

Pathologic Findings of Feline Infectious Peritonitis

Emi Barker, BSc (Hons), BVSc (Hons), PhD, DECVIM-CA
 University of Bristol
 Bristol, United Kingdom

In the Literature

Rissi DR. A retrospective study of the neuropathology and diagnosis of naturally occurring feline infectious peritonitis. *J Vet Diagn Invest.* 2018;30(3):392-399.

FROM THE PAGE ...

Feline infectious peritonitis (FIP) is a fatal disease of cats.¹ Histopathologic changes are characterized by pyogranulomatous inflammation affecting one or more organs, which can include the CNS. Approximately one-third of cats with the noneffusive dry form of FIP have neurologic signs.²

This retrospective study described the signalment, presenting neurologic signs, gross postmortem changes, and CNS histopathology of a cohort of 26 cats with confirmed FIP and CNS involvement. Signalment was consistent with previous reports of FIP,¹ with young cats affected (average age, 11.8 months); no breed or sex predilection was identified. Neurologic signs, present in 85% of cats, were similar to those previously reported² and included ataxia, depression, seizures, head tilt, urinary incontinence, opisthotonus, muscle rigidity, anisocoria, and miosis. Complete neurologic assessment was not performed in every cat. Rabies was included as a differential in half of the cats with the main complaint of neurologic signs.

On postmortem examination, gross neuropathologic changes were present in 58% of cats. Inflammation was characterized histologically by vasculitis and perivascular infiltration with mixed inflammatory cells. There were different morphologic variations in the macrophage population within the lesions; in one case, lesions were mostly neutrophilic, raising concern for bacterial infection.

Three different distributions of inflammation were noted, with lesions localized to the ventricular system, brainstem/cerebellum, or leptomeninges. No potential explanation for these distribution differences was suggested, but they may have accounted for differences in clinical signs. Inflammatory changes were similar regardless of distribution pattern. Most cats had lesions consistent with FIP noted in other organs, but 23.1% did not. Immunostaining of formalin-fixed CNS tissue was positive for feline coronavirus antigen in all 26 cases, but fluorescent antibody testing of fresh tissue was positive in only 7 of the 17 cases tested.

... TO YOUR PATIENTS

Key pearls to put into practice:

- 1** Cats with FIP lesions in the CNS are generally presented at the same age as cats with FIP affecting other organs; CNS signs may be variable or absent.
- 2** Although type of inflammation was similar, 3 different CNS distribution patterns were noted; therefore, postmortem sampling for disease confirmation should incorporate these sites.
- 3** Immunohistochemistry is very sensitive for confirming FIP,* although a negative fluorescent antibody test result on fresh tissue does not rule out FIP.

*Specificity was not determined but is typically good.

References

1. Kipar A, Meli ML. Feline infectious peritonitis: still an enigma? *Vet Pathol.* 2014;51(2):505-526.
2. Crawford AH, Stoll AL, Sanchez-Masian D, et al. Clinicopathologic features and magnetic resonance imaging findings in 24 cats with histopathologically confirmed neurologic feline infectious peritonitis. *J Vet Intern Med.* 2017;31(5):1477-1486.