

**DATE PRESENTING CLINICAL SIGNS**

3/9/22

Came in 12/28/21 for second opinion/set up new vet. Seen at another vet and treated for repeated Giardia infections. Checked fecal showed giardia cleared. p has had chronic GI issues with consistently softer stools but o had felt things were stable/p was doing well until recently p had episode of excessive drinking and thirst, that resolved but then a few weeks later p had blow out watery diarrhea which he was seen for on 03/03/22. PE unremarkable, p is at a healthy weight/size and has endless energy. O requested BW and UA - noted extremely elevated ALT when discussed with o she reports previous vet had done BW as well and had discussed a possible shunt but due to higher costs o had elected not to pursue dx at that time. Feeds origin grain free food but has been feeding chicken and rice only since the diarrhea had started. o has noted some improvements in response to Metronidazole.

**PATIENT**

Blaze Kelly

**SPECIES**

Canine

**BREED**

Boxer

**SEX**

Intact Male

**AGE**

6/28/21

**WEIGHT**

64.3 Pounds

**INTERPRETED BY**

Andi Parkinson RDMS

**IMAGING PERFORMED BY**

Andi Parkinson RDMS

**HOSPITAL NAME**

Northwind AH

**REFERRING VET**

Dr. Repsher

**INVOICE**

36024

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN****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.

The prostate is large in size (1.07 cm) but has a regular shape with smooth external margins. The parenchyma is heterogenous but no discrete focal lesions are present. The prostatic urethra appears normal with no evidence of irregularity, invasion, mass effect or calculi.

The left kidney has a normal shape and size (6.69 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (6.97 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

**Adrenal Glands**

The left adrenal gland is normal to borderline flat, measuring XXcm 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.

The right adrenal gland is normal in size measuring 0.46 cm at the caudal pole. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

**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.

### **Liver**

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

The gallbladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. Luminal contents are 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. There are prominent mesenteric lymph nodes measuring 0.80 cm and 0.78 cm. The omentum is of normal echogenicity.

### **Other**

Both testicles are imaged and appear within normal limits.

## **ULTRASONOGRAPHIC FINDINGS**

- Prominent mesenteric lymph nodes – This is a common finding in young dogs and is likely within normal limits.
- Borderline “flat” adrenals – Recommend screening for Addison’s disease.

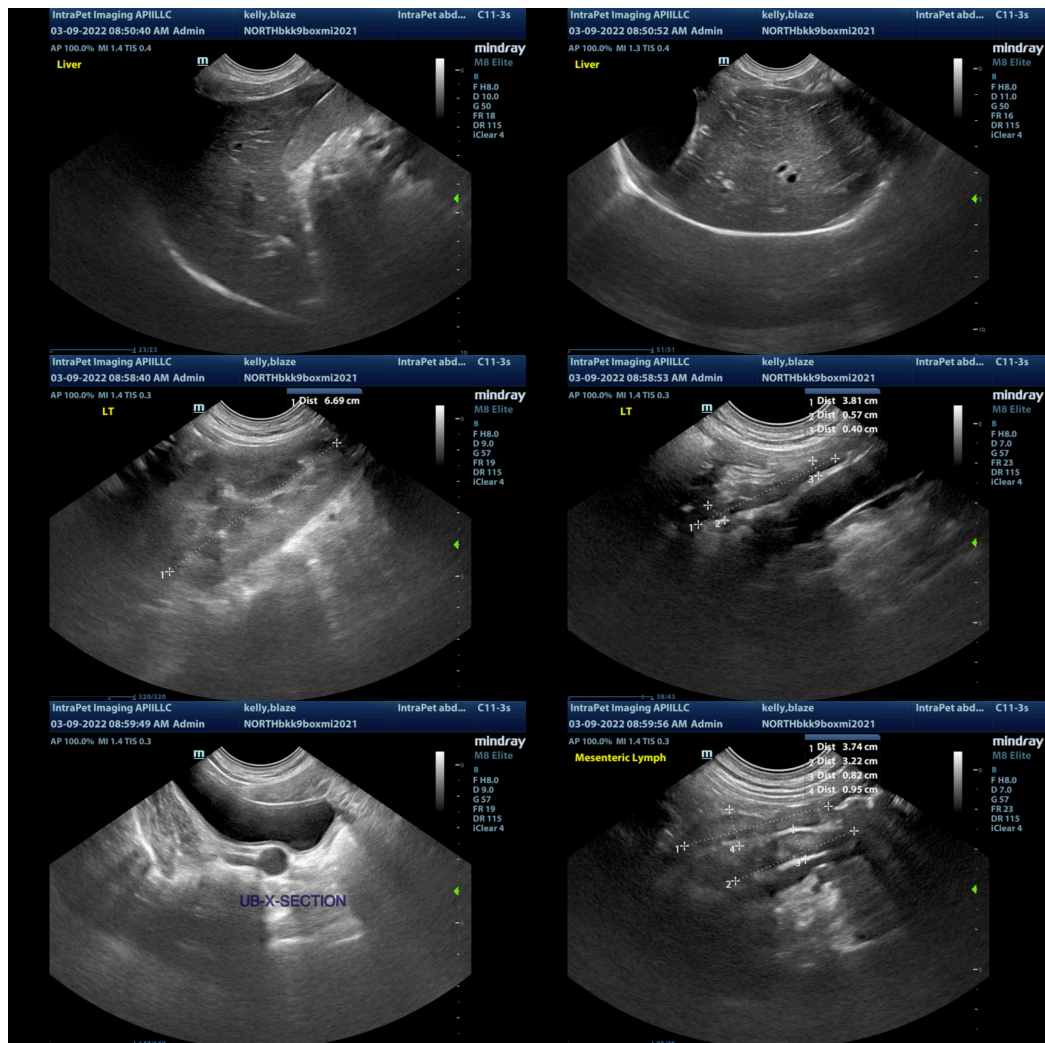
## **INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

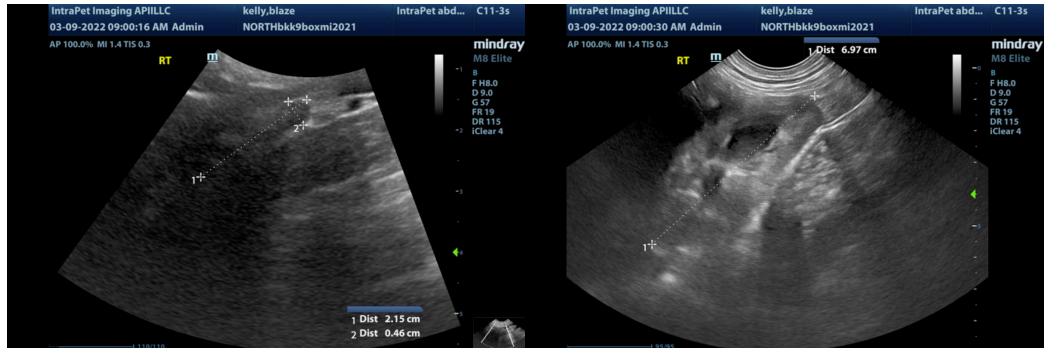
No focal lesions are observed in the liver to explain the elevation in ALT. The liver appears adequate in size, and no obvious shunting vessel is visualized. Unfortunately, in a deep chested dog like this, a shunt cannot be 100% excluded based on ultrasound alone. If post-prandial bile acids are significantly elevated, then consider a contrast CT scan to look for a more subtle vessel. Additionally, there are no ancillary findings supportive of a shunt (bladder stones, etc.).

- Consider close evaluation of history for possible toxic changes examine medications, diet, dietary indiscretion etc...
- Consider PCR on urine/serum for leptospirosis (if not on antibiotics)/serology if recent antibiotic history

- If not already done, consider pre and post prandial bile acids to evaluate liver function. If bile acids are significantly elevated, then consider a contrast CT scan to evaluate for a congenital anomaly (i.e., shunt, etc.).
- If the ALT remains persistently elevated despite supportive care (Denamarin +/- antibiotics, etc.), and liver function is abnormal, then consider obtaining a GI biopsy with samples obtained for histopathology, culture and copper levels. A fine needle aspirate could be considered, but is less likely to be helpful in this situation.

Both adrenal glands are borderline flat in shape and slightly small. Consider screening for Addison's disease.





**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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