Two unusual cases of MCF

Malignant catarrhal fever (MCF) is diagnosed regularly by Invermay Animal Health Laboratory, most frequently in winter in deer over 1 year of age.[1]

Two dramatic cases in weaners were encountered this winter. Both were unusual in the age of animal affected and the clinical or histological lesions.

Case one

The first case was acute. The affected animal was a 6-month-old red hind which was seen to be dull and febrile in the morning. It was submitted moribund for necropsy in the afternoon. On handling for clinical examination the hair and superficial layers of skin readily lifted off leaving dry alopoecic areas. This occurred anywhere on the haired skin.

The deer had encrustations on the muzzle, a 1 cm diameter ulcer inside the lower lip and foul smelling breath. There was soft pale cheesy material over the perineum. On post-mortem examination there was anteroventral consolidation of the lung. The abomasal and intestinal mucosae were reddened but there was no sign of diarrhoea. A diagnosis of MCF was made on the demonstration of all three types of histological lesion characteristic of the disease. There was a dramatic and severe vasculitis, usually arteriolitis, in all sections of brain, also in the lungs and intestinal submucosa. Endothelial cell proliferation was evident, especially in the meninges and intestinal submucosa. The inflammation seemed to be asymmetric rather than annular or diffuse.

Mononuclear cell infiltrates were present in the hepatic portal tracts, parafollicular cortex of lymph nodes, kidney interstitium, abomasal and intestinal mucosa and peribronchiolar tissue of the lung.

The epidermis appeared to be completely necrotic and there was necrotising change in sebaceous glands. There was a massive suppurative inflammatory reaction in the underlying dermis at mid to deep follicle level but no significant vasculitis which might indicate ischaemic necrosis. There was ulceration of the buccal mucosa and there were a few erosions of the bladder epithelium.

Case two

The unusual features of the second case were its age, the clinical signs and the severity of the vasculitis. The affected animal was one of a group of 40 eight month old stags housed indoors. Three showed fever, depression, anorexia and diarrhoea over a 10-day period and a tentative diagnosis of MCF was made.

Two died and the diagnosis was confirmed on histological examination of the brain. The third deer survived, it regained its appetite and its faeces firmed. However, it became anaemic and lost weight over the following 4 weeks. It was euthanased.

At necropsy there was dramatic thickening of arteries and arterioles throughout the body. Virtually every artery appeared thickened and tortuous, especially the vessels in the mesentery and kidney. There were recent infarcts in the kidney and there was a small area of peritonitis around an intestinal perforation.

There were normal faecal pellets in the rectum and the lymph nodes were not enlarged.

Histology confirmed massive vasculitis with thickening of the media by fibrinoid material and mononuclear cell infiltration. Necrotising cells were scattered throughout and there were perivascular cuffs of mononuclear cells. Endothelial cell proliferation was evident. These changes were especially marked in arteries and arterioles of the mesentery, kidney, pelvis and meninges. Vasculitis of lesser severity was evident in all tissues examined. Again the vasculitis appeared to be asymmetrical in affected blood vessels.

The other histological lesions of MCF were also present. There were mononuclear cell infiltrations particularly in portal tracts of the liver, beneath the buccal mucosa and in parafollicular cortical tissue of lymph nodes. There was necrosis of the intestinal mucosa extending to involve the full thickness of the intestinal wall in the area of the perforation.

These two cases illustrate the variety of clinical and pathological changes which can occur in MCF. Sloughing of the skin does not seem to have been reported previously as a sign of the disease. Gross thickening of blood vessels has been documented in a case of chronic MCF in a sika deer.[2] Both changes are unusual features of MCF in deer.

References

1 Orr, M B, 1986: Diagnosis of malignant catarrhal fever in deer at Invermay. *Surveillance 13 (4):* 22-3.

2 Wilson, P R, Alley, M R, Irving, A C, 1983: Chronic malignant catarrhal fever: A case in a sika deer *(Cervus nippon). N.Z. Vet. J. 31:* 7-9.

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