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Brief Communication

A CASE OF GANGRENOUS ERGOTISM IN GRAZING SHEEP

Ergotism, a mycotoxicosis induced by uptake of alkaloids of the sclerotial stage of the fungus Claviceps purpurea, has been described from many parts of the world. However, ergotism in animals has not been reported from Norway. This paper describes a case of gangrenous ergotism in sheep grazing a pasture in the south-western part of the country.

Case description

The affected lamb belonged to a flock of 40 ewes and 76 lambs of the Old Norwegian breed. The flock returned from mountain grazings on Sept. 7, and was kept on cultivated pastures until Sept. 14. The lambs were then weighed and 46 of them were sent for slaughter. The remaining sheep were all healthy and in good condition and were put onto a new pasture. On Sept. 20 one lamb was lame and had a stiff gait. Later all four limbs became swollen and nearly hairless on the distal parts.

The lamb was submitted to this laboratory on Oct. 17. The lamb could walk with great difficulties although the distal parts of the legs were gangrenous up to 5 cm above the stiff fetlock joints (Fig. 1). The lamb was killed and necropsy performed. The dry firm gangrenous tissue was sharply demarcated and the skin had mostly separated and sloughed, exposing underlying tendons and bones (Fig. 2). The right limbs could easily be divided in the fetlock joints without using any force, since the joint capsules and the tendons were necrosed and ruptured. The myocardium contained a few white greyish foci with a maximum dimension of 2 cm. The digestive tract and the lymph nodes appeared normal.

Histopathological examination showed scirrhous granulations with scattered vascular elements in the demarcation zones of the limbs. Most of the arterioles had small lumina and seemed thick-walled because of muscular hypertrophy and/or contraction. Some larger vessels had focal areas of endothelial cell shrinkage and pyknosis, with signs of regenerative activity and thickened intima. One vessel was almost entirely occluded by an organized

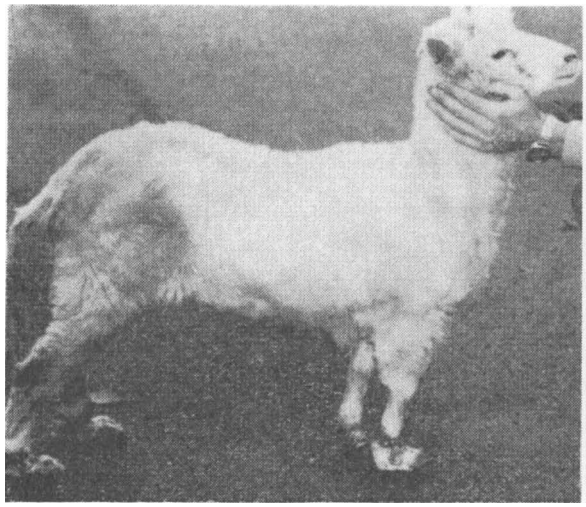

Figure 1. The affected lamb, one month after the first symptoms appeared.

Figure 2. The lamb's right forelimb.

thrombus. Few polymorphonuclear cells were present in the demarcation zones, apart from an increased infiltration near the surface. In the myocardium there were numerous scattered degenerative areas mostly infiltrated by lymphohistiocytic and fibroblastic cells, with calcifications in some of them. Muscular threads near to these areas were light and swollen. Some arterioles appeared thick-walled as in the skin. No specific pathological changes were found in the kidneys, liver, intestines and brain.

Twelve different blood values estimated were all within normal ranges. No pathogenic organism was detected by bacteriological examination of internal organs and skin lesions.

The pastures

Although no symptoms of disease were observed in the remaining sheep grazing the same pastures, the lesions in the affected lamb indicated that ergotism was the most likely cause of the condition, and the pastures were therefore inspected. No plants with seed heads were found on the pasture grazed from Sept. 7 to Sept. 14. The field grazed from Sept. 14 had been harvested in June and August. However, it was not cultivated and harvested along the fences. This field had also been grazed very closely, and only a few plants of Molinia coerulea and ryegrass

(Lolium perenne) were found. These plants were heavily infected with Claviceps purpurea as numerous sclerotia were present.

Extract from the collected sclerotia was examined by the Allport-Cocking's modified van Urk's test (*Cottral* 1978), which showed the characteristic violet-blue colour indicating the presence of ergot alkaloids.

During the period Sept. 14—Sept. 21, when the lamb probably was intoxicated, the weather was unusually wet, stormy and cold, with temperatures varying between 5°C and 13°C. Unfavourable climatic conditions seem to predispose for gangrenous ergotism in sheep and cattle (*Woods et al.* 1966, *Greatorex & Mantle* 1973). In sheep grazing ergotised pasture in cold and wet weather, lameness and the first symptoms of gangrene may appear within one week (*Greatorex & Mantle*). According to these authors peripheral vasoconstriction induced by low external temperature may increase the peripheral vasoconstriction due to ergot alkaloids. It is therefore good reason to believe that the effect of the ergot poisoning in the present case was aggravated by the climatic conditions.

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