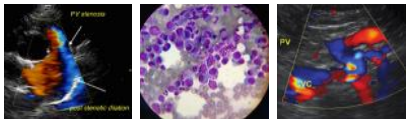
IMAGING PERFORMED BY

IntraPet.com



SonoPath
Clinical Sonography & Telecytology
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DATE

7.25.2022

PATIENT

Ori Wallwork

SPECIES

Canine

BREED

Am. Cocker Spaniel

SEX

Spayed Female

AGE

3/25/2009

WEIGHT

17.4 lbs

INTERPRETED BY

Andrea Nicastro, DMV, Diplomate DACVIM (Small Animal Internal Medicine)

HOSPITAL NAME

Animal Emergency Hospital

REFERRING VET

Dr. Kalwa

INVOICE

11268

PRESENTING CLINICAL SIGNS

Vomiting, diarrhea, collapse 6/18- here for eating chocolate- very critical on presentation- had severe diarrhea- elevated liver value- improved went home O reports she never really recovered/went back to normal. Drank more, increased diarrhea. CPL test high, liver values got worse. Treated for pancreatitis. O changed diet multiple times- turkey, rice, chicken, pasta etc. Lost weight. Stools have been loose, not wanting belly rubs Hx: - rocky mt spotted fever - pancreatitis PT / PTT wnl.

Current Medications: Buprenorphine, Vitamin B12, Protonix, Cerenia, Metoclopramide, Denamarin, Proviable, Ampicillin.
Lab Results: See attached.
ALP 2585. ALT 507. tBili 0.2. CBC unremarkable.
Radiographs: Extreme dilation of stomach and GIT, normal position. Nasogastric tube in place. Stomach full.
Date of Previous IntraPet Ultrasound: No previous.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: DVM requested Stat.

Imaging Performed By: Andi Parkinson, BS, RDMS.

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. The region of the trigone appears normal.

The **left kidney** is normal size (4.89 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. A few pinpoint hyperechoic foci are observed within the cortex. There is no evidence of pyelectasia, infarcts or hydronephrosis. Renal vasculature is normal.

The **right kidney** is normal size (5.19 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.

Adrenal Glands

The **left adrenal gland** is mildly enlarged (0.77 cm at cranial pole) (0.74 cm at caudal pole) (2.43 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 mildly enlarged (0.84 cm at cranial pole) (0.80 cm at caudal pole) (2.41 cm in length); with a slightly irregular shape. At the cranial pole, there is a questionable emerging hyperechoic nodule (1.30 x 3.51 cm). Glandular echogenicity and detail at the caudal pole are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

Spleen

The **spleen** is normal in size (1.67 cm in width at the level of the hilus) with a normal capsular contour. There is appropriate echogenicity and echotexture. A few, small, irregular, hyperechoic nodules are observed throughout the organ. Splenic vasculature is normal.

Liver

The **liver** is subjectively enlarged with swollen peripheral contours. The parenchyma is hyperechoic relative to the spleen and diffusely mottled, with numerous, hypoechoic nodules visualized throughout the organ (the largest measuring 1.72 cm in diameter on the right side). 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 distended. The wall is normal in thickness and hyperechoic. A moderate to large amount of aggregated, echogenic-to-mineralized, partially dependent debris/sludge is observed within the lumen. The cystic and common bile ducts are normal/not seen.

Gastrointestinal

The **gastric wall and pylorus** are normal in thickness with a normal layering pattern. Within the gastric lumen, 1.50 to 2.00 cm of soft shadowing material is visualized. The pyloric outflow tract appears 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 enlarged with slightly irregular peripheral contours. The parenchyma is mildly hypoechoic relative to surrounding omental fat and subtly mottled in appearance. No distinct focal lesions are observed. The pancreatic duct is prominent (up to 0.27 cm). There is no evidence of peripancreatic effusion.

Free Abdomen

There is no evidence of free fluid. 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

- Given the rapid rise of liver values, there is concern for clinically significant hepatobiliary disease (i.e., infiltrative neoplasia, inflammatory disease (i.e, cholangiohepatitis, cholecystitis, chronic active hepatitis), hepatotoxicosis). A concurrent benign process (benign process (i.e., regenerative nodular hyperplasia and/or vacuolar hepatopathy) is also possible.

- The gall bladder sludge could be consistent with a developing mucocele, cholestasis, or less likely, fasting. The gall bladder wall changes are suggestive of cholecystitis.

- The pancreatic changes are consistent with chronic +/- active pancreatitis.

Secondary Findings

- Bilateral adrenomegaly. Possible emerging right adrenal nodule, which may represent benign nodular hyperplasia, adenoma, adenocarcinoma, or pheochromocytoma. A benign process is favored.

- The hyperechoic splenic nodules likely represent a benign process (i.e., myelolipomas) with a low possibility of infiltrative neoplasia.

- The shadowing within the gastric lumen could be consistent with ingesta and/or foreign material (i.e., grass). The material appears nonobstructive at this time.

*It is unclear whether the patient's diarrhea is secondary to chronic pancreatitis, underlying liver disease, a microscopic enteropathy, or some combination thereof.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Regarding the rising liver enzymes, consider the following:

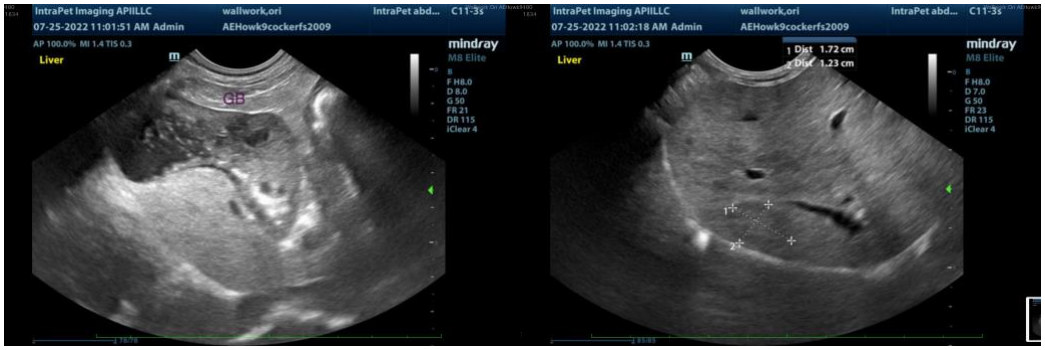
1. Pre-and postprandial serum bile acids
2. Leptospirosis testing (i.e., blood and urine PCR, serology), particularly if the clinical suspicion for disease is high.
3. Hepatic tissue sampling (i.e., fine-needle aspirate or surgical biopsy). It should be noted that cytologic evaluation of the liver is useful in assessing for round cell neoplasia but may be less beneficial in evaluating for other hepatopathies (i.e., chronic active hepatitis, hepatotoxicosis). Therefore, surgical biopsies are preferred. If pursued, aerobic and anaerobic bile cultures are recommended along with acquisition of additional hepatic tissue samples for potential copper quantitation. While awaiting test results, consider empirical treatment for cholangiohepatitis/cholecystitis with broad-spectrum antibiotics, hepatic protectants and systematic therapy.

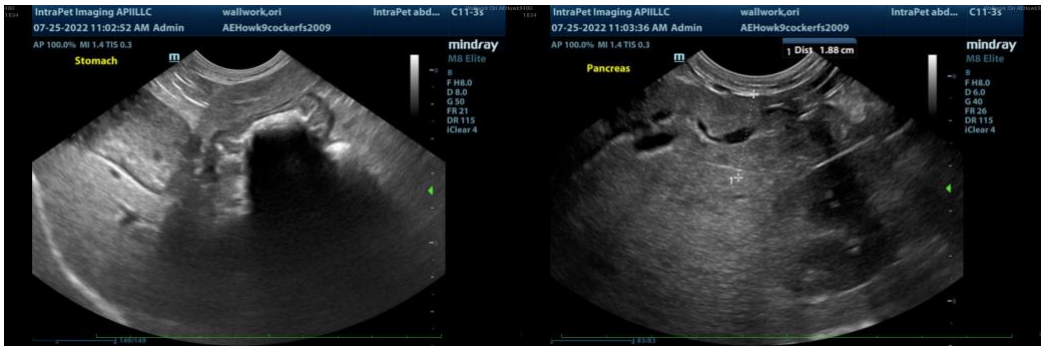
Regarding the gall bladder sludge, consider initiation of ursodiol therapy and serial sonographic monitoring (i.e., 6-8 weeks) of the gall bladder to assess for progression to a fully-formed mucocele.

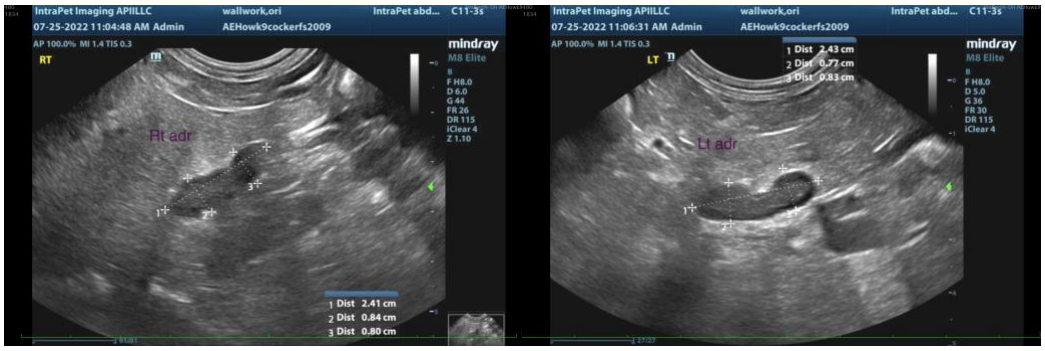
Regarding the chronic diarrhea, consider the following:

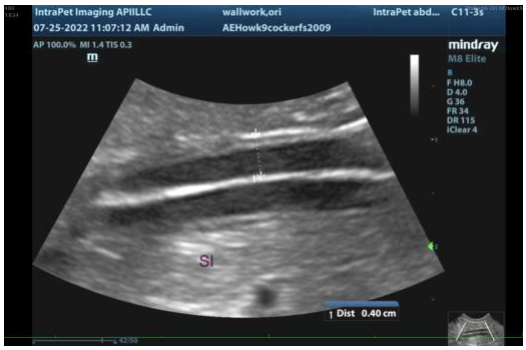
1. Fecal evaluation for ova and Giardia if not already performed
2. Prophylactic deworming with fenbendazole
3. Malabsorption panel, including serum cobalamin and folate, TLI and PLI (send to Texas A&M)
4. 6-week limited antigen diet trial
5. +/- GI biopsies (i.e., endoscopic or surgical)

Consider testing for hyperadrenocorticism with a low-dose dexamethasone suppression test or ACTH stimulation test if clinical signs (i.e., PU/PD) develop.









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)
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