Detection of feline infectious peritonitis virus-like antigen in ferrets

SIR, – Feline infectious peritonitis (FIP) is caused by feline coronavirus (FCoV). It is a well known and widely distributed coronavirus-induced systemic disease in cats and non-domestic felids (O'Reilly and others 1979, Kennedy and others 2002). The disease is characterised by fibrinous to granulomatous serositis with protein-rich effusions in body cavities and granulomatous inflammatory lesions in several organs (Weiss and Scott 1981). Over the past three years some clinicians have suspected, based on clinical signs and serology, the possibility of infection of ferrets with FCoV. We would like to report the observation of microscopic granulomatous lesions consistent with FCoV infection.

Nine ferret cases submitted to the pathology diagnostic service during the period 2004/05 were selected for investigation. The ferrets were from different origins and presented non-specific clinical signs. The animals were all examined post-mortem and had been submitted by the same clinician. He had sent several organs and tissues (lymph node, kidney, mesentery, intestine, spleen, liver, lung, pancreas, heart and adrenal glands) in 10 per cent formalin for histopathological examination.

The histopathological picture consisted of a granulomatous inflammatory reaction in nearly all the tissues evaluated. Lymph nodes and the mesentery were the most affected tissues in frequency and severity and showed severe multifocal granulomas affecting the normal structure of the tissues. Granulomas had a variable large central area of macrophages, surrounded by a broad rim of lymphoplasmocytic infiltrate; in some of them, a central area of necrosis was detected.

Occasionally, single or small numbers of neutrophils scattered between macrophages were observed. In other organs, granulomas were detected with different frequencies depending on the animal evaluated. Finally, an inflammatory angiocentric pattern, usually described in cats, was observed only in some small granulomas located in the mesentery and liver.

Immunohistological demonstration of FCoV was performed as described by Kipar and others (1998). In granulomas of seven of the ferrets a specific immunohistological reaction using the monoclonal antibody directed towards FCoV could be seen in macrophages, similar to the well-known reaction that is found in feline granulomas in FIP. We conclude, therefore, that coronavirus can induce a disease in ferrets with a high similarity to FIP.

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