



Overview of Black quarters disease in animal

Benidir Mohamed*

National Institute for Agricultural Research (INRAA), Reserch Unit of Sétif, 19000 Sétif, Algeria

*Corresponding author. E-mail: moh19na@yahoo.fr

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ABSTRACT

Black quarters disease otherwise known as black leg disease. Blackleg is a sever acute, febrile, highly fatal disease of cattle and sheep caused by *Clostridium chauvoei* and differentiated by various symptoms emphysematous swelling, commonly affecting heavy muscles. It is found worldwide. In cattle, blackleg infection is endogenous. Lesions found without any history of wounds although bruising or excessive exercise may be precipitate disease in some cases. Mostly, the animals that contract with blackleg are of the beef breeds with excellent health and gaining weight. In this case fatality rate approaches 100%. In New Zealand, blackleg is seen most frequently in sheep.

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COMMENTARY

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C chauvoei is occurred naturally in the intestinal tract of various animals. Spores remain alive in the soil for years and are converted to be a source of infection. Outbreaks of blackleg have generally occurred in cattle on farms in which recent excavations have occurred or after flooding. The organisms may be are ingested any infected foods and pass through the wall of the GI tract and after gaining access to the bloodstream they are deposited in muscle and other tissues of spleen, liver, and alimentary tract and may remain dormant indefinitely.

In cattle, blackleg infection is endogenous. Lesions found without any history of wounds although bruising or excessive exercise may be precipitate disease in some cases. Mostly, the animals that contract with blackleg are of the beef breeds with excellent health and gaining weight. Outbreaks occur in which a few new cases are found each day or sometimes for several days. Generally most cases are seen in cattle from 6–24 month old, but thrifty calves as young as 6 week and cattle as old as 10–12 year may be affected. The disease generally comes in summer and fall and is uncommon during the winter. Interestingly, in sheep, the disease is almost always the result of a wound infection and often proceeds to some form of injury such as shearing cuts, docking, crutching, or castration. In this case fatality rate approaches 100%. In New Zealand, blackleg is seen most frequently in sheep.

Symptoms

- Sudden high fever (107°F-108°F) and the animal stops eating and ruminating.

- Signs like hot and painful swelling develop on loin and buttocks causing lameness. Swelling sometimes affects shoulders, chest and neck of cattle also. When pressed swelling area a crackling sound is heard because of the gas accumulation in the swellings.
- Animal dies within 24-48 hrs. of appearance of symptoms. At this juncture, swellings become cold and less painful.

Diagnosis

A sever fatal, febrile disease developed in well-nourished young cattle, particularly of the beef breeds, with crepitan swellings of the heavy muscles suggests blackleg. The affected muscles are looks dark red to black and dry and spongy and have a sweetish odor and are infiltrated with small bubbles but like little edema. The lesions may be seen in any other muscle or even in the tongue or diaphragm. In sheep due to the lesions of the spontaneously occurring type are often small and deep and they may be overlooked. Occasionally, the tissue changes caused by *C septicum*, *C novyi*, *C sordellii*, and *C perfringens* may resemble those of blackleg. At times, both *C septicum* and *C chauvoei* may be isolated from blackleg lesions, particularly when the carcass is examined within or in between 24 hrs. After death, this allows time for postmortem invasion of the tissues by *C sordellii*. Field diagnoses are confirmed by laboratory identification of *C chauvoei* in affected muscle standard methods for detection is culture and biochemical identification. The muscle samples should be taken as soon as after death as soon as possible. The fluorescent antibody test for *C chauvoei* is rapid and sweet able. A PCR is applicable and reported to be best for clinical samples but not for environmental samples.

Control

A special type of multivalent vaccine which containing *C chauvoei*, *C septicum* and where we needed *C novyi* antigens are safe and reliable for cattle and sheep. Calves 3–6 month of age should be vaccinated twice in between 4 week apart and followed by annual boosters before the anticipated danger period (usually spring or early summer). In an outbreak, all susceptible cattle should be vaccinated and treated properly with penicillin (10,000 IU/kg, IM) to prevent upcoming new cases for as long as 14 days. Cattle should be moved from affected pastures. Vaccine failure has been observed locally and attributed to a deficient spectrum of antigens in the vaccine. In such cases, a bacterin vaccine is produced with local and previously identified clostridial strains of *C chauvoei*.

Naive ewes must be vaccinated twice 1 month before lambing and then with yearly boosters. In outbreaks in flocks of ewes, prophylactic penicillin and antiserum treatments are recommended. Young sheep must be vaccinated before going to pasture. Immunity in young sheep is relatively low. Clostridial vaccines are reported to produce a weaker immune response in sheep and goats than in cattle.

Carcasses must be destroyed by burning or buried deeply in a fenced-off area to limit heavy spore contamination of the soil.

Prevention

- Vaccinated all animals which are comes under 6 months and above of age group annually before the onset of monsoon in endemic areas.
- Then burning the upper layer of soil with straw to eliminate spores may be of help in endemic areas.
- Never forget to sprinkle lime over carcass at the time of burial.

Treatment

Treatment may be effective in initial stages of this disease. However in most cases treatment it is found that treatment is not worth the while.