Agricultural Extension Service
The University of Tennessee

RINGWORM (CLUB LAMB FUNGUS) IN SHEEP

Fred M. Hopkins, DVM, MS
Warren Gill, PhD
University of Tennessee
Knoxville, TN

Ringworm in sheep is an infection of the outer layer of the skin and hair shafts by one of several types of fungus. All domestic animals and people are susceptible to ringworm. In rural areas, 80% of ringworm cases in people are caught from animals and human cases may be especially severe, possibly resulting in scarring.

In the past, ringworm has been considered uncommon in sheep. In 1989 and 1990 it was seen frequently in lambs in New Mexico, Colorado, and Wyoming. By 1992, Ringworm was considered a problem in lambs in Kentucky and has been diagnosed more often in Tennessee recently. This is believed to be related to beginning the practice of very close shearing of show lambs resulting is loss of protective wool and the irritation of shearing very close to the skin. Ringworm is rare in wooled sheep.

In most states, including Tennessee, lambs with ringworm are not eligible for shipment and are barred from shows and exhibitions.

TRANSMISSION AND PREDISPOSING FACTORS

The fungus causing ringworm is likely most often transmitted when infected sheep are closely sheared releasing spores attached to wool shafts into the air. Nearby lambs with no wool, little lanolin, and irritated skin are very susceptible. Ringworm can also be spread by contact with animals, clipping, brush, cards, lamb tubes and blankets, fence posts, wire, and the hands of handlers.

Once an infected animal comes in contact with equipment or the environment, the equipment or environment may serve as a source of infection for up to 4 years.

Certain factors make an animal more susceptible to ringworm infection.

1) Young animals are more easily infected. Ringworms is unusual in sheep over one year of age.
2) Poor nutrition increases the likelihood of ringworm infection.
3) Animals that have not had ringworm before are more likely to catch it.
4) Animals kept in the same pen with infected animals are more likely to catch ringworm.
5) Animals kept in dark, damp, warm, and poorly ventilated places become infected more easily.
6) The use of clippers, brushes, and blankets on different animals without disinfection will spread this disease.
7) Sheep in contact with infected cattle can get this disease.
8) Washing lambs frequently will remove normal skin bacteria and lanolin, and make these

lambs more susceptible to ringworm.

9) It is likely that the increase in ringworm that we have experienced can be associated with extremely close shearing which causes skin irritation allowing the fungus a way to get into the skin.
10) Flies may spread ringworm.

DIAGNOSIS

One to four weeks after coming into contact with the fungus, sheep will first show signs of disease. The fungus affects both the outer layers of skin and the wool. The fungus spreads outward from the center causing a more or less circular area of wool loss. The ears, head, loin and neck are the most likely areas to be affected. The first sign of ringworm is often a raised area where the wool is clumped and feels stiff. These areas are more easily felt than seen. Once the wool comes out, a circular area of wool loss 2 to 2 inches in diameter is seen. Often, this area is covered by a gray-white scab. The skin under the scab may ooze clear fluid or be bloody. Itching is not usually present. Almost all animals with ringworm will recover in 1-4 months, though a spot of darker wool may result. It is sometimes difficult to diagnose club lamb fungus in animals in fleece; therefore, shearing assists in accurate diagnosis.

TREATMENT

Always wear rubber gloves when handling infected or suspect sheep. The ringworm fungus is most likely to be found at the outer edge of the hairless area and in the normal wool next to the hairless area. Treatment should begin with removing the wool for about 2 inches around the ringworm spot. Next a brush and soapy water should be used to remove the scab down to the skin. This makes it easier for treatment to reach the fungus. Be sure to properly disinfect or dispose of clippers, brushes, wool, and scabs.

Many types of fungus can cause this problem. Treatment may shorten the healing time but is important mainly to reduce the spread of the disease to other animals. Several disinfectants can be used to treat ringworm, though none have been approved by the FDA for the treatment of ringworm in sheep. Always soak the entire animal and not just the hairless spot. These products may be applied with sprayers, poured on, or the animal may be immersed in a large container.

Several of these treatments are very hard on lamb skin and the infected area may not return to normal because of over treatment. What works on one case may not work on others.

.5% chlorohexadine (Nolvasan - 3 oz. per gallon) is very effective but is inactivated by soap.

1:10 dilution of hypochlorite solution (Chlorox) or other chloride containing disinfectant is effective but will corrode metal it comes in contact with.

1:300 dilution of Captan will work for some types of ringworm but is not approved for use in food animals, may irritate human skin, and is listed as a cancer causing agent by the EPA.

A mixture of 1 part 7% iodine and 3 parts of baby oil used for 4 days only is said to dry up lesions effectively.

.5 to 1% povidol iodine (tamed iodine) can be used but may stain.

.5% lime-sulfur solution is effective but smells like rotten eggs and stains wool yellow.

Affected animals should be treated daily for 5 days, then weekly for 3 treatments.

Vitamin A injection may speed healing.

PREVENTION

Prevention of ringworm cases begins with isolation of new arrivals on the farm for 30 days. This gives these animals time enough to develop the disease before they contact other animals. A single whole body treatment with a disinfectant before releasing these animals into the flock is a good idea. Skin treatment with a suitable disinfectant after showing is likely another good idea.

Frequent bathing of sheep results in loss of lanolin and a change in normal skin bacteria. This may make the animal more susceptible to ringworm. Avoid excessive bathing.

Cattle may serve as a source of fungus to sheep. Avoid mixing **infected** cattle and sheep.

Other sheep with ringworm are the most likely source of the disease. Isolate affected sheep from others until wool begins to grow back.

Ringworm fungus may be anywhere on the sheep, not just the areas where wool has been lost. Treat the entire sheep not just the ringworm spots.

Ringworm fungus can survive for months on brushes, combs, blankets, clippers, fence, fence posts, and soil. Clean and disinfect pens and equipment where infected sheep have been (1:10 dilution of hypochlorite) before using it for other animals.

Disinfect chipper blades often during shearing and between shearing lambs.

Using a mineral mix that contain EDDI may make lambs more resistant to ringworm.

Most states will not allow sheep with ringworm to enter show grounds. Ringworm can quickly be spread over a wide area by infected animals being taken to shows and sales. Do not take infected animals to shows.

Ringworm can easily be brought home from a show or sale. Spray animal all over with one of the treatments listed earlier after the show.

Ringworm or club lamb fungus is a troublesome disease. Careful observation, effective treatment, and thoughtful prevention should keep this disease from being a problem in your flock.

REFERENCES

Hunt, E. Infectious skin diseases of cattle. In: Large Animal Dermatology. Mullowney, P.C. (ed) Veterinary Clinics of North America, Vol. 6 (#1) pp 155-159, March 1984. W. B. Saunders.

Dermatophytosis. Merck Veterinary Manual (7th edition) Charles Fraser (ed) pp 789-7910. Merck and Co. 1991.

Pier, A. C. Ovine dermatophytosis. Kentucky Herd Health Memo No. 5, pp 44-45, November 1992.

Claeys, M. C. Club Lamb Fungus is all around us. North Carolina Cooperative Extension Service Newsletter, p 15. Aug/Sept 1992.

White-Werthers, N. and Medleau, L. Evaluation of topical therapies for the treatment of dermatophyte-infected hairs from dogs and cats. Journal of the American Animal Hospital Association. Vol 31, pp 250-253. May/June 1995.

Rosser E. J. Infectious Crusting Dermatoses. In: Dermatology, Veterinary Clinics of North America, V. Fadak (ed), Vol 11 (#1), pp 53-59, April 1995.

Scott, E. M., Gorrnan, S. P. and McGrath, S. J. An assessment of the fungical activity of antimicrobial agents used for hard surface and skin disinfection. Journal of Clinical and Hospital Pharmacy, Vol 11 (#3), pp 199-705. 1986.

Scott E. Dermatophytosis. In: Large Animal Dermatology, pp 172-182.

Dermatomycosis. In: Bovine Medicine, Diseases and Husbandry of Cattle. Andrews A, Blowey R, Boyd H, Eddy R. (eds), pp 1164-1167. Blackwell Scientifics Publ. 1992.

Pier, A. C. Dermatophytosis. In: Current therapy, Food Animal Practice. J. Howard (ed), 3rd Edition. pp 924-927. 1993, W. B. Saunders.

Captan 50W. Material Data Safety Sheet. C & P press, pp 1-2.

Hulliner, G.A., et.al. Dermatophytosis in show lambs in the United States. Veterinary Dermatology (199), 10, 73-76.