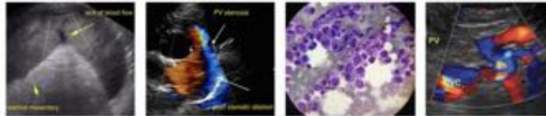

PATIENT

BamBam Lyda

SPECIES

Canine

BREED

Chihuahua

SEX

Neutered Male

AGE

5.26.2008

WEIGHT

5.5 lbs

INTERPRETED BY

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

IMAGING PERFORMED BY

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PRESENTING CLINICAL SIGNS

Clinical Exam Findings:
-Mild icterus noted on exam
- Acute onset behavioral/cognitive changes noted at home with acute onset vomiting
- Historical liver value elevation that previously improved greatly with Denamarin and urosidol (still on currently)

Abnormal lab-work values:
Neutro- 178400
BUN- 30
CRE 1.6
ALT 744
ALP 1915
GGT 18
TBIL 1.4
Current Medications: Ursodiol 12.5mg PO BID, Denamarin for size

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The **urinary bladder** wall is normal in thickness and the mucosal surface is smooth. The bladder lumen is moderately distended with 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 prostate is normal in size (0.89 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 (2.91 cm in length); normal shape and architecture with smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with moderate loss of corticomedullary distinction. Moderate pyelectasia is present (0.45 cm in the transverse plane). There is no evidence of nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The **right kidney** is normal size (3.41 cm in length); normal shape and architecture with smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with moderate loss of corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

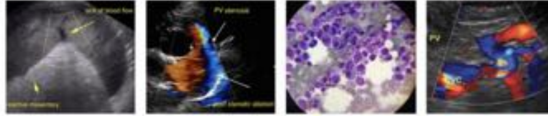
Adrenal Glands

The **left adrenal gland** is normal size (0.55 cm at cranial pole) (0.48 cm at caudal pole) (1.46 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 (0.99 cm at cranial pole) (0.42 cm at caudal pole) (1.39 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 (0.91 cm in width at the level of the hilus) with a normal capsular



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contour. There is appropriate echogenicity and echotexture. No focal lesions are observed. Splenic vasculature is normal.

Liver

The **liver** is subjectively prominent in size with slightly swollen peripheral contours. The parenchyma is hypoechoic to isoechoic relative to the spleen and slightly mottled in appearance. No distinct focal lesions are observed. Hepatic vasculature and intrahepatic biliary tracts are of normal volume with no evidence of congestion. The portal vein to caudal vena cava ratio is approximately 1: 1.

The **gall bladder** is mildly to moderately distended. The wall is thickened (up to 0.25 cm) and hyperechoic. A moderate amount of aggregated, echogenic, partially dependent sludge 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 to moderately 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 ileocecocolic junction and colonic wall are normal. There is no evidence of an obstructive pattern.

Pancreas

The region of the **pancreas** is isoechoic relative to surrounding omental fat. No obvious parenchymal abnormalities are observed. There is no evidence of regional 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.

Other

A brief echocardiogram reveals no evidence of pericardial effusion or obvious right atrial/auricular mass.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

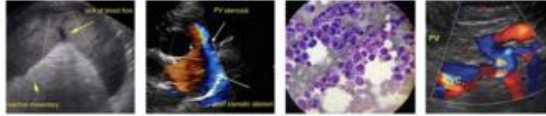
- The gall bladder changes are most consistent with cholecystitis. The gall bladder sludge may be secondary to fasting, cholestasis, or a developing mucocele (less likely).

- Nonspecific diffuse hepatopathy. Based on the patient's liver enzyme elevations, an inflammatory hepatopathy (i.e., bacterial cholangiohepatitis, chronic active hepatitis) is suspected. However, other differentials could include Leptospirosis, hepatotoxicosis (i.e., copper), other hepatopathy, +/- other concurrent benign age-related change (i.e., vacuolar hepatopathy and/ or regenerative nodular hyperplasia).

- Bilateral degenerative renal changes. The left pyelectasia could be consistent with pyelonephritis, age-related remodeling, fluid therapy (if applicable) or some combination thereof.

Secondary Findings

- If the patient was fasted for this study, the ingesta within the gastric lumen may represent delayed gastric emptying.



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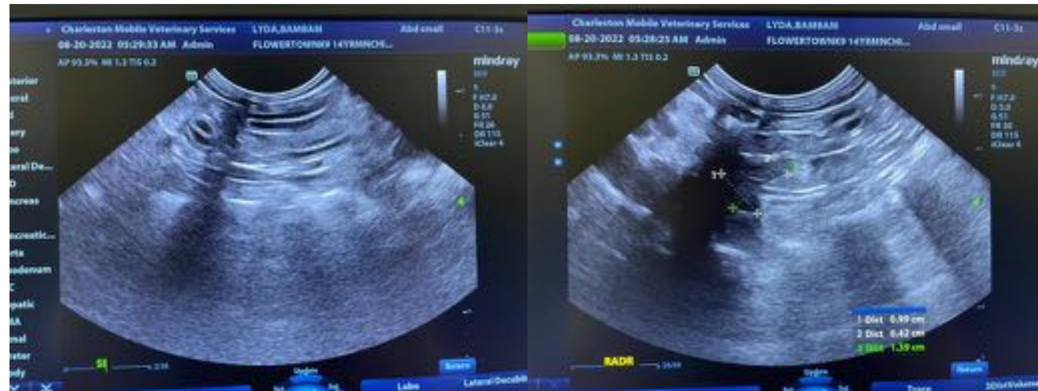
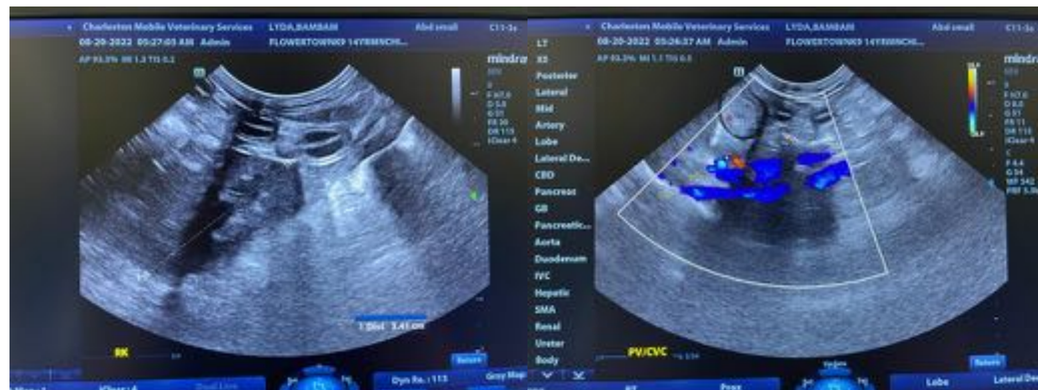
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Empirical treatment for cholecystitis/cholangiohepatitis is recommended, including broad-spectrum antibiotics (i.e., Clavamox +/- Metronidazole at a reduced dose (i.e., 7.5 mg/kg every 12 hours), Denamarin, Ursodiol and symptomatic care). If the patient's liver values do not improve within the next 3-5 days, consider initiation of a more broad-spectrum antibiotic (i.e., fluoroquinolone) or a surgical biopsy with aerobic and anaerobic bile cultures and acquisition of additional hepatic tissue samples for potential copper quantitation.

Also consider Leptospirosis testing (i.e., blood and urine PCR, serology), particularly if the clinical suspicion for disease is high.

Given the left pyelectasia, a urinalysis with a culture and sensitivity is recommended along with serial monitoring of the patient's renal values to assess for worsening azotemia.





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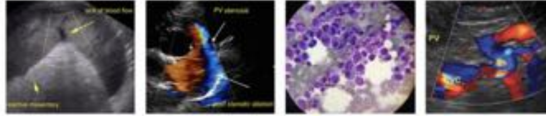

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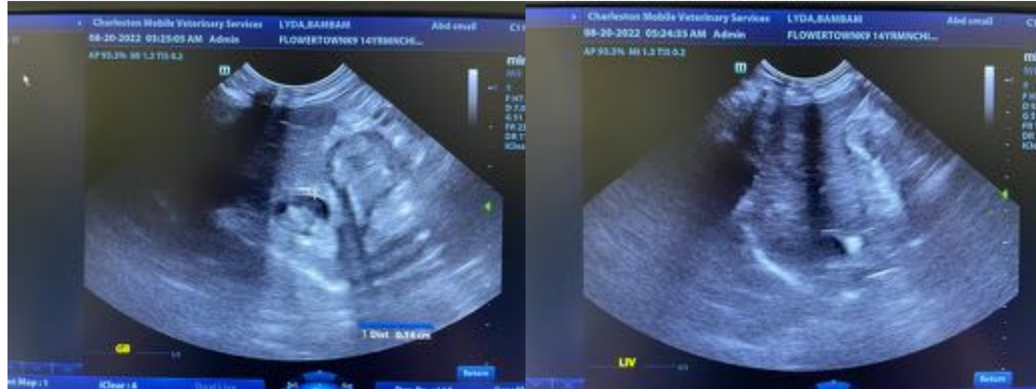

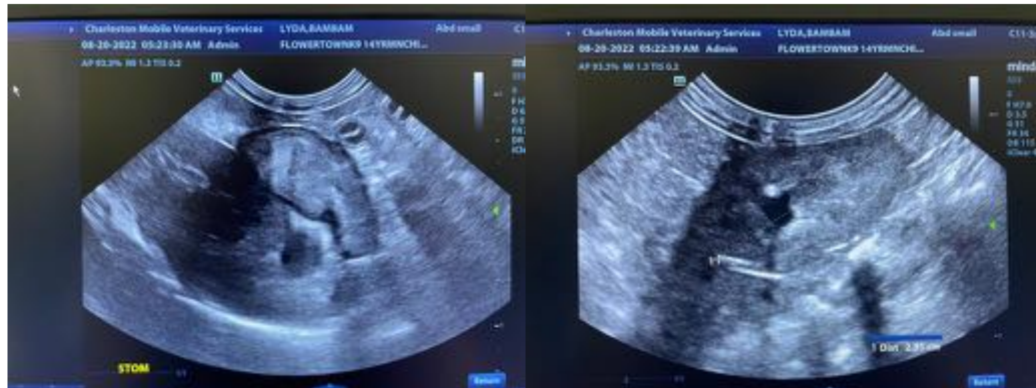

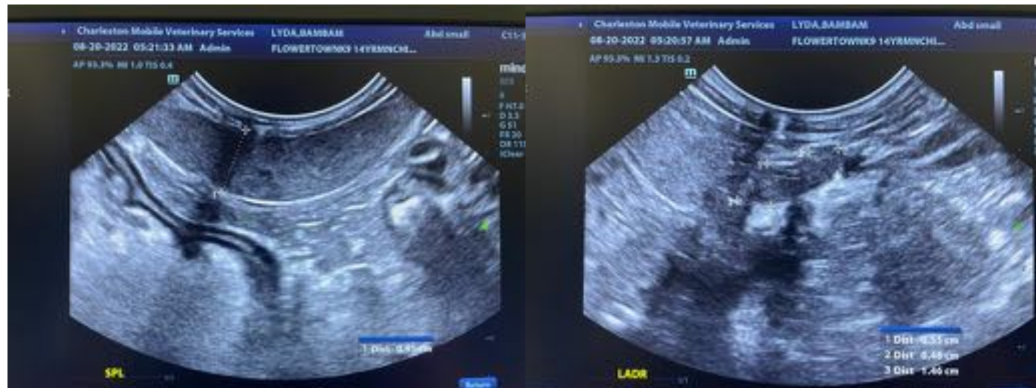

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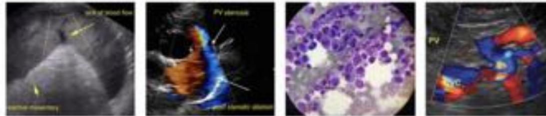

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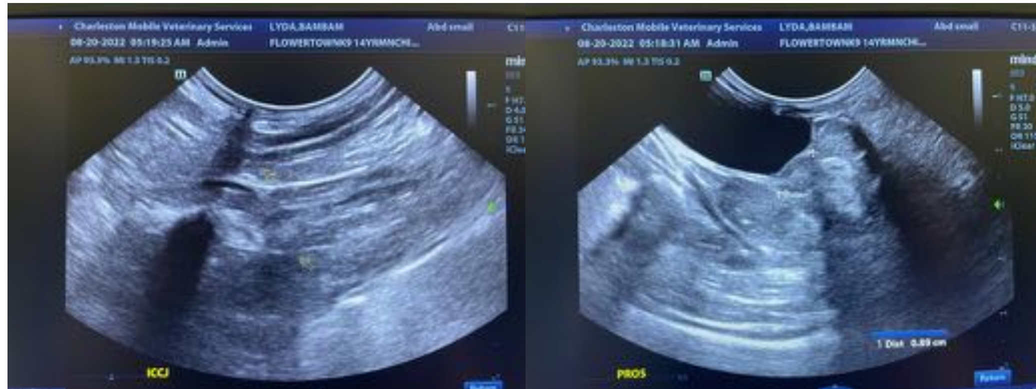

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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