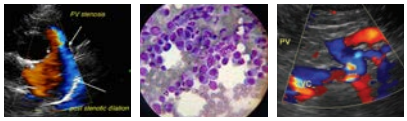
IMAGING PERFORMED BY

IntraPet.com



SonoPath

Clinical Sonography & Telecytology

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DATE

1/19/23

PATIENT

Coal McClelland

SPECIES

Feline

BREED

ASH

SEX

Neutered Male

AGE

6/20/06

WEIGHT

6.8 Pounds

INTERPRETED BY

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

HOSPITAL NAME

Animal Emergency Hospital

REFERRING VET

Dr. Martinoli

INVOICE

44352

PRESENTING CLINICAL SIGNS

Lethargic, Anorexia, Constipation, Vocalisation.

Current Medications: Maropitant, Clavamox, Buprenorphine.
Lab Results: ALT 2341, GGT 22, tBili 5.5, Lipase 5532, SDMA 31, Creatinine 2.7, BUN 67, Phos 8.7, ProBnP 446.

Date of Previous IntraPet Ultrasound: No previous.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Not requested.
Imaging Performed By: Andi Parkinson, BS, RDMS.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately distended with anechoic urine. The Bladder wall, trigone, ureteral papillae and visible urethra (to a depth of 2cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or cystic calculi.

The left kidney has a normal shape and size (3.33 cm). Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (3.68 cm). Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The region of left adrenal (Cranial to left renal artery) is unremarkable but the adrenal is not distinctly visualized. No evidence of a mass effect is visualized.

The right adrenal gland is normal in size measuring 0.48 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. There are numerous intrahepatic biliary stones visualized within the parenchyma and lining the bile ducts.

The gallbladder lumen is significantly distended with echogenic debris, making it fairly isoechoic with the hepatic parenchyma. The gallbladder wall appears thickened at 0.24 cm. The cystic and common bile ducts are severely dilated with thickened wall and a large amount of intraluminal mucus, sandy debris/stones. It measures at 0.49 cm just distal to the liver, and 1.17 cm in diameter at the level of the duodenal papilla.

Gastrointestinal

The stomach contains minimal luminal contents. It measures at a normal thickness of <0.36cm 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. Jejunum wall measures 0.28 cm. 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 borderline large (1.0 cm) and hypoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is evidence of regional mesenteric inflammation. Consistent with moderate pancreatitis.

Free Abdomen

Evaluation of the peritoneal cavity did not reveal any evidence of effusion, or subjective lymphadenomegaly. The Medial iliac nodes appear normal and there was no evidence of a caudal aortic thrombus at the bifurcation. The omentum is of normal uniform echogenicity.

PRIMARY FINDINGS

- Heterogeneous liver with intrahepatic biliary stones – The diffuse hepatic changes are non-specific and could be consistent with vacuolar hepatopathy, nodular hyperplasia, inflammatory/immune-mediated disease, fibrosis, extramedullary hematopoiesis, toxic hepatopathy (e.g., copper), infiltrative neoplasia (less likely) or other hepatopathy.

- Distended gallbladder with thickened wall and a large amount of intraluminal material as well as a severely dilated thickened bile duct with intraluminal stones and mucus. Findings are consistent with cholecystitis and biliary stones/partial obstructions.

- Prominent muscularis layer of the small intestine – The small intestinal wall changes could be consistent with an underlying inflammatory process. These types of changes can sometimes be seen in normal older cats. Correlate with clinical signs.

- Large hypoechoic prominent right limb of the pancreas – The pancreatic changes are most consistent with moderate pancreatitis/pancreatic inflammation. Recommend fPLI testing and continued monitoring for improvement or possible development of a pancreatic abscess. Consider fine needle aspirate if not improving.

SECONDARY FINDINGS

- Decreased corticomedullary distinction in both kidneys – The bilateral renal findings are consistent with age-related change.

- Borderline large spleen – The spleen appears relatively normal in appearance, but consider a fine needle aspirate if round cell neoplasia is a differential.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

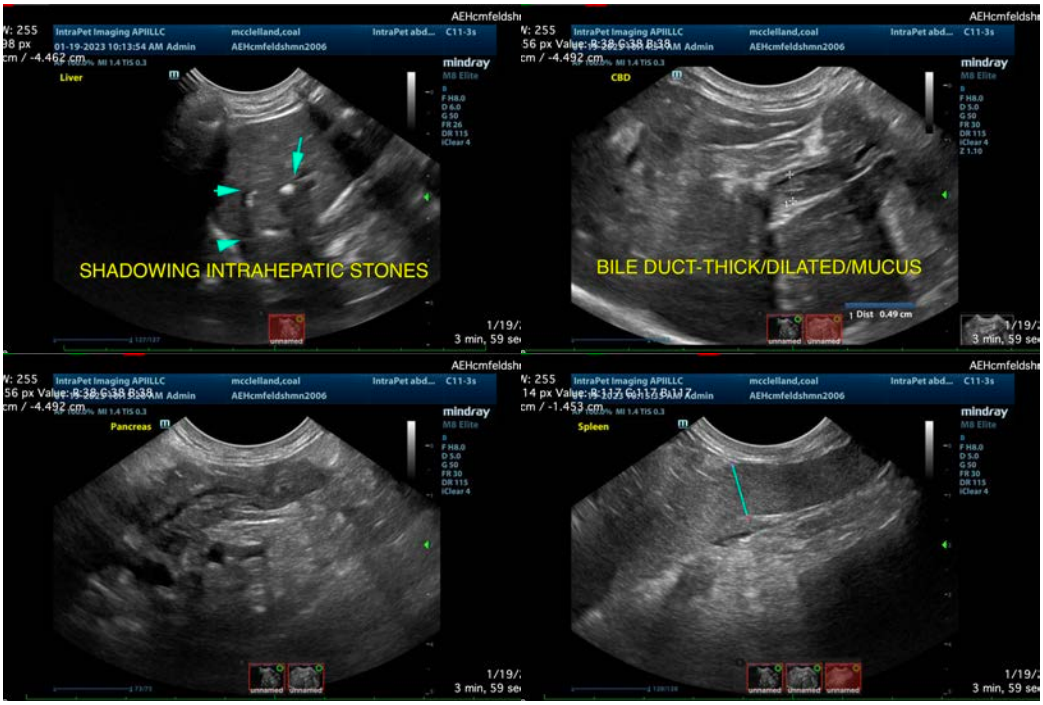
There are numerous intrahepatic biliary stones visualized, as well as a dilated thickened gallbladder with severe bile duct dilation with stones, mucus, etc. These findings are consistent with chronic inflammatory disease and cholecystitis/cholangiohepatitis with likely concurrent partial obstructions, etc. Recommend treatment for cholangiohepatitis with antibiotics, Ursodiol, and likely for this individual IV fluids, nausea medications, pain medications, etc.

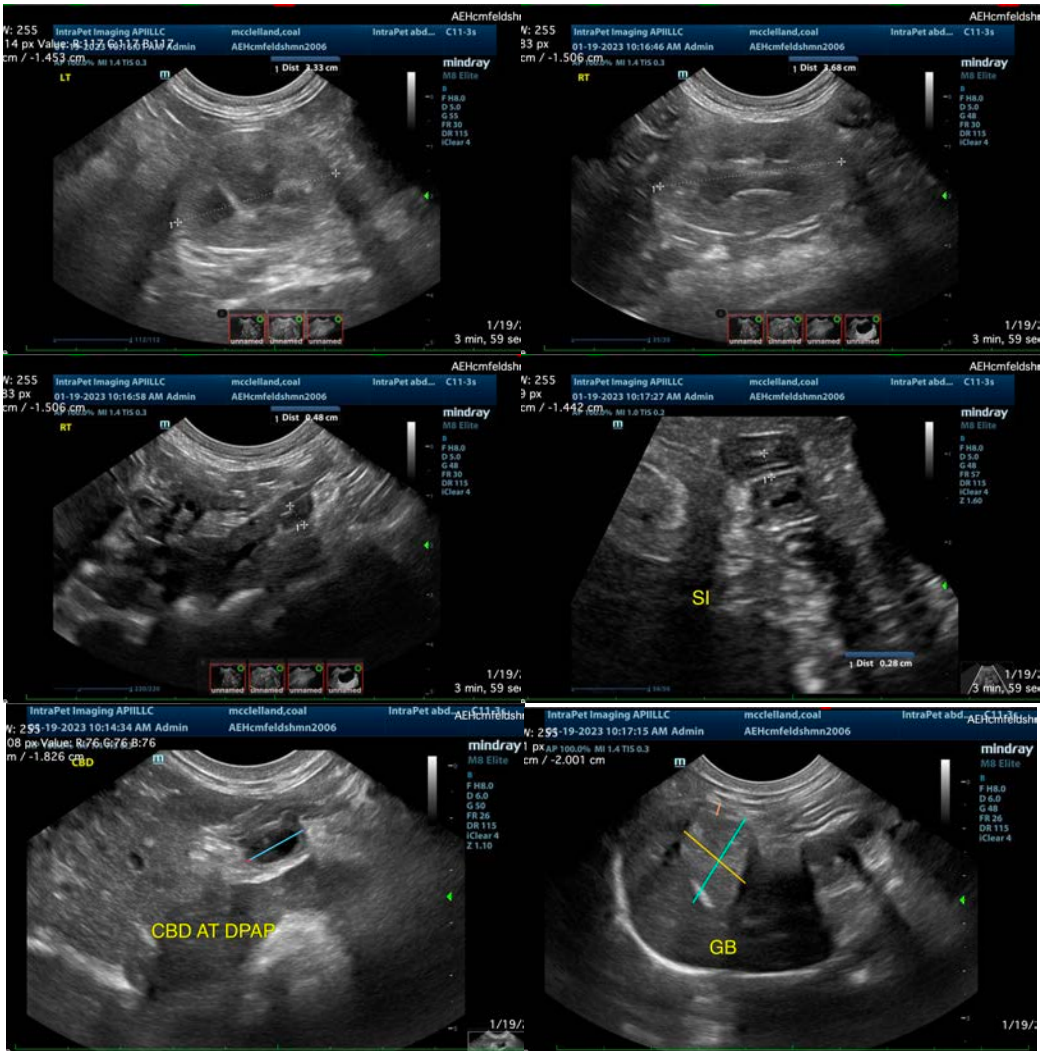
Additionally, the pancreas appears very prominent and inflamed, consistent with pancreatitis. Recommend aggressive treatment for this as well. This combined with the somewhat "ropey" appearing small intestine increases concerns for Triaditis and partially obstructive biliary disease. Consider over the long-term further evaluation for underlying gastrointestinal disease. Consider changing to a novel protein/hydrolyzed protein prescription diet. Consider a GI panel to Texas A&M for a qualitative fPLI, TLI, cobalamin and folate, and the possibility of needing to obtain GI biopsies.

Although this is likely an inflammatory/infectious disorder complicated by the stones, there can also be a neoplastic component, as lymphoma can present this way as well. Consider a fine needle aspirate of the liver and possibly spleen, provided coagulation parameters are normal.

Recommend three view thoracic radiographs to evaluate for possible concurrent thoracic disease/involvement.

If this patient is not improving, recommend reevaluation of the biliary tract with ultrasound. If there is no response to therapy and the obstructive process appears to be progressing, surgical intervention may need to be considered.





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.

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