



PATIENT PRESENTING CLINICAL SIGNS

Akamaru Lausi Elevated ALT on 3/7: 1046 U/L on 3/9: 826 U/L

SPECIES

Canine

BREED

Mixed Breed

SEX

Male, intact

AGE

12/21/2020

WEIGHT

34 lbs.

INTERPRETED BY

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

**IMAGING
PERFORMED BY**

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ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder, trigone, and pelvic urethra are normal in thickness and the mucosal surface is smooth. The bladder lumen is moderately distended. A small amount of suspended echogenic debris is observed within the lumen. No masses, inflammatory changes or calculi are observed. Ureteral papillae and visualized portion of the proximal urethra, visible to a depth of 2 cm, are normal.

The prostate is enlarged (2.46 cm in width) with a normal shape and smooth peripheral contours. The parenchyma is hyperechoic relative to surrounding omental fat and subtly heterogeneous in appearance. The prostatic urethra is not overtly dilated.

The left kidney is normal size (6.55 cm in length); normal shape and architecture with smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with normal corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydronephrosis. Renal vasculature is normal.

The right kidney is normal size (6.58 cm in length); normal shape and architecture with smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with normal corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydronephrosis. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal size (0.31 cm at cranial pole) (0.36 cm at caudal pole) (0.69 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 (0.55 cm at cranial pole) (0.46 cm at caudal pole) (2.42 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 (1.71 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 hilus could not be evaluated due to ingesta within the stomach. The gall bladder lumen is moderately distended. The wall



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is thin and smooth. Luminal contents are anechoic. The cystic and common bile ducts are normal/not seen.

Gastrointestinal

The stomach and intestine are free of stasis and exhibit normal peristaltic activity. The gastric lumen is moderately distended with ingesta. 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. 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

Trace free fluid is observed. A 2.50 cm medial iliac lymph node is visualized.

ULTRASONOGRAPHIC FINDINGS

Primary Findings:

- An obvious cause for the patient's elevated ALT is not identified in the study. Differentials include infection (i.e., Leptospirosis, bacterial cholangiohepatitis), hepatotoxicosis (i.e., sago palm), congenital portosystemic shunt (less likely given the sonographic appearance of the liver and degree of ALT elevation), other hepatopathy.
- The trace ascites may be secondary to increased vascular permeability, low oncotic pressure or increased hydrostatic pressure. Correlation with clinical findings is recommended.

Secondary Findings:

- The prostate changes are consistent with a young intact male.
- Urinary bladder debris. The urinary bladder debris could be consistent with cells, crystals and/or exfoliated material.
- The presence of ingesta in the gastric lumen despite fasting is suggestive of delayed gastric emptying.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

- Pre- and post-prandial serum bile acids are recommended to assess hepatic function.
- Leptospirosis testing (i.e., blood/urine PCR, serology)
- Although a congenital extrahepatic portosystemic shunt is considered unlikely given the degree of ALT elevation and the liver size, if bile acids are elevated, a contrast abdominal CT scan may be beneficial in definitively ruling out a portosystemic shunt (*Note: the patient was fasted for



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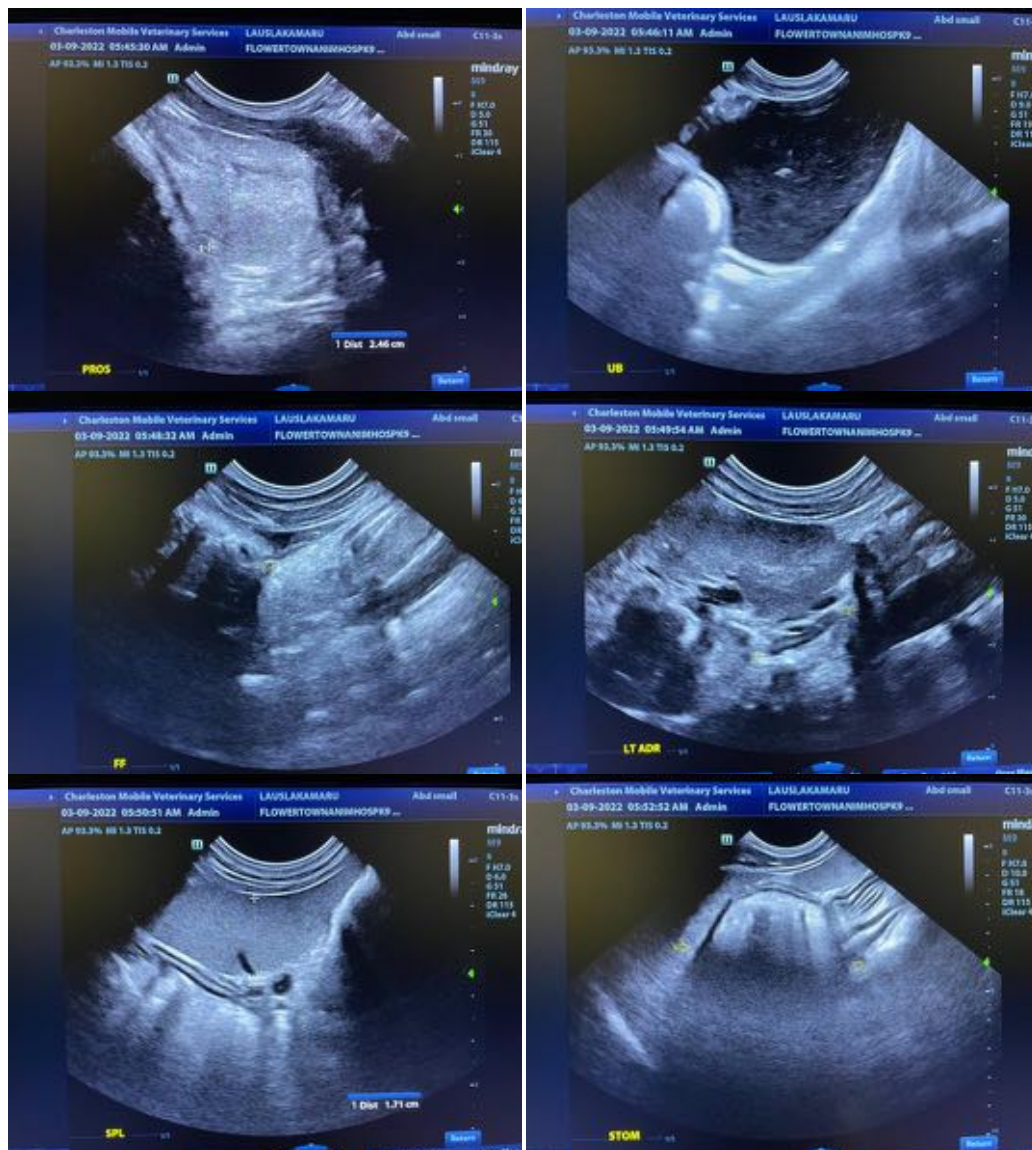
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>16 hours but still had a moderate amount of ingesta still in the stomach, obscuring visualization of the portal hilus).

- Ultimately, a surgical liver biopsy may be necessary to get a definitive diagnosis. If a biopsy is pursued, aerobic and anaerobic bile cultures along with acquisition of additional hepatic tissue samples for potential copper quantitation may be warranted. In the meantime, consider initiation of hepatic antioxidants (i.e., Denamarin Advanced, Vitamin E) and an antibiotic trial (i.e., amoxicillin-clavulanic acid) as empirical treatment for bacterial cholangiohepatitis/Leptospirosis. If no improvement in the ALT is seen within 5-7 days of initiated therapy, the antibiotics should be discontinued and hepatic tissue sampling considered.
- Due to the concern for possible sago palm exposure, liver values and PT/PTT should be closely monitored (i.e., every 24-48 hours). Hospitalization may be warranted if the patient becomes symptomatic.





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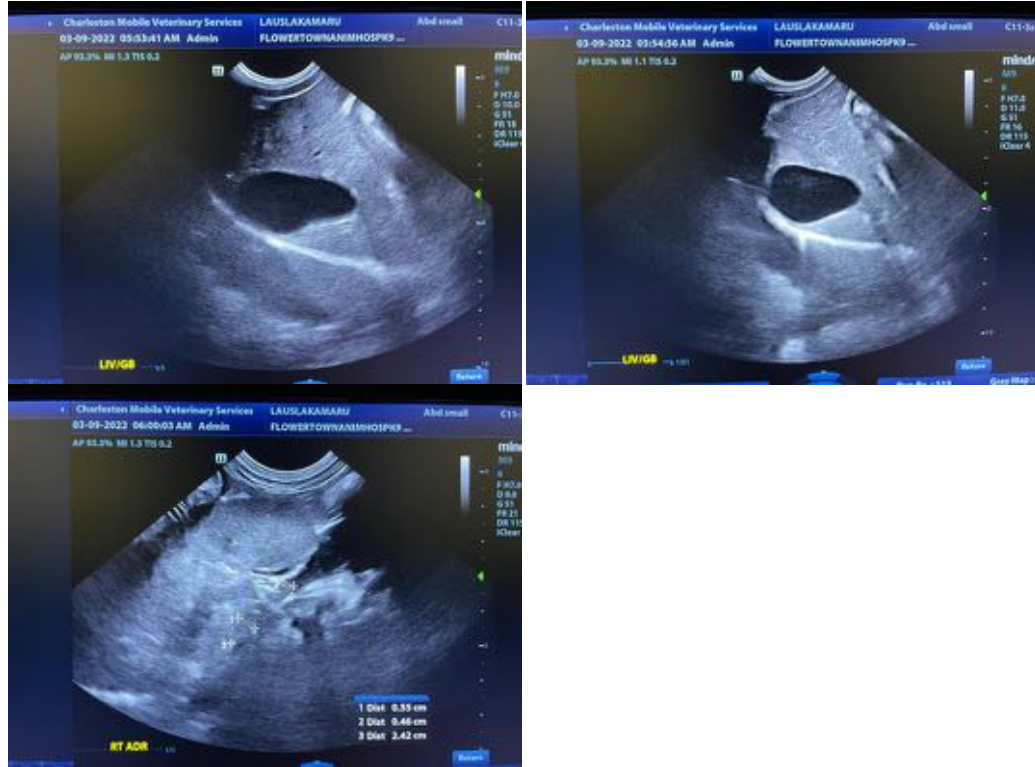
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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