

COMMUNICATION III

A Case of Feline Panleukopenia in Malaysia Confirmed by Electron Microscopy

RINGKASAN

Satu kes feline panleukopenia dalam seekor kucing rumah berumur 18 bulan adalah dilaporkan. Tanda-tanda klinik utama ialah tidak berselera makan, kemasyghulan, ceret dan kekeringan badan. Perubahan-perubahan patologi yang biasa seperti atrofi vilus dan erosi pada epithelia usus kecil telah ditemui. Pemeriksaan najis menggunakan mikroskop lektron telah menunjukkan benda-benda yang menyerupai parvovirus.

SUMMARY

A typical case of feline panleukopenia in an 18 month-old domestic cat is reported. The disease was characterised clinically by anorexia, depression, diarrhoea and dehydration. Typical pathological changes of severe villous atrophy and erosion of the small intestinal epithelium were observed. Electron microscopic examination of the faeces revealed the presence of particles resembling parvovirus.

INTRODUCTION

Feline panleukopenia (FPL) is a highly contagious disease of domestic as well as exotic species of cats. It is caused by parvovirus and characterised by an explosive and short course and a high case mortality rate. The disease has a worldwide distribution, being enzootic in many countries (Gillespie and Scotts, 1973). In Malaysia, it is generally considered to be common on the basis of clinicopathological evidence and cats are routinely vaccinated against it. There has been, however, only one documented report of FPL which was seen in 3 leopard cats (Chong, 1970).

The purpose of this communication is to report a case of FPL in a domestic cat in Malaysia which was confirmed by electron microscopic demonstration of the causal virus in the faeces.

HISTORY

An 18 month-old unvaccinated male domestic short-haired cat was presented to the Veterinary Teaching Hospital, Universiti Pertanian Malaysia with a history of anorexia and diarrhoea for the previous five days. This was the second cat in that household to become ill. Two days previously, a 5 month-old cat had died following anorexia and depression of one day duration. In the immediate neighbourhood, two adult cats and their six suckling kittens had died within days of each other in the past week. Another neighbour had also lost one cat in the same week. All the cats mentioned had not been vaccinated against FPL.

CLINICOPATHOLOGICAL FINDINGS

On physical examination, the cat was observed to be severely dehydrated, had a body temperature of 36.1°C and was in a state of shock. A grave prognosis was given and the cat was treated with warmed physiological saline, ampicillin and vitamin B12, and placed in a comfortably warm cage. However, it died one hour later.

The gross lesions seen at necropsy consisted of marked dehydration and emaciation. The lungs were severely congested and oedematous. The gastrointestinal tract was slightly dilated and its wall oedematous and congested. The serosal surface of the entire small intestine was moderately hyperaemic and contained generalized petechiae which were also visible on the mucosal surfaces which was covered with fibrinous exudate. The mesentric lymph nodes were slightly enlarged, oedematous and congested.

Microscopically, the small intestine exhibited villous atrophy and erosion of the surface epithelium. Numerous bacterial colonies and marked ectasia of capillaries were observed on the remaining intact surface epithelium. The crypts were dilated by serous fluid, and many contained desquamated eosinophilic necrotic epithelial cells. These dilated crypts were lined by mostly flattened epithelial cells, several of which had intranuclear inclusion bodies. The lamina propria was moderately infiltrated by lymphocytes.

Electron microscopic examination of the faecal sample using the method previously described by Faridah and others (1980), revealed minute particles in clumps with morphological features resembling parvovirus (Figure 1).

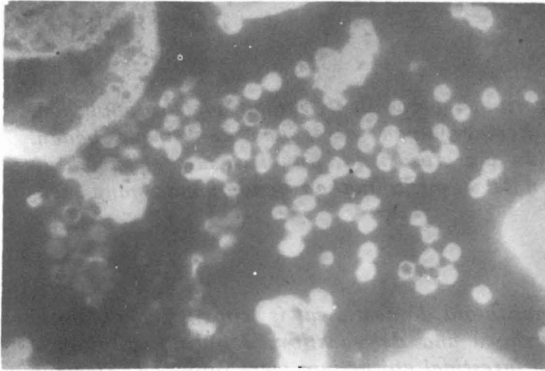


Fig. 1. Electron microscopic appearance of parvovirus-like particles observed in the saeces (Bar = 55 nm)

DISCUSSION

The clinicopathological findings in this case are consistent with those occurring in natural and experimental FPL as reported by other workers (Carpenter, 1971; Langheinrich and Nielsen, 1971). It is believed that the cats in the neighbourhood were all susceptible to FPL virus as they were all not vaccinated against FPL. The suckling kittens might not have acquired a passive immunity against FPL since the immunity would depend on the immune status of the dams. During the clinical phase of the disease, the virus is usually secreted in faeces, urine and saliva and the natural infection occurs by ingestion or inhalation of the virus (Gillespie and Scott, 1973). Contaminated hands, animal contacts, flying insects, airborne dust and droplets may spread the infection among the neighbourhood cats.

This is the first report in Malaysia of FPL suspected based on the typical clinicopathological evidence which was subsequently confirmed by demonstration of the causal virus in the faeces under electron microscope. The electron microscopic examination is not however carried out routinely to reach a diagnosis. Histopathological evidence is considered sufficient to confirm a clinically suspected case.

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