Contagious ecthyma (aka Soremouth)

Significance
Contagious ecthyma is a contagious, zoonotic viral skin disease primarily affecting domestic sheep and goats. It can be associated with significant damage to individual bighorn sheep and mountain goats. In rare situations, mild skin lesions can occur in humans.

What? Where? How?
Contagious ecthyma associated with a parapoxvirus, is a contagious skin disease that shows up in domestic sheep and goats around the world. The virus can reside for several months or years in the environment, mainly in scabs that drop off infected individuals. It also can live in domestic sheep wool for up to a month.

Contagious ecthyma can infect various wild ruminants, such as bighorn sheep, mountain goats, mule deer, white-tailed deer, caribou, moose, elk, pronghorn, and muskox. Young animals, or older animals which have never been infected, are more susceptible to infection.

This disease creates crusty lesions on the lips, muzzle, tongue, face, udder, and feet. These lesions can lead to difficulty eating or nursing, lameness, and an overall decrease in body condition.

Transmission Cycle
Infection occurs through direct contact of the virus with broken or damaged skin – for example, contact with contaminated soil, rough vegetation, or excessive salt intake can increase the opportunity for the virus to invade cuts in the skin or mouth. Most infections in the wild probably occur while individuals are feeding close to the ground or are bedded. Nursing lambs can transfer the virus to the udder of lactating females. Or vice versa, a lactating ewe can infect the lamb if her udder is contaminated with virus from the ground. The course of infection generally is short and once resolved, the individual usually is immune to further infection.

The virus reproduces in skin cells, causing blisters to form, burst, and scab over. The tissue under these scabs can be proliferative (undergo excessive growth), creating large lumpy lesions. These lesions are self-limiting and resolve in 3-4 weeks. In some situations, bacteria infect these lesions, and cause a secondary bacterial infection. Dried scabs drop off but contain virus that can stay alive for long periods and potentially infect other individuals.

Distribution in Alberta
Contagious ecthyma was first documented in Alberta wildlife as lesions on bighorn sheep in Banff National Park in 1952. Since then, it has been seen in bighorn sheep and mountain goats in Jasper, Banff, Kootenay, and Waterton National Parks. Contagious ecthyma also is common in mining areas in west-central Alberta or where artificial salt blocks are placed on or near areas used by wild ungulates.

Importance for Wildlife Management
This disease is rare but can occur in individual wild sheep, goats, and deer in Alberta. In a population of bighorn sheep at Ram Mountain, Alberta, animals affected with contagious ecthyma lesions had reduced summer weight gain, but no greater mortality rate than uninfected sheep. However, severe lesions in some individuals have been associated with premature mortality.

Public Significance
Humans in contact with infected animals are at increased risk of infection by direct contact with the virus through broken or damaged skin. Skin lesions are seen within 3-7 days after infection. Lesions start as small blisters, which can break and eventually become crusted. These skin lesions heal within 3-6 weeks. Other clinical signs in humans
include a low-grade fever, and an increase in the size of regional lymph nodes.

People who exhibit skin lesions after handling or working around animals with contagious ecthyma-like skin lesions should see a physician.

Prevention/Control
In wildlife, contagious ecthyma is difficult to prevent, due to ability of the virus to survive in the environment. Surviving in the environment is the primary way the virus persists in an area and infects new animals.

Removing or prohibiting substances that facilitate transmission, such as salt blocks in wildland areas, could reduce the risks to wildlife. Overuse of salt can be caustic to delicate tissues of the mouth and lead to damaged areas that the virus can enter and establish new infections.

It also is difficult to contain free-ranging wild sheep and goat herds, making it impossible to treat or quarantine infected animals. However, once individuals have been infected, they are generally protected from reinfection. Similarly, even if a vaccine was available in Canada, protecting wild sheep and goats this way is not a viable option for wildlife managers.

If you see wild sheep or goats with contagious ecthyma lesions, please contact your local Fish and Wildlife office.

A vaccine containing a live virus can reduce the severity of disease in domestic animals, but is not available in Canada. And caution is warranted, as the vaccine virus can cause disease in disease-free livestock.

Summary
Overall, contagious ecthyma is a disease that pops up in wild populations of bighorn sheep and mountain goats in Alberta where they overlap with current or previous use by domestic stock. It can be associated with significant damage to delicate tissues, particularly on the face and in the mouth. Most cases are relatively mild and resolve over time. A few cases can reduce individual growth rate or fitness, and in the worst cases, affect survival. This viral disease also can pose a risk of skin lesions in humans in contact with sick animals or infectious scabs in the environment.

Additional Information

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