

Pig Health - Joint ill in piglets

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The condition commonly referred to as "joint ill" is more correctly an arthritis affecting one or more joints, usually in young pigs. It is a condition seen in the young of most species and results from infection gaining entry to the blood stream at or soon after birth, circulating around the body and then settling out in the joints or occasionally in other parts of the body, particularly the brain causing meningitis. NADIS reports identify occasional problems with joint ill, which occurs on farms either as a sporadic disease of individuals or as an outbreak (particularly with *Strep suis* type 14). The NADIS reports suggest it is something of a rarity outdoors.



Fig 1. Abrasion of the lower leg can lead to secondary joint infection.



Fig 2. Inability to stand in a 2-week-old piglet with joint ill.



Fig 3. Swollen feet in a 7 day old piglet.



Fig 4. Epiphyseal (Growth plate) fracture secondary to suspected *strep suis* type 14 joint ill.

Cause

The cause of joint ill is bacterial infection of the piglet, pre-weaning. The majority of cases are caused by opportunist infection from the environment with, for example, *E coli*, *Staphylococci* and *Streptococci*. There are specific infectious agents that can produce outbreaks of joint ill (and meningitis) such as *Strep suis* type 14.

There are a number of possible routes by which the bacteria can gain access to the blood stream and, hence, spread to the joints:-

- 1) Through the navel
- 2) Through badly clipped teeth
- 3) Through contamination of a docked tail stump
- 4) Through wounds or abrasions (Fig 1.)
- 5) Through the tonsil of the piglet (especially *Strep suis*)

Clinical Signs

The first signs usually seen will be a piglet carrying a leg or reluctant to stand. Some may "dog sit" (Fig 2). As the pigs' ability to compete for a teat is compromised, loss of condition and starvation will occur. Crushing due to overlaying is a common sequel. The initial joint ill can occur within the first two days of life.

It is often the case that visible and palpable swelling of specific joints occurs later and, when evident, the hock and knee are most commonly affected.

Without treatment the infection will persist and, in severe cases, the abscessation resulting will burst out from the joint.

In outbreaks of Strep suis type 14 (and other epidemic forms of Streptococcal arthritis in piglets) most major joints of the legs can be affected such that the piglet presents in recumbency, often twitching. The intense pain that occurs often leads to an assumption that the pig is suffering from meningitis - which is an uncommon complication. This form of joint ill is most often seen from 10-14 days of age.

Cases of arthritis can be seen post weaning, either as a delayed manifestation of earlier infection or resulting from inadequate treatment of an earlier case.

In addition to enclosed joints becoming infected and swollen, foot lesions in the young piglet are also common. These usually result from cracking or abrasion of the contact surface of the claw - due to floor damage - with opportunist bacteria gaining entry to the wound, infecting the inner tissues of the toe (laminae) and from there spread into the local joints. If untreated, eventually the infection will break out above the claw as a weeping abscess. (Fig 3.)

Treatment

Early individual antimicrobial treatment is essential if a recovery is to be made. The medication used should be tailored to the needs of the farm and laboratory testing of the cause(s) may help. In general, penicillin, ampicillin or lincomycin are likely to be effective. Use of pain killers (e.g. ketoprofen) may also be indicated as this condition can be very painful.

Treatment should be continued for at least 3 and preferably 5 days even if a response occurs within 24 hours (often the case in Strep suis infections)

Failure to respond and evidence of burst abscesses from joints should lead to euthanasia.

In rare cases, an early problem with joint ill can infect the end of the bone and affect the growth plates with the result that later in life (e.g. at 3 months) spontaneous fractures occur. Fig 4.

Prevention

The key to controlling joint ill is firstly to improve hygiene in the farrowing area and secondly to identify and rectify the route of entry of infection.

1) Teeth Clipping

Teeth should be clipped singly with clean sharp clippers or ground off to avoid shattering of the teeth. Some producers stop teeth clipping in the face of joint ill problems but it must be remembered that the fighting damage that results can itself lead to joint ill! Teeth clipping itself does not cause joint ill; bad teeth clipping does. Clippers should be replaced regularly and kept clean. Ideally, dip in alcohol (surgical spirit) between piglets. It is against the law to clip teeth of pigs routinely - only under veterinary direction. Where performed, avoid

clipping until the piglet is at least six hours old as early clipping can interfere with colostrum intake.

2) Tail Docking

Always use separate instruments from those used to clip teeth. Ideally, use thermocautery. Tail stumps can be dipped or sprayed with iodine immediately after docking. Routine docking is also illegal and should only be performed under veterinary direction where there is evidence to suggest that a failure of docking will lead to unacceptable tail biting.

3) Navels

Navels should be dipped in iodine at birth - spraying is inadequate as it usually misses the broken end of the cord.

4) Disinfectants

Use of dry disinfectants in the farrowing pens can help but is not a substitute for a failure to wash and disinfect or to keep the pen clear of sow faeces. Do not allow sows to spend more than 5 days in the farrowing crate before farrowing. In outdoor situations move arcs to clean ground within the paddock and remove old bedding. Avoid wooden floors in arcs.

5) White-washing.

White-washing of farrowing pens with hydrated lime following routine cleaning will dramatically improve the standard of disinfection particularly on old worn out floors and wooden partitions. A thick emulsion must be applied but it is vital that pens are left unoccupied for 4 days after treatment to allow the lime to 'cure'. Failure to do this will lead to scalding and ulceration of the sow or even the piglets if exposed immediately.

6) Antibiotics

Where tonsillar penetration is suspected, and in particular with Strep suis type 14 infection, prevention can be achieved by:-

a) Routine treatment of piglets at birth with long acting penicillin or amoxycillin.

b) Treatment of the sows in the farrowing area with appropriate antibiotics, either by inclusion in the feed or use of long-acting antibiotics prior to farrowing (e.g. Naxcel : Pfizer)

The long-term use of antibiotics at birth is to be avoided, as this is likely to lead to the development of resistance in bacteria on the farms.

Early intake of colostrum is critical to protect piglets against all infections.

Consult your veterinary surgeon, who will design the most appropriate control programme.

7) Floors

Replace or repair worn floors, especially old concrete. Where slats are used, ensure they are in good state of repair and with gaps that are appropriate to the size of the piglets' feet - avoiding entrapment. The use of deep bedding will minimise abrasion but where this is not possible the use of old carpet as protection for the piglets legs in the first 24 hours of life can be beneficial. It is likely to need replacement between litters.

Costs

Outbreaks of Strep suis type 14 have affected over 50% of piglets with 10% of these (i.e. 5% of the total population) dying as a result of starvation, overlying, septicaemia or euthanasia. Primary outbreaks, as were common in the 1990's, could last three months.

Valuing a weaned piglet at £50 (anticipated income from sale of a bacon pig minus saved feed cost) the shortfall for a 500 sow breeder/feeder farm would be up to 150 piglets, or £7500, plus the costs of medicine and labour to treat and control.

In the more chronic herd situation where a grumbling level of joint ill is present all the time, problem herds can experience a 5% incidence of joint ill with an associated 1.5% increase in mortality. In addition to the costs of treatment, the 500 sow farm would lose up to 200 pigs per year due to this condition - an ongoing drain of £10,000 per year.

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