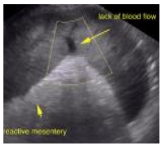
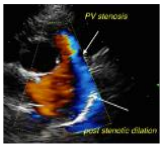
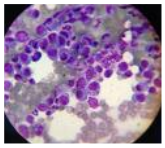
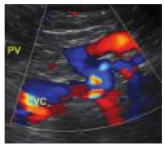
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™

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

PATIENT
Rudy Lawrence

SPECIES
Canine

BREED
Schnauzer

SEX
Neutered Male

AGE
13 years, 11 mos

WEIGHT
15.4 lbs

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

IMAGING PERFORMED BY
Lucas Budden

HOSPITAL NAME
Frontier VH

REFERRING VET
Dr. Lucas Budden

INVOICE
10931

DATE
5/18/22

PRESENTING CLINICAL SIGNS

History: Seen 5/2/2022 for PU PD for 6 months, accidents in the house, large amounts. Had lost about 1.4 pounds since the previous year. Intermittent diarrhea for several months. At presentation on this date patient was not drinking much, did not want to eat breakfast, was lethargic, seemed uncomfortable. Was given subcutaneous fluids and started on metronidazole as well as a probiotic. He was also started on Hill's i/d diet and Denamarin. Was started on amoxicillin:clavulonate after the results of the urine culture received. Was rechecked again on 5/14/2022. At this time was eating better, had vomited once since last visit, energy had improved, but still had severe PU PD. The previous night had seemed uncomfortable and appeared to be circling. On presentation today patient is still PU/PD, but appetite is normal. Vomiting and diarrhea have resolved. Has good energy. Seems like getting back to his normal self per owner. On rectal exam prostate feels very firm and asymmetrical.

Abnormal PE/Chem/CBC/UA Results: Cbc/chem/urinalysis/culture 5/2/2022 White blood cell high 20.15 Neutrophils high 16.8 Hematocrit low 36.18 ALP high 656 ALT high at 364 Total protein high 8.6 USG 1.021 Turbid appearance Protein 3+ White blood cell 21–50 RBC 11–20 Cocci and rods 20–25 Transitional epithelia 2–3 Culture positive beta-hemolytic strep

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately distended. The wall is normal in thickness. The mucosal surface is slightly irregular. A small to moderate amount of suspended, echogenic debris is observed within the lumen along with a small amount of gravity dependent mineralized sand, +/- tiny calculi. The region of the trigone and the visible portion of the proximal urethra are normal.

The prostate is enlarged (2.29 cm in width) with a mass effect. There are smooth curvilinear peripheral contours. The parenchyma is hypoechoic relative to surrounding omental fat and heterogenous with focus of mineralization. The prostatic urethra is not overtly dilated.

The left kidney is normal size (4.74 cm in length); normal shape and architecture with smooth peripheral margins. The cortex is hyperechoic and mildly thickened. There is moderate loss of corticomedullary distinction. Hyperechoic shadowing diverticular foci are visualized. At least one cortical cyst is seen. Trace pyelectasia is present. There is no evidence of infarcts or hydroureter.

The right kidney is normal size (4.69 cm in length); normal shape and architecture with smooth peripheral margins. The cortex is hyperechoic and mildly thickened. There is moderate loss of corticomedullary distinction. Hyperechoic shadowing diverticular foci and a few, small nonobstructive nephroliths are present. A few, small cortical cysts are seen. There is no evidence of pyelectasia, infarcts or hydroureter.

Adrenal Glands

The left adrenal gland is normal size (0.48 cm at cranial pole) (0.41 cm at caudal pole) (1.75 cm in length); 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 (0.67 cm at cranial pole) (0.46 cm at caudal pole) (1.72 cm in length); 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 normal in size (1.06 cm in width at the level of the hilus) with a normal capsular contour. There is appropriate echogenicity and echotexture. Numerous, irregular, hyperechoic nodules are observed throughout the organ, particularly in the region of the hilus. Splenic vasculature is normal.

Liver

The liver is subjectively prominent in size with slightly swollen peripheral contours. The parenchyma is isoechoic relative to the spleen and heterogenous in appearance. No distinct focal lesions are observed. Hepatic vasculature and intrahepatic 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 moderate to large amount of aggregated, echogenic, suspended debris/sludge is observed within the lumen. This sludge is in a partially stellate pattern. 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 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. Discreet masses are not identified. The ileocecocolic junction and colonic wall are normal. There is no evidence of an obstructive pattern.

Pancreas

The base/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.

Free Abdomen

There is no evidence of free fluid. Two enlarged hypoechoic, slightly irregular caudal abdominal lymph nodes are visualized, one measuring 1.64 cm in length, the other measuring 1.35 cm in length. Surrounding mesentery is mildly hyperechoic.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

- Prostatic mass effect. Neoplasia (i.e., prostatic adenocarcinoma, transitional cell carcinoma) is considered likely with a lower possibility of benign pathology.
- The caudal lymphadenopathy could be consistent with metastatic disease, reactive lymphadenopathy or lymphoid hyperplasia.

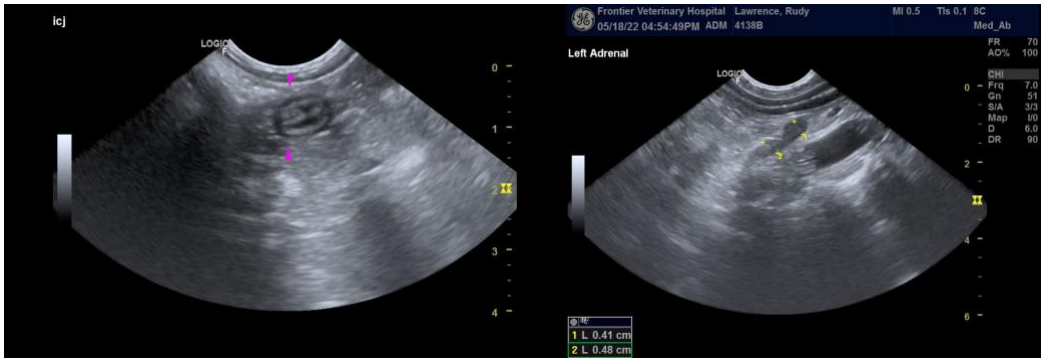
- Diffuse hepatopathy. Differentials include inflammatory disease (i.e., chronic active pancreatitis, bacterial cholangiohepatitis), Leptospirosis, hepatotoxicity (i.e., copper)), other hepatopathy, +/- concurrent age-related changes (i.e., regenerative nodular hyperplasia). Infiltrative neoplasia is considered possible but considered less likely.
- The gall bladder changes are suggestive of a developing mucocele.

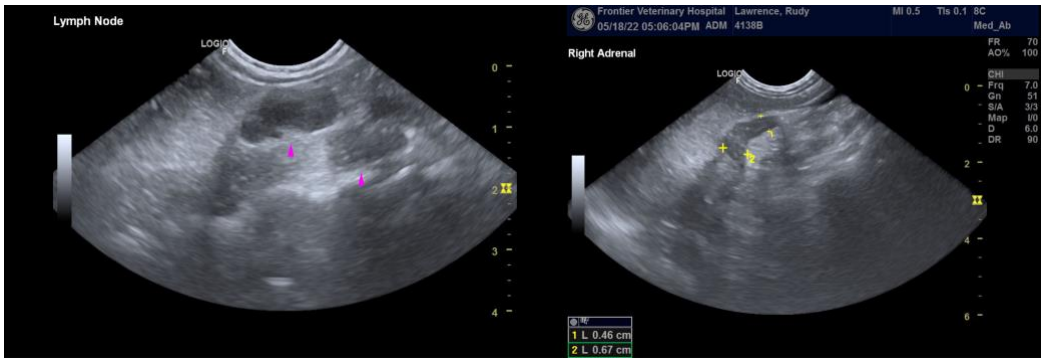
Secondary Findings

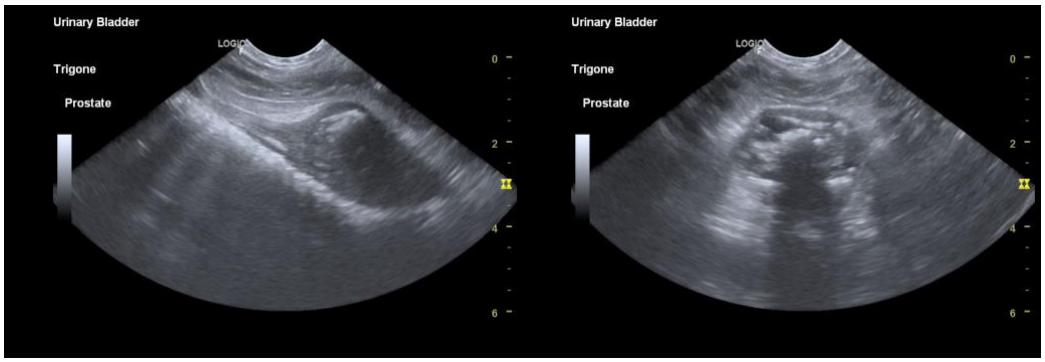
- The pancreatic changes are most consistent with age-related parenchymal remodeling, potentially secondary to a prior inflammatory episode, early fibrosis or chronic pancreatitis.
- The hyperechoic splenic nodules are most consistent with a benign process (i.e., myelolipomas).
- The bilateral renal changes are consistent with chronic interstitial nephrosis/nephritis with dystrophic mineralization and right nonobstructive nephroliths.
- Urinary bladder sand +/- tiny cystic calculi

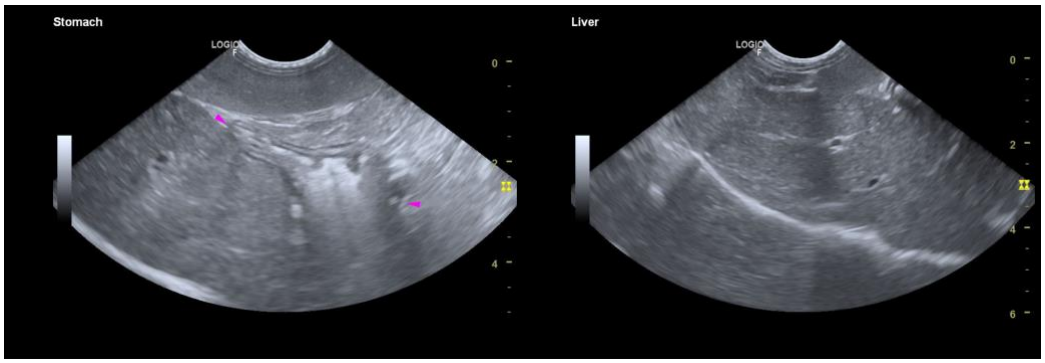
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

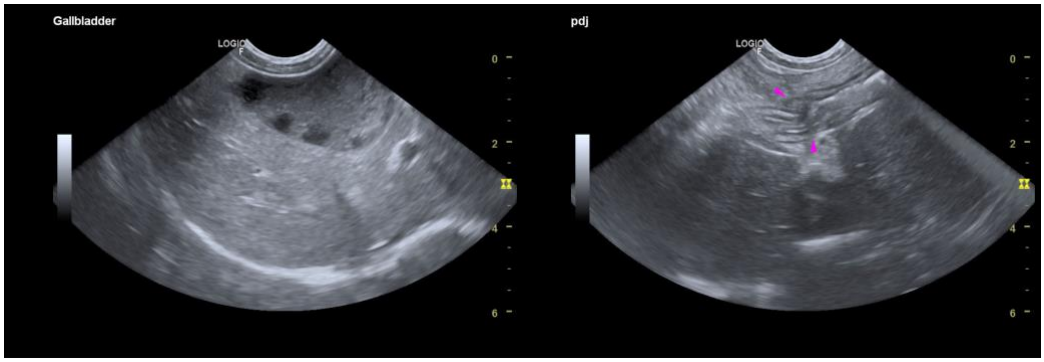
- Three-view thoracic radiographs are recommended to assess for pulmonary metastases.
- A urine BRAF test is recommended to further asses for lower urinary tract neoplasia. It should be noted that a negative test does not completely rule out the possibility of cancer. Therefore, if a negative result is obtained, further testing (i.e., traumatic urethra catheterization or surgical biopsy) may be necessary to get a definitive diagnosis.
- Regarding the hepatic changes, the following diagnostics/therapeutics can be considered:
    1. Leptospirosis testing (i.e., blood and urine PCR, serology). If the liver enzymes are chronic however, Leptospirosis would be considered less likely, and testing may be of low yield.
    2. Also consider pre-and postprandial serum bile acids, as well as hepatic tissue sampling (i.e., fine-needle aspirate or surgical biopsy). If biopsies are pursued, aerobic and anaerobic bile cultures as well as acquisition of additional hepatic tissue samples for potential copper quantitation are recommended. If surgery is performed, the gall bladder should also be evaluated for mucocele +/- removed, if indicated. Clotting time should be assessed prior to any tissue sampling. In the meantime, consider initiation of Ursodiol therapy.
    3. Given the history of circling, a neurologic exam, blood pressure measurement, +/- blood ammonia level (to assess for hepatic encephalopathy) should be considered.


icj
Frontier Veterinary Hospital Lawrence, Rudy
05/18/22 04:54:49PM ADM 4138B
Left Adrenal
1 L 0.41 cm
2 L 0.48 cm


Lymph Node
Frontier Veterinary Hospital Lawrence, Rudy
05/18/22 05:06:04PM ADM 4138B
Right Adrenal
1 L 0.46 cm
2 L 0.67 cm


Urinary Bladder
Trigone
Prostate
Urinary Bladder
Trigone
Prostate


Stomach
Liver



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