is poor. The organism is resistant to colistin (which is now not used in gamebirds). Personally, I use a combination of antibiotics available for use in gamebirds similar to the classes of those listed above, in addition to electrolytes and – in partridges – Red Bull (the sugar version).(Maybe the advertised claims are true, it does give them wings!)

With partridges on known sites that have had a previous diagnosis, I always now treat on signs of sleepiness and nothing else found on the post mortem. Similarly with pheasants I would treat on presentation with the classic diarrhoea picture. Why is nothing else found on post mortem? I often find that in cases of a bacterial septicaemia, apart from Coccidosis, the normal protozoal infections such as Hexamita are not in evidence. That is not to say, however, that those diseases will not appear as soon as treatment has finished for the *Yersinia* as the birds will have had their immune systems considerably compromised.

Prevention

Experience suggests contaminated ground will stay that way for some time, so I always advise on moving the rearing field if practical to do so. Don't spread manure shortly before placing the birds, and especially not pig manure. Practice good biosecurity, including rodent control and take measures to exclude wild birds. •



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