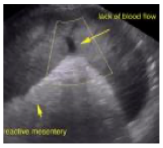
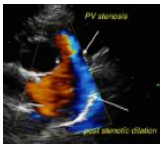
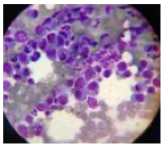
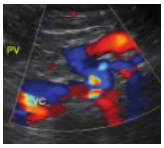
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™

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

PATIENT
Archer Brill

SPECIES
Canine

BREED
Maltese

SEX
Neutered Male

AGE
11 years, 10 mos

WEIGHT
12 lbs

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

IMAGING PERFORMED BY
Lucas Budden

HOSPITAL NAME
Frontier VH

REFERRING VET
Lucas Budden

INVOICE
11693

DATE
9.22.22

PRESENTING CLINICAL SIGNS

History: Presented 8/10/2022 for hematuria. Urination habits had been normal and urinated a pool of blood that morning. Owners also mentioned had been dribbling urine over past couple months. Everything else was normal at this time. Treated with a 5-day course of antibiotics while awaiting culture that helped. Represented 8/26/22 because was still urinating blood. Now a little lethargic/lazy per owners. Ultrasound to further evaluate urinary tract to look for a cause of hematuria. Current medications: Benadryl Prednisone 2.5 mg every 12-24 hours long term Simparica Trio Just finished course of Clavamox for skin

Abnormal PE/Chem/CBC/UA Results: PE today: enlarged abdomen, thin skin, multiple epidermal collarettes on abdomen 8/11/2022 UA and Culture USG 1.037 Protein 1+ no bacteria, crystals, excessive WBC seen culture negative 8/27/2022 Cbc/chem/pt/ptt Chem - ALT high 483, high ALT 2782 Chem-platelet high 484, monocytes high 1.88 PT/PTT-WNL

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The **urinary bladder** wall is normal in thickness and the mucosal surface is smooth. The bladder is mildly to 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 **prostate** is normal in size (0.86 cm in width) and shape. Parenchyma is homogenous. The prostatic urethra appears normal without evidence of dilation or obstruction.

The **left kidney** is normal size (4.27 cm in length); normal shape and architecture with smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with minimal loss of corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter.

The **right kidney** is normal size (4.24 cm in length); normal shape and architecture with smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with minimal to mild loss of corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter.

Adrenal Glands

The **left adrenal gland** is normal size (0.41 cm at cranial pole) (0.48 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 normal size (0.76 cm at cranial pole) (0.45 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.

Spleen

The **spleen** is subjectively prominent in size (1.19 cm in width at the level of the hilus) with rounding at the cranial pole. The parenchyma is diffusely mottled, bordering on a “Swiss cheese” appearance. An ill-defined hypoechoic area is observed at the cranial aspect. A few ill-defined myelolipomas are observed in the region of the hilus. Splenic vasculature appears normal with no evidence of thrombosis.

Liver

The **liver** is subjectively enlarged with slightly swollen peripheral contours. The parenchyma is isoechoic relative to the spleen and diffusely homogeneous in appearance. No distinct focal lesions are observed. Vascular and biliary tracts are of normal volume with no evidence of congestion.

The **gall bladder** lumen is moderately distended. The wall is thin and smooth. A small amount of mostly gravity dependent, echogenic debris is observed within the lumen. The cystic and common bile ducts are normal/not seen.

Gastrointestinal

The **stomach and intestine** are free of stasis and exhibit normal peristaltic activity. The gastric lumen is mildly distended with ingesta. 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. Discreet masses are not identified. The colonic wall is normal. There is no evidence of an obstructive pattern.

Pancreas

The right limb 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. In the region of the left limb, the pancreas is prominent with slightly irregular margins and hyperechoic to heterogenous parenchyma.

Free Abdomen

There is no evidence of free fluid. The abdominal **lymph nodes** are normal/not visible.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

- An obvious cause for the patient's hematuria is not identified in this study. Considerations include occult urinary tract infection, emerging lower urinary tract neoplasia, benign essential renal hematuria, coagulopathy, other.
- The splenic changes are concerning for infiltrative neoplasia (i.e., round cell tumor). However, a benign process (i.e., extramedullary hematopoiesis, lymphoid hyperplasia or similar) cannot be excluded.
- Nonspecific diffuse hepatopathy. Differentials could include inflammatory disease (i.e., bacterial cholangiohepatitis, chronic active hepatitis), hepatotoxicity (i.e., copper), reactive hepatopathy +/- concurrent benign age-related change (i.e., vacuolar hepatopathy, regenerative nodular hyperplasia).

Secondary Findings

- Minor age-related pancreatic remodeling

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

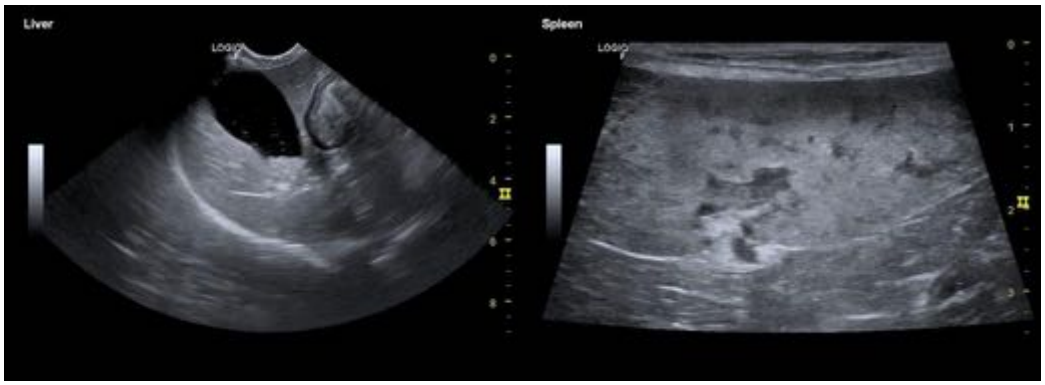
Regarding the urinary tract symptoms, consider a PT/PTT to assess for an underlying coagulopathy. Also consider a urine BRAF test to assess for emerging lower urinary tract neoplasia. It should be noted however that a negative BRAF test does not completely rule out the possibility of cancer. If the above diagnostics are inconclusive, consider another course of broad-spectrum antibiotics, followed by a culture 5-7 days after the last dose.

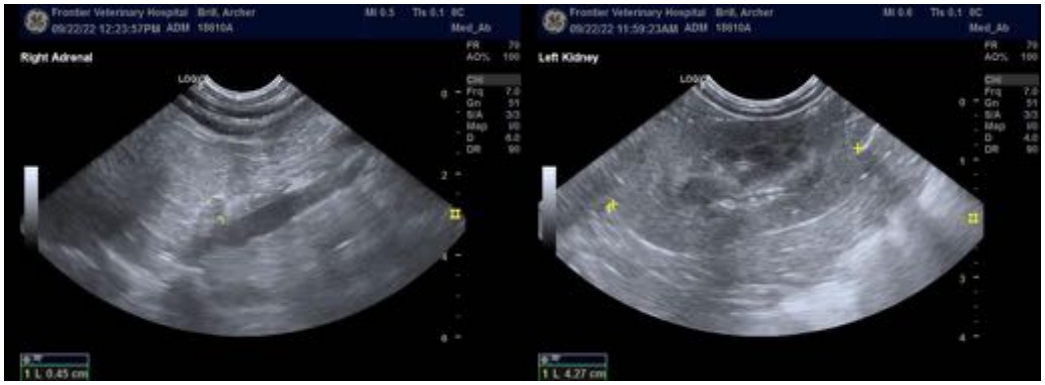
Regarding the splenic changes, consider an FNA if clotting status is appropriate.

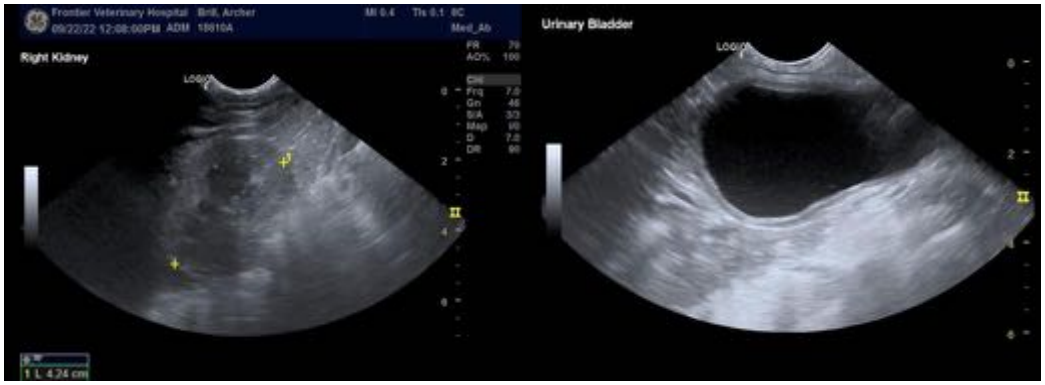
Regarding the elevated liver values, consider the following:

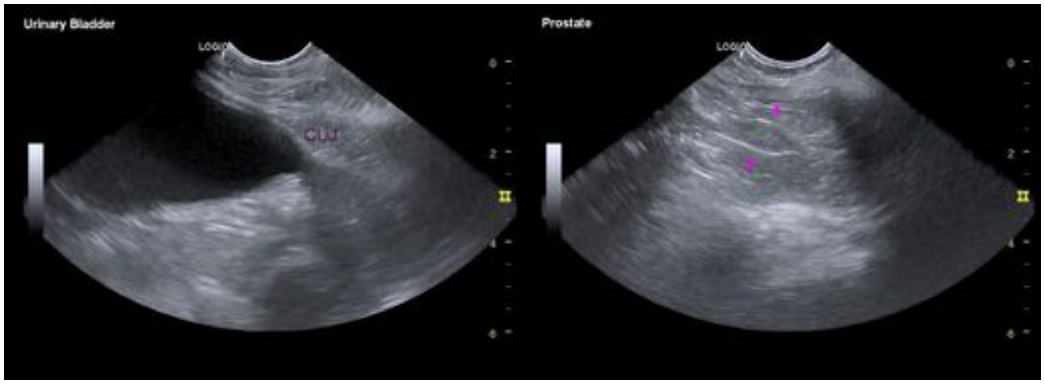
1. Pre-and postprandial serum bile acids
2. Leptospirosis testing (i.e., blood and urine PCR, serology)
3. Hepatic tissue sampling (i.e., fine-needle aspirate or surgical biopsy) if clotting status is appropriate. Surgical biopsies are more likely to yield a definitive diagnosis. If pursued, aerobic and anaerobic bile cultures, as well as acquisition of additional hepatic tissue samples for potential copper quantitation are recommended.

Given the patient's age, thoracic radiographs are recommended to assess cardiopulmonary status, particularly if the patient is to undergo anesthesia.









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