

PATIENT PRESENTING CLINICAL SIGNS

Honeybee Rosen
History: protein-losing enteropathy. Currently receives budesonide every other day and a hypoallergenic diet as well as Cobalaquin and Tylosin. Has a history of persistent urinary tract infections, so gets amoxicillin once-a-day at night before bed. Most-recent culture was negative after a long string of positive cultures. Has had mild proteinuria in the past. Was also on Incurin in the past. Has had a mild ALP elevation. Now ALP is 255. ALT 192. Creatinine is now 2.5. BUN 52. Previous history of mild stomach wall thickening and chronic renal changes on ultrasound.

SPECIES

Canine

BREED

Mixed

SEX

Female Spayed

AGE

12 years

WEIGHT

35 lb

INTERPRETED BY

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

IMAGING PERFORMED BY

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

HOSPITAL NAME

West Ashley

REFERRING VET

Dr. Badger

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6.15.23

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder wall is normal in thickness and the mucosal surface in the region of the apex is mildly irregular. The bladder is moderately distended. A small amount of suspended echogenic debris is observed within the lumen. No cystic calculi are observed. The region of the trigone and the proximal urethra, visible to a depth of 2 cm, are normal.

The left kidney is normal in size (5.57 cm in length) with a relatively normal shape. The cortex is isoechoic relative to the spleen and mildly thickened with several cortical cyst as well as pinpoint focus of mineralization. There is moderate loss of corticomedullary distinction. Hyperechoic shadowing diverticular foci are visualized. There is no evidence of pyelectasia, infarcts or hydroureter. Renal vasculature is normal.

The right kidney is normal in size (5.37 cm in length) with a slightly irregular shape. The cortex is isoechoic relative to the spleen and mildly thickened with several cortical cyst as well as pinpoint focus of mineralization. There is moderate loss of corticomedullary distinction. Hyperechoic shadowing diverticular foci are visualized. There is no evidence of pyelectasia, or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal in size (0.55 cm at cranial pole) (0.51 cm at caudal pole) with a normal shape and 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 in normal size (0.60 cm at cranial pole) (0.53 cm at caudal pole) with a normal shape and 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 normal in size normal curvilinear peripheral contours. One-to-two small, ill-defined hypoechoic nodules/areas are visualized. Pinpoint focus of mineralization are observed throughout the organ. The remaining parenchyma is homogenous. Splenic vasculature is normal with no evidence of thrombosis.

Liver

The liver is subjectively enlarged with swollen peripheral contours. The parenchyma homogenous with a coarse echotexture and is isoechoic relative to the spleen. Numerous biliary tracts have mineralization along the walls. Hepatic vasculature is of normal volume with no evidence of congestion. The portal vein to caudal vena cava ratio is approximately 1: 1.

The gall bladder lumen is moderately distended. The wall is thin and smooth. A moderate to large amount of aggregated, echogenic, partially dependent to suspended sludge in a partially stellate pattern is observed within the lumen. The cystic and common bile ducts are normal.



PATIENT *Gastrointestinal*

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The gastric lumen is mildly fluid-distended. The gastric wall is diffusely thickened (up to 0.65 cm) with apparent retention of the normal layering pattern. The pyloric outflow tract is patent. The small intestinal lumen is not dilated. The small intestinal wall is normal to mildly thickened with retention of normal layering. There is evidence of mucosal striations in some segments. The ileum is diffusely thickened (up to 0.47 cm) with a prominent muscularis layer. The ileocecolic junction and colonic wall are normal. The colonic lumen contains shadowing fecal material. There is no evidence of an obstructive pattern.

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Pancreas

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The right limb is prominent in size with slightly irregular peripheral contours. The parenchyma is mildly hypoechoic relative to surrounding omental fat. No focal lesions are observed. The pancreatic duct is not overtly dilated.

Free Abdomen

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Trace free fluid is observed. The abdominal lymph nodes are normal/not visible.

Other

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

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ULTRASONOGRAPHIC FINDINGS

Primary Findings

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- The gallbladder changes are consistent with an emerging mucocele.
- The hepatic parenchymal changes are nonspecific and could be consistent with vacuolar hepatopathy (i.e., idiopathic/endocrine), inflammatory disease (i.e., chronic hepatitis, bacterial cholangiohepatitis), hepatotoxicity (i.e., copper), infiltrative neoplasia (unlikely), other hepatopathy. Intrahepatic biliary tract mineralization – incidental.
- Bilateral chronic nephropathy with nonobstructive nephrocalcinosis and cortical cysts.
- The bowel changes are consistent with the previous diagnosis of a protein-losing enteropathy. The thickened stomach and ileum could be consistent with an inflammatory process. However, emerging neoplasia cannot be completely excluded. The stomach was previously reported as mildly thickened.

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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.
- Trace ascites (the cause of which is unclear)
- The hypoechoic splenic nodules trend toward the benign (i.e., foci of lymphoid hyperplasia or similar) with a low possibility of emerging neoplasia. Dystrophic mineralization of the spleen is present. This is likely a benign incidental finding that can occasionally be seen with endocrinopathies.

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

- Given the recent azotemia and increase in liver enzymes, consider Leptospirosis testing (i.e., blood and urine PCR, serology).



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- Also consider initiation of Ursodiol therapy for the emerging gallbladder mucocele. If Ursodiol therapy is not initiated at this time, consider a recheck ultrasound in 4-6 weeks, preferably 2 hours post-small meal. If changes are similar to today's scan, Ursodiol can be initiated at that time.

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- Serial monitoring (i.e., every 2-3 months) of the patient's liver values is recommended to assess for progression. If values increase, further workup (i.e., repeat abdominal imaging, serum bile acids, hepatic tissue sampling) may be warranted.

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- Regarding the azotemia, consider the following:
 1. UPC
 2. Baseline blood pressure measurement
 3. Serial monitoring of the patient's renal values to assess for progressive azotemia.

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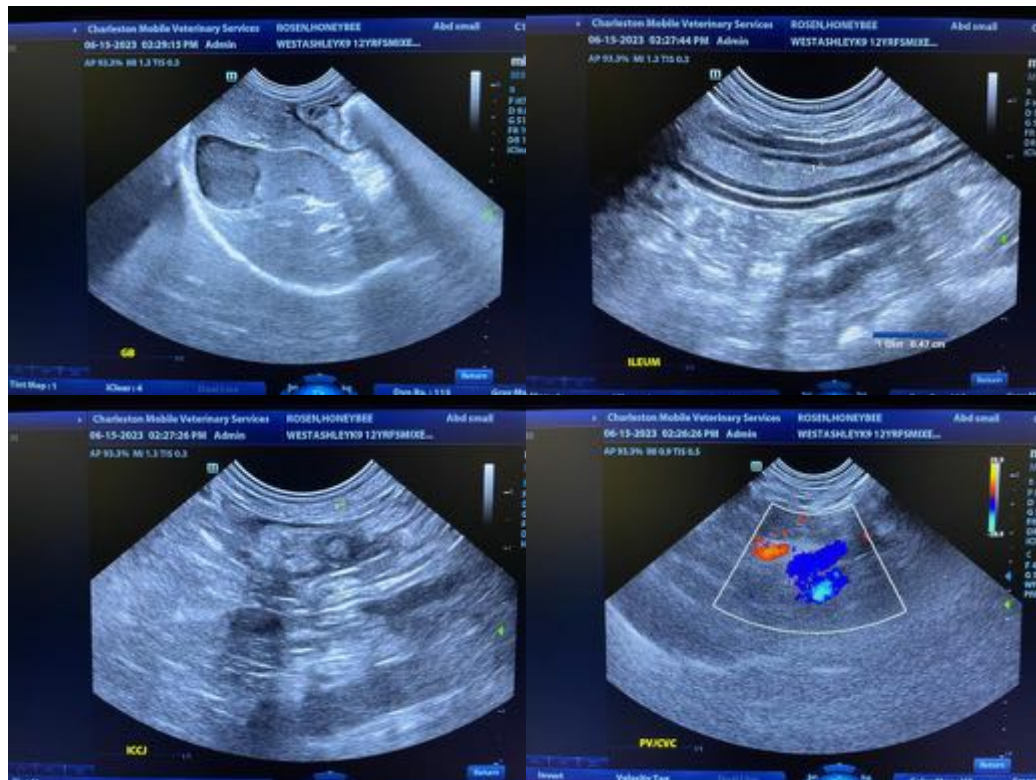
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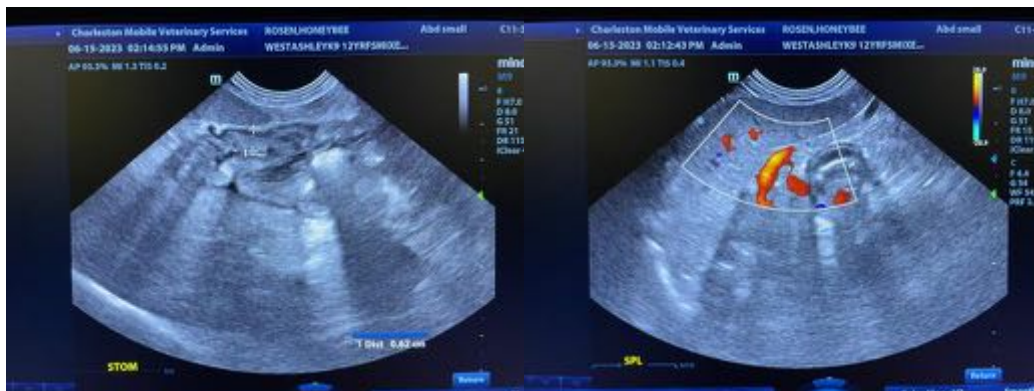
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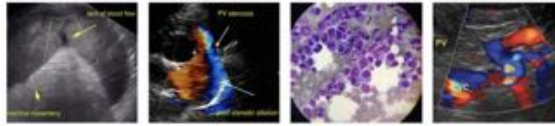
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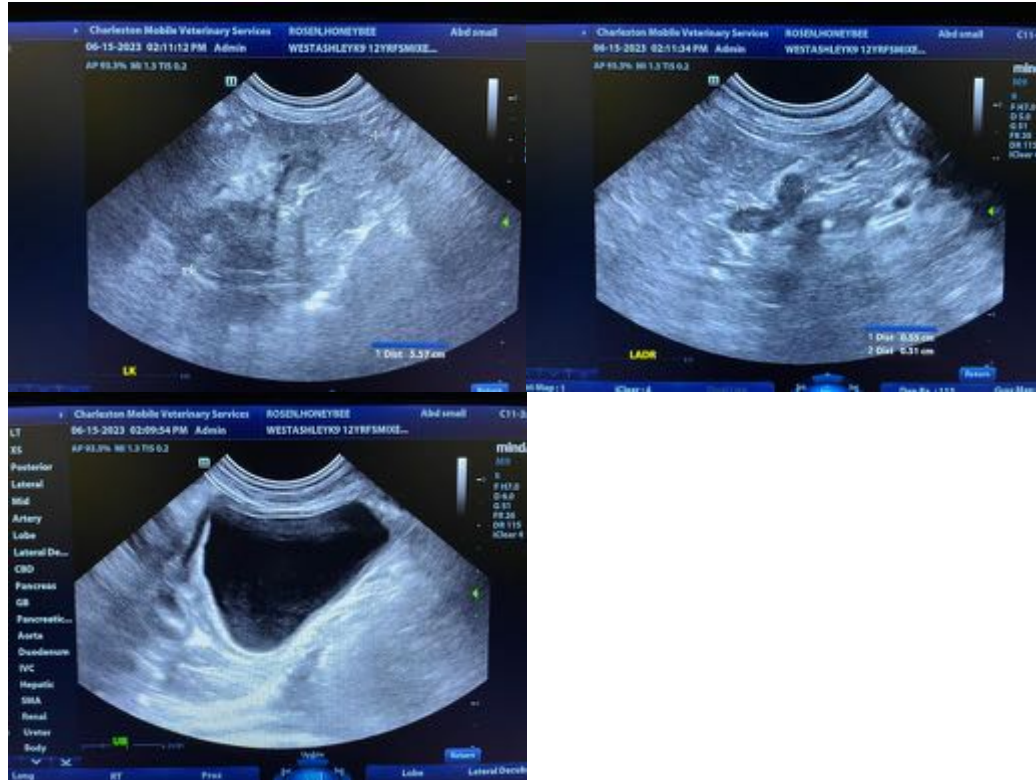
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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