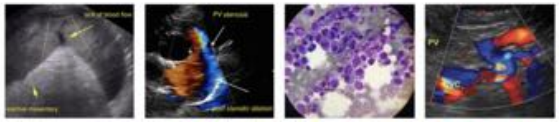


PATIENT

Gizmo Hazera

SPECIES

Canine

BREED

Shih Tzu

SEX

Neutered Male

AGE

12.4.2011

WEIGHT

15.60 lbs

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

Flowertown AH

REFERRING VET

Dr. Randinelli

INVOICE

11310

DATE

8.3.2022

PRESENTING CLINICAL SIGNS

Abnormal lab-work values: ALT- 339, AST 58
Current Medications: Denamarin 1 T, Dasuquin 1 chew EOD, HG, NG

7/4/2022, ALT 204.
7/16/2022 ALT 339.
The dog is otherwise asymptomatic.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The **urinary bladder** is moderately distended. The wall is normal in thickness. A few, small cystic calculi are observed. The remaining luminal contents are mostly anechoic. The cystourethral junction and the proximal urethra, visible to a depth of 2 cm, are normal.

The **prostate** is normal in size (0.64 cm in width) and shape. Parenchyma is homogenous. The prostatic urethra appears normal without evidence of dilation or obstruction.

The **left kidney** is normal in size (4.03 cm in length) with a normal shape, smooth peripheral margins, and normal internal architecture. There is moderate loss of corticomedullary distinction. Several hyperechoic shadowing diverticular foci are observed. Pinpoint hyperechoic foci are observed in the cortex. There is no evidence of pyelectasia, infarcts or hydronephrosis. Renal vasculature is normal.

The **right kidney** is normal size (4.50 cm in length); with a normal shape, smooth peripheral margins, and normal internal architecture. There is moderate loss of corticomedullary distinction. Several hyperechoic shadowing diverticular foci are observed. Pinpoint hyperechoic foci are observed in the cortex. There is no evidence of pyelectasia, infarcts or hydronephrosis. Renal vasculature is normal.

Adrenal Glands

The **left adrenal gland** is normal size (0.40 cm at cranial pole) (0.49 cm at caudal pole) (1.68 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 enlarged at the cranial pole and normal in size at the caudal pole (1.34 cm at cranial pole) (0.40 cm at caudal pole) (2.08 cm in length); with an irregular shape. At the cranial aspect, a 1.41 x 1.08 cm hyperechoic to slightly heterogenous nodule is visualized. Glandular echogenicity and detail in the caudal pole are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

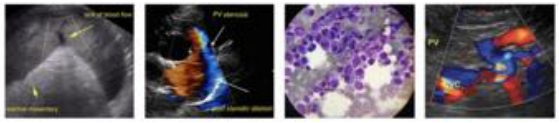
Spleen

The **spleen** is normal in size (1.22 cm in width at the level of the hilus) with a normal capsular contour. There is appropriate echogenicity and echotexture. No focal lesions are observed. Splenic vasculature is normal.

Liver

The **liver** is subjectively normal in size with normal contours and structure. There is appropriate echogenicity and echotexture. No overt structural evidence of inflammatory, infiltrative, or regenerative pathology is evident. Vascular and biliary tracts are of normal volume with no evidence of congestion. No pathological hepatic lymphadenopathy observed. 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. Luminal contents are anechoic. The cystic and common bile ducts are normal/not seen.



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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 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 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

- 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, reactive hepatopathy, infiltrative neoplasia (less likely)) cannot be excluded.
- Cystic calculi

Secondary Findings

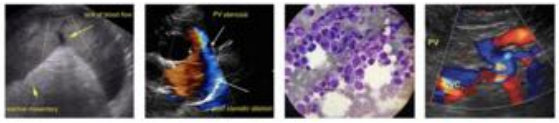
- The right adrenal nodule could be consistent with a benign process (i.e., nodular hyperplasia). Alternatively, an emerging tumor (i.e., adenoma, adenocarcinoma, pheochromocytoma) cannot be completely excluded.
- Bilateral, chronic age-related renal changes with dystrophic mineralization

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

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

Also consider pre-and postprandial serum bile acids to assess hepatic function.

Ultimately, hepatic tissue sampling (i.e., fine-needle aspirate or surgical biopsy) would be necessary to get a definitive diagnosis. Surgical biopsies are preferred in that they are more likely to be representative of global organ pathology. Hepatic cytology is useful in diagnosing round cell neoplasia and vacuolar hepatopathy but is less beneficial in assessing for other hepatopathies. If surgery is pursued, aerobic and anaerobic bile cultures are recommended along with acquisition of additional hepatic tissue samples for potential copper quantitation.



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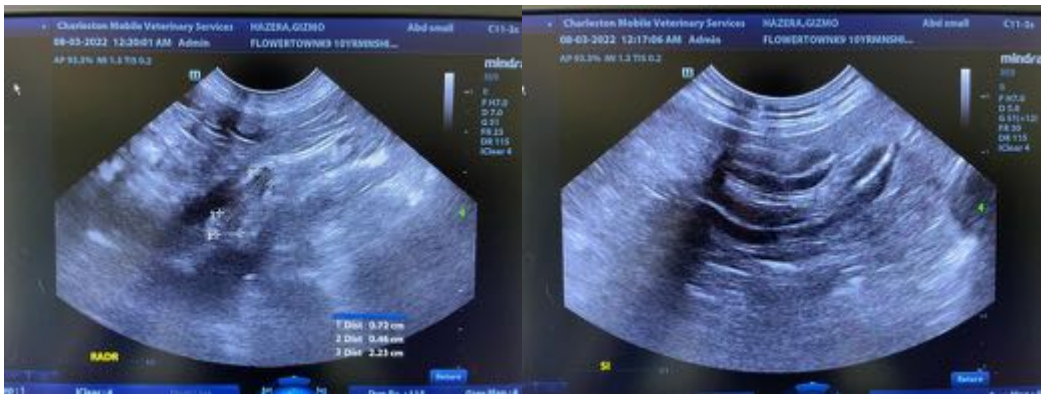
If a conservative approach is desired, consider empirical treatment for bacterial cholangiohepatitis (amoxicillin-clavulanic acid, +/-metronidazole, Denamarin). If no improvement in the liver values is seen within 7-10 days of initiating therapy, antibiotics should be discontinued, and hepatic tissue sampling reconsidered. If liver values improve, continue therapy for at least 4-6 weeks and 1 week beyond normalization of the liver values.

Regarding the right adrenal nodule, if an aggressive approach is desired, consider the following:

1. Baseline blood pressure measurement
2. Three-view thoracic radiographs are recommended to assess for pulmonary metastatic disease
3. Further testing (i.e., low-dose dexamethasone suppression test, urine/blood catecholamine levels) to evaluate for a functional adrenal tumor
4. If a more conservative approach is desired, consider a recheck ultrasound in 6-8 weeks to assess for progression.

Regarding the cystic calculi, consider a cystotomy with stone removal analysis and culture. Alternatively, an attempt at medical dissolution can be considered. However, if there is no improvement in stone size within 4 weeks of initiating therapy, a cystotomy should be reconsidered.



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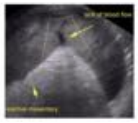
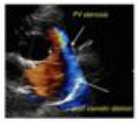
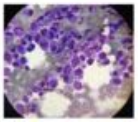
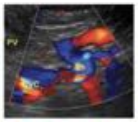

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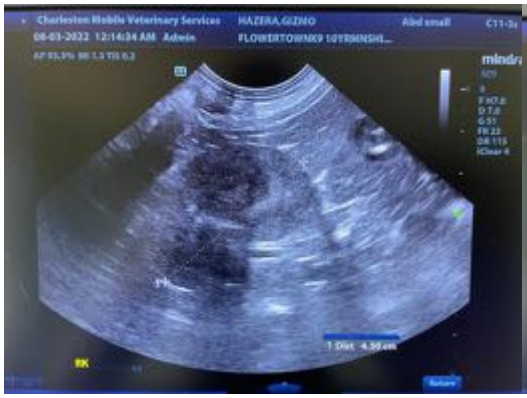

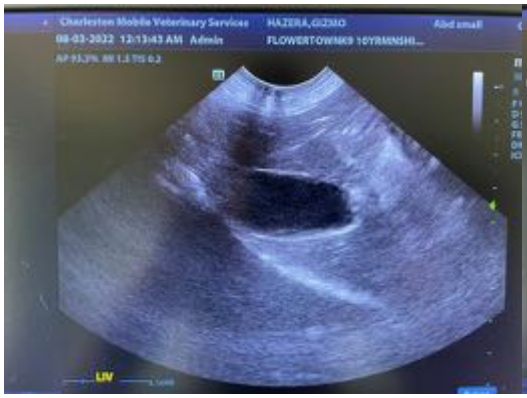

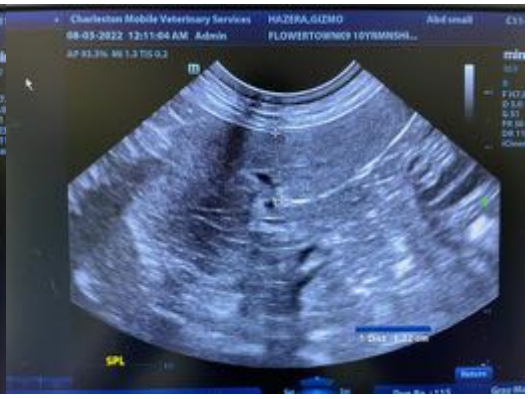

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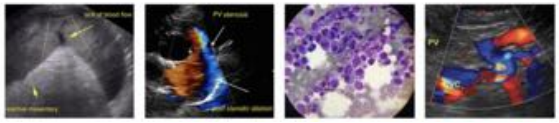

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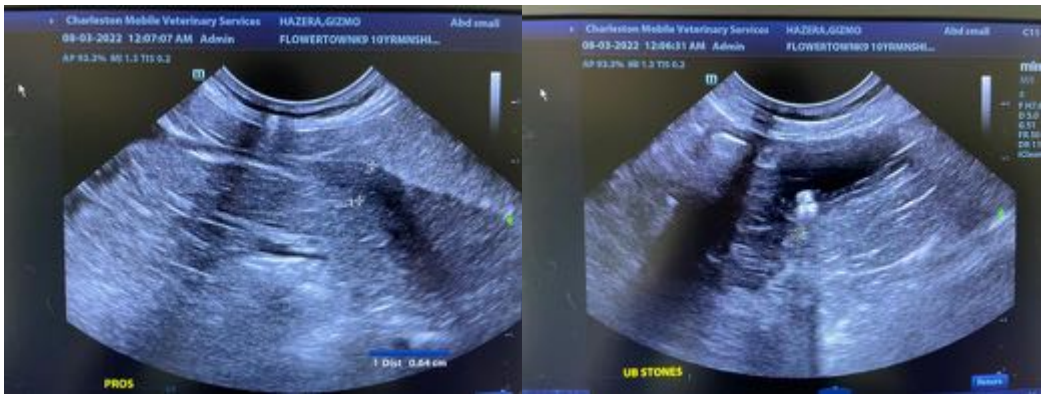

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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