

Tetanus In Lambs

By F. M. Bolin¹ and I. A. Schipper²

In the diagnostic laboratory, our attention has been called to the high incidence of tetanus occurring in baby lambs which have been docked or castrated with the rubber band elastrator.

A discussion of tetanus and the conditions under which it develops are given so that better management can be practiced in a reduction of the disease. Treatment for those cases which occur is also given.

Tetanus toxin is produced in dead tissue and pus in the absence of air by an organism, *Clostridium tetani*. Basically, pus under a scab of a dirt and filth contaminated wound is the most favorable place for the growth of the tetanus organism and the production of the tetanus toxin. Should the organism be in the blood stream of the animal, tetanus will not result unless there is an abscess somewhere in the body where conditions are favorable for growth. Tetanus toxin is not produced unless the organisms are growing.

In sheep and lambs the navel may be infected at the time of birth. Docking and castration wounds, as well as punctures for ear tags, puncture wounds especially of the feet, and cuts in the skin at shearing time are suitable sites for the tetanus organism to grow. The tetanus spores may enter the wound at the same time as the pus-producing bacteria.

Under natural conditions, tetanus usually occurs about two weeks after the wound or tissue damage has been made. This will be different in other species due to the degree of susceptibility of various animals to tetanus toxin.

Early in an attack the symptoms are slight and may go unnoticed. There is a stiff, stilted movement in walking, the tail rigid and arched, the ears a little more erect, twitching of the eyes and some difficulty in nursing and swallowing. These symptoms may be precipitated or aggravated by sudden noises, gusts of wind, flies, bright light and forced movements. In fatalities, the animal dies in extreme general muscular contractions.

Nursing and treatment are directed at prevention of the muscular spasms. The affected animal should be placed in a darkened stall, out of drafts, and away from flies and noises. The animal should be handled as little as possible.

Experimentally treated cases of tetanus were given sufficient nembutal to relieve the tetanic spasms. Intravenous administration of 1¼ grain for a two-week old lamb weighing 10 pounds was sufficient on this case. Surgical removal of an umbilical abscess

¹Associate Veterinarian.

²Assistant Professor and Veterinarian.

was completed under aseptic conditions. Locally the wound was treated with sulfa urea.

The systemic treatment was twice daily subcutaneous injections of tetanus antitoxin for four days. A total of 20,000 units of tetanus antitoxin was used.

The first two days of treatment included 1600 units of penicillin G and 500 mg. Dyhydrostreptomycin was administered intramuscularly in divided doses. The lamb was returned to the ewe and continued to complete recovery in six days. The same method of treatment was used where docking and castration wounds were involved, with equally good results.

Most treatments include a sedative. In the literature, the value of antibiotics has not been determined because of the use of the antisera, tetanus antitoxin and the sedatives.

Only animals of high value should be treated because of the cost. Prevention by good husbandry still pays the greatest dividends.

WE STILL NEED WHALES

The whale is much more important to our well-being than most of us would think. It is true that we no longer have much need of what is erroneously called "whalebone"; this is the baleen, not bone at all, but a huge set of springy bristles 6 to 10 feet long, that grow in the jaws of the toothless varieties of whales. Medieval knights bought quantities of it from the Basques because by fastening a thin strip on their helmets they could make the plumes nod and sway in a highly effective manner.

Victorian ladies also coveted baleen for their corset stays, but today the small amount on the market is used principally for making industrial brushes. But the baleen whale is still vigorously hunted, because it also produces an edible oil, and in quantities that make it important in world economy. Of all the edible fats consumed by the entire human population, 10 per cent comes from baleen whales.

The oil of the toothed varieties, the sperm whales, is not edible, but it is valuable as a source of fine lubricants, cosmetics, illuminants and many other products. From the livers of both baleen and sperm whales we derive valuable vitamins, and recently two Danish doctors, Hagedorn and Sterling, have learned to extract from a single whale pancreas more insulin than is obtainable from 500 hogs. With diabetes on the increase, the salvaging of these formerly wasted glands is in itself a major achievement. More recently still, Norwegian factory ships have begun extracting ACTH, the anti-arthritis hormone.

Whaling crews have always eaten whale beef, and now that quick freezing has made possible its long distance transportation, it is becoming a standard article of diet in meat hungry Europe. Where the old time captains threw away mountainous carcasses, once they had taken the blubber, oil and baleen which they could sell, modern science has enabled us to waste very little of the entire animal body. The bones are ground to make a high grade fertilizer; much of the offal is processed into a nutritious meal that is greatly fancied by silver foxes, and scientists are at work trying to dehydrate the blood so that it may also be used as animal feed and fertilizer.