

**DATE**

5/9/22

**PRESENTING CLINICAL SIGNS**

Pet recently presented for exam and owner would like to have dental procedure done (pet with moderate dental calculus. Pre-op blood test results with liver value elevations AST, ALT, ALKP and GGT) and other above normal (BUN, Globulin); suspect liver/bacillary disease.

**PATIENT**

Nickie Kahapea

Current Medications: None listed.

Lab Results: Above normal on ALT, AST, ALKP, GGT, BUN, Globulin, TP, WBC, Necrophilia, monocyte and platelet count. ALP 352, ALT 370, GGT 40, Globulins 4.3, BUN 36.

**SPECIES**

Canine

Date of Previous IntraPet Ultrasound: No previous.

Sedation: Not required to complete full diagnostic ultrasound.

Stat Report: Not requested.

Imaging Performed By: Rachel Brillhart, RDMS.

**BREED**

Pomeranian

**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 with anechoic urine. No masses, inflammatory changes or calculi are observed. The region of the trigone is normal.

**SEX**

Female, spayed

**AGE**

4/29/2012

The left kidney is normal size (2.86 cm in length) with a slightly irregular shape. There is a normal 1:3 cortex to medulla ratio with poor corticomedullary distinction. A hyperechoic medullary band is observed adjacent to the corticomedullary junction. Trace pyelectasia is present. There is no evidence of nephroliths or hydronephrosis. Renal vasculature is normal.

**WEIGHT**

3.4 lbs.

The right kidney is normal size (2.85 cm in length); normal shape and architecture with smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with poor corticomedullary distinction. A hyperechoic medullary band is observed adjacent to the corticomedullary junction. There is no evidence of pyelectasia, nephroliths, infarcts or hydronephrosis. Renal vasculature is normal.

**INTERPRETED BY**

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

**Adrenal Glands**

The left adrenal gland is normal size (0.38 cm at cranial pole) (0.34 cm at caudal pole) (1.44 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.

**HOSPITAL NAME**

Erdman AH

The right adrenal gland is normal size (0.44 cm at cranial pole) (0.47 cm at caudal pole) (1.08 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.

**REFERRING VET**

Dr. Wu

**Spleen**

The spleen is normal in size (0.69 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.

**INVOICE**

13331

**Liver**

The liver is subjectively normal in size with normal curvilinear peripheral contours. The parenchyma is isoechoic relative to the spleen and exhibits mild heterogeneity. No distinct focal lesions are observed. Hepatic vasculature and biliary tracts are of normal volume with no evidence of congestion. The gall bladder lumen is moderately distended. The wall is thin and smooth. A small amount of aggregated echogenic suspended debris is observed within the lumen. 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 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. No obstructive disease is noted.

### ***Pancreas***

The right limb of the pancreas is visible with normal curvilinear peripheral contours. The parenchyma is slightly hyperechoic relative to surrounding omental fat and slightly mottled in appearance. The pancreatic duct is visible but not overtly dilated. There is no evidence of peripancreatic 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:**

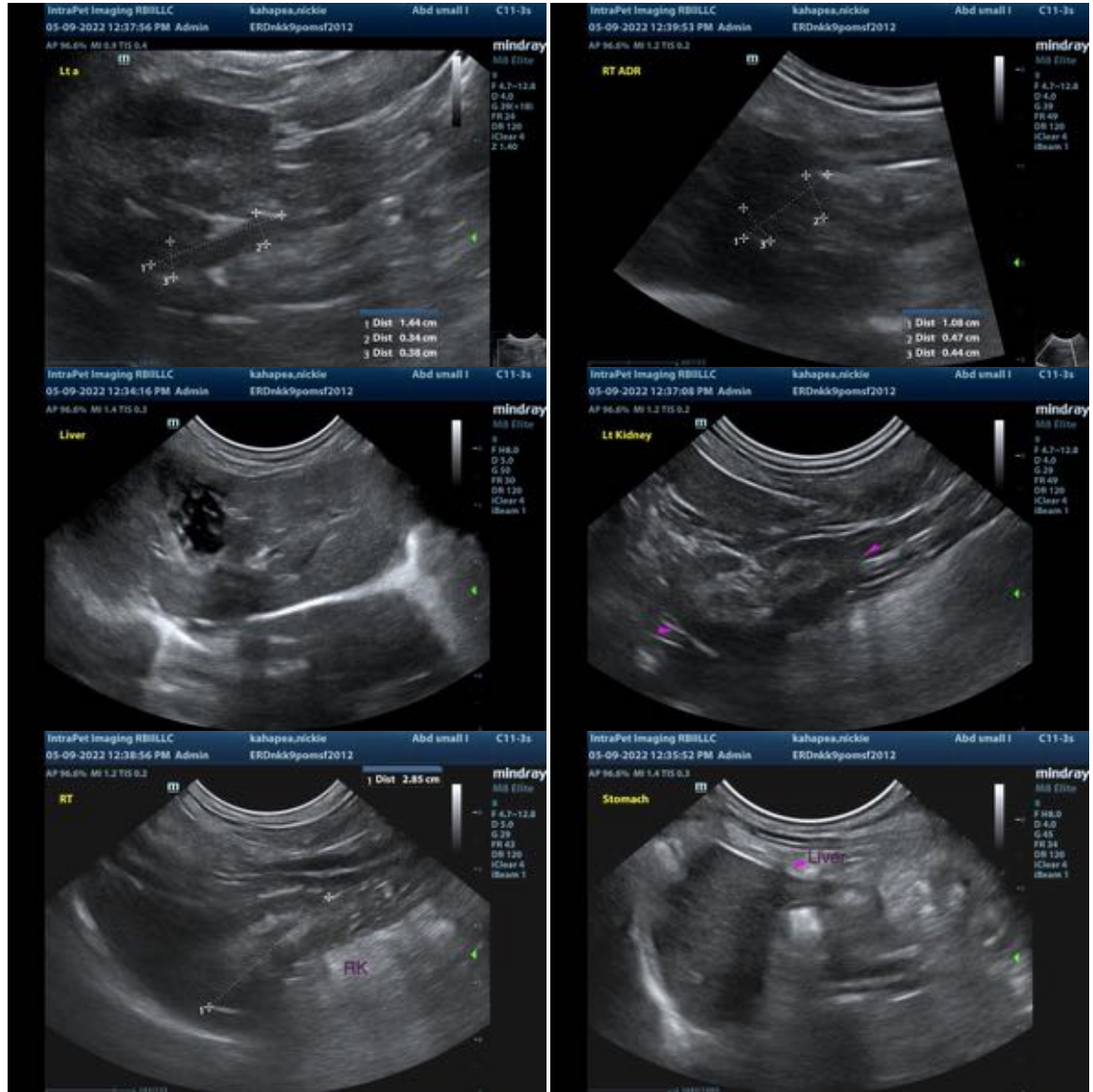
- The hepatic parenchymal changes are non-specific and could be secondary to inflammatory disease (i.e., chronic active hepatitis, bacterial cholangiohepatitis), copper hepatotoxicosis, Leptospirosis, reactive hepatopathy +/- concurrent age-related change (i.e., regenerative nodular hyperplasia and/or vacuolar hepatopathy).

### **Secondary Findings:**

- Age-related pancreatic remodeling +/- fibrosis.
- Low-grade pancreatitis may be present, particularly if the patient exhibits cranial abdominal pain on palpation.
- Bilateral chronic age-related renal changes.

## **INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

- Further hepatic workup could include the following:
  - Pre- and post-prandial serum bile acids
  - Leptospirosis testing (i.e., blood and urine PCR, serology)
  - Hepatic tissue sampling (i.e., fine needle aspirate or biopsies). Surgical biopsies are preferred in that they are more likely to be representative of global organ pathology. If pursued, aerobic and anaerobic bile cultures should also be obtained along with additional hepatic tissue samples for potential copper quantitation. Given the patient's age, thoracic radiographs should be performed prior to anesthesia. If an anesthetic procedure is to be pursued, benzodiazepines should be avoided and opioids should be used judiciously.



The information and recommendations provided are based on the images presented by the referring veterinarian. 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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