**PATIENT**

Eddie Crampton

**SPECIES**

Feline

**BREED**

Domestic Shorthair

**SEX**

Neutered Male

**AGE**

3 years

**WEIGHT**

11 Pounds

**INTERPRETED BY**Lisa Carioto, DVM,  
DVSc, Diplomate  
ACVIM**IMAGING PERFORMED BY**

Sarah Pender, CVT

**HOSPITAL NAME**

SVS Imaging QC

**REFERRING VET**

Dr. Narske

**INVOICE**

99318

**DATE**

4/15/22

**PRESENTING CLINICAL SIGNS**

History: vomiting, not eating Currently hospitalized on IVF  
 Abnormal PE/Chem/CBC/UA Results: dehydrated, jaundice elevated liver values, Tbili is 6.5

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN****Urinary System**

The urinary bladder is well distended with anechoic contents. The wall is smooth and regular. No abnormalities are noted with the trigone or proximal urethra, and there is no evidence of cystoliths, polyps or a mass. A trivial amount of free floating sediment is present, however, obvious signs of cystitis are not noted.

The **left** kidney measures 4.33 cm (3.80-4.40 cm). The capsule is smooth. Its overall architecture, including the definition of the cortico-medullary junction, are preserved. There are no signs of nephroliths or pyelectasia. An accumulation of fat is noted within the pelvis. The surrounding mesentery is severely hyperechoic.

The **right** kidney measures 4.38 cm (3.80-4.40 cm). The capsule is smooth. Its overall architecture, including the definition of the cortico-medullary junction, are preserved. An accumulation of fat is noted within the pelvis. There are no signs of nephroliths. Pyelectasia, measuring 1.5 mm is noted, however, this may be due to the administration of intravenous fluids. The urine within the pelvis is anechoic. The surrounding mesentery is severely hyperechoic.

**Aortic bifurcation/trifurcation:** No abnormalities observed.

**Adrenal Glands**

The **left** adrenal gland measures 0.30 cm. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

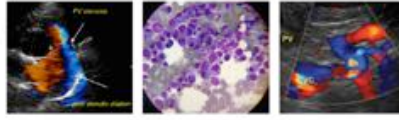
The **right** adrenal gland measures 0.30 cm. Findings are similar to the left, i.e. no abnormalities are observed.

**Spleen**

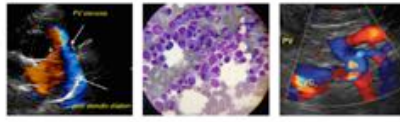
The spleen is within normal limits in size 9.40 mm (normal = 10 mm), echotexture, and echogenicity. The capsule is smooth. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.

**Liver**

High index of suspicion of hepatomegaly, however, size is better characterized at the time of the ultrasound or with radiographs. The liver is homogeneous, however, it appears to be hypoechoic. A component of the appearance of diffuse hypoechoic may be due to the severe hyperechogenicity of the mesentery throughout the abdomen. The liver is hypoechoic to the falciform fat. The borders are



<b>PATIENT</b>	smooth, however, they are mildly rounded, with one of the right lobes appearing “scalloped”. A large amount of echogenic material, most consistent with fat, appears to be separating the liver lobes.
Eddie Crampton	
<b>SPECIES</b>	The gall bladder is not distended, however, its wall is very hyperechoic and thicker than normal (1.75 mm). The walls of the cystic and common bile ducts are also thicker and hyperechoic than normal and are mildly tortuous, yet, they do not appear dilated. They are difficult to follow due to the large amount of gas in the surrounding gastrointestinal tract and the hyperechoic mesentery.
Feline	
<b>BREED</b>	<b><i>Gastrointestinal</i></b>
Domestic Shorthair	Ingesta, fluid and gas are present within the lumen. The gastric wall and pylorus are normal in thickness. There is no loss of definition of the normal architecture of the wall layers.
<b>SEX</b>	The small intestinal wall thickness, including the duodenum, is within normal limits. Mild fogging of the duodenum is present, which may be due to inflammation. The definition of the wall layers of the small intestine is preserved. Abnormally dilated loops of bowel are not observed. The ileo-cecal-colic junction and the surrounding mesentery are unremarkable.
Neutered Male	
<b>AGE</b>	A large amount of gas is present in the transverse colon. The colonic wall is not thickened and mural detail is considered normal.
3 years	There are no obvious signs of a mass, foreign body, or an obstruction.
<b>WEIGHT</b>	Peristalsis of the GI tract appears “ineffective”, i.e. i.e., a “to and fro” motion is noted.
11 Pounds	
<b>INTERPRETED BY</b>	<b><i>Pancreas</i></b>
Lisa Carioto, DVM, DVSc, Diplomate ACVIM	The right and left limbs and body of the <b>pancreas</b> are diffusely hypoechoic. The pancreas is moderately enlarged with irregular contours. Not only is the surrounding mesentery hyperechoic, but it is considered severely hyperechoic throughout the entire abdomen, i.e. severe steatitis is present. These findings are consistent with a diagnosis of active pancreatitis. Overt signs of neoplasia are not noted.
<b>IMAGING PERFORMED BY</b>	<b>Lymph nodes</b>
Sarah Pender, CVT	Despite being within the normal reference range in echotexture, echogenicity, and size, multiple lymph nodes are slightly rounded and “plump”. They are visualized throughout the abdomen, including the hepatic lymph node. The latter measured 3.8 mm x 6.1 mm. Reactive hyperplasia is the most likely cause for these findings.
<b>HOSPITAL NAME</b>	<b>Abdominal effusion</b>
SVS Imaging QC	A trivial amount of effusion is observed between the liver lobes, dorsally.
<b>REFERRING VET</b>	
Dr. Narske	
<b>INVOICE</b>	<b>ULTRASONOGRAPHIC FINDINGS</b>
99318	<ul style="list-style-type: none"> <li>The sonographic findings are consistent with a diagnosis of active pancreatitis and severe steatitis. The entire mesentery is severely hyperechoic. An evaluation of Eddie’s diet is suggested to ensure he is not receiving a fish exclusive diet, which can lead to steatitis in some cats.</li> </ul>
<b>DATE</b>	
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- The high index of suspicion of hepatomegaly is suggestive of inflammation. The diffuse hypoechoogenicity may be, in part, due to the stark contrast from the severe hyperechogenicity of the mesentery throughout the abdomen. The most common cause of diffusely hypoechoic liver in cats is lymphoma, which could cause Eddie's clinical signs, however, his history is more consistent with an individual suffering from severe pancreatitis and secondary cholangitis/cholangiohepatitis, and possibly a secondary bacterial infection, as well as cholecystitis, based on the appearance of the biliary tree. Hepatic lipidosis may also be contributing to hepatomegaly. Another reason for diffuse hypoechoogenicity may be edema due to ascending inflammation from the pancreas.
- The scant amount of abdominal effusion between the liver lobes may be due to a vasculitis secondary to pancreatitis.
- Pyelectasia, measuring 1.5 mm is noted, however, this may be due to the administration of intravenous fluids. The urine within the pelvis is anechoic. Pyelonephritis is considered much less likely, but cannot be excluded if Eddie had only been on IV fluids for a short period of time.
- Reactive hyperplasia is the most likely cause for the prominent lymph nodes observed throughout the abdomen.
- The mucosal fogging of the duodenum is very mild and somewhat of a subjective finding and may be due to inflammation, Inflammation associated with underlying inflammatory bowel disease cannot be excluded.

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

An evaluation of Eddie's diet is suggested to ensure he is not receiving a fish exclusive diet.

The following are recommended

A urinalysis, +/- a urine culture, to exclude the possibility of pyelonephritis.

Intravenous analgesia, such as buprenorphine every 6 to 8 hours, however, constant rate infusions may be necessary, for example, lidocaine and ketamine CRIs, as well as butorphanol or fentanyl CRIs to control his discomfort.

Administration of vitamin K due to high index of suspicion of cholestasis (0.5 mg/kg SQ q8-12h for 1-3 doses)

maropitant (Cerenia) if nauseous or vomiting at 1 mg/kg IV or SQ every 24 hours

vitamin B12 250 ug/injection - one dose to start and to re-assess depending on clinical status

nasooesophageal tube to decrease risk of developing hepatic lipidosis

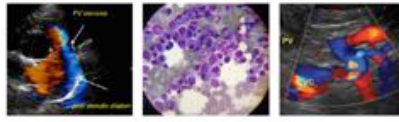
possible esophagostomy tube depending on appetite

taurine 250 mg PO every 12 hours

SAM-e/milk thistle/vitamin E supplementation if not vomiting

acetylcysteine may be required

Evaluation of the blood pressure



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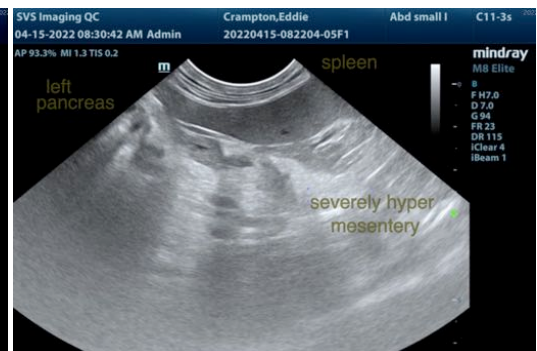
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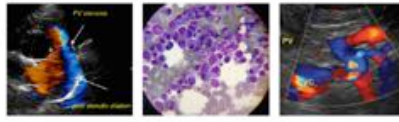
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One could consider performing a fine needle aspirate of the liver if there is no improvement in Eddie's clinical signs within 48 to 72 hours of the above supportive care for the treatment of pancreatitis/hepatic lipidosis. An evaluation of a coagulation profile is suggested prior to performing a FNA.



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svsmobileimaging.com 309-737-3070



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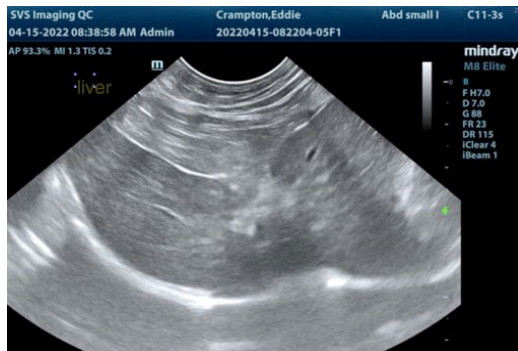
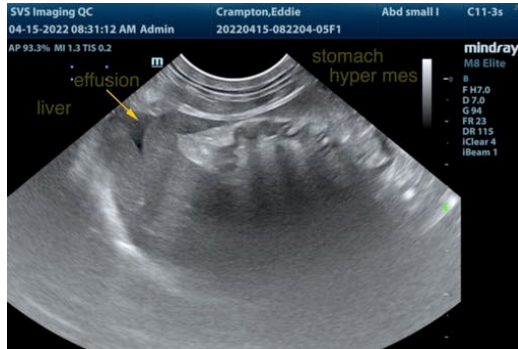
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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

[Lisa.Carioto@sonopath.com](mailto:Lisa.Carioto@sonopath.com)