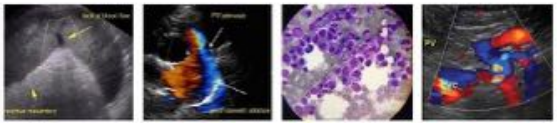


PATIENT

Lucy Granger

SPECIES

Canine

BREED

Shih Tzu

SEX

Female, spayed

AGE

13 Yrs.

WEIGHT

9 lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Kelly Reschny

HOSPITAL NAME

Dog and Cat Clinic of Niagara

REFERRING VET

Dr. Aziz

DATE

8/21/23

PRESENTING CLINICAL SIGNS

History: elevated liver values despite meds Meds: ursodiol 75mg, hydrocodon 2.5mg. Thrombocytosis. ALT 647, slightly elevated BUN and total bilirubin.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder and visible portion of the pelvic urethra are normal for the degree of luminal distension. The urine is anechoic with no evidence of debris. Cystic calculi and discrete masses are not observed. The region of the trigone is normal.

The left kidney is normal size (3.83 cm in length) with a normal shape and smooth peripheral contours. The cortex is isoechoic relative to the spleen and diffusely thickened. 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 size (3.78 cm in length); normal shape and architecture with smooth peripheral margins. The cortex is isoechoic relative to the spleen and mildly thickened and there is mild to moderate loss of corticomedullary distinction. Several small non-obstructive foci of mineralization are visualized. There is no evidence of pyelectasia, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal size (0.44 cm at cranial pole) (0.49 cm at caudal pole) (1.15 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 (1.55 cm at cranial pole) (0.50 cm at caudal pole) (2.05 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

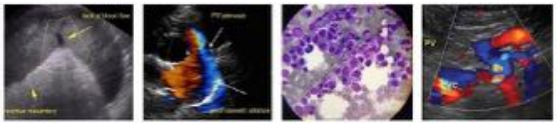
The spleen is normal in size (0.90 cm in width at the level of the hilus) with a normal capsular contour. There is appropriate echogenicity and echotexture. A few small meylolipomas are observed in the region of the hilus. Splenic vasculature is normal.

Liver

The liver is subjectively normal in size with normal curvilinear peripheral contours. The parenchyma is hyperechoic relative to the spleen and diffusely homogeneous in appearance. No distinct focal lesions are observed. Vascular and biliary tracts are of normal volume with no evidence of congestion. The gallbladder is of normal contours and contains some dependent echogenic debris. The wall is normal in thickness. No choleliths are observed. The cystic and common bile ducts are normal.

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



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thickness is normal with a normal layering pattern and appropriate mural detail. Discreet masses are not identified. The colonic wall is normal. No obstructive disease is noted.

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.

ULTRASONOGRAPHIC FINDINGS

Primary Findings:

- An obvious cause for the elevated liver enzymes is not identified in the study. However, a microscopic hepatopathy (i.e., bacterial cholangiohepatitis, Leptospirosis, chronic active hepatitis, copper-associated hepatotoxicity, infiltrative neoplasia (less likely)) is suspected.
- Gallbladder debris, non-mucocele.

Secondary Findings:

- The bilateral renal changes are most consistent with chronic interstitial nephrosis/nephritis with subtle dystrophic mineralization.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

- Consider pre and post prandial serum bile acids to assess hepatic function.
- Leptospirosis testing (i.e., blood and urine PCR, serology) can be considered if clinical suspicion for disease is high. However, if the liver enzyme elevations are chronic in nature, this differential is considered less likely.
- Cytologic evaluation of the liver should be considered in this patient if clotting status is appropriate. A fine needle aspirate using a 25-gauge needle is recommended. If cytologic evaluation is inconclusive, consider a surgical liver biopsy with aerobic and anaerobic bile cultures and acquisition of additional hepatic tissue samples for copper quantitation.
- If a more conservative approach is desired, consider empirical treatment for cholangiohepatitis with amoxicillin-clavulanic acid along with hepatic antioxidants. If liver values do not begin to improve within 7-10 days of initiating therapy, antibiotics should be discontinued and hepatic tissue sampling reconsidered. If values do improve, a 4–6-week course of treatment is recommended.
- Given the renal changes, a urinalysis +/- culture and sensitivity is also recommended.

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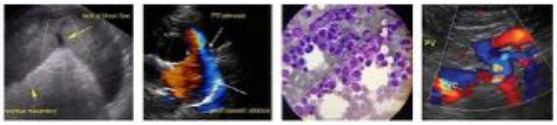

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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

DATE

8/21/23