

NADIS Pig Health – December 2006 Acute Glassers Disease

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Acute septicaemia (“blood poisoning”) associated with infection with *Haemophilus parasuis* typically occurs in weaners 8-10 weeks old, although in a completely naïve herd, it can affect animals of any age including adults. The causative organism – of which there are more than 20 identified strains – is very widespread in the pig population and in most herds infection is endemic. Disease can result from:-

- 1) Infection of weaners with high levels of challenge after maternal immunity has been lost.
- 2) Infection of introduced animals that are naïve.
- 3) Introduction of a strain variant to which immunity is inadequate.
- 4) In association with viral infections e.g. PRRS, PMWS and Swine Influenza.

Presentation

In the most acute form, pigs will be found dead. Typically, there will be red to purple discoloration of the ears, abdomen and occasionally legs. Where pigs are found alive, there will be a range of symptoms:-

- 1) Collapse and laboured breathing associated with high temperatures (41°C/106°F or more). Skin discoloration is common. (Fig. 1)
- 2) “Meningitis”, although there is more twitching of the body rather than paddling and convulsions associated with *Strep suis* infection.
- 3) Joint Ill – polyarthritis – affecting one or more legs with obvious joint swelling.
- 4) Coughing – particularly evident in herds which are free of enzootic pneumonia.

The post mortem picture is of a typical septicaemia with congestion of internal organs, excessive fluid and fibrin (protein) “tags” within both the abdomen and chest. The organism can be cultured from lung tissue or body fluids but cultures are best done on samples from a freshly killed pig – the pH changes that occur after death will kill the organism. Cultures must be set up rapidly if success is to be achieved.

If the pig survives the acute infection, the excessive fluid will organise and lead to adhesions that may then subsequently be associated with “sudden” death, or may simply be picked up at slaughter – the typical chronic Glassers Disease picture. (Fig. 2)

The acute specific form of the disease and its consequences should be differentiated from the effects of secondary infection with *Haemophilus parasuis* in major viral disease outbreaks. The organism will commonly take advantage of an animal damaged with PRRS or PMWS



Fig. 1 - Acute septicaemia - note discoloration of extremities



Fig. 2 - Glassers Disease at post mortem examination

and be the ultimate cause of death. It may, however, be just one of a number of secondary infections in such situations.

Increasingly, *Haemophilus parasuis* infection and Glassers Disease can be seen as a less severe but widespread disease in suckling pigs from 2 weeks old onwards and in herds so affected it is rare to see the acute disease at 8-10 weeks as well. Chronic cases with severe pleurisy and pericarditis (scarring around the heart) will still occur. Fig.3. This form of the disease arose in the early 1990's and may represent a strain shift or mutation.

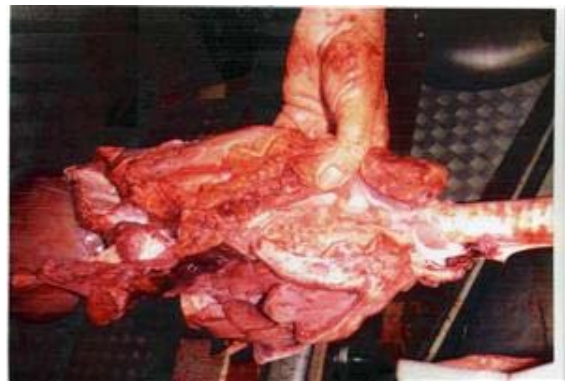


Fig. 3 - Severe pleurisy and pericarditis at slaughter, typical of chronic *Haemophilus parasuis* (photo courtesy of S. Walton)

Health Quiz

Treatment

If spotted early enough and action is taken rapidly, affected pigs can be successfully treated and lead to a full recovery. The choice of antibiotic to treat pigs will lie with the unit veterinarian but as a general rule, penicillin based treatments give good responses.

Where outbreaks are ongoing feed or water medication may be appropriate and the choice of antibiotics will again be made by the veterinarian based on clinical experience and responses to injectable treatments.

Removal to hospital pens and provisions of TLC are essential parts of any treatment regime for sick pigs.

Prevention

Where a herd is known or believed to be free of *Haemophilus parasuis*, on no account should new stock enter the farm – carrier pigs being the most likely route of introduction and no reliable tests exist to screen pigs as being clear of infection.

From a clinical point of view, it seems that most pigs in an endemically infected herd pick up a “trickle” of infection in early life that overlaps with colostrum protection. In this way, natural immunity can develop without disease. Separation of pigs early i.e. early weaning (as is practised in the USA) and distance separation of weaners (as practised in many outdoor herds in the UK) may break this cycle of infection and lead to naïve pigs at 8-10 weeks that then become infected. This picture seems more common in high health (SEP free) herds and suggests a possible association (or lack of one) between *Haemophilus parasuis* and *Mycoplasma hyopneumoniae*.

Whilst in excess of 20 strains of *Haemophilus parasuis* are known, tests are not available in the UK to differentiate them. There appears to be little cross over of immunity between strains. A commercial vaccine containing strains of *Haemophilus parasuis* is available. This would normally be administered at 5 and 7 weeks of age. However, if the strains involved in the disease is not included in the vaccine, it will not work.. Alternatively, an autogenous vaccine can be prepared from the farm's own isolate but this must be done under special DEFRA licence and producers should consult their veterinary advisors as to the appropriateness of such a programme.

Increasingly, to control early stage disease, vaccination is undertaken, off licence, in the sows prior to farrowing, relying on transfer of colostrum to protect young piglets. This can only be done under specific veterinary instructions.

Health Quiz

Costs

Acute outbreaks of disease in naïve herds can cause mortality levels in excess of 8% and it can take more than 4 weeks to fully control, particularly if vaccination is necessary. Thus for a 300 sow breeder feeder farm the cost of an outbreak measured in deaths alone would be £2500 to which must be added costs of treatment, disposal costs and depression in growth of chronically damaged animals of at least 50gm/day in the long term.

Glassers Disease type damage is commonly recognised in slaughter pigs (severe pleurisy and pericarditis) and membership of the BPEX pig health monitoring programme (see www.bpex.org.uk/bphs/default.asp) is a very useful method for producers and their veterinary surgeon to monitor such disease levels and thereby assess the costs.

NADIS Health Bulletins are designed to improve farm income, animal health and welfare by promoting disease control and prevention.

Discuss how health planning can improve the profitability of your farm with your veterinary surgeon. NADIS is supported by BPEX, EBLEX, HCC, QMS, Elanco Animal Health and MLC.

