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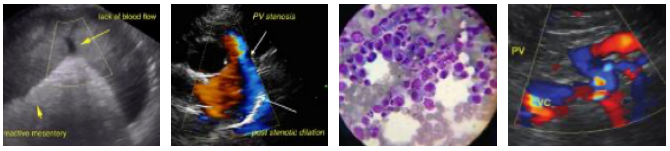


SonoPath.com
1-800-838-4268 info@sonopath.com

**PATIENT**
Coco Walker

**SPECIES**
Feline

**BREED**
Maine Coon

**SEX**
Female, spayed

**AGE**
16 yrs.

**WEIGHT**
7 lbs.

**INTERPRETED BY**
Andrea Nicastro, DVM, Diplomate ACVIM (*Small Animal Internal Medicine*)

**IMAGING PERFORMED BY**
Amanda Crook

**HOSPITAL NAME**
Rivers Edge Pet Medical Center

**REFERRING VET**
Dr. Bridget Hayes

**INVOICE**
11951

**DATE**
8/24/21

## PRESENTING CLINICAL SIGNS

History: Hx of jaundice last year that was treated at another clinic. O was away for 3 weeks, noticed jaundice when she got back. Cat is eating treats, but only licking canned food. BCS = 2/9, matted, deeply jaundiced. Liver slightly palpable. Mild dehydration. BAR. Grade 2/6 murmur. Mild hepatomegaly. Abnormal PE/Chem/CBC/UA Results - All liver values elevated, anemia (ALT 508, ALKP 417, total bilirubin 16, GGT 10), leukocytosis with left shift.

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### *Urinary System*

The urinary bladder, trigone, and pelvic urethra are normal in thickness and the mucosal surface is smooth. The bladder lumen is moderately distended. A small amount of suspended echogenic debris is observed within the lumen. No masses, inflammatory changes or calculi are observed. Ureteral papillae and visualized portion of the proximal urethra, visible to a depth of 2 cm, are normal.

The left kidney is normal in size (3.62 cm in length) with a normal shape, smooth peripheral margins and normal internal architecture. There is mild loss of corticomedullary distinction. Several hyperechoic shadowing diverticular foci are observed. There is no evidence of pyelectasia, infarcts or hydronephrosis. Renal vasculature is normal.

The right kidney is normal in size (3.06 cm in length) with a normal shape, smooth peripheral margins and normal internal architecture. There is mild loss of corticomedullary distinction. Several hyperechoic shadowing diverticular foci are observed. Mild pyelectasia is present (0.22 cm in the transverse plane). There is no evidence of infarcts or hydroureter. Renal vasculature is normal.

### *Adrenal Glands*

The left adrenal gland is normal in size (1.39 cm length; 0.41 cm width) with a normal shape and smooth peripheral contours. A few hyperechoic foci are observed within the parenchyma. The phrenicoabdominal vein and surrounding vasculature appear normal.

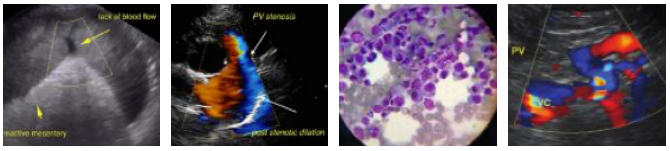
The right adrenal gland is normal in size (1.08 cm length; 0.40 cm width) with a normal shape and smooth peripheral contours. A few hyperechoic foci are observed within the parenchyma. The phrenicoabdominal vein and surrounding vasculature appear normal.

### *Spleen*

The spleen is subjectively enlarged and elongated (1.13 cm in width at the level of the hilus) with normal curvilinear peripheral contours. The parenchyma is of appropriate echogenicity and echotexture. A few small hyperechoic nodules are observed throughout the organ. Splenic vasculature appears normal with no evidence of thrombosis.

### *Liver*

The liver is subjectively prominent in size with normal curvilinear peripheral contours. The parenchyma is isoechoic relative to the spleen and subtly mottled in appearance with an increase in portal markings. A 0.78 cm anechoic cyst is observed on the left side. Hepatic vascular is of normal volume with no evidence of congestion. The gall bladder lumen is moderately distended. The wall is diffusely thickened (up to 0.59 cm), irregular and hyperechoic. A small to moderate amount of suspended echogenic debris is observed within the lumen. The cystic and common bile ducts are visible/tortuous and mildly dilated (0.33 cm proximally, 0.15 cm distally). The walls are thickened. The common bile duct can be followed to



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the level of the duodenal papilla which is normal in thickness (0.40 cm) in width. There is no obvious evidence of luminal obstruction.

### *Gastrointestinal*

The stomach and intestine are free of stasis and exhibit normal peristaltic activity. The gastric lumen is not distended. The gastric wall and pylorus are normal in thickness with a normal layering pattern. The pyloric outflow tract is patent. The small intestinal lumen is not dilated. The small intestinal wall thickness is normal with a normal layering pattern and appropriate mural detail. There is disruption in the normal 1:3 muscularis: mucosal ratio in some segments. Discreet masses are not identified. The ileocecal colic junction and colonic wall are normal. No obstructive disease is noted.

### *Pancreas*

The body/right limb of the pancreas is visible with minimal deviation from the normal peripheral contours. The parenchyma is slightly hyperechoic relative to surrounding omental fat and subtly mottled in appearance. The left and right limbs are isoechoic. The pancreatic duct is not overtly dilated.

### *Free Abdomen*

Trace free fluid is observed in the cranial abdomen. The abdominal lymph nodes are normal/not visible.

## ULTRASONOGRAPHIC FINDINGS

**Primary Findings:**

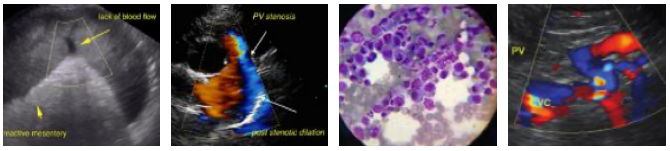
- Diffuse hepatopathy. Differentials include inflammatory/immune mediated disease, hepatic lipidosis, infiltrative neoplasia (less likely), FIP or some combination thereof.
- The gallbladder and cystic/common bile duct changes are most consistent with cholecystitis/cholangitis.
- The trace ascites is likely secondary to hepatobiliary pathology.

**Secondary Findings:**

- Bowel pattern consistent with inflammatory bowel disease with a lower possibility of emerging lymphoma.
- The pancreatic changes are most consistent with age-related parenchymal remodeling, potentially secondary to a prior inflammatory episode, early fibrosis or chronic pancreatitis.
- The splenic parenchymal changes could be consistent with lymphoid hyperplasia, extramedullary hematopoiesis or less likely infiltrative neoplasia. The hyperechoic nodules trend toward the benign (i.e., myelolipomas) with a lower possibility of neoplasia.
- The hyperechoic foci in both adrenal glands are likely a benign incidental age-related finding.
- Bilateral age-related renal changes with dystrophic mineralization and right pyelectasia.

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

- If a conservative approach is desired, consider empirical treatment for bacterial cholangiohepatitis/cholangitis (amoxicillin-clavulanic acid +/- Metronidazole, Denamarin). If no



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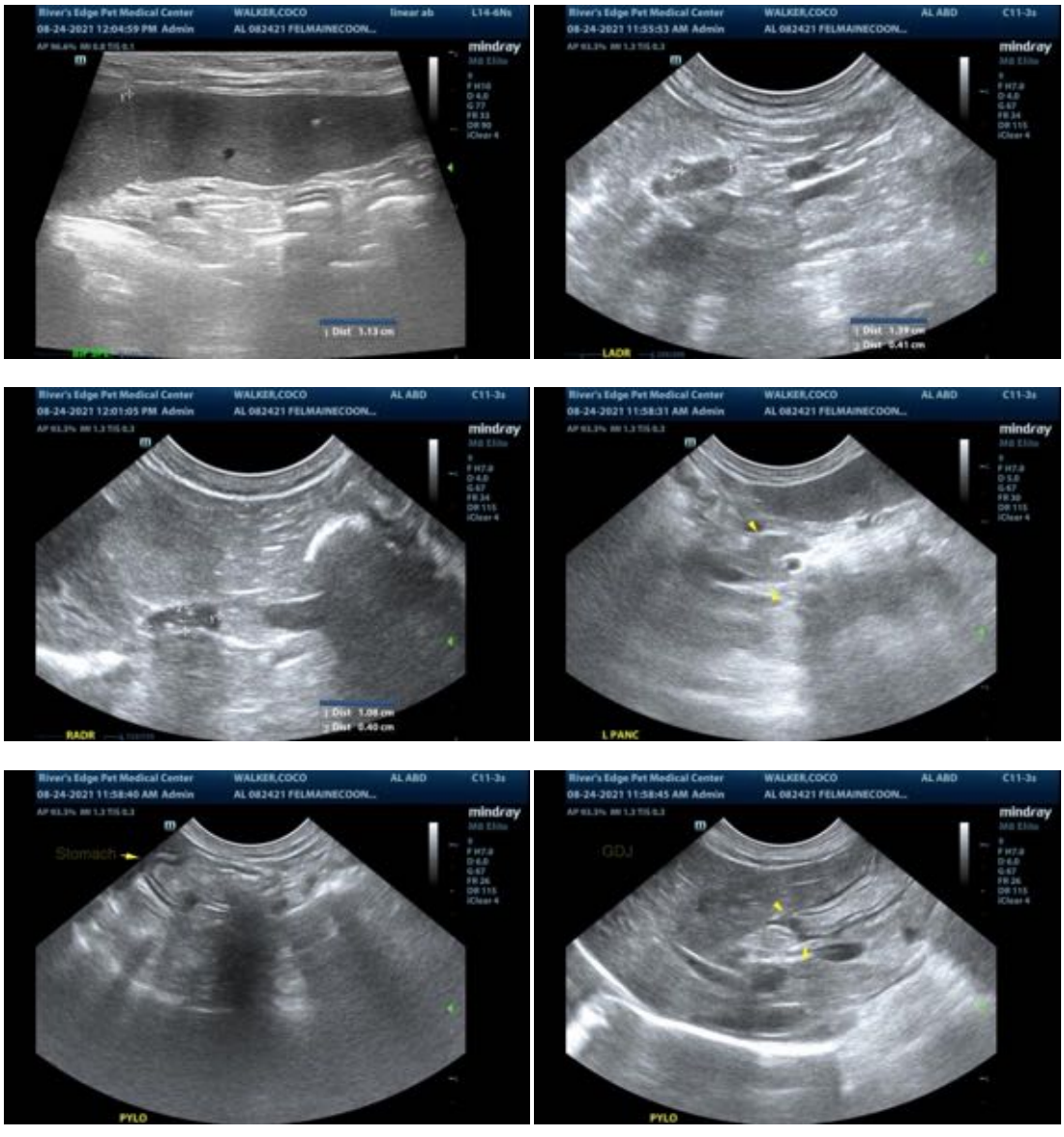
improvement in the liver values is seen within 7-10 days of initiating therapy, antibiotics should be discontinued and hepatic tissue sampling reconsidered. If liver values improve, continue therapy for at least 4-6 weeks and 1 week beyond normalization of the liver values. Nutritional support (i.e., via temporary feeding tube) is strongly encouraged to help prevent/treat hepatic lipidosis.

- A fine needle aspirate of the liver can be considered (if clotting status is appropriate). A 25-gauge needle should be used. If cytologic evaluation is inconclusive, a surgical liver biopsy with aerobic and anaerobic bile cultures can be considered.
- Consider a malabsorption panel to assess for concurrent small intestinal and pancreatic disease.



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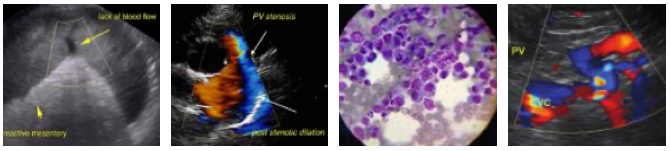

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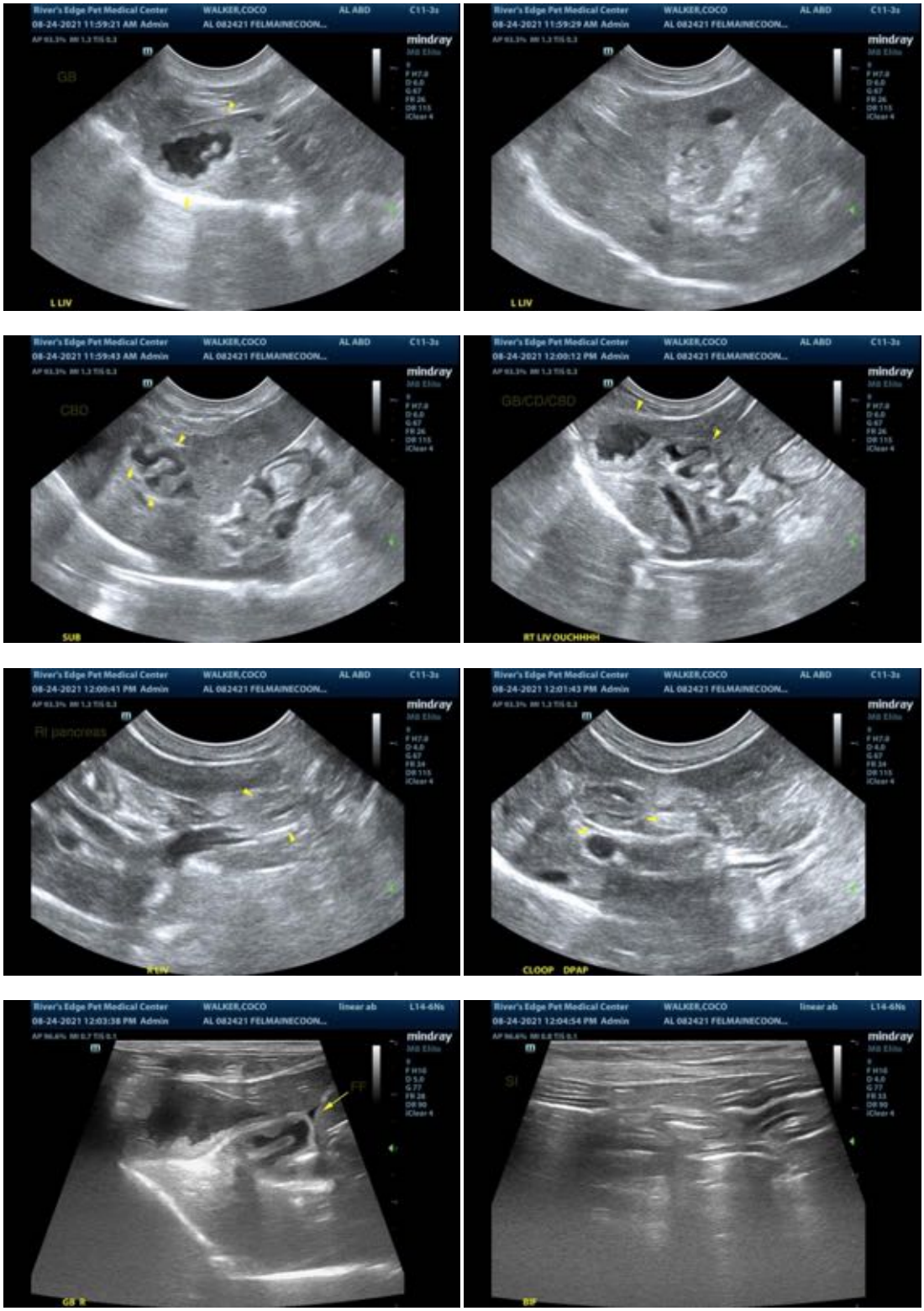

**The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the**

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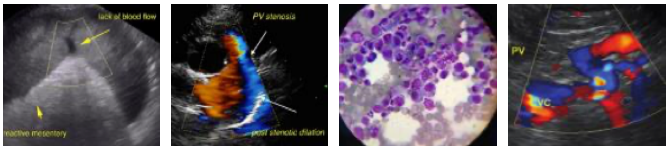

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**image/video clips provided.**

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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Andrea.nicastro@sonopath.com