

LUNG LESION LINK TO HIGHLY CONTAGIOUS DISEASE

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a reader query about sudden finisher-pig deaths

QUESTION:

Recently we have seen an increase in deaths in our finisher pigs. These are usually good pigs that show almost no clinical signs before they are found dead. The pigs don't have loose stools and there is only a small amount of coughing. Recently abattoir reports have indicated a higher level of pleurisy and increased lung condemnations. What could be causing this?

ANSWER:

There are a number of potential reasons why good-sized pigs are found as sudden deaths in the finishing stage. These include viral infections, with opportunistic secondary bacterial infections, as well as bacterial infections alone. Increased levels of stress through feed and/or water shortages, the latter resulting in salt poisoning due to water deprivation, can also result in sudden death, along with intestinal torsions.

But the clinical signs described, in combination with the increase in reported pleurisy levels from the abattoir, do suggest that the deaths may be due to an infection with a bacterium called *Actinobacillus pleuropneumonia* (more commonly known as APP). APP is a highly contagious disease that causes mortality rates of between 30% and 50% in acute outbreaks in growers and finishers.

APP initially invades the tonsils of the pig at between four and 12 weeks of age and can remain there for a long time without causing clinical signs.

A disease-causing APP strain



will enter the bloodstream from the tonsils and travel to the lungs. In the lungs, usually in the biggest lobe, it will release toxins and destroy the surrounding lung tissue, resulting in 'dark, cherry-like lesions'. These lesions are dark red to purple in colour and penetrate deeply through the lung tissue. Over these lesions, APP causes inflammation of the lung surface, also known as pleurisy, which can remain until slaughter.

TYPICAL SYMPTOMS

Due to the lung damage live pigs can be depressed, anorexic and reluctant to rise, and breathe with increased abdominal effort. In severe infections, cyanosis, blue-purplish discoloration of the skin, can occur as the body decreases the blood flow to the

skin and redirects it to vital organs such as the kidneys and brain. There is usually little coughing.

In an acute outbreak of disease, sudden deaths are seen between four and six hours of the organism invading the bloodstream, resulting in septicaemia (infection in the blood). Due to the extensive lung damage, caused by the toxins released, pigs may be found with a bloody mucoid discharge from their nose.

I would suggest you speak with your vet regarding post mortems being carried out on any recently deceased pigs as soon as possible. There are 15 different serotypes of APP, within which there are several strains that can cause mild or severe clinical disease, or no clinical disease at all. Presence of a disease-causing strain does not

necessarily mean that it will cause disease.

With this in mind, in order to diagnose this disease, a sample of any suspect APP-like lung lesion should be taken for further testing. The organism will then be cultured at the laboratory and serotyped if present.

RESISTANT STRAINS

The bacterium is usually sensitive to a wide range of antibiotics, but resistant APP strains do occur. Diagnosis of the disease through culture with antibiotic sensitivity testing will help identify resistant strains – once these results have been received, your vet will be able to advise you further on your antibiotic selection.

In an outbreak, treatment is usually given individually as



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affected pigs neither eat nor drink. Medication of the feed or water with a suitable antibiotic can then be administered once the outbreak has been brought under control. Treatment of animals will reduce clinical signs and mortality, but be aware that these animals may not build up any immunity to the organism and so disease can re-occur at a later point.

The lung lesions do not resolve and, if they do not cause a fatal bleed, they can then go on to develop into abscesses as a result of the bacteria present and the dead lung tissue. Pigs that are affected

by this chronic long-term disease will grow slower due to the reduced functioning of the lungs.

Lungs affected with either abscesses or pleurisy will be condemned at the abattoir. Using abattoir information, along with regular abattoir data such as the British Pig Health Scheme (BPHS), will help monitor any changing trends in pleurisy and APP-like lesions that can be indicators of problems within the herd, and so help monitor any signs of underlying subclinical disease. They would also help indicate further if this is an increasing problem within your pigs.

REDUCE STRESS

APP is difficult to control. It is important to reduce any stresses on the pigs that could trigger an outbreak of disease, such as sudden temperature changes, high stocking densities and sudden changes or shortages of feed and water. Although clinical disease can be seen with a simple infection of APP, outbreaks are usually triggered by stress, including breakdowns or flares of other respiratory diseases such as EP (enzootic pneumonia) or PRRS (porcine reproductive respiratory disease or

'blue ear' disease). If these other disease challenges are on farm they can complicate the clinical picture, so it is important that you speak to your vet about them to ensure their control is effective and if any changes to your current protocols need to be made.

The disease is predominantly spread from pig to pig, although it can be transmitted short distances in the air, particularly in low temperatures and high humidity. Animals that recover become carriers, looking clinically well but shedding the bacteria for months. Carrier pigs are often how APP is brought onto a farm, but a more in-depth discussion with your vet regarding pig movements if you are not a closed herd will be more beneficial in starting to identify how the disease may have entered your farm, if it is diagnosed.

To reduce stress on the pigs, good pen hygiene and management (such as running pens all-in-

all-out) as well as good ventilation is important – this will also assist in controlling an APP infection. The bacterium is sensitive to most disinfectants. However, it is an anaerobic bacterium, meaning that it will survive in environments where there is no oxygen. It survives in mucous and muck for up to five days, and up to 30 days in clean water. As most disinfectants are inactivated with organic matter, such as muck, it is important to remove any contamination from the surfaces before applying the disinfectant in order to ensure that any APP is killed.

If the affected pigs are kept in buildings that are run on a continuous flow system, it would be beneficial to investigate a way to clear these rooms completely, otherwise it is likely that the disease will be passed from the older infected pigs to the younger naïve pigs, resulting in ongoing clinical disease in these rooms.

Ask the vet . . .

Email your animal health questions to sophie.throup@xvets.co.uk