

Tetanus

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INTRODUCTION

Tetanus is an acute disease of mammals characterised by muscular spasms and increased sensitivity to stimuli. Tetanus occurs in humans; it has also been reported in all domestic animals except the cat. In the Northern Territory, the disease has been recorded in horses, cattle, sheep, pigs and dogs. Horses are reported to be the most susceptible to the disease. Tetanus can be a common cause of death in weaners after castration and dehorning.

CAUSE OF DISEASE

Tetanus is caused by the bacterium *Clostridium tetani* when it enters the animal's body through traumatic wounds, or during parturition or management procedures. Procedures such as castration, dehorning and wounds inflicted at shearing or mulesing and the use of rubber ligatures for tail docking can all provide suitable anaerobic sites for the bacterium. After entering the body, the bacterium begins to multiply and produce a toxin, which causes the clinical signs of tetanus. Spores of this organism commonly occur in soil and in the faeces of most animals and can survive for many years in the environment. It is for this reason that people who have contact with soil and animal faeces are at greater risk of contracting this disease.



Figure 1. Cattle death due to tetanus

CLINICAL SIGNS

Signs of tetanus include body stiffness, muscular spasms, 'locking' of the jaw, inability to eat and drink, rigid extended limbs, difficulty in breathing and swallowing. There is also a high sensitivity to noise or touch and protrusion of the third eyelid. Immediately before death, convulsions occur, respiration is laboured and body temperature rises.

In affected dogs, there is a characteristic elevation of the ears, wrinkling of the forehead and protrusion of the third eyelid.

Affected horses initially appear stiff, reluctant to move and have difficulty opening their mouths and therefore cannot eat. The head is stretched out and the tail may be slightly elevated. As the disease progresses, they are unable to swallow, they drool saliva and cannot drink. The third eyelid comes across the eye, initially in spasms and later permanently. The affected horse becomes hypersensitive to sound and goes into rigid spasms when disturbed and may even appear to have convulsions or fits. Eventually, the respiratory muscles are affected, making breathing difficult. The horse becomes progressively exhausted, collapses and dies.

TREATMENT

Tetanus is easy to prevent but difficult to treat. If signs are detected early and the disease is not too severe, treatment can be successful using antitoxin and antibiotics.

Treatment of small animals with antibiotics and supportive care can be effective; however, the disease in livestock is often too advanced for treatment to be successful.

Response to treatment is better in dogs than in horses.

PREVENTION

Hygiene: Every attempt should be made to ensure that any procedure requiring the skin to be broken, such as injections and castration, is carried out as hygienically as possible. Instruments used for such procedures, such as needles and knives, should be free from contamination.

Vaccination: Vaccination is the best way to protect against tetanus. For previously unvaccinated animals, the recommended vaccination program consists of two doses of tetanus toxoid administered four to six weeks apart, with a booster dose given 12 months later. This is to be followed by repeat boosters, approximately every five years. In livestock, annual boosters given a month before calving or lambing allows for passive immunity to be transferred from the dam to the offspring, thus protecting them in the first vulnerable period of life prior to receiving their first vaccination at marking time. Always check the recommendations that come with the vaccine being used. Vaccination programs in horses are common. Dogs are not often affected and so a routine vaccination program is not common.

In the case of injury, an immediate tetanus antitoxin injection is advisable. This ensures a greater level of protection for the next 10-14 days. It is important to be aware that adverse reactions to the antitoxin have been reported in some cases.

If the animal is not already vaccinated, the tetanus vaccination (toxoid) course can be started at the same time as the antitoxin is given.

SUMMARY OF BEST PRACTICE

- Aim to reduce contamination of surgical instruments by placing them in antiseptic whilst not in use.
- Adopt best practices for branding, castration and dehorning as per the MLA manual, 'A Guide to Best Practice Husbandry in Beef Cattle: Branding, Castrating and Dehorning' (MLA 2007) and start a '5 in 1' vaccination program at branding, followed by a booster four to six weeks later or at the next weaning muster.
- Prevent wounds from becoming infected by applying an antiseptic to the wound.
- Wet down the yards prior to 'marking' and move weaners out of the yards as soon as possible.
- Weaners and calves should be castrated and dehorned just before leaving the yards and not before trucking.
- Consider vaccinating weaners with a '5 in 1' or '7 in 1' followed by a booster shot four to six weeks later, especially on properties with a history of tetanus.

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