IMAGING PERFORMED BY

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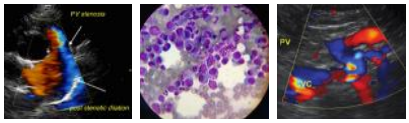

SonoPath
Clinical Sonography & Telecytology
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DATE

12/17/21

PATIENT

Casper Strom

SPECIES

Feline

BREED

DSH

SEX

Spayed Female

AGE

10/3/11

WEIGHT

9.6 Lbs.

INTERPRETED BY

Kathleen Sennello DVM, MS, Diplomate ACVIM (Small Animal Internal Medicine)

IMAGING PERFORMED BY

Stephanie Pearce RDCS, RVT

HOSPITAL NAME

Fork VH

REFERRING VET

Dr. Doherty

INVOICE

13122

PRESENTING CLINICAL SIGNS

History: Cat had been exhibiting an ongoing weight loss over the past few weeks to months. No evidence of increase in activity or appetite, no vomiting or obvious GI signs. The cat was showing normal thirst and eliminations (normal urine production and formed stool). The initial blood profile did show some elevation to the liver enzyme ALT, ALKP but most of the other blood values were WNL. No radiographs as the owner does have some cost concerns and we had a discussion of the greater benefit of ultrasound. Please note that the cat does have a history of likely eosinophilic skin plaques primarily during the summer months.

Lab Results: Blood panel dated: 11/11/21 ALT - 242 (27-158), ALKP - 128 (12-59). Other values including Total T4 were WNL.
Date of Previous IntraPet Ultrasound: No previous IntraPet scans.
Sedation: Not required for a full diagnostic ultrasound.
Stat Report: Not requested.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately distended with mild primarily suspended echogenic debris present. The Bladder wall, trigone, ureteral papillae and visible urethra (to a depth of 2 cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or calculi. Echogenic debris of this type can be associated with small crystals, cellular debris and proteinaceous debris.

The left kidney is regular in shape and relatively normal in size, measuring 2.67 cm. Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. The caudal pole of the left kidney appears indented, likely due to a previous infarct and there is pyelectasia evident, measuring at 0.43 cm in diameter. There are small nonobstructive nephroliths evident as well as some hyperechoic intrapelvic debris most consistent with a small intrapelvic nephrolith. There is no definitive evidence of obstruction at this time. There is no evidence of perinephric inflammation or effusion. Renal vasculature is normal.

The right kidney has a normal shape and size (4.35 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal in size measuring 0.25 cm at the caudal pole. It is observed in its normal position cranial to the left renal artery. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

The right adrenal gland is normal in size measuring 0.41 cm at the caudal pole. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

Spleen

The spleen is subjectively normal in size, echotexture is homogenous, and the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. No focal parenchymal abnormalities are visualized.

Liver
The liver is subjectively normal in size, and echogenicity with smooth peripheral margins. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. No focal nodules or cystic lesions are observed

The wall of the gall bladder is not thickened and has a smooth mucosal surface. Luminal contents are primarily anechoic. The cystic and common bile ducts are normal/not visible.

Gastrointestinal
The stomach contains minimal luminal contents. It measures at a normal thickness of <0.36 cm with some variability due to the presence of rugal folds. The distinction of the gastric wall layers is adequate and there is no impression of reduced peristaltic activity. No masses or focal lesions were observed.

The visualized areas of duodenum, jejunum and ileum have a uniform diameter with minimal fluid distension. Wall thickness is normal to slightly increased. Bowel loops follow a typical curvilinear path with distinct wall layering, but some areas display a prominent muscularis layer which does not display the typical 1:3 muscularis:mucosa layer ratio. The jejunum measured 0.33 mm in diameter. Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

The ileocecal junction was visualized and exhibited normal intact wall layering and is subjectively of normal thickness. Sections of colon are visualized with formed fecal material and gas shadowing distally. There is no observed focal or generalized colon wall thickening or loss of layering.

Pancreas
The pancreas is prominent and hypoechoic as compared to the surrounding isoechoic mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

Free Abdomen
No free fluid. There are clusters of prominent mesenteric lymph nodes visible, measuring 0.6 cm, 0.94 cm, 0.49 cm and 0.6 cm. The omentum is of increased echogenicity around the prominent lymph nodes.

ULTRASONOGRAPHIC FINDINGS

- Irregular left kidney with evidence of previous infarct, pyelectasia, nonobstructive nephroliths and a nephrolith within the renal pelvis. There is no evidence of an obstruction at this time, but the dilation could be consistent with a partial obstruction, infection, inflammation or a previous obstruction.

- Prominent hypoechoic pancreas. The pancreatic changes are most consistent with age-related parenchymal remodeling, potentially secondary to a prior inflammatory episode, early fibrosis or chronic pancreatitis.

- Heterogeneous liver. Hepatic changes are non-specific and could be consistent with inflammation/infection (cholangiohepatitis), infiltrative neoplasia, lipidosis or other hepatopathy.

- Prominent muscularis layer to the small intestine. The small intestinal wall changes are most consistent with an inflammatory process (i.e., inflammatory bowel disease) with a low possibility of emerging lymphoma

- Prominent mesenteric lymph nodes. The prominent mesenteric lymph nodes are most consistent with reactive lymphadenitis or lymphoid hyperplasia. Neoplastic infiltration is considered less likely.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The changes in the left kidney are likely chronic and secondary to a previous infarct. There are nonobstructive nephroliths visualized in addition to a nephrolith within the dilated renal pelvis. This could be an incidental finding or consistent with previous obstruction or current partial obstruction. Recommend urinalysis and culture. Continued monitoring of the renal pelvis with ultrasound for progression. This could be a somewhat incidental finding, if it is stable/static or could be consistent with infection, possible even chronic pain? There is no surrounding inflammation visualized.

The liver is somewhat heterogeneous, but no focal lesions are observed, and the biliary tract appears normal. None the less, any elevation in liver values is significant for a feline patient, particularly if you are seeing weight loss. Potential systemic causes for cats with elevated liver enzymes include hyperthyroidism, diabetes, sepsis toxicity (meds etc., FIP etc.). If these conditions are unlikely, then a hepatic issue (infectious, inflammatory, lipidosis, neoplasia) is suspected.

The ultrasonographic changes in the liver were relatively non-specific. Unfortunately, there were also some mild changes to the biliary tract making it difficult to differentiate between a primary hepatopathy and a partial post hepatic biliary obstruction combined with a hepatopathy. Potential systemic causes for cats with elevated liver enzymes include hyperthyroidism, DM, sepsis, toxicity (meds etc…),FIP, etc..) If these conditions are unlikely then a hepatic/post hepatic issue (infectious, inflammatory, lipidosis, neoplasia) is suspected.

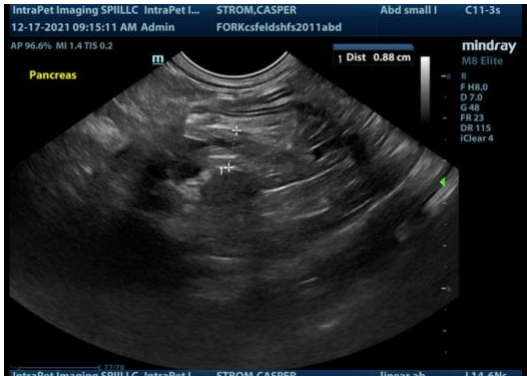
- Consider close evaluation of history for possible toxic changes examine medications, diet, dietary indiscretion etc.
- Recommend thyroid evaluation (if not already done)
- If not already done, consider pre and post prandial bile acids to evaluate liver function (can skip if bilirubin is elevated)
- Consider fine needle aspirate if round cell neoplasia is on your differential list (25 g needle, normal coags)
- If cytology is not helpful and there is no response to therapy, consider liver biopsy with samples obtained for histopathology and culture.
- Recheck gall bladder and bile duct in 48-72 hours to look for progressive distension.
- If triaditis is suspected, consider therapy for cholangiohepatitis (fluids, antibiotics +/- steroids), testing for pancreatitis and evaluation for IBD (GI panel to Texas A&M GI lab)

Additionally, there are some somewhat subtle changes to the small intestine and prominent mesenteric lymph node. This can be an indicator of underlying small intestinal disease such as dietary intolerance, IBD, intestinal neoplasia (less likely). Consider a GI panel (to Texas A & M University) for a qualitative FPLI, TLI, cobalamin and folate (as recommended above) to further evaluate the pancreatic changes and the small bowel changes observed.

- Consider a novel protein/hydrolyzed protein prescription diet

- If GI signs develop or triaditis is suspected, then consider obtaining GI biopsies for a definitive diagnosis.

It would be very reasonable to consider surgical GI biopsies with a liver biopsy +/- pancreatic biopsy. I recommend three-view thoracic radiographs.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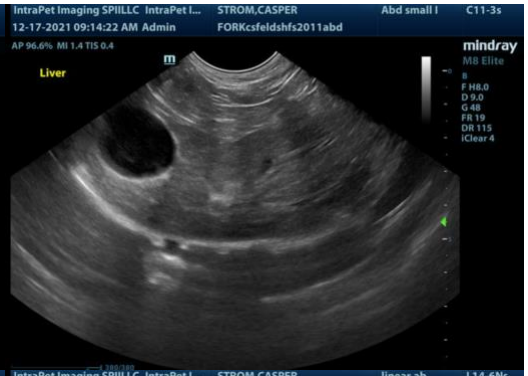
Pancreas
Dist 0.88 cm
mindray
M8 Elite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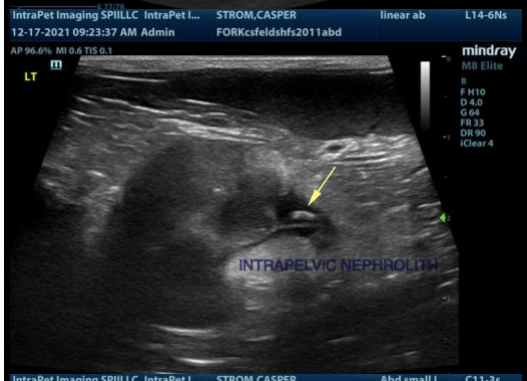
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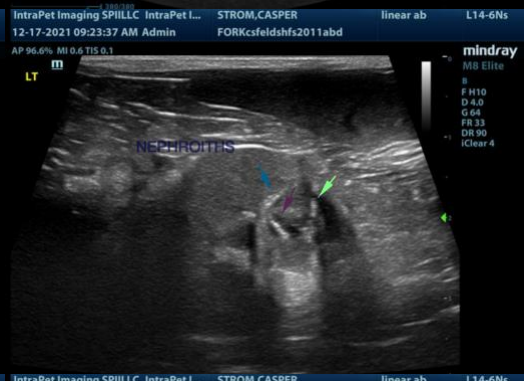
LT
INTRAPELVIC NEPHROLITH
mindray
M8 Elite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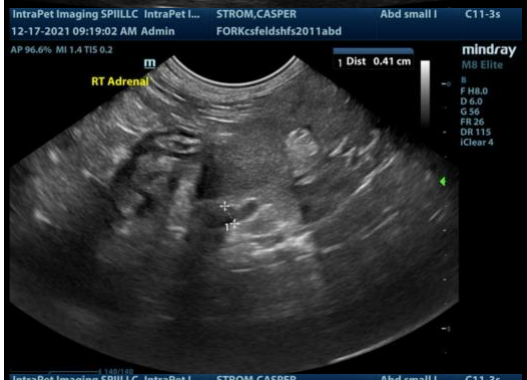
LT
NEPHROLITHS
mindray
M8 Elite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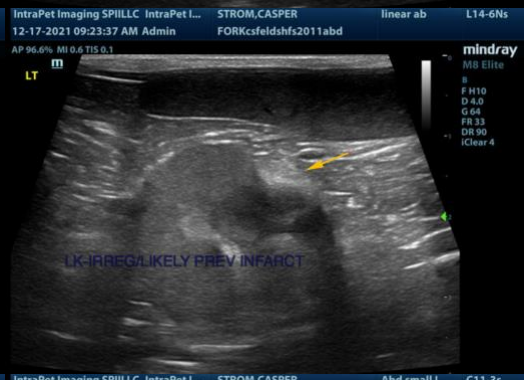
RT Adrenal
Dist 0.41 cm
mindray
M8 Elite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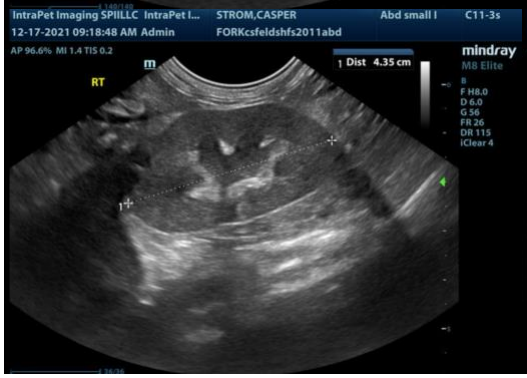
LK-IRREG/LIKELY PREV INFARCT
mindray
M8 Elite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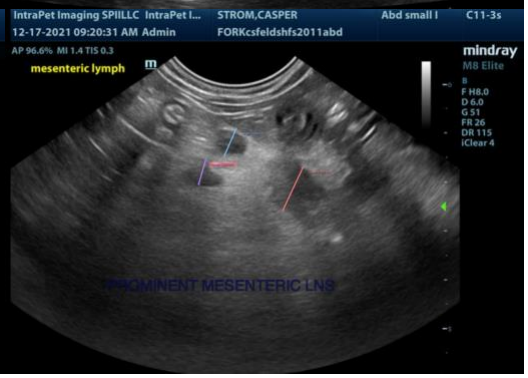
RT
Dist 4.35 cm
mindray
M8 Elite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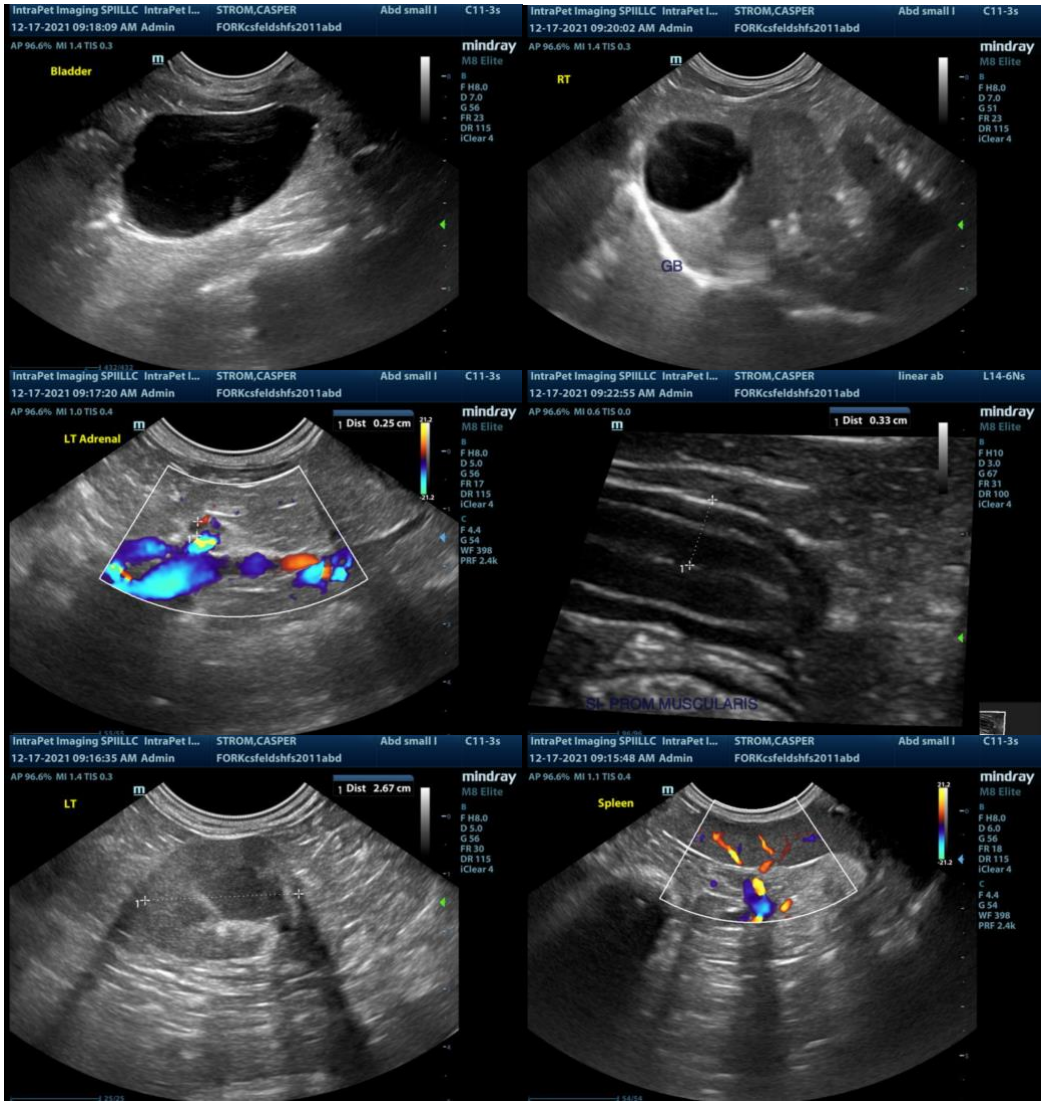
mesenteric lymph
PROMINENT MESENTERIC LNS
mindray
M8 Elite



The information and recommendations provided are based on the images presented by the referring veterinarian. 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.

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