



PATIENT

Missy Aschoff

PRESENTING CLINICAL SIGNS

Wt loss, anorexia; large mid abdominal mass palpated.
Abnormal PE/Chem/CBC/UA Results: Tbili 2.4, ALKP 401

SPECIES

Feline

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

BREED

DSH

The urinary bladder is well distended. The wall is smooth and regular. No abnormalities are present with the trigone or proximal 2 cm of the urethra. A small to moderate amount of free floating sediment is present, some of which has developed into free floating aggregates. There is no evidence of cystoliths, polyps or a mass.

SEX

Spayed Female

Kidneys

The **left** kidney measures 5.00 cm (3.80-4.40 cm). Renomegaly. The capsule is smooth. The cortex is moderately hyperechoic and a mild to moderate loss of the normal definition of the cortico-medullary junction is present. There are no signs of nephroliths or pyelectasia. The surrounding mesentery is not hyperechoic.

AGE

10 Years

The **right** kidney measures 2.74 cm (3.80-4.40 cm). It is decreased in size and a marked loss of the normal definition of the cortico-medullary junction is present. A few mineralizations of the diverticulae and pelvis are present, in addition to a nephrolith within the pelvis. Multiple, well-defined hyperechoic regions most consistent with infarcts, are noted. There are no signs of pyelectasia. The surrounding mesentery is hyperechoic.

WEIGHT

16 Pounds

Aortic bifurcation/trifurcation

No abnormalities observed.

INTERPRETED BY

Lisa Carioto, DVM,
DVSc, Diplomate
ACVIM

Adrenal Glands

The **left** adrenal gland measures 0.34 cm in diameter. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

IMAGING PERFORMED BY

Diane McFadden

The **right** adrenal gland measures 0.33 cm in diameter. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature are unremarkable. The surrounding mesentery is mildly hyperechoic.

HOSPITAL NAME

East Plane AH

Spleen

Splenomegaly at 14.0 mm (normal = 10 mm). The spleen is within normal limits in echotexture, and echogenicity. Scalloped contours are observed when evaluated with the linear probe. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.

REFERRING VET

Dr. Rosen

Liver

Subjectively, the liver is slightly enlarged and "swollen". Its borders are smooth and sharp to mildly rounded. The liver's echotexture is homogeneous, but is mildly to moderately hyperechoic, i.e. it is mildly hyperechoic to the falciform fat. Focal lesions are not observed. No abnormalities are observed with the hepatic vessels visualized.

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The gallbladder wall is within normal limits in thickness and echogenicity. A small amount of echogenic material is present within the GB. The cystic duct is tortuous and at the high end of normal



PATIENT	at 3.9 mm. The common bile duct is at the high end of the normal reference range, but not tortuous (3.9 mm). The surrounding mesentery is hyperechoic. No abnormalities are observed with the duodenal papilla.
Missy Aschoff	
SPECIES	Gastrointestinal
Feline	Gas is present within the lumen in the stomach. The gastric wall is within normal limits in thickness and the wall layers are well defined. No obvious abnormalities are observed with its peristalsis.
BREED	A small amount of fluid is present in the duodenum. The duodenum does not appear to be the origin of the mass (see other, below).
DSH	The small intestinal wall thickness, including the duodenum, is within normal limits and the definition of the wall layers is preserved. However, some of the loops of bowel show a mildly hyperechoic submucosa and a prominent to mildly thickened muscularis. Abnormally dilated loops of bowel are not observed. The mesentery surrounding the small intestines is hyperechoic.
SEX	
Spayed Female	The colonic wall is not thickened and mural detail is considered normal.
AGE	Pancreas
10 Years	No overt abnormalities are observed with the echogenicity or echotexture of the left limb. There is no evidence of hyperechogenicity of the surrounding mesentery, i.e., signs of active pancreatitis are not present.
WEIGHT	
16 Pounds	The body and right limb are mildly hypoechoic and appear to be the origin of a heterogeneous mass. The pancreas is surrounded by a mildly to moderately hyperechoic mesentery (see other, below).
INTERPRETED BY	Other
Lisa Carioto, DVM, DVSc, Diplomate ACVIM	A heterogeneous mass is noted in the region of the right pancreas, duodenum and right kidney. It has multiple anechoic areas that appear cystic in nature, but other areas appear cavitory. Soft tissue regions of variable echogenicities are noted throughout, in addition to very well delineated hyperechoic regions, which are suggestive of infarcts and fibrosis.
IMAGING PERFORMED BY	The mass is round to elliptical, depending on the angle of the probe. It measures 4.22 cm in diameter x 4.68 cm in length, and up to 5.31 cm in diameter in another view. The surrounding mesentery is severely hyperechoic, with multiple, small, hypoechoic nodules dispersed haphazardly throughout. The mass appears to be originating from the pancreas. The omentum appears to be causing "aggregation" and adhesions of the three organs with hyperechoic mesentery interspersed. The mass is avascular. Certain areas of the mass have an acinar architecture. Although there are one or two views which suggest the mass is originating from the right kidney, the capsule of the kidney can be followed in the majority of the images. Further diagnostics, such as CT and angiography, are required to confirm the origin of the mass, especially if a decision is made to pursue surgery.
Diane McFadden	
HOSPITAL NAME	
East Plane AH	
REFERRING VET	Mesentery
Dr. Rosen	Hypoechoic nodules are observed throughout the hyperechoic mesentery. One example is 3.8 mm in diameter x 4.1 mm in length.
INVOICE	Lymph nodes
37876	No abnormalities are observed, however, some of the mesenteric nodules may be small, reactive lymph nodes.
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Abdominal effusion

SPECIES

Feline

A scant amount of anechoic effusion is observed surrounding the pancreas in the right cranial quadrant of the abdomen.

BREED

DSH

ULTRASONOGRAPHIC FINDINGS

SEX

Spayed Female

- **Heterogeneous mass** in the right cranial abdomen, which appears to be originating from the pancreas. Although there are one or two views which suggest the mass is originating from the right kidney, the capsule of the kidney can be followed in the majority of the images. Further diagnostics, such as CT and angiography, are required to confirm the origin of the mass, especially if a decision is made to pursue surgery. Differential diagnoses include an adenocarcinoma with possible cavitory hemorrhaging, as well as carcinomatosis based on the hypoechoic nodules observed throughout the hyperechoic mesentery. Adhesions, created by the omentum enveloping the mass and incorporating the duodenum, body, right limb of the pancreas and right kidney, are suspected.

AGE

10 Years

- The **gastrointestinal tract** show changes suggestive of inflammation. There is no obvious loss of the demarcation/definition of the wall layers, therefore, underlying inflammatory bowel disease may be present.

WEIGHT

16 Pounds

- **Right kidney;** changes observed are suggestive of previous infarcts and fibrosis, as well as some mild mineralization and very small nephroliths. See above regarding origin of mass.

INTERPRETED BY

Lisa Carioto, DVM,
DVSc, Diplomate
ACVIM

- **Left kidney;** renomegaly may be secondary to compensation as a result of the smaller size and fibrotic appearance of the right kidney. The loss of definition of the cortico-medullary junction and the hyperechoic cortex may be due to inflammation (interstitial nephritis or glomerulonephritis), as well as age-related degeneration.

IMAGING PERFORMED BY

Diane McFadden

- **Liver:** A vacuolar hepatopathy and hepatic lipidosis may be contributing to the diffuse hyperechogenicity of the liver. Ascending inflammation from the pancreas and mass is suspected, however, a secondary bacterial infection cannot be excluded. Other differential diagnoses include cholestasis, cholangitis/cholangiohepatitis and cholecystitis. Cholecystitis and inflammation created by the pancreatic mass could cause inflammation of the common bile and cystic ducts. Furthermore, Missy may have suffered from “triaditis” in the past, in which she may be having a “flare up” due to underlying neoplasia affecting the pancreas.

HOSPITAL NAME

East Plane AH

- **Splenomegaly** may be due to splenitis due to antigenic stimulation and secondary inflammation. Other differential diagnoses include extramedullary hematopoiesis, hypersplenism and reactive hyperplasia. Neoplasia, such as lymphoma, or other round cell tumour, is considered less likely, but cannot be excluded. A fine needle aspirate is required to obtain a definitive diagnosis.

REFERRING VET

Dr. Rosen

- The free floating sediment within the lumen of the **urinary bladder** is most likely composed of mucus, crystalline material and exfoliated cells. The debris is likely clinically insignificant given the lack of inflammatory changes to the bladder wall, however, findings should be correlated with clinical signs and a urinalysis.

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

SPECIES

Feline

Fine needle aspirates of the spleen and liver may be performed to obtain definitive diagnoses.

Although a fine needle aspirate of the mass may be performed, it should be done judiciously due to the risk of bleeding or rupture if necrosis is present. A 25 gauge needle is suggested, as well as a coagulation profile. Administration of vitamin K (0.5 mg/kg SQ q8-12h for 1-3 doses) is suggested even if the results of the PT/PTT are within normal limits.

BREED

DSH

Further diagnostics, such as CT and angiography, are required to confirm the origin of the mass, especially if a decision is made to pursue surgery.

SEX

Spayed Female

Supportive care is suggested, for example,

Analgesia for visceral pain, such as buprenorphine, and gabapentin.

A 10-14 day trial with famotidine or omeprazole every 12 hours, if signs of GERD are present.

AGE

10 Years

An easily digestible diet that is appetizing, as well as small, frequent meals.

Subcutaneous fluids if intravenous fluids are not pursued.

If further diagnostics or surgery are not pursued, treatment with toceranib (Palladia®), a tyrosine kinase inhibitor, may be considered. This medication can help slow down the progression of the tumour. It is administered by mouth three days a week, for example, Mondays, Wednesdays, Fridays. Routine blood work, consisting of a CBC and serum biochemical profile, is required to monitor for neutropenia and elevated liver enzyme activities.

INTERPRETED BY

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HOSPITAL NAME

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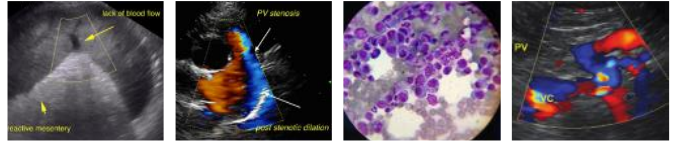
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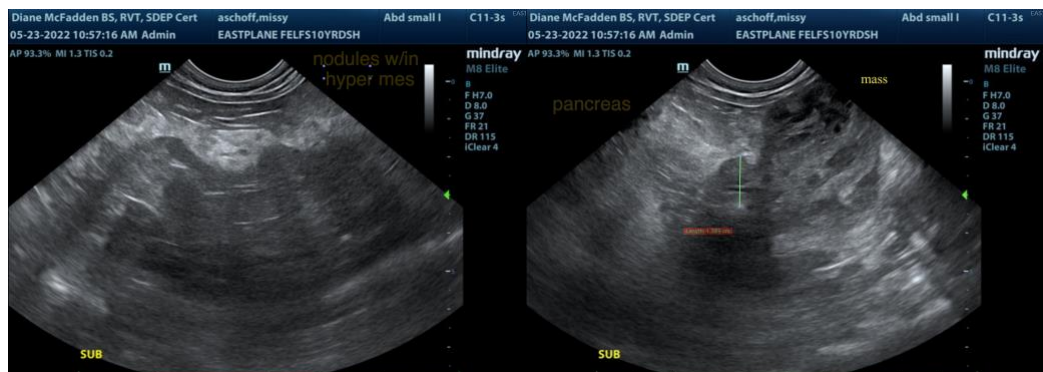
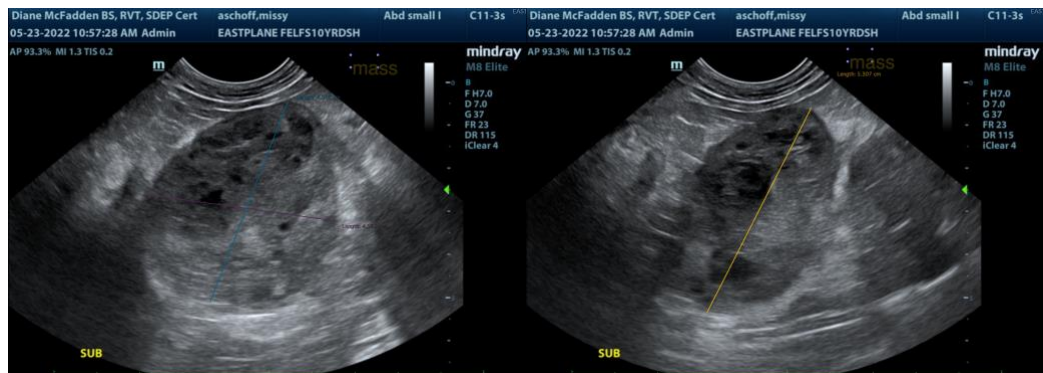
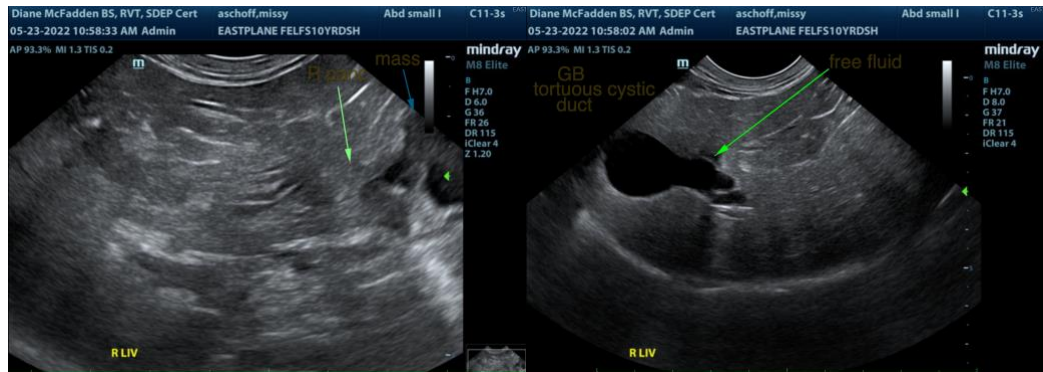
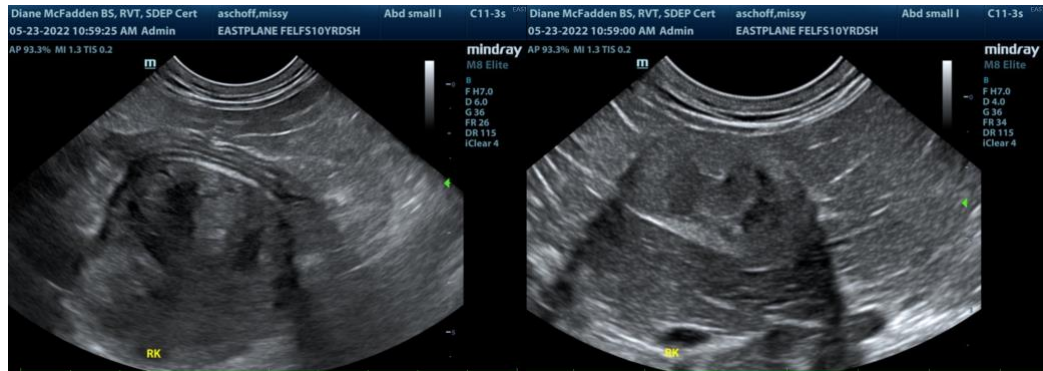
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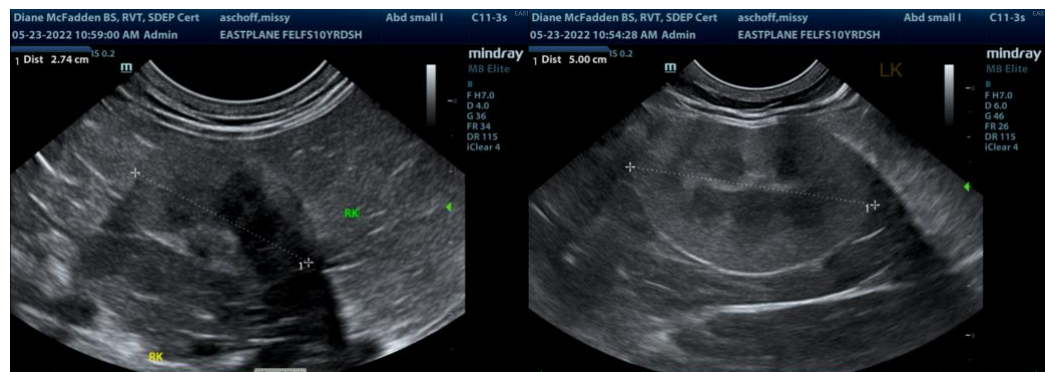
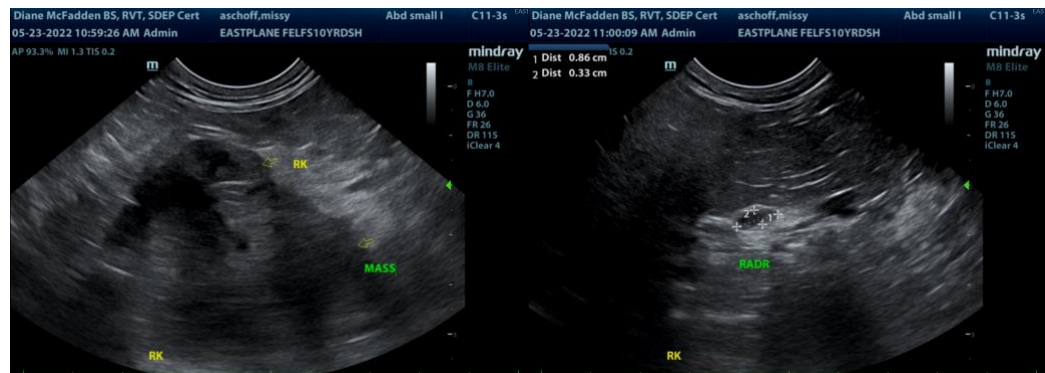
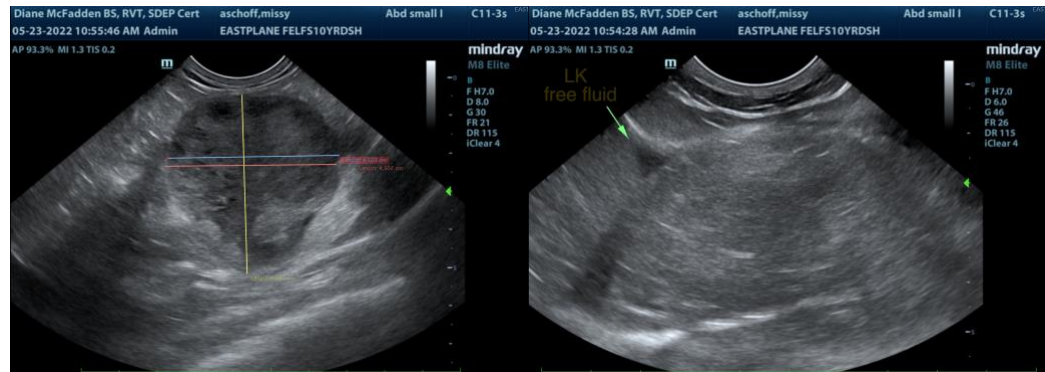
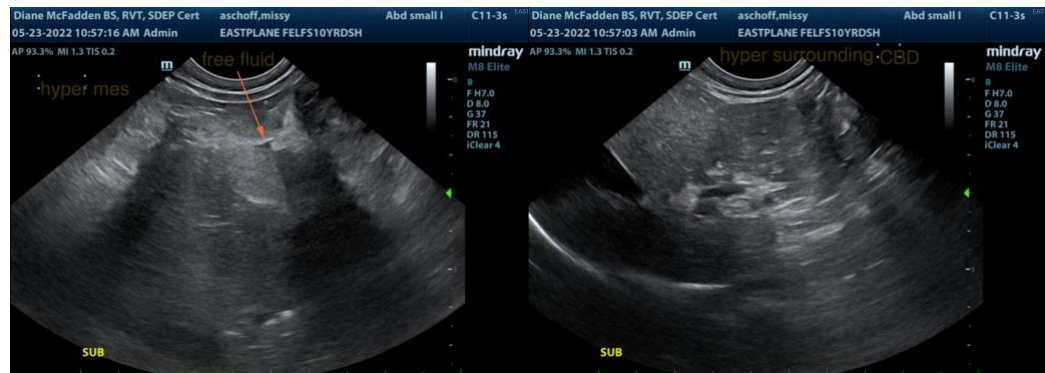
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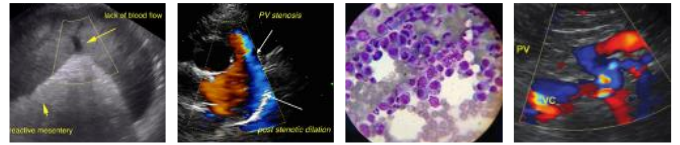
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

SPECIES

Feline

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

BREED

DSH

Lisa.Carioto@sonopath.com

SEX

Spayed Female

AGE

10 Years

WEIGHT

16 Pounds

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