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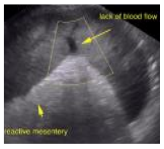
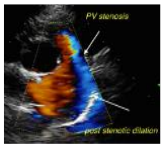
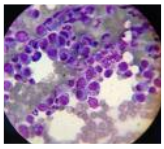
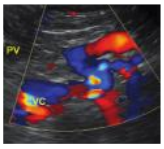

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT

Muffy Miller

SPECIES

Canine

BREED

Havanese

SEX

Spayed Female

AGE

16 years

WEIGHT

10.7 lbs

INTERPRETED BY

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

IMAGING PERFORMED BY

Dr. Saum Hadi

HOSPITAL NAME

Bethany Family Pet Clinic

REFERRING VET

Dr. Mark Norman

INVOICE

10381

DATE

2/16/22

PRESENTING CLINICAL SIGNS

History: P presented for a dental cleaning. Weight down from 12.7 to 10.7 between November 2021 to today. Pre-anesthetic chem 10/cbc revealed increased ALT/ALKP/BUN. See abnormal results. P doing good at home per O. Minimal findings on physical exam. BCS 4/9.
Abnormal PE/Chem/CBC/UA Results: 2/16/22: ALT: 410 U/L, ALKP: 996 U/L, Creatinine: 1.3 mg/dL (WNL), BUN: 37 mg/dL, Globulins 4.3 g/dL (high normal). NSF on CBC.

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 with mostly anechoic urine. 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 presented normal size (3.28 cm in length); with a slightly irregular shape. There is a normal 1:3 cortex to medulla ratio with moderate loss of corticomedullary distinction. Hyperechoic shadowing diverticular foci are visualized. Moderate pyelectasia is present (0.42 cm in the transverse plane). A few nonobstructive nephroliths are seen. There is no evidence of hydroureter.

The right kidney is normal in size (3.85 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 to moderate pyelectasia is present (0.31 cm in the longitudinal plane). There is no evidence of infarcts or hydroureter.

Adrenal Glands

The left adrenal gland is normal size (0.54 cm at cranial pole) (0.55 cm at caudal pole; normal shape; homogenous parenchyma. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

The right adrenal gland is mildly enlarged (1.05 cm at cranial pole) (0.83 cm at caudal pole) (2.02 cm in length); with a relatively normal shape. The parenchyma is slightly heterogenous. No distinct focal lesions are observed. There is some loss glandular detail. The surrounding vasculature appears normal.

Spleen

The spleen is subjectively normal in size (1.07 cm in width at the level of the hilus) with normal curvilinear peripheral contours. The parenchyma is of appropriate echogenicity and echotexture. Pinpoint hyperechoic to mineralized foci are observed throughout the organ. A small ill-defined hyperechoic nodule is observed at the caudal lateral aspect. Splenic vasculature is normal with no evidence of thrombosis.

Liver

The liver is subjectively enlarged with swollen/rounded peripheral contours. The parenchyma is isoechoic relative to the spleen and diffusely heterogenous in appearance. No distinct focal lesions are observed. Hepatic vasculature and intrahepatic biliary tracts are of normal volume with no evidence of congestion.

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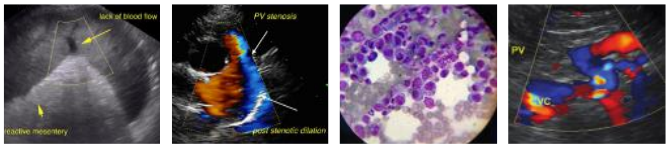

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The gall bladder lumen is moderately distended. The wall is thin and smooth. A moderate amount of aggregated echogenic partially dependent sludge is observed within the lumen. The cystic and common bile ducts are normal.

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 small intestinal lumen is not dilated. The small intestinal wall thickness is normal with a normal layering pattern and appropriate mural detail. Discreet masses are not identified. The colonic wall is normal. No obstructive or overt infiltrative disease is noted.

Pancreas

The right of the pancreas is visible with normal curvilinear peripheral contours. The parenchyma is largely isoechoic relative to surrounding omental fat and slightly mottled in appearance. The pancreatic duct is visible but not overtly dilated. There is no evidence of peripancreatic inflammation or effusion.

Free Abdomen

The peritoneal cavity is normal. There is no evidence of inflammation or effusion. The abdominal lymph nodes are normal/not visible.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

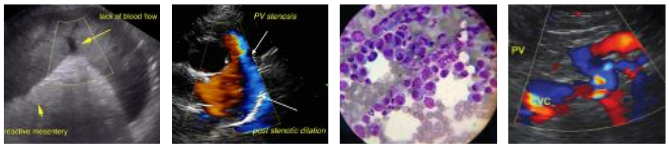
- Non-specific diffuse hepatopathy. Differentials include inflammatory/immune-mediated disease (i.e, chronic hepatitis, bacterial cholangiohepatitis), Leptospirosis, infiltrative neoplasia (i.e., lymphoma), other hepatopathy, +/- concurrent age-relate change (i.e., vacuolar hepatopathy, regenerative nodular hyperplasia.
- Bilateral degenerative renal changes with dystrophic mineralization, pyelectasia and left nonobstructive nephrolithiasis.
- Gall bladder sludge, non-mucocele

Secondary Findings

- Mild right adrenomegaly
- Splenic dystrophic mineralization. This is a common finding with endocrinopathies.
- The hyperechoic nodule is likely benign (i.e., myelolipoma with low potential for emerging neoplasia).
- Age-relate pancreatic remodeling +/- fibrosis.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

- In order to get a definitive diagnosis, hepatic tissue sampling (i.e., fine-needle aspirate or surgical biopsy would be necessary). Surgical biopsies would be ideal as they are more representative



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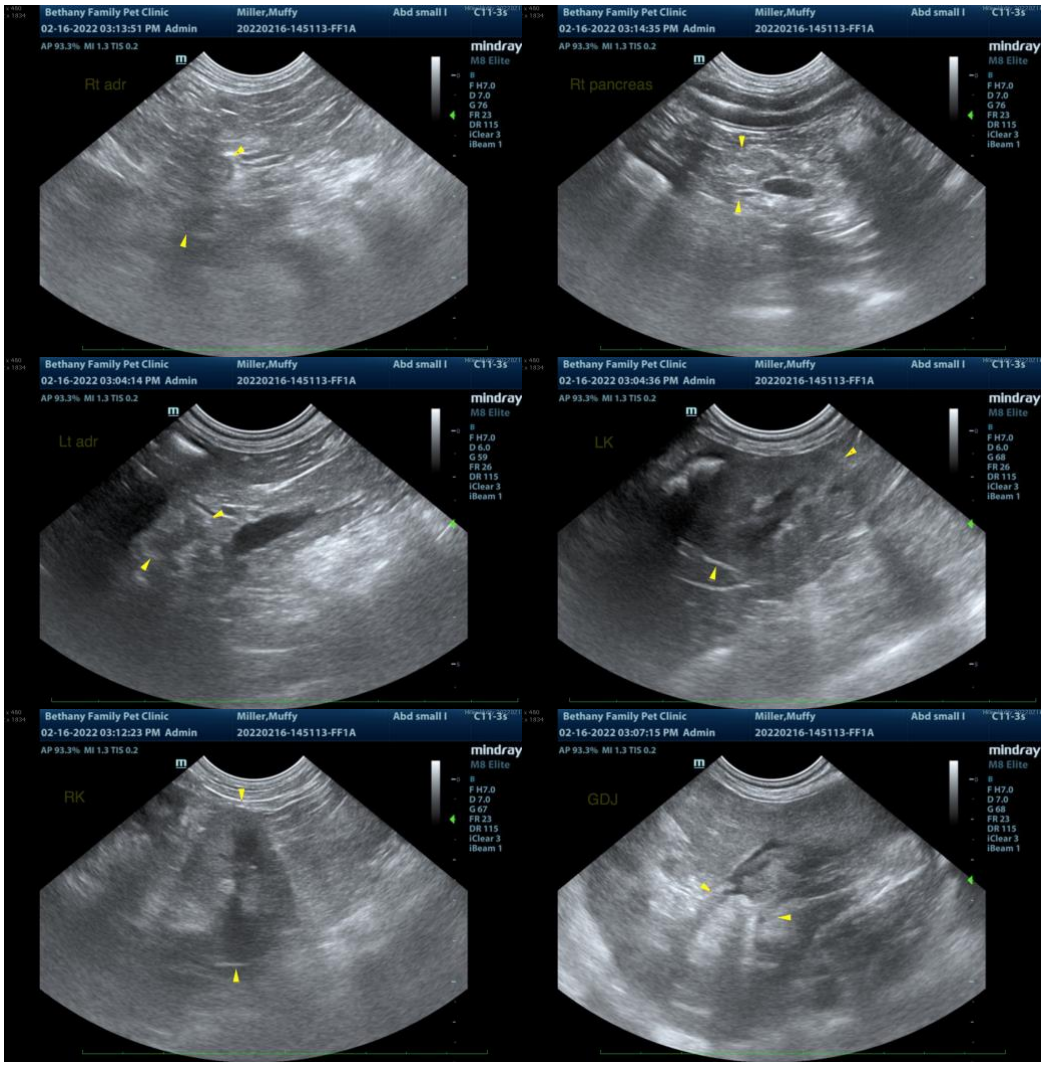
of global organ pathology. If surgery is pursued aerobic and anaerobic bile cultures and additional hepatic tissue sampling for potential copper quantitation should be obtained.

- Also consider Leptospirosis testing (i.e., blood and urine PCR, serology).
- Given the azotemia, other diagnostic considerations include a urine culture and sensitivity, UPC (if proteinuria is present), and baseline blood pressure measurement.



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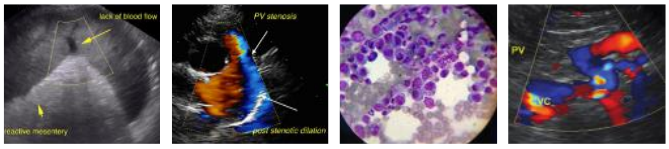

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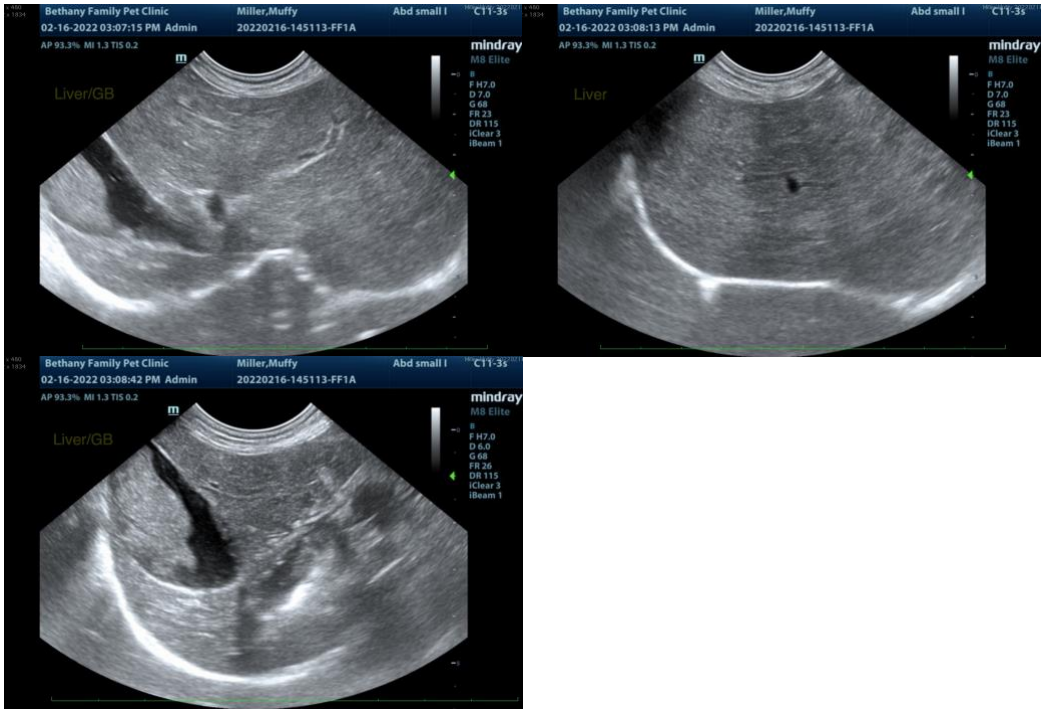

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Andrea Nicastro, DVM, Diplomate DACVIM (Small Animal Internal Medicine)
info@SonoPath.com