

CASE REPORT: NECROBACILLOSIS OF THE LIVER IN
RED DEER

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INTRODUCTION:

I would like to discuss two deer herds where liver abscess (necrobacillosis of the liver) has occurred, and in one of these herds this appears to be an annual problem.

Herd One:

In April 1982 I was called out to autopsy three red deer (1 hind, 2 hind fawns) which had died suddenly and were in reasonable condition. The herd consisted of about 30 red deer - (hinds, stags and fawns) - pasture was very short and the diet consisted mainly of maize and nuts.

Autopsy

All three of these deer had identical and dramatic pathology. There were large ruptured liver abscesses involving a large part of liver parenchyma with rupture occurring at the diaphragmatic surface. The diaphragm had been penetrated and a purulent pleuropneumonia and percarditis were present. The duodenum, as it passes the liver, appeared intimately involved with a fibrino purulent reaction.

Bacteriology

F. necrophorus and C. pyogenes were isolated.

Herd Two:

Between April & July 1983 4 weaners died. I attended one about 6 hours before death and treated it for a suspected peritonitis.

Clinical Symptoms

Anorexia, depression, abdominal pain, grunting respiration. Well grown.

Autopsy

This one, plus one other at a later stage, were autopsied. Both deer showed identical lesions to those already described. Pasture was excellent. Weaning occurred in mid-March. No supplementary feeding took place. This mob also had a considerable number of cases of foot abscess, several requiring claw amputation. Quite a few (not necessarily the same ones as had foot abscess) also had C. pyogenes abscesses around joints and other sites around the body unassociated with lymph nodes.

In 1983 a much larger property was purchased, hinds were calved on this new property. In May - July 1984, several deaths occurred and once again a considerable number of foot abscesses developed. Two autopsies were carried out, once again revealing the same liver lesions.

In April 1985 I attended a sick hind fawn. Clinical symptoms were severe depression, anterior abdominal pain and a respiratory grunt. A diagnosis of necrobacillosis of the liver was made, euthanasia was carried out with the diagnosis being confirmed on autopsy. Two other deaths had also occurred, but were not autopsied. Towards the end of April 1985, I was called to another property to autopsy a weaner stag. This stag had died one week after arrival from the above property. The cause of death was necrobacillosis of the liver. In May 1985 again on a different property I autopsied a weaner stag with necrobacillosis of the liver. This stag had arrived one month earlier from the above property.

FACTS:

- (1) This problem appeared to transfer from one property to another with the animal.
- (2) All cases autopsied since 1982 have originated from Herd 2.
- (3) It appears to me that these liver abscesses have been present for a considerable time. There was a large amount of fibrous reaction around abscesses.
- (4) Although abscesses were present it has appeared not to have caused ill-thrift.
- (5) Transport stress was present in two cases. Feed stress was not apparent and no concentrates were fed.
- (6) The only stress obviously placed on these weaners was weaning, and yarding to drench.
- (7) It is obvious from the number of cases of necrobacillosis, foot abscess, and superficial abscesses, that this property has a severe environmental contamination.
- (8) Herd 1 had a plantation of Kahikatea under which pasture was virtually absent. Herd 2 had large areas of mature tree under which no pasture was present. Fawning on both properties took place in these paddocks and in 'Herd 2' weaning took place into these paddocks.

PATHOGENESIS & DISCUSSION:

Necrobacillosis of the liver in feed-lot cattle, is dealt with in the literature (e.g. Blood & Henderson) where it is suggested that rumenitis results from concentrate feeding and vascular drainage enables localization of casual organisms (F. necrophorus, C. pyogenes) into the liver. Rumenitis did not appear to be present in these deer although duodenal ulceration was. It is also suggested that the primary lesion may instead be a navel infection in the new born. In deer, duodenal ulceration may provide invasive opportunity as ulceration is often noted at autopsy in deer and, I believe this can be stress-induced. The habit of newborn fawns 'going to ground' also gives ample opportunity for navel infection to occur. This could lead to a latent liver abscess later 'exploding' under stress. I do not know which of the above is occurring, or if in fact there is another portal of entry.