A probable case of Fescue foot in the Netherlands

M. Holzhauer, G. Counotte, E. van Garderen, R. Dijkman, D. Smits, M. Mars
GD Animal Health, Deventer, The Netherlands

Summary

At the end of 2017 GD was contacted about serious claw-health problems in a dairy herd in both young dairy cows as well as in young stock. Clinical symptoms: severe lameness of mainly hind legs of dairy cows and young stock and severe damage in the wall of the horn shoe, which did not show any recovery after functional and therapeutic trimming. At affected cattle, claw condition deteriorated rapidly and animals had to be euthanized or slaughtered. Diagnosis was made on histopathological examination of the claw tissue, whereby abnormalities in the wall of arteriolae were noticed, characterized by thickening of the vascular wall due to tunica media proliferation resulting in luminal compression of arteriolae in the horn shoe. Fescue foot was suggested as a probably diagnosis and confirmed by investigation of the grass silage. This condition is caused by ergot alkaloids, especially ergovaline, which is produced by the endophyte *Neotyphodium coenophialum* in fescue (*Festuca arundinaceum*).

Introduction

Fescue lameness, is caused by ergot alkaloids, especially ergovaline, produced by the endophyte fungus *Neotyphodium coenophialum* in tall fescue grass (*Lolium arundinaceum*, formerly *Festuca arundinacea*). It begins with lameness in one or both hind feet and may progress to necrosis of the distal part of the affected limb(s). The tail and ears also may be affected independently of the lameness. In addition to gangrene of these extremities, animals may show loss of body mass, an arched back, and a rough coat.

Material and methods

In November 2017 GD was consulted by a dairy practitioner about very serious lameness problems in a small sized herd (48 dairy cows), own young stock and 400 fattening beef calves. The problem was very lame cows with serious affection of the wall of the horn shoe (picture below) that after functional and therapeutic trimming and a block under the inner claw did not show hardly any recovery, so that euthanize was the only solution. Another remarkable point was the presence (50%) of lameness in the young stock herd. The ration of the cattle comprised grass and corn silage, by products and concentrate. Young stock almost grass silage only. Since the final diagnosis could not be made clinically, a heifer and a calf of 6 weeks, both with typical symptoms, were sent to GD Animal Health for pathological examination. No clinical problems were seen in the fattening bull calves.

Results

At histopathological examination striking abnormalities in the wall of arteriolae were noted, mainly characterized by thickening of the vascular wall due to tunica media proliferation resulting in luminal compression of the arteriolae in the horn shoe (figure 1a and 1b). After excluding other possible causes such as Salmonellosis, fescue foot was suggested as a probably diagnosis. A sample of the silage which looked completely normal was send to a toxicological laboratory (RIKILT, WUR) and the toxins ergot alkaloids were discovered. The suspect grass silage was no longer being fed, and no new cases have occurred and even the claw health of affected cows improved.

Discussion

- This is a first confirmed case of fescue foot in Western Europe.
- Concentration ergavaline was low, however above the threshold value
- Only one herd had a confirmed diagnosis, while the grass seed should have been sold to other farmers also.
- The related typical fescue grass was not found due to a very dry summer (no flowering period).

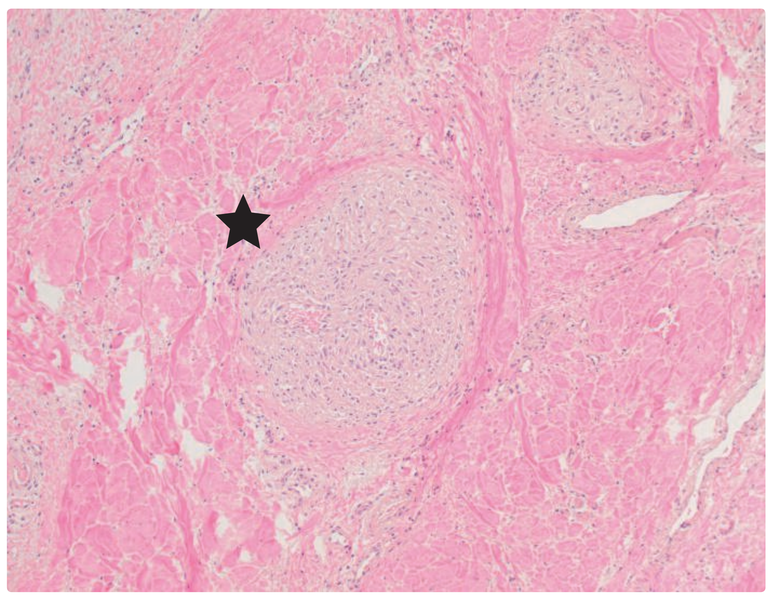

Figure 1a. HE stain of section of soft tissue compartment in the claw (x6.3). Overview (x6.3 magnification). Abnormal arterial branch*, characterized by a severely compressed lumen.

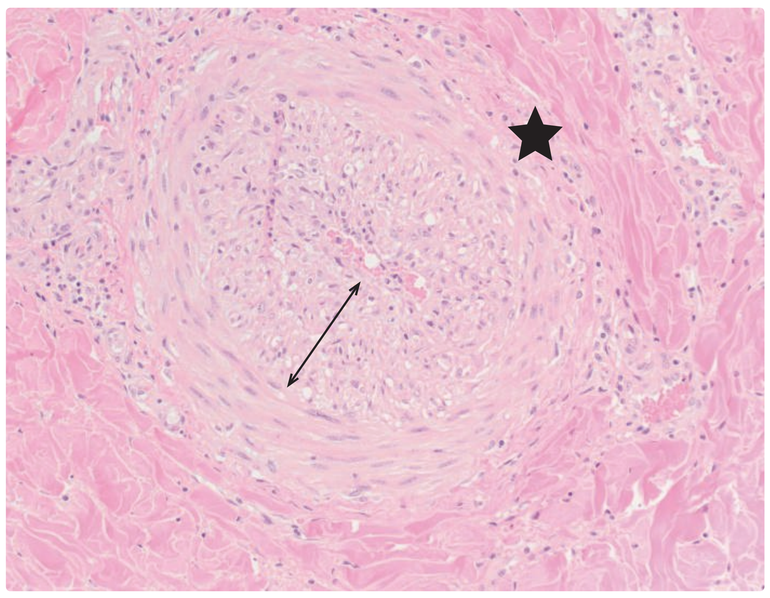

Figure 1b. HE stain of section of soft tissue compartment of the claw. Detail (x12.6 magnification). Abnormal arterial branch*. Compression of the lumen is caused by a striking proliferation of tunica media tissue.

m.holzhauer@gdanimalhealth.com
www.gdanimalhealth.com