

IMAGING PERFORMED BY

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DATE PRESENTING CLINICAL SIGNS

11/11/22 Lab Work had elevated enzymes and Bilirubin.

PATIENT

Kadie Rutherford

Current Medications: Meloxicam 7.5mg 1/2 pill SID as needed
Lab Results: Elevated alkaline phosphatase, globulin, total protein, total bilirubin, and bilirubin in the urine.
Date of Previous IntraPet Ultrasound: No previous.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Not requested.

SPECIES

Canine

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

BREED

Keeshond x

Urinary System

The urinary bladder is moderately distended with anechoic urine. The Bladder wall, trigone, ureteral papillae and visible urethra (to a depth of 2cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or cystic calculi.

SEX

Spayed Female

The left kidney has a normal shape and size (6.48 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

AGE

6/1/11

The right kidney has a normal shape and size (6.59 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

WEIGHT

69.1 Pounds

Adrenal Glands

The left adrenal gland is normal in size measuring 0.60 cm at the caudal pole. It is observed in its normal position cranial to the left renal artery. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

INTERPRETED BY

Kathleen Sennello DVM,
MS, Diplomate ACVIM
(Small Animal Internal
Medicine)

The right adrenal gland is mildly enlarged measuring 0.87 cm at the cranial pole, 0.71 cm at the caudal pole, and 2.89 cm in length. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is slightly irregular in shape, and there is a small pinpoint hyperechoic mineralization visualized measuring 0.30 cm. There is no evidence of vascular invasion visualized.

IMAGING PERFORMED BY

Rachel Brilhart RDMS

Spleen

The spleen is subjectively normal in size, echotexture is homogenous, and the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. No focal parenchymal abnormalities are visualized.

HOSPITAL NAME

Friendly Paws VC

Liver

The liver is subjectively normal in size, and echogenicity with smooth peripheral margins. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. No focal nodules or cystic lesions are observed.

REFERRING VET

Dr. Price

INVOICE

42757

The gallbladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. Luminal contents are mild and primarily anechoic. The cystic and common bile ducts are normal/not visible.

Gastrointestinal

The stomach contains minimal luminal contents. It measures at a normal thickness of <0.7cm with some variability due to the presence of rugal folds. The distinction of the gastric wall layers is adequate and there is no impression of reduced peristaltic activity. No masses or focal lesions were observed.

The visualized areas of duodenum, jejunum and ileum have a relatively uniform diameter with minimal fluid distension. Wall thickness is normal. Bowel loops follow a curvilinear path with distinct wall layering maintaining the typical 1:3 muscularis:mucosa layer ratio. The duodenum measured as normal (between 0.3-0.5cm in wall thickness) and the jejunum measured as normal (between 0.2-0.47cm.) Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

The ileocecal junction was visualized and exhibited normal intact wall layering and is subjectively of normal thickness. Sections of colon are visualized with formed fecal material and gas shadowing distally. There is no observed focal or generalized colon wall thickening or loss of layering.

Pancreas

The pancreas is normal and isoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

Free Abdomen

Evaluation of the peritoneal cavity did not reveal any evidence of effusion, or subjective lymphadenomegaly. The Medial iliac nodes appear normal and there was no evidence of a caudal aortic thrombus at the bifurcation. The omentum is of normal uniform echogenicity.

Other

The uterine stump is slightly prominent, measuring 0.65 cm in diameter with no surrounding inflammation or fluid.

ULTRASONOGRAPHIC FINDINGS

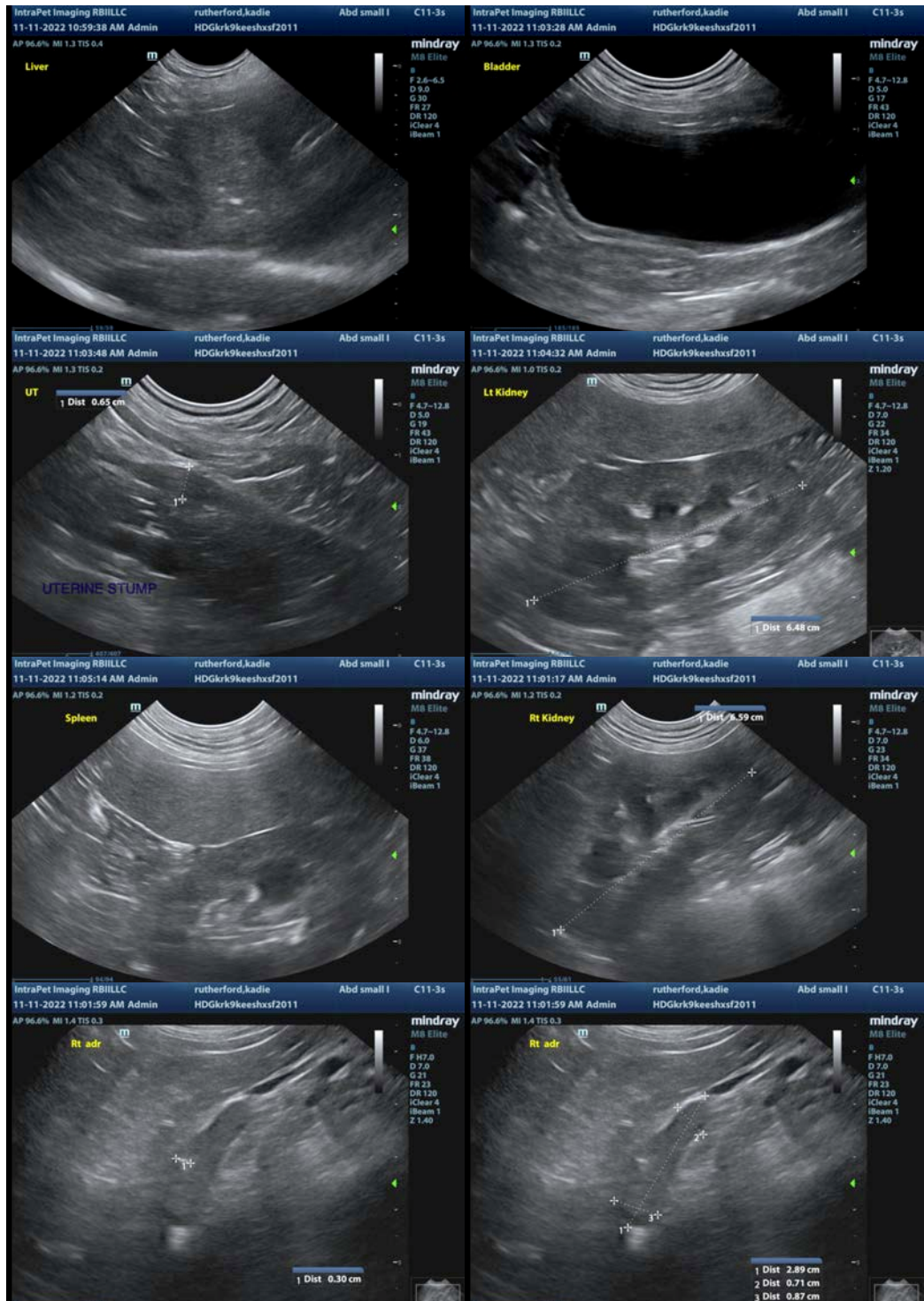
- Heterogeneous liver – The diffuse hepatic changes are non-specific and could be consistent with vacuolar hepatopathy, nodular hyperplasia, inflammatory/immune-mediated disease, fibrosis, extramedullary hematopoiesis, toxic hepatopathy (e.g., copper), infiltrative neoplasia (less likely) or other hepatopathy.
- Slightly irregular right adrenal gland with a hyperechoic foci – The significance of this is currently unclear, but this lesion is relatively mild at this time. Recommend continued monitoring.

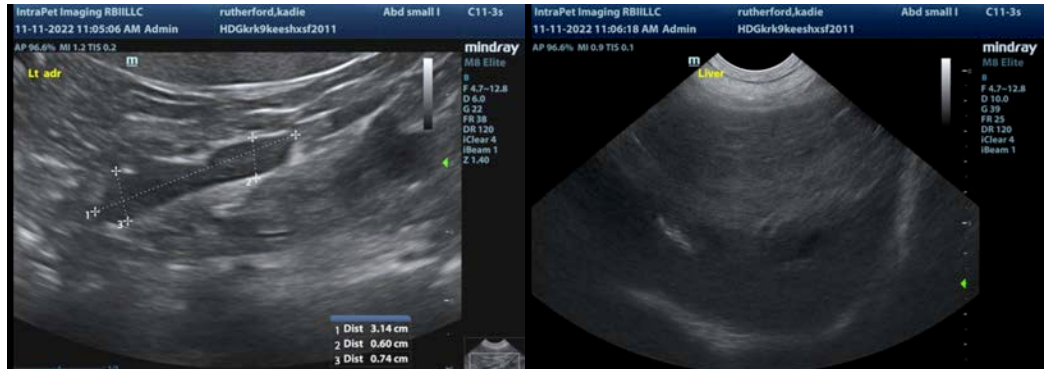
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No focal lesions are visualized associated with the liver to explain the elevation in liver enzymes reported. Additionally, the gallbladder and the bile duct appear relatively normal.

- Consider a liver function test (pre- and post-prandial bile acids)
- Recommend rechecking lab work on a fasted patient with no hemolysis to confirm the mild elevations in liver enzymes
- If liver enzymes persist and/or liver function is abnormal, recommend fine needle aspirate of the liver.
- If this is not helpful, then consider reimaging to look for progression of any lesions and possibly a liver biopsy for histopathology and culture +/- copper levels

Liver enzymes at this time are mildly elevated, and it would be somewhat unusual to see a bilirubin elevation with this mild of liver enzymes, so consider the possibility of an artifact or interference with hemolysis, etc. Additionally, consider starting Denamarin in hopes that this is a transient rise in liver enzymes.





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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