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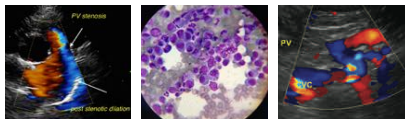

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DATE
11/30/21

PATIENT
Enid Preti

SPECIES
Feline

BREED
Domestic Shorthair

SEX
Spayed Female

AGE
11/27/10

WEIGHT
7.7 lbs

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

IMAGING PERFORMED BY
Rachel Brilhart RDMS

HOSPITAL NAME
Animal Emergency Hospital

REFERRING VET
Dr. Nacke-Horney

INVOICE
94204

PRESENTING CLINICAL SIGNS

History: Presenting Complaint: Seizures. Date: 11-27-2021 Notes: Hasn't seemed right since Wednesday. Evaluated by rdvm 11/24 - lethargic, drowsy - nothing was noted on PE - did BW - gave antibiotic injection, did not send home any medications - got results Friday: possible changes to liver - may be acute or chronic - was noted to be hyperthyroid. Was eating a little bit and appeared to be using the litter box. Rdvm sent out additional bw. Has been noted to be walking in circles - started today. Not interested in spending time with owner which is unusual. Started having seizures today, possibly started yesterday: was yowling and lasted around 30 secs. Later today: laying down, shaking all over - lasted around 30 - 45 seconds, immediately went to bowl and ate food - 30 minutes afterwards: another grand mal, prior had episodes of increased vocalizing - lasted around the same time frame. Had a total of 3 grand mal seizures, around 5-6 vocalization events Unsure of toxin exposure - no live plants in the house, does have dried eucalyptus - did not see her get into anything. Known to spend a lot of time in the litter box and will over-groom. Unsure if UTD on vaccines. Assessment: Seizures - circling, abnormal vocalization, lethargy. Plan: Reviewed history and physical exam. Discussed ddx for icterus: pre-hepatic (extravascular hemolysis) vs hepatic (hepatits vs hepatic lipidosis vs cancer) vs post-hepatic (gall bladder obstruction vs pancreatitis) - expressed concerns for liver disease causing buildup of ammonia leading to hepatic encephalopathy - discussed potential for cancerous process in the liver and the brain - explained that both differentials can cause the neuro clinical signs Recommended hospitalization, full bw + ammonia + triple +/- repeat liver panel, +/- U/S, fluids, supportive care as needed - owner agreed to plan.
Current Medications: Cerenia, Omeprazole, Metronidazole, Lactulose, Levetiracam, Adenosyl, Pantoprazole, Diazepam (11-27).
Lab Results: Attached separately.
Radiographs: Xray Whole Body 2 view- no obvious masses or metastatic lesions. Attached separately.
Date of Previous IntraPet Ultrasound: No previous IntraPet scans.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Not requested.

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 (3.67 cm). Overall echogenicity is normal with mildly reduced corticomedullary distinction. There is no evidence of perinephric inflammation or effusion. There is no evidence of nephroliths, infarcts or hydroureter. Mild pyelectasia was noted and measured 0.31 cm. Renal vasculature is normal.

The right kidney has a normal shape and size (3.4 cm). Overall echogenicity is normal with mildly reduced corticomedullary distinction. There is no evidence of perinephric inflammation or effusion. There is no evidence of nephroliths, infarcts or hydroureter. Mild pyelectasia was noted and measured 0.36 cm. 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.

The right adrenal gland is normal in size measuring 0.35 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. There are visualized hyperechoic shadowing mineralization within the hepatic parenchyma. This is consistent with intrahepatic biliary stones associated with mild dilation of the intrahepatic biliary ducts. The gallbladder lumen is moderately distended with a large amount of hyperechoic shadowing. Intraluminal mineralized debris and stones were noted. The wall of the gallbladder is relatively normal with a large amount of hyperechoic shadowing intraluminal mineralized debris and stones. The gallbladder wall appears relatively normal, but the cystic and common bile ducts appear dilated and tortuous measuring 0.45 cm. A distinct point of obstruction is not noted.

Gastrointestinal
The stomach contains minimal luminal contents. It measures at a normal thickness of <0.7cm 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 relatively uniform diameter with minimal fluid distension. Wall thickness is normal. Bowel loops follow a curvilinear path with distinct wall layering maintaining the typical 1:3 muscularis:mucosa layer ratio. The duodenum measured as normal and the jejunum measured as normal (0.2 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 large and hypoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. The pancreatic duct was prominent and measured 0.17 cm. There is evidence of regional mesenteric inflammation. Consistent with mild 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.

Heart
A brief view of the heart was submitted. No pericardial effusion was seen.

ULTRASONOGRAPHIC FINDINGS
PRIMARY FINDINGS:

- Biliary mineralization are evident within the intrahepatic and post hepatic bile ducts as well as within the gallbladder lumen with evidence of an obstructive process. A clear point of obstruction is not

noted. Therefore, it is unknown if the changes observed with an active complete obstruction or secondary to chronic partial obstructions, inflammation, etc.

- Hypoechoic prominent pancreas with prominent pancreatic duct. The pancreatic changes are most consistent with (mild/moderate/severe) pancreatitis/pancreatic infiltration. I recommend fPLI testing and continued monitoring for improvement or possible development of a pancreatic abscess. Consider FNA if not improving.

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

SECONDARY FINDINGS:

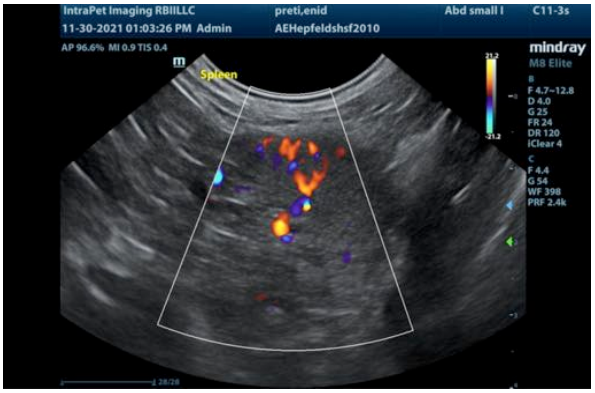
- Mildly decreased corticomedullary distinction in both kidneys with mild bilateral pyelectasia. The bilateral renal findings are consistent with age-related change. Pyelectasia of the kidneys could be consistent with pyelonephritis, chronic renal disease, secondary to PU/PD or fluid therapy (if applicable), other.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

This is a somewhat atypical presentation as blood work is most consistent with active liver disease. Ultrasound findings demonstrate evidence of stones within the biliary tract. This could be consistent with cholangiohepatitis and possible obstructive process, although a specific point of obstruction is not observed. While seizures are known potential complication of liver disease it is somewhat of a rare complication. Additionally, consider intercranial causes and systemic hypertension as contributing. Options moving forward include:

- Pre and post hepatic bile acids and FNA of the liver.
- GI panel with a quantitative fPLI, TLI, cobalamin and folate to evaluate further for pancreatic inflammation and possible concurrent small intestinal disease. This may be an indicator of triaditis.
- I recommend treatment for cholangiohepatitis with antibiotics, Denamarin +/- Ursodiol??
- If not responding to therapy consider a CT scan of the abdomen to see if there is a specific point of obstruction (i.e. stone or stricture) which could be surgically resolved.
- I recommend blood pressure and treatment of hyperthyroidism if this is confirmed.
- Consider consultation a veterinary neurologist to try to determine if seizures are due to systemic disease or intracranial disease (or hypertension).
- If neurologic symptoms are progressing you can consider imaging of the brain.

There is a lot going on with this individual and I think I would start with diagnostics regarding the liver then treatment with hypertension if is present. If the symptoms are not improving then additional diagnostics will be necessary.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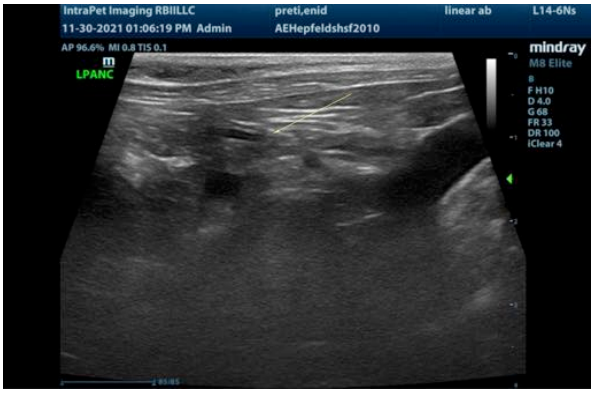
Spleen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M8 Elite
Liver
Dist 1.05 cm
GB- MINERALIZED DEBRIS/STONES


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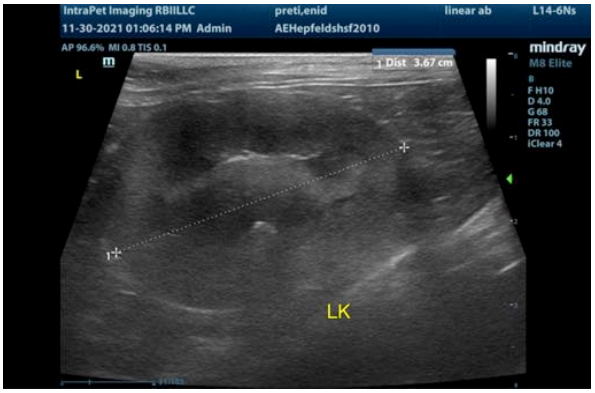
CBD
Dist 0.45 cm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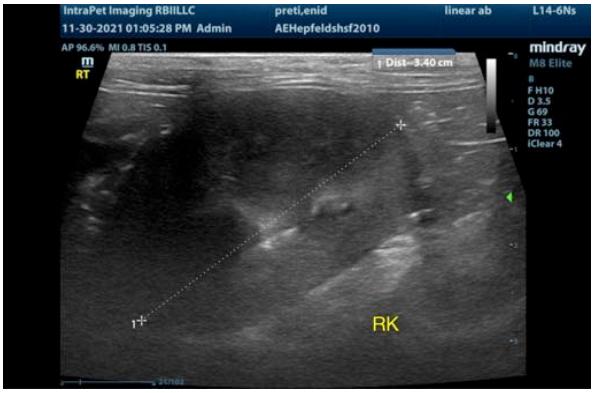
AP 96.6% MI 0.8 TIS 0.1
mindray
M8 Elite
L
Dist 3.67 cm
LK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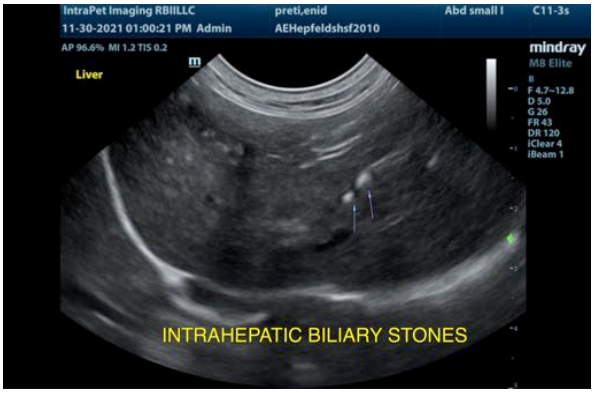
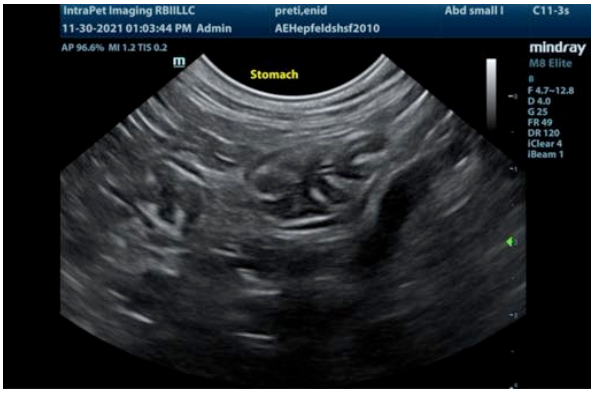
AP 96.6% MI 0.8 TIS 0.1
mindray
M8 Elite
RT
Dist 3.40 cm
RK





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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