A geriatric cat presents with vomiting and diarrhea. Is it primary intestinal lymphoma, inflammatory bowel disease (IBD), or hypersensitivity? DCPAH now offers a panel of tests to distinguish between these differentials with a high degree of certainty. Microscopic analysis alone yields highly variable diagnoses, particularly when practitioners submit endoscopic samples as opposed to full-section biopsies. This panel uses an experimentally-developed diagnostic algorithm to improve diagnostic certainty, allowing practitioners to more confidently choose treatment options for the animals under their care. The feline lymphoma panel includes microscopic evaluation, immunohistochemical (IHC) phenotyping, and confirmatory PCR for lymphocyte clonality.

Microscopic evaluation of the routine formalin-fixed biopsy sample (endoscopic or full thickness) is used to screen for morphologic hallmarks of lymphoma, including marked lymphocytic infiltration of the muscularis (full thickness samples only) and epitheliotropism (nests or plaques of lymphocytes accumulating within the epithelial layer). IHC is then used to differentiate between B and T cells, also visualizing the location of T-lymphocytes in the epithelial layer and identifying heterogeneous inflammatory cell populations versus homogeneous neoplastic cell infiltrates.

The diagnosis is confirmed based on the combined interpretation of morphology and IHC results, or—if the diagnosis is inconclusive—PCR tests for T- or B-lymphocyte clonality are run as needed to differentiate neoplastic and inflammatory lymphocytes. PCR evaluations are always performed in duplicate and native as well as denatured gel electrophoresis is used to eliminate the potential for false positive results. Research indicates that the use of single PCR tests only to determine lymphocyte clonality quite commonly leads to false positive results (pseudoclones).

Histology, IHC, and PCR results interpreted in context dramatically increase diagnostic certainty in differentiating feline intestinal lymphoma from inflammation, in particular IBD. The feline lymphoma panel, including histology, IHC and PCR, is available for $165, and all tests can be performed on routine formalin-fixed biopsy material as well as previous biopsy submissions. Alternately, clients can submit the paraffin block of the lesion in question or 10 unstained slides of this block and receive the panel for $150, including a second biopsy opinion. For more information on the feline lymphoma panel, contact Dr. Matti Kiupel at 517-353-5275 or visit our Website at www.animalhealth.msu.edu.
and ammeline–were present in wheat gluten imported by Menu Foods, and to date more than 100 pet food recalled dog and cat foods produced at two of its facilities between Dec. 3, 2006, and March 6, 2007 and was later expanded to include additional companies supplying Menu Foods recalled dog and cat foods on March 16, 2007. On March 30 the FDA reminded to remain vigilant and observant and bring pets in for a check-up if they suspect illness. Because investigations are ongoing, pet owners should be kept informed. DCPAH is open Saturdays to receive samples, so those last-minute Friday afternoon submissions arrive as affordable. DCPAH is open Saturdays to receive samples, so those last-minute Friday afternoon submissions arrive as required.* If you have questions about how to ship a sample, check the order catalog on the DCPAH website at www.animalhealth.msu.edu, or call us at 517-353-1683.

*Clients who buy FedEx billable stamps from DCPAH are NOT charged additional shipping fees by FedEx unless the package is slated for Saturday delivery. Please contact us at 517-353-1683 for more information about our subsidized overnight shipping program, or view our product order form on the DCPAH Website at www.animalhealth.msu.edu.

When shipping time- and/or temperature-sensitive samples, use an overnight courier service like FedEx or UPS. These carriers guarantee overnight delivery, and DCPAH offers subsidized FedEx billable stamps, making effective, convenient delivery affordable. DCPAH is open Saturdays to receive samples, so those last-minute Friday afternoon submissions arrive as affordable.

Effects of Pet Food Contamination Still Being Felt in the Veterinary Community
Wilson K. Rumbelka BVM, PhD, DABVT, DART and Clinical Toxicologist

Menu Foods, Inc. initiated a recall of several brands of pet food on March 16, 2007. On March 30 the FDA announced finding melamine–a chemical associated with cases of nephrotoxicity–in these foods. Initially, Menu Foods recalled dog and cat foods produced at two of its facilities between Dec. 3, 2006, and March 6, 2007 and sold under a number of different brand names. The recall was later expanded to include additional companies supplied by Menu Foods, and to date more than 100 pet food products have been recalled. A list of recalled items can be found on the FDA website at http://www.fda.gov.

Subsequent investigations have revealed that melamine and other adulterants–including cyanuric acid, ammelide and ammelmine–were present in wheat gluten imported from China and subsequently incorporated into pet foods. Melamine has also since been discovered in rice protein concentrate used in the manufacture of pet foods. Presently, it is not clear which of these contaminants is responsible for the kidney injury. It is possible that there may or may not be interaction between the contaminants resulting in nephrotoxicity. Of particular interest is possible interaction between melamine and cyanuric acid.

Melamine is an industrial chemical used as a fertilizer and in the plastics manufacturing process. It has no nutritional value. Cyanuric acid is also an industrial compound which is used widely in swimming pools. It is not clear why melamine, cyanuric acid, and/or other adulterants were incorporated into wheat gluten. It is not clear if cyanuric acid is a breakdown product of melamine. Because investigations are ongoing, pet owners should be reminded to remain vigilant and observant and bring pets in for a check-up if they suspect illness.

The FDA and USDA recently announced that swine and poultry from several states that were fed melamine-adulterated foods would not be allowed to enter the food supply. Chicken, pork, and pork products derived from animals fed adulterated products will also be destroyed. Apparently adulterated pet food feeds were incorporated into feed prior to the announcement of the recall.

During the week of April 23, 2006, DCPAH started offering melamine tests on urine and feed. Tests for melamine on kidneys and tests for cyanuric acid in kidney, urine, and food are in development. Testing is only being offered on samples related to diagnostic cases for purposes of confirming exposure. Please check the DCPAH Website at www.animalhealth.msu.edu or call us at 517-353-1683 for additional information about the pet food recall.

Specimen Shipping Tip #1 - Choose the Appropriate Shipping Method

Your clients expect fast and reliable results. Don’t jeopardize specimen integrity by choosing the wrong shipping method. When shipping time- or temperature-sensitive samples, remember that U.S. Postal Service Priority Mail does not guarantee overnight delivery. Depending on your location, these packages can take up to 7 days to arrive. During the hot summer months, this can severely impact specimen integrity, requiring costly and inconvenient repeat specimen collection and additional shipping fees.

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Subsequent investigations have revealed that melamine and other adulterants— including cyanic acid, ammelide and ammeline—were present in wheat gluten imported from China and subsequently incorporated into pet foods. Melamines have also since been discovered in rice protein concentrate used in the manufacture of pet foods. Presently, it is not clear which of these contaminants is responsible for the kidney injury. It is possible that there may or may not be interaction between the contaminants resulting in nephrotoxicity. Of particular interest is possible interaction between melamine and cyanic acid.

The two compounds have been found in urinary crystals from dogs and cats fed the recalled foods. Melamine is an industrial chemical used as a fertilizer and in the plastics manufacturing process. It has no nutritional value. Cyancic acid is also an industrial compound which is used widely in swimming pools. It is not clear why melamine, cyanic acid, and/or other adulterants which are melamine and cyanic acid were incorporated into wheat gluten. It is also not clear if cyanic acid is a breakdown product of melamine.

Because investigations are ongoing, pet owners should be reminded to remain vigilant and observant and bring pets in for a check-up if they suspect illness.

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WHAT IS LEPTOSPIROSIS?

Leptospirosis is a disease caused by infection with one of the more than 250 types of bacteria called Leptospira. These bacteria can infect any mammal, including humans. Leptospira live in warm, wet environments like damp grass, standing water, mud, and lakes. Under ideal conditions, the bacteria can survive more than three months outside the body.

HOW IS LEPTOSPIROSIS TRANSMITTED?

Leptospirosis is most often transmitted to dogs through mucous-membrane (mouth, nose, eye) contact with the urine of infected animals. Raccoons, skunks, opossums, rats, cows, and pigs are all known carriers of the infection. Dogs can also become infected from close contact with another infected dog. Because of the broad range of carrier species, any dog—even one briefly outdoors in an urban backyard—is vulnerable to the disease.

HOW CAN LEPTOSPIROSIS AFFECT MY DOG?

Leptospirosis can cause a broad range of clinical signs in any combination. The most common early indicators of Leptospirosis are: loss of appetite, increase or decrease in urine production, uncharacteristic inactivity, vomiting, and diarrhea. Even with prompt, exhaustive medical care, 10 to 15 percent of infected dogs may die. Left untreated, many infected dogs die of kidney or liver failure.

HOW DO I PREVENT LEPTOSPIROSIS?

For most dogs, limiting exposure to the outdoors is neither practical nor desirable. Vaccination is the best way to prevent leptospirosis. There are a number of vaccine options and vaccination schedules. Discuss the benefits and risks of leptospirosis vaccination with your dog’s veterinary medical provider.

WHAT DO I DO IF I SUSPECT LEPTOSPIROSIS?

If you suspect your dog may have leptospirosis, CONTACT YOUR VETERINARY MEDICAL PROVIDER. Your veterinarian can assess your dog’s condition and order any necessary diagnostic tests. Early diagnosis, treatment, and supportive care are essential to giving your dog the best chance for survival. Humans are also vulnerable to leptospirosis. If your dog is diagnosed with leptospirosis, consider medical assessment for anyone in close contact with the animal.

This fact sheet is provided by the Michigan State University Diagnostic Center for Population and Animal Health as a public service. It is not intended to diagnose any disease. Please contact your veterinary medical service provider if you have questions regarding this or any other veterinary medical issue.
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