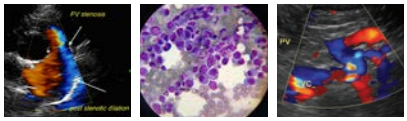
IMAGING PERFORMED BY

IntraPet.com



SonoPath

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DATE

12/1/22

PATIENT

Precious Harrell

SPECIES

Canine

BREED

Chihuahua

SEX

Spayed Female

AGE

7/13/15

WEIGHT

16.09 Pounds

INTERPRETED BY

Kathleen Sennello DVM, MS, Diplomate ACVIM (Small Animal Internal Medicine)

IMAGING PERFORMED BY

Stephanie Warga RDCS, RVT

HOSPITAL NAME

Fullerton AH

REFERRING VET

Dr. Unger

INVOICE

43133

PRESENTING CLINICAL SIGNS

Intermittent GI issues- vomiting and diarrhea. Periodic hind leg weakness. Difficulty getting pet to lose weight. O was told by a previous vet that she had a small kidney. Exam shows BCS 9/9 with moderate tartar and no other abnormalities.

Current Medications: Proviable capsules.
Lab Results: Alp- 1111 (5-131), ALT- 131 (12-118). UA 2+protein with specific gravity of 1.052, a few WBC and cocci. LDDST- normal
Radiographs: fairly unremarkable except stomach appears displaced more to the left on V/D
Date of Previous IntraPet Ultrasound: No previous.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Not requested.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is mildly distended with echogenic urine. The Bladder wall appears diffusely irregular and thickened with maximal thickness occurring in the more apical and dependent regions, measuring up to approximately 0.74 cm. There is a large amount of dependent shadowing debris, most consistent with sandy debris/small stones. This debris appears to extend from the dependent portion of urinary bladder into the proximal urethra. Additionally, in some views, there is a focal mass effect in the apical view, which could be consistent with a polyp or bladder mass. Recommend urinalysis and culture.

The left kidney has a normal shape and size (4.06 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (3.4 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal in size measuring 0.54 cm at the caudal pole. It is observed in its normal position cranial to the left renal artery. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

The right adrenal gland is normal in size measuring 0.48 cm at the caudal pole. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

Spleen

The spleen is subjectively normal in size, echotexture is homogenous, and the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. No focal parenchymal abnormalities are visualized.

Liver

The liver is large in size, and normal in echogenicity with smooth peripheral margins. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. No focal nodules or cystic lesions are observed.

The gall bladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. There is a mild amount of non-organized echogenic debris. The cystic and common bile ducts are normal/not visible.

Gastrointestinal

The stomach is mildly distended with ingesta and gas. It measures at a normal thickness of <0.7cm with some variability due to the presence of rugal folds. The distinction of the gastric wall layers is adequate and there is no impression of reduced peristaltic activity. No masses or focal lesions were observed.

The visualized areas of duodenum, jejunum and ileum have a relatively uniform diameter with minimal fluid distension. Wall thickness is normal. Bowel loops follow a curvilinear path with distinct wall layering maintaining the typical 1:3 muscularis:mucosa layer ratio. The duodenum measured as normal (between 0.3-0.5cm in wall thickness) and the jejunum measured as normal (between 0.2-0.47cm.) Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

The ileocecal junction was visualized and exhibited normal intact wall layering and is subjectively of normal thickness. Sections of colon are visualized with formed fecal material and gas shadowing distally. There is no observed focal or generalized colon wall thickening or loss of layering.

Pancreas

The pancreas is normal and isoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

Free Abdomen

Evaluation of the peritoneal cavity did not reveal any evidence of effusion, or subjective lymphadenomegaly. The Medial iliac nodes appear normal and there was no evidence of a caudal aortic thrombus at the bifurcation. The omentum is of normal uniform echogenicity.

PRIMARY FINDINGS

- Irregular thickened urinary bladder wall – Findings are most consistent with diffuse cystitis and dependent sandy debris/small stones, but underlying neoplasia cannot be ruled out.

- Large, heterogeneous liver – The diffuse hepatic changes are non-specific and could be consistent with vacuolar hepatopathy, nodular hyperplasia, inflammatory/immune-mediated disease, fibrosis, extramedullary hematopoiesis, toxic hepatopathy (e.g., copper), infiltrative neoplasia (less likely) or other hepatopathy.

SECONDARY FINDINGS

- Mild gallbladder debris – The significance of the aggregated gallbladder debris is unclear. This could represent an early mucocele, cholestasis, or may be secondary to fasting but seems unlikely to be causing a current issue. Recommend continued monitoring.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The urinary bladder appears significantly thickened and irregular with a large amount of dependent sandy mineralized debris/small stones. These findings are most consistent with severe cystitis. Recommend a urinalysis and culture (when off antibiotics for 3-5 days) and treatment of the infection. I recommend reevaluation of the urinary bladder while on antibiotics to ensure that the lesions observed are resolving, as underlying neoplasia cannot be ruled out as a possibility. If no infection is present, a traumatic catheterization should be performed.

An obvious cause for the vomiting and diarrhea reported is not observed, although there are many causes for vomiting and diarrhea that cannot be diagnosed by ultrasound alone.

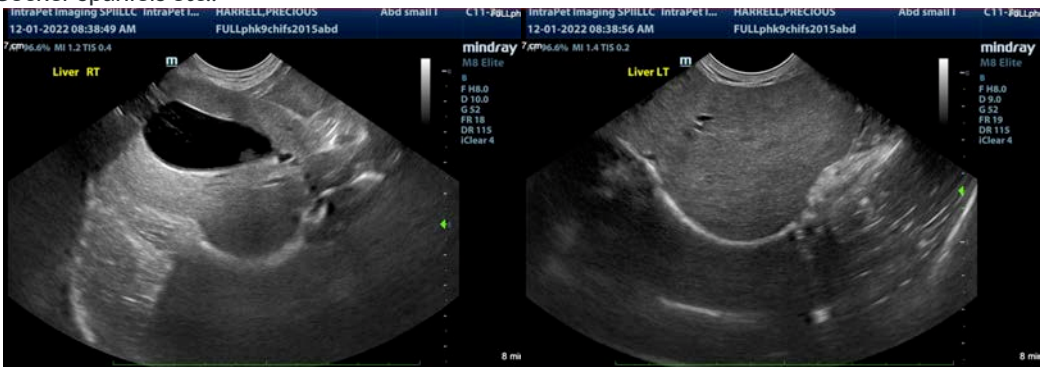
Consider such differentials as food allergy/dietary intolerance, GI parasitism, pancreatitis, dysbiosis, recurrent dietary indiscretion, IBD and less likely neoplasia, etc.…

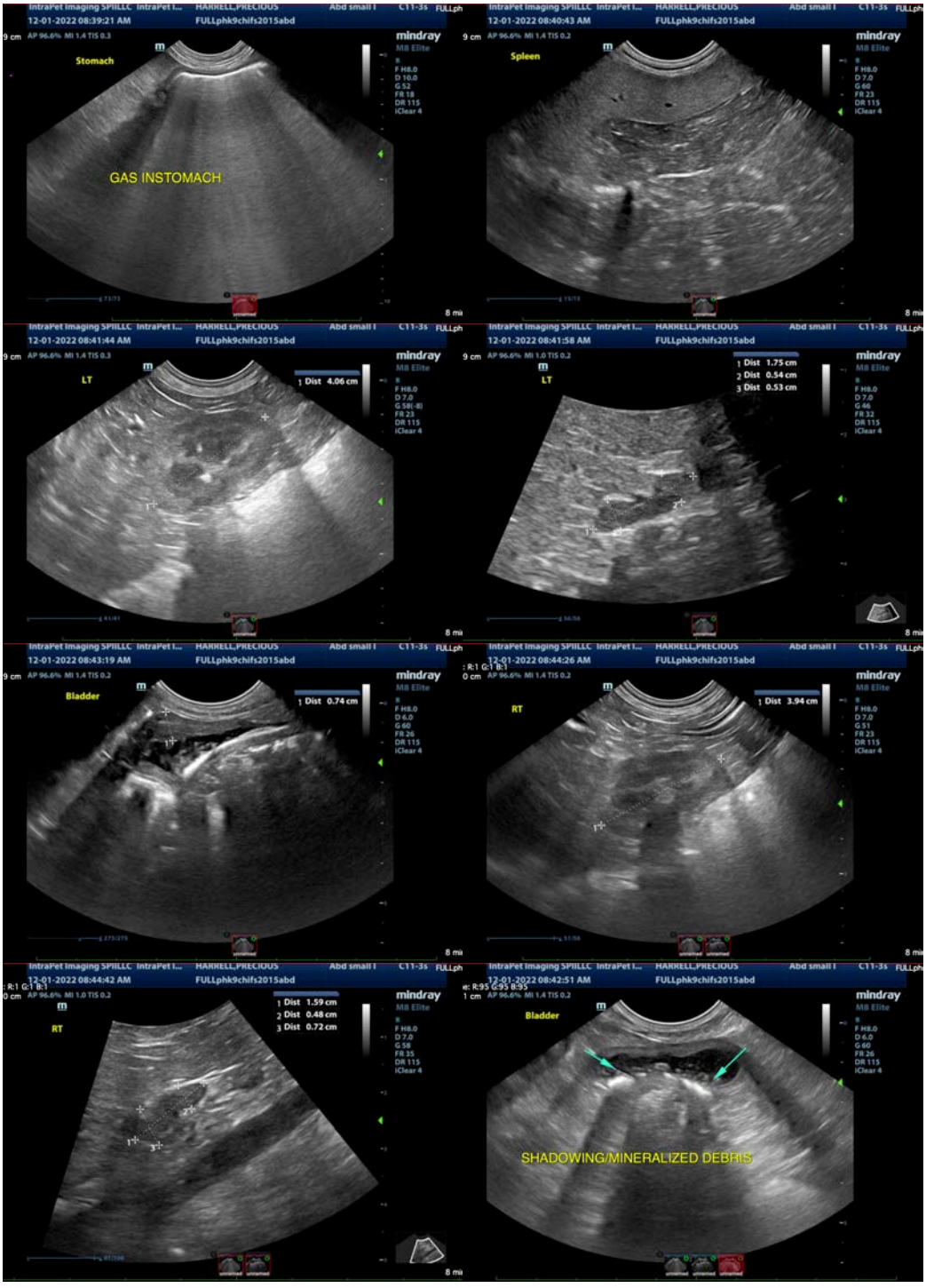
- Consider a novel protein/hydrolyzed protein diet (exclusively at least 4-6 weeks)
- Consider a GI panel to Texas A&M for evaluation of B12 levels, folate, PLI/TLI etc.. to further evaluate for pancreatic/small intestinal disease.
- Recommend chronic probiotic therapy.
- If symptoms persist, consider obtaining GI biopsies.

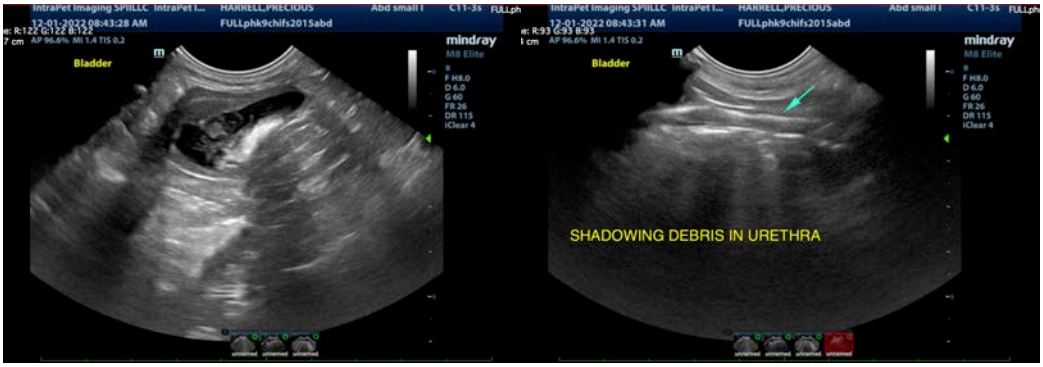
If this patient is frequently on systemic antibiotics, probiotics should always be used in conjunction, and potentially all the time.

The liver is slightly heterogeneous and hyperechoic. No focal lesions are visualized, and there is no evidence of biliary tract disease. These are my recommendations for further evaluation of a primary ALP elevation.

- Induction phenomena are the most common cause for an elevation in ALP. These are systemic illnesses that 'turn on' the liver enzyme. Causes of this include Cushing's disease, dental disease, arthritis, and numerous others. In many cases the exact cause is unclear but as long as ultrasound and bile acids tests are normal most patients do not have progressive changes in their liver. While liver biopsy is not routinely performed, vacuolar hepatopathy, is noted on most biopsies. This is often non-progressive but in rare cases can be more severe and lead to liver failure.
- If signs of cushings disease are present recommend endocrine function testing to evaluate for cushings disease.
- Consider fine needle aspirate to rule out round cell neoplasia -if this is a concern.
- If a cause for the ALP elevation is not identified: I recommend recheck general blood work every 6 months, ultrasound once per year, and bile acids test every 1-2 years based on other results. If the ALP continues to climb a biopsy could be considered.
- Consider long term use of denamarin, and monitoring for the signs of cushings developing.
- A primary vacuolar hepatopathy can be breed related and is seen in Scottish Terriers, Schnauzers, Cocker spaniels etc..




Stomach
GAS INSTOMACH
Spleen
LT
1 Dist 4.06 cm
LT
1 Dist 1.75 cm
2 Dist 0.54 cm
3 Dist 0.53 cm
Bladder
1 Dist 0.74 cm
RT
1 Dist 3.94 cm
RT
1 Dist 1.59 cm
2 Dist 0.48 cm
3 Dist 0.72 cm
Bladder
SHADOWING/MINERALIZED DEBRIS



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.

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