IMAGING PERFORMED BY

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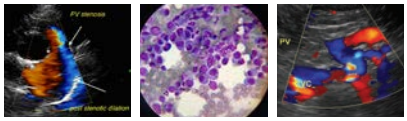

SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
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DATE

3/28/23

PATIENT

Julian Salvatore

SPECIES

Feline

BREED

DSH

SEX

Neutered Male

AGE

12/1/07

WEIGHT

9.1 Pounds

INTERPRETED BY

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

HOSPITAL NAME

Animal Emergency Hospital

REFERRING VET

Dr. Nacke-Horney

INVOICE

46203

PRESENTING CLINICAL SIGNS

Had constipation issues during COVID that he needed to be cleared out for Was diagnosed with kidney disease in the last six month, has not had the values rechecked since - started on kidney medicine that he was vomiting up Will intermittently stop eating food Thursday and friday: vomiting after eating, not really eating - has been laying around and seems lethargic. Owners noted that patient is difficult to give pills to Current meds: - Benazepril 5 mg 1/4 tab q24 - last given yesterday around 4p

Current Medications: Mirtazapine, Buprenorphine, Vitamin B, Gabapentin, Benazapril, Cerenia.
Lab Results: See attached.
Date of Previous IntraPet Ultrasound: No previous.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Not requested.
Imaging Performed By: Rachel Brilhart, 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 (3.73 cm). Overall echogenicity is slightly hyperechoic with mildly reduced 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 (3.42 cm). Overall echogenicity is slightly hyperechoic with mildly reduced 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 left adrenal gland is normal in size measuring 0.48 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 0.47 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 (1.0 cm), 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 intrahepatic vile ducts are significantly distended with what appears to be some areas of intraluminal debris (see gallbladder for description of the biliary tract). No focal nodules or cystic lesions are observed.

The gall bladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. There is a moderate amount of non-organized echogenic debris. The bile duct is prominent and tortuous with a thickened wall in some areas. This bile duct dilation appears to progress as it passes distally towards the duodenal papilla, reaching a maximal diameter of approximately 1.12 cm with some intraluminal debris visualized. At the level of the duodenal papilla, the bile duct is severely dilated with a prominent duodenal papilla measuring 0.85 cm x 0.61 cm, and additional heterogeneous material most consistent with excess sludge/debris, and some echogenic material is visualized within the duodenum. Soft tissue mass effect cannot be excluded as a possibility.

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. Duodenum wall measures 0.37 cm. Jejunum wall measures 0.33 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 prominent and mottled 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. Severely dilated pancreatic duct noted measuring 0.52 cm at its maximal width.

Free Abdomen

Evaluation of the peritoneal cavity did not reveal any evidence of effusion. There are occasional prominent mesenteric lymph nodes in the region of the ileocecal junction, one measures 0.38 cm. The omentum is hyperechoic in the cranial abdomen around the bile duct and pancreas.

ULTRASONOGRAPHIC FINDINGS

- Decreased corticomedullary distinction in both kidneys – The bilateral renal findings are consistent with age-related change.
- Mottled, prominent pancreas with severely dilated pancreatic duct – The pancreatic changes are most consistent with mild pancreatitis or a recent episode of pancreatic inflammation. The dilation of the pancreatic duct is most consistent with a blockage (debris, tissue, etc.) at the level of the common bile duct.
- Heterogeneous liver – Hepatic changes are non-specific and could be consistent with hepatic lipidosis, inflammatory/infectious disease, infiltrative neoplasia, or other hepatopathy.
- Moderate gallbladder debris with distention of the intrahepatic bile ducts, the cystic duct, and the common bile duct with a prominent duodenal papilla – Findings are concerning for a partial bile duct obstruction (or previous obstruction). Intraluminal debris is visualized and excess heterogeneous tissue at the level of the duodenal papilla.

- Mildly prominent muscularis layer to 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.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

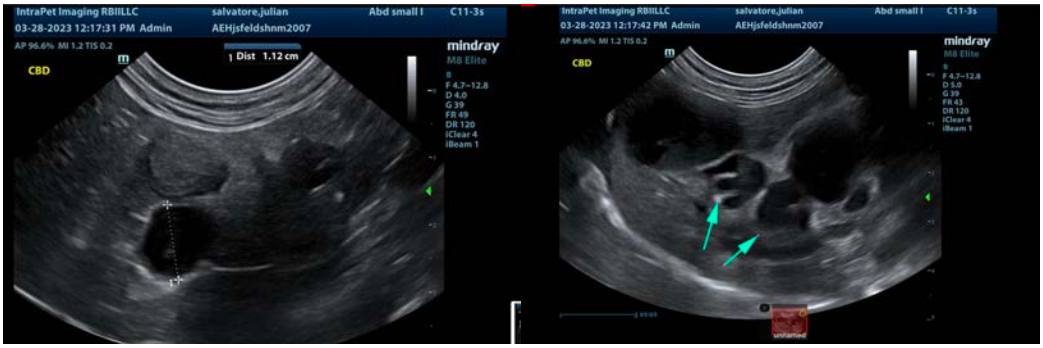
The bile duct is severely distended, starting at dilated intrahepatic bile ducts and worsening distally as the common bile duct approaches the duodenal papilla. In this region, the bile duct is severely dilated with thickened wall and some intraluminal debris. Additionally, at the level of the duodenal papilla, there is heterogeneous material that does not appear to have significant blood flow on the color doppler, which could be consistent with intraluminal debris (mucus plug) or soft tissue (mass effect, swelling, etc.). A definitive point of obstruction is not observed, but there is concern about a pathologic process at the level of the duodenal papilla.

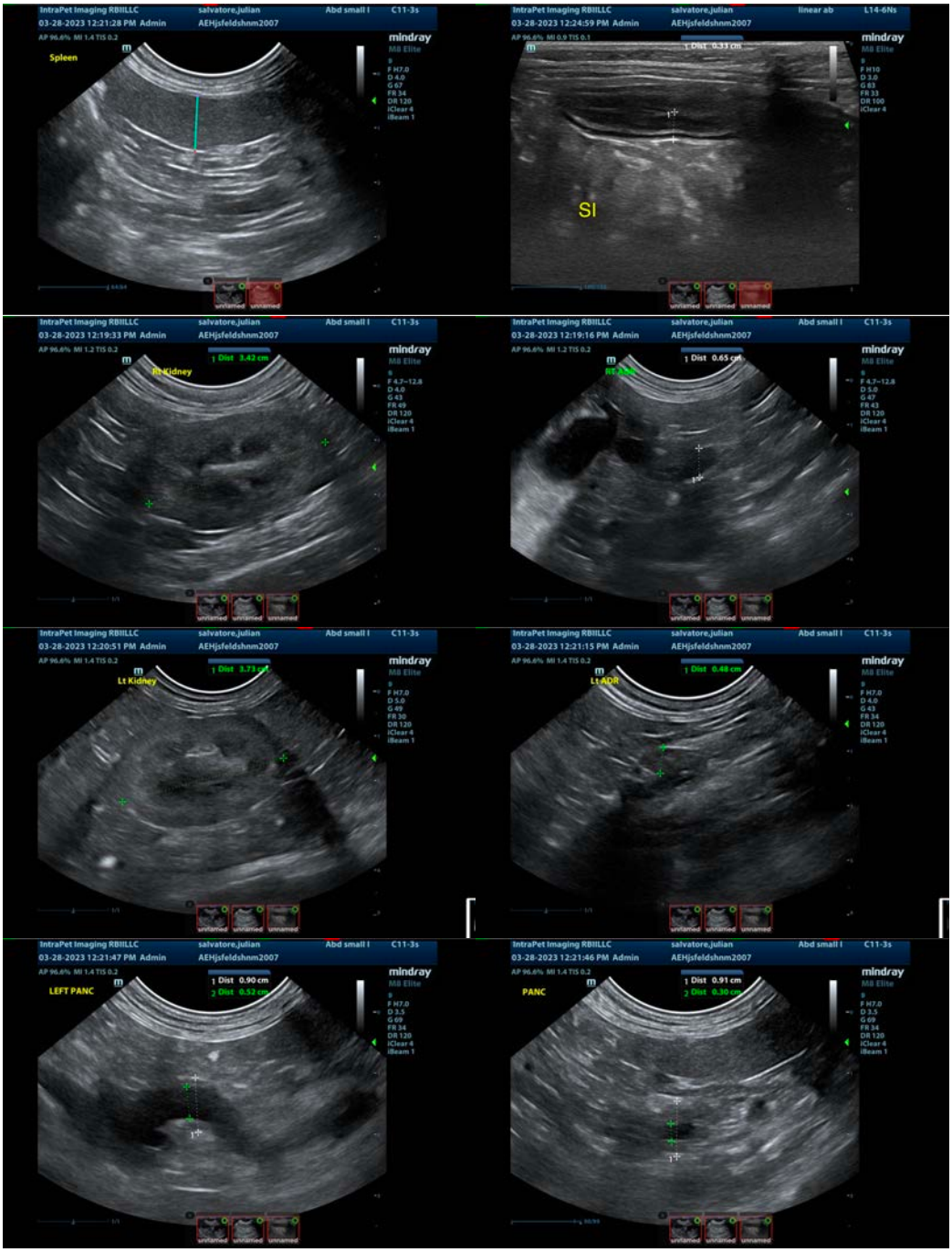
Additionally, the pancreas and the small bowel appear slightly thickened/abnormal. This could be within normal limits for this individual or could be consistent with a process such as Triaditis or even lymphoma. I am somewhat surprised to see a lack of significant liver enzyme elevations. If bloodwork has not been run recently (in the last 24-48 hours), recommend reevaluation. If there is historical severe bile duct dilation, this may not improve, but I suspect this is an active process. Consider treatment with Ursodiol and antibiotics, with close monitoring.

Additionally, you could consider treatment for mild pancreatitis and even IBD (novel protein diet, etc.). At this time, I would try to avoid steroids, as this could make obtaining a diagnosis very difficult. If the patient is not responding to this therapy, then consider either a contrast CT scan of this region, or referral to a veterinary surgeon to evaluate the biliary system, cannulate the bile duct, etc. to determine if a true obstruction is visualized +/- rerouting and obtaining biopsies of the bowel, pancreas, liver, etc.

Additionally, if coagulation parameters are normal, you could consider a fine needle aspirate of the liver earlier in this patient's evaluation.

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

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Spleen
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Dist 3.73 cm
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Lt ADR
Dist 0.48 cm
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C11-3s
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AEHjsfeldshnm2007
mindray
LEFT PANC
Dist 0.90 cm
Dist 0.52 cm
IntraPet Imaging RBIILLC
salvatore,julian
Abd small I
C11-3s
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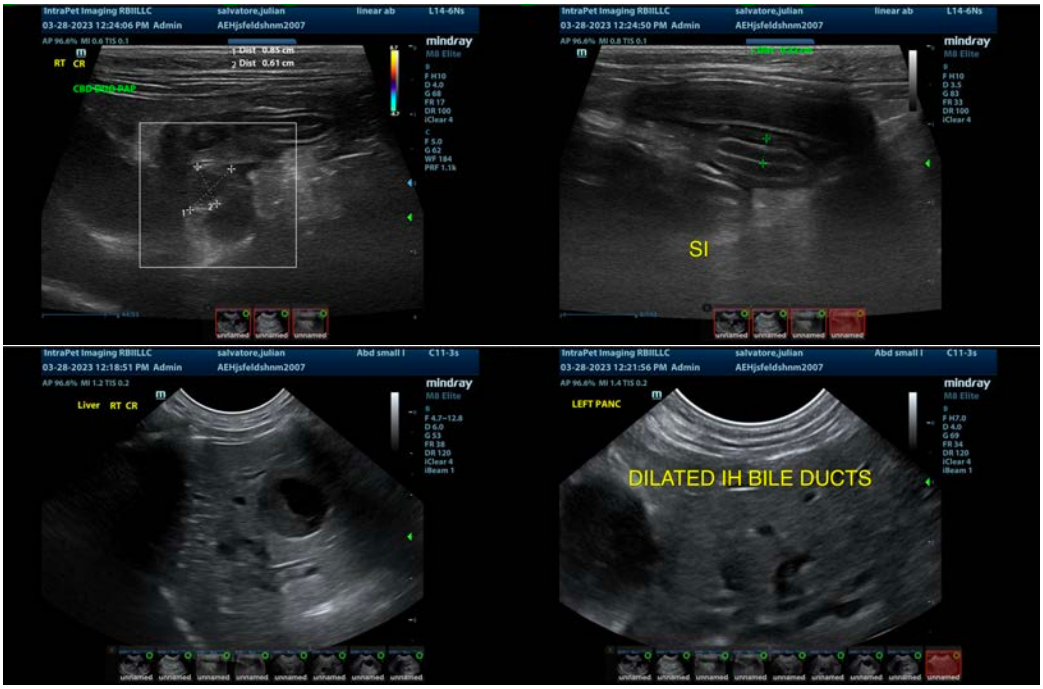
AEHjsfeldshnm2007
mindray
PANC
Dist 0.91 cm
Dist 0.30 cm



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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