

Livestock Health Series

Caseous Lymphadenitis in Small Ruminants

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Introduction

Caseous lymphadenitis (CL) is a contagious, infectious and chronic disease of goats and sheep that occurs across the United States. *Corynebacterium pseudotuberculosis* is the bacterium that is the causative agent of this disease.

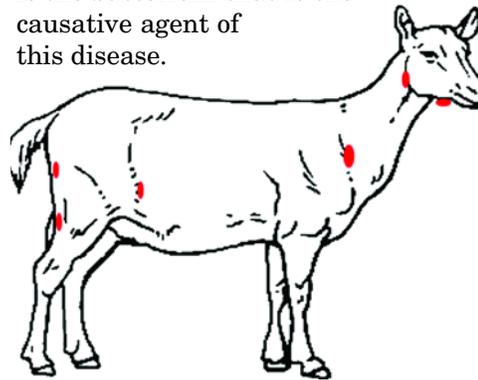


Figure 1. This figure denotes the most common sites for CL.

The infectious bacteria can enter through skin wounds or mucous membranes. The bacteria will generally localize in a subcutaneous lymph node and form an abscess that the animal walls off from the rest of its body. The clinical signs of the disease are one or more abscesses that are often located just beneath the skin. However, if organisms enter the bloodstream, abscesses may also develop in internal body organs such as the lungs or liver. In this case, external abscesses may not be present, and the only thing that the shepherd notices is a thin, debilitated animal. The abscesses contain a thick, yellow to white pus that has a soft, pasty consistency much like toothpaste.

Transmission

CL is typically transmitted when subcutaneous abscesses are ruptured. Bacteria from ruptured abscesses are released into the environment, allowing transmission to susceptible hosts. When an abscess ruptures, it can contaminate pens, water buckets, barns, shearing clippers and feed bunks. The pus contains a high number of bacteria, and these bacteria can survive for several months in the environment. When susceptible animals are exposed to the bacteria, they may become infected. Another concern with CL is that it's a zoonotic disease, which means it can also infect people. Although human infection is rare, take sanitary precautions when treating and handling infected animals. Always wear disposable gloves, and wash your hands and clothes after you have been in contact with a suspect animal.

Clinical Signs

Clinical signs may be very mild. Lymph nodes around the head and neck region are most commonly affected (Figure 1). Some animals may have an increased temperature, loss of appetite and lethargy with the initial infection. The infection may spread from superficial nodes to other organs such as the liver, lung, kidney, reproductive tract and nervous system. Since we cannot identify the total impact of the internal abscesses in living animals, we cannot define the full extent of the damage that they might cause. Thus, CL has been associated with chronically thin and

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generally poor performing goats or sheep and is often referred to as "thin ewe syndrome." An increased incidence of this disease is typically noted in adults. Mortality in infected sheep and goats is generally low. However, production losses in weight gain, milk production, reproductive efficiency and carcass quality may be significant. This disease is often introduced to a flock or herd from the introduction of contaminated animals. Introduction can also occur from exposure to bacteria while at fairs or shows.

Diagnosis

A diagnosis for this disease can be made based on clinical signs and appearance of the lesions on the animals. It should be noted that a sample of pus from a ruptured abscess should be submitted to a veterinary laboratory to confirm proper diagnosis of this disease because some abscesses, especially in goats, may be due to pathogens other than *Corynebacterium pseudotuberculosis* (e.g., *Actinomyces pyogenes*).

Treatment

In regards to treatment of CL, antibiotic therapy is limited due to the inability of any antibiotic to penetrate inside the abscess. Abscesses can be surgically drained and flushed with iodine solution. However, draining the abscess will increase risk of transmission of the organism to other animals if they are exposed to the pus. The discharge that is present in the abscess should be disposed of in such a way as to avoid contamination of the facilities and remaining animal population. Many producers will isolate the affected animal, lance the abscess in an area where the other goats or sheep are not kept, and keep the affected animal isolated until the infection heals. Unfortunately, abscesses may reoccur after such treatment has been attempted. In a case where the abscess has ruptured, it should be drained immediately and the infected animal moved to an isolation pen to minimize contamination of the environment.

In sheep, abscesses are usually not found until shearing. During shearing, the shearer may inadvertently nick the wall of an abscess. If this occurs, shearing should be stopped, and the clippers, blades and general area should be disinfected as well as possible. When trying to prevent infection in younger sheep, the shearing order should be the youngest to the oldest in the flock.

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Prevention

Currently, one company manufactures a vaccine available for the prevention of CL. This vaccine is called Case-Bac®, and it is manufactured by Colorado Serum Company. However, this product is only labeled for use in sheep and has shown some safety concerns when used in goats. A study published in the *Journal of the American Veterinary Medical Association* showed a significant reduction in the number of abscesses when sheep were vaccinated. In this study, the researchers used infectious bacterial cultures to inoculate the sheep in numerous places including the lips and skin. Twenty weeks after being inoculated the sheep were euthanized, and the carcasses were examined for abscesses. Vaccinated sheep had on average 1.3 abscesses as compared to 33.1 abscesses in the control sheep. However, a side effect that has been noted with the use of this vaccine is that it may lead to injection-site lesions or abscesses. Therefore, if a flock has not had this disease problem in the past, vaccination may not be indicated. Since this product is not labeled for use in goats, a goat herd that is troubled with outbreaks of this disease can have an autogenous vaccine produced for use in the herd.

On farms that have had serious continual problems with CL, vaccination along with isolation of infected animals and good sanitary practices have been beneficial for controlling disease outbreaks. However, culling animals with clinical signs of the disease is the safest and most effective way of controlling this disease in a herd. For more information about this disease and other diseases affecting small ruminants, contact your local county extension office.

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