

## Bacterial arthritis in lambs

### Dr Sarah Robson

Regional Animal Health Leader, Animal & Plant Biosecurity, Wagga Wagga

### What is arthritis?

Arthritis simply means inflammation of joints. Lambs suffering from arthritis will be lame and reluctant to move. The affected joints are usually hot, swollen and painful. When more than one joint is affected the term polyarthritis is used.

### What causes arthritis?

Outbreaks of arthritis in lambs can be caused by a variety of bacteria. Bacteria that are commonly involved in arthritis include *Streptococcus*, *Staphylococcus*, *Actinomyces pyogenes*, *Fusobacterium necrophorum*, *E.coli*, *Erysipelothrix*, *Chlamydophila*, *Mycoplasma* and *Histophilus ovis*. Most of these bacteria are normal 'environmental' bacteria present on the skin, in faecal material and in the soil.

### How do bacteria get into joints?

Arthritis in lambs invariably results from a blood borne infection. In young lambs the usual cause is spread from infection of the navel (navel-ill) or from infected marking or mulesing wounds. Bacteria enter the bloodstream then lodge in joints causing an inflammatory reaction.

Shearing wounds are a risk, especially if sheep are dipped off shears as dip fluid can harbour bacteria. *Erysipelothrix* is a common dip inhabitant. Grass seed penetration of the skin can cause wounds which allow bacteria to enter the body. When grass seed wounding is combined with contaminated dipping fluid, bacterial infections and hence arthritis are almost inevitable.

### Suppurative arthritis

Suppurative (pus-forming) arthritis is caused by *Streptococcus*, *Staphylococcus*, *Actinomyces*

*pyogenes* and *Fusobacterium necrophorum* bacteria and typically occurs 2 to 7 days after birth (if infection starts at the umbilicus) or marking/mulesing. The shoulder, elbow, knee, stifle and hock joints are frequently affected. Other body organs may be involved. There may be abscesses in the liver and lungs. Affected joints contain cream, yellow or green coloured pus.



The swollen fetlock on this lamb was caused by bacteria which entered the bloodstream via infected marking wounds.



### Erysipelas arthritis

Erysipelas arthritis is caused by the bacterium *Erysipelothrix rhusiopathiae*. The acute form typically occurs 10 to 14 days after marking or mulesing. Any joint may be affected but most commonly the knee, elbow, hock and stifle joints

are involved. Initially there is fever and severe joint pain but no obvious heat or swelling. Some animals may recover but some will progress to a chronic arthritis. Chronic arthritis is the more common form and is typically seen in lambs around 6 months of age. Affected lambs have thick, swollen joints which contain a large volume of cloudy fluid.



*Large volume of purulent discharge from hind fetlock joint.*



*Hock joint containing pus.*

### **Chlamydial polyarthritis**

*Chlamydia pecorum* is the organism involved. It is thought to be transmitted through a flock by consumption or inhalation of infected material in the faeces, urine or ocular discharges of infected animals. It may also enter through the conjunctiva.

Chlamydial polyarthritis typically affects lambs 3 to 6 months of age. Lambs initially run a fever, become stiff, lame and may be reluctant to move. They may develop conjunctivitis. Affected joints contain cloudy fluid but are not necessarily swollen.

### **Treatment and prevention**

It is important to diagnose the cause of arthritis as this determines the treatment and the approach taken in prevention. Other conditions may be confused with arthritis.

Contact your local veterinary officer, district veterinarian or veterinary practitioner to examine the affected animals. The most reliable way of

reaching a diagnosis is to post mortem two or more arthritic animals and submit affected joints for laboratory examination. A blood test can be used to diagnose chlamydial polyarthritis.

### **Treatment**

Success of treatment depends on the stage of infection in the joint. If caught early, antibiotic treatment can be successful. The choice of antibiotic will depend on the causative bacteria. Long standing cases will usually have irreversible joint changes and will not respond to treatment.

### **Prevention**

Prevention involves minimising the chance of bacterial contamination of wounds and encouraging rapid wound healing.

Lambs that have received adequate colostrum from their dams and are well nourished will have stronger immune systems and will therefore be less likely to become infected. They will usually heal faster after marking and mulesing.

### **Methods of minimising bacterial contamination of wounds**

#### *1. Choice of lambing paddocks*

Lambing into a well grassed paddock with minimal faecal contamination is ideal.

#### *2. High standard of hygiene at lamb marking.*

- It is advisable to carry out marking in temporary yards in a clean, well grassed paddock.
- Avoid dust.
- Use only clean instruments for marking and mulesing and change disinfectant solutions for instruments frequently.
- Mild weather is best for marking. If possible avoid marking / mulesing when fly numbers are high.
- Avoid marking/mulesing in wet conditions.
- Avoid holding marked lambs in large concentrated mobs for long periods as this will increase the risk of faecal contamination of fresh wounds.

#### *3. Provide optimal conditions for wound healing*

- Minimal handling after marking. Leave lambs undisturbed for at least 3, preferably 4, weeks after mulesing.
- Prevent fly irritation. If you cannot avoid fly weather apply an insecticide 1 or 2 days before mulesing. Make sure, however, that the breech area is dry at the time of mulesing. Application of antiseptic/ insect repellent dressing will delay wound healing but is preferable to fly strike.

- Keep lambs dry. Avoid pastures with long wet grass.

#### 4. Prevent post dipping arthritis

- Avoid dipping off shears. Wait a few days for shearing wounds to heal before dipping.
- Avoid dipping during times of grass seed infestation.
- Ensure dipping fluids are changed if they become heavily fouled with faeces and mud. Do not re-use dips from a previous dipping. Add an antiseptic solution to the dip.

#### 5. Vaccinate ewes for *Erysipelothrix*

A vaccine – Eryvac™ for sheep (Pfizer Australia) – is available to assist in the prevention of erysipelas arthritis in lambs. Previously unvaccinated ewes are given two doses of the vaccine, the first at joining, then a booster 4 weeks before lambing. If previously vaccinated just one dose 4 weeks before lambing is required. Temporary immunity is passed to the lamb in the colostrum. This will provide 6-8 weeks protection for the lamb.

### Further information

For further information, contact your local veterinary officer at NSW Department of Primary Industries, district veterinarian or veterinary practitioner.

---

© State of New South Wales  
through NSW Department of Primary Industries 2007

ISSN 1832-6668

Replaces Agfact A3.9.46

Check for updates of this Primefact at:

[www.dpi.nsw.gov.au/primefacts](http://www.dpi.nsw.gov.au/primefacts)

Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (February 2007). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of New South Wales Department of Primary Industries or the user's independent adviser.

The product trade names in this publication are supplied on the understanding that no preference between equivalent products is intended and that the inclusion of a product name does not imply endorsement by NSW Department of Primary Industries over any equivalent product from another manufacturer.

Job number 7370