

Club Lamb Fungus

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Club lamb fungus was first reported in 1989 in the southwestern United States. Club lamb fungus occurs most frequently in the Southwest, West and Midwest regions of the United States, but occurs wherever sheep are shown. Club lamb fungus affects the skin of sheep and is also known as woolrot, lumpy wool, sheep ringworm, and sheep dermatophytosis. Club lamb fungus got its name because it most commonly affects show lambs. It is a highly contagious disease and is contagious to humans.



Sheep with club lamb fungus

ceptible to disease. Humans can contract the disease by coming in contact with infected sheep or contaminated equipment.

Clinical Signs

Club lamb fungus causes skin lesions on affected sheep. Lesions appear one to four weeks after exposure to the fungus. They can appear anywhere, but are most common on the head, neck, and back. The haired regions of the face and ears seem particularly susceptible. The skin initially develops a pustule and looks thickened and red with some discharge. Later it appears crusty and flaky. It can vary from light scaly scabs to

Transmission

Club lamb fungus is caused by a fungus in the *Trichophyton* genus. The specific species of *Trichophyton* has not yet been identified. It can be spread by direct lamb-to-lamb contact or through contact with infected equipment or surroundings. The fungus can live in the environment for several years, especially in dark, wet conditions. Shearing equipment and close shearing, in particular, are suspected of spreading the disease, but tack, grooming tools, barns, bedding, feeders, and trailers are also sources of the fungus. Soil and manure can be contaminated with the fungus. Disease occurs when the fungus enters the skin and wool follicles of the sheep. Normally lanolin, a natural oil found on the sheep's skin, protects the skin but frequent washing and close shearing removes the lanolin, making the skin more susceptible to disease. Nicks and cuts from shearing also allow the fungus to enter the skin. Stress from travel, diet changes, and shows lower the animals' immune systems, making them more sus-

thick crusty areas. The lesions expand to their full size in four to eight weeks and are usually round. They vary in size, but most are approximately one inch in diameter. Sheep are contagious at all stages of the disease. It is much easier to identify lesions on shorn sheep. The wool of unshorn sheep with club lamb fungus appears clumped. Infected wool fibers can break easily and fall out in the center of the lesion.

Diagnosis

A presumptive (probable) diagnosis of club lamb fungus is made based on the history and clinical signs. While not commonly performed, culturing the fungus from the skin makes a definitive diagnosis. Secondary bacterial infections can complicate the disease, with the most common bacteria being *Arcanobacterium (Corynebacterium) pyogenes*.

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Treatment

Club lamb fungus usually heals on its own in eight to 16 weeks. A lesion is considered healed when the start of new hair growth is visible. Reducing stress and providing a good plane of nutrition will help with the healing process. Often the skin will turn dark and the hair will regrow black. There are no approved antifungal medications in sheep, but topical antifungal medications have been reported to inhibit fungal growth and decrease the spread of infection. Always wear latex gloves when handling or treating infected sheep. Clip the wool two inches from the edge of the infection. Scrub with warm soapy water to remove the scab. Get an eight-ounce bottle of baby oil and discard two ounces. Add two ounces of 7 percent iodine, shake well, and apply to sore and to the edge of clipped wool. Apply once daily for five days and then weekly for three weeks. Speak to your veterinarian about other possible treatment options if you suspect club lamb fungus in your sheep. If necessary, the secondary bacterial infections can be treated with penicillin or tetracycline.

Prevention

Good hygiene and management practices are critical to the prevention of club lamb fungus. Careful shearing to avoid nicks and cuts, and less frequent shampooing and grooming will help promote healthy skin reducing the incidence of disease. Avoiding crowded, humid environments is also beneficial to the skin. Each animal should have its own set of show equipment such as a halter, blanket, and tack. New arrivals should be quarantined for one month. On the farm, affected animals should be isolated, and show animals should be kept separate from the rest of the flock. Shared shearing or other equipment should be disinfected with an antifungal agent after each use and between animals. The areas where infected sheep are housed should also be disinfected with an antifungal agent. Captan®, chlorohexidine (Nolvasan® and several generics), and bleach are examples of antifungal agents. At shows, facilities should be disinfected with antifungal agents and kept free of sharp edges and debris. Scales used to weigh sheep should be disinfected between exhibitors. Equipment should not be shared between exhibitors. Owners should not bring any sheep for exhibition that have been exposed to infected animals. The State Fair of Virginia requires sheep to have been recently shorn with a fleece length of one-quarter inch or less. (An exception is made for breeding sheep shown in fleece or with fitted fleece). Sheep must be free of clinical symptoms of club lamb fungus and any healed club lamb fungus lesions must demonstrate healthy skin. The State Fair of Virginia livestock rules state: "An animal

that has had a contagious disease that has been successfully treated but still has physical evidence of the disease must be accompanied by a note from an accredited veterinarian on the animal's health certificate regarding the successful treatment of the disease." Sheep with active lesions will not be permitted on the fairgrounds or in stalling or exhibit areas. Many local and regional shows have similar rules.

A critical aspect of prevention is to not bring club lamb fungus back to your farm from shows. Lambs should be completely sprayed with a 0.5 percent chlorohexidine solution (three ounces chlorohexidine per gallon of water) prior to leaving the fairgrounds (Hopkins, *et al.*). Using a sponge to apply the solution on the face will treat the area without the danger of getting it into the animal's eyes. Different iodine concentrations and lime sulfur solutions have been used, but they will stain the wool. Captan® is an antifungal agent that can be used on equipment but it is not approved for use on food animals and may irritate human skin (Captan 50W MSDS).

Because club lamb fungus can be passed from animals to humans it is considered a zoonotic disease. Rubber gloves, long-sleeved shirts, and pants should be worn when handling infected animals. Thorough hand washing and washing of clothes immediately after handling animals are recommended. Washing hands after handling any animal is always a good idea. For the sake of good agricultural relations and public health, the public should not be allowed contact with infected animals on the farm or at exhibition. If a human infection is suspected, a physician should be contacted immediately as scarring is possible. It is important to inform the physician that the infection may be a contagious form of ringworm acquired from sheep.

Summary

Club lamb fungus is a highly contagious fungal infection of sheep. It is most common in show sheep, but any sheep may be affected. The disease may be spread to humans as well. Proper hygiene and management practices will help control the spread of club lamb fungus. Contact your veterinarian if you suspect club lamb fungus on your farm.

References:

1. Hopkins, Fred D.V.M. M.S.; and Gill, Warren Ph.D. Ringworm (club lamb fungus) in Sheep, Agricultural Extension Service, The University of Tennessee.
2. Captan 50W. Material Safety Data Sheet. C&P Press, pp 1-2.