

**PATIENT PRESENTING CLINICAL SIGNS**

**PATIENT** Ruby Reeve  
**SPECIES** Canine  
**BREED** Husky  
**SEX** Spayed Female  
**AGE** 11 years  
**WEIGHT** 60 Pounds

History: Chief Concern / Provisional Diagnosis: ~~ elevation liver enzymes that have increased in 1 month period vague ataxia signs that may be related to IVDD lumbar spine Relevant Medical History and Physical Exam findings: ~~ hx of hypothyroid, currently regulated w/ 0.6 mg po bid Recent Diagnostics: Relevant Laboratory Results / Abnormalities: ~~ alt 575 alp 700 Current medications (include full name, dosage and frequency): ~~ Denamarin 425 mg po sid gabapentin 100 mg 1 po bid l-thyroxine 0.6 mg po bid Galliprant 60 mg 1 po sid

**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 left kidney has a normal shape and size (6.91 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 (6.3 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.

**INTERPRETED BY**

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

**Adrenal Glands**

The left adrenal gland is normal in size measuring 0.59 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.

The right adrenal gland is normal in size measuring 0.63 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.

**IMAGING PERFORMED BY**

Loetitia Saint-Jacques, RVT

**HOSPITAL NAME**

MountainView AH

**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.

**REFERRING VET**

Dr. Kalivoda

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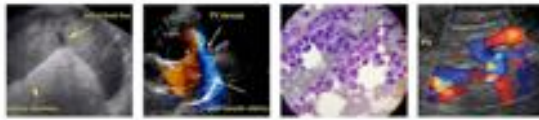
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**Liver**

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. There are at least three lesions observed. One hypoechoic cystic structure measured 0.63 cm. A second hypoechoic nodule measured 0.8 cm in the

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periphery and a mixed echogenic nodule that measured 1.9 cm. The gallbladder lumen is moderately distended. The wall of the gallbladder is not thickened and has a smooth mucosal surface. There is a moderate amount of non-organized echogenic debris. The cystic and common bile ducts are normal/not visible.

**SPECIES**

Canine

**Gastrointestinal**

**BREED**

Husky

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.

**SEX**

Spayed Female

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.

**AGE**

11 years

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.

**WEIGHT**

60 Pounds

**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.

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**Free Abdomen**

A scant amount of anechoic effusion was visualized. There was no lymphadenomegaly. The omentum is of normal echogenicity.

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**ULTRASONOGRAPHIC FINDINGS**

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Heterogenous liver with multiple, mixed echogenic nodules. 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. FNA was performed at the time of the ultrasound.

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Distended gallbladder with a large amount of gallbladder sludge and irregular wall. The findings are concerning for cholecystitis.

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Scant abdominal effusion. The findings are likely due to secondary inflammatory changes.

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

Ruby Reeve

The liver is diffusely heterogenous and has multiple nodules. A FNA was obtained of the liver nodules. These could be benign or malignant lesions. Additionally there could be primary liver disease present and/or cholecystitis. You can consider a second aspirate of more normal appearing liver in addition to a nodule. I recommend thoracic radiographs. If cytology is not diagnostic then consider causes of a diffuse hepatopathy including:

**SPECIES**

Canine

- Consider close evaluation of history for possible toxic changes, exam medications, dietary indirection, etc.
- Consider PCR and urine and 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.
- FNA and labs are not diagnostic and liver values fail to improve with conservative therapy (antibiotics, Ursodiol, Denamarin, etc) then consider liver biopsy with samples obtained for histopathology, culture and copper levels. Additionally keep a close eye on the gallbladder as it could require removal if it progresses.

**BREED**

Husky

**SEX**

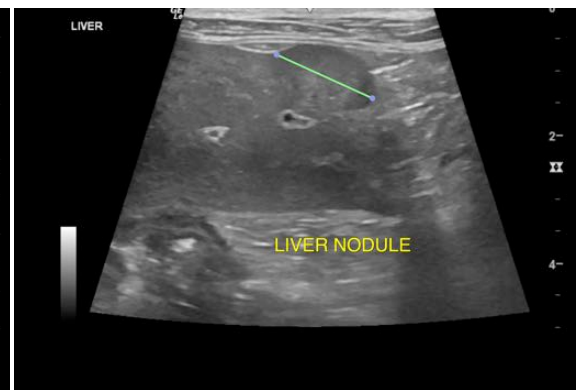
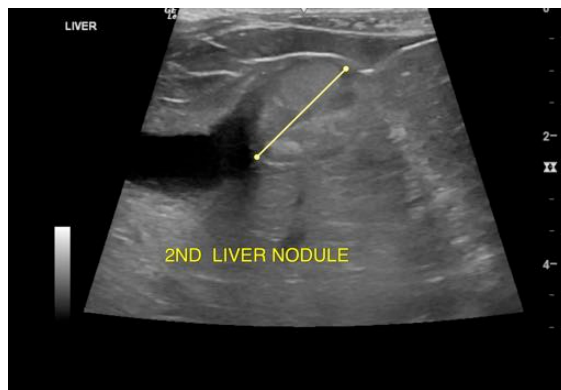
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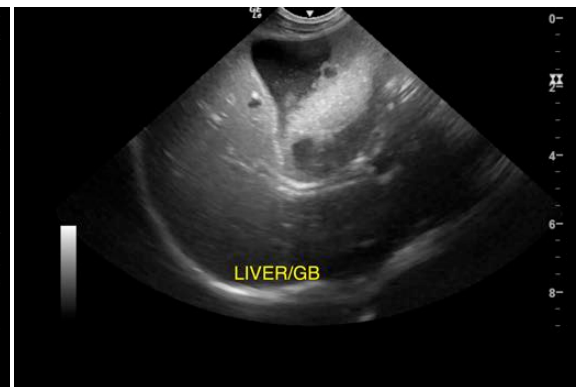
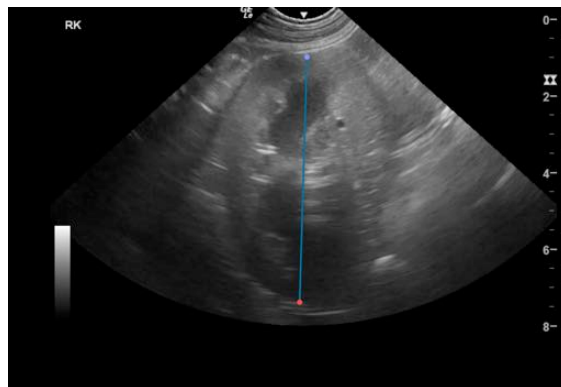


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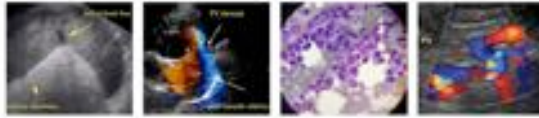
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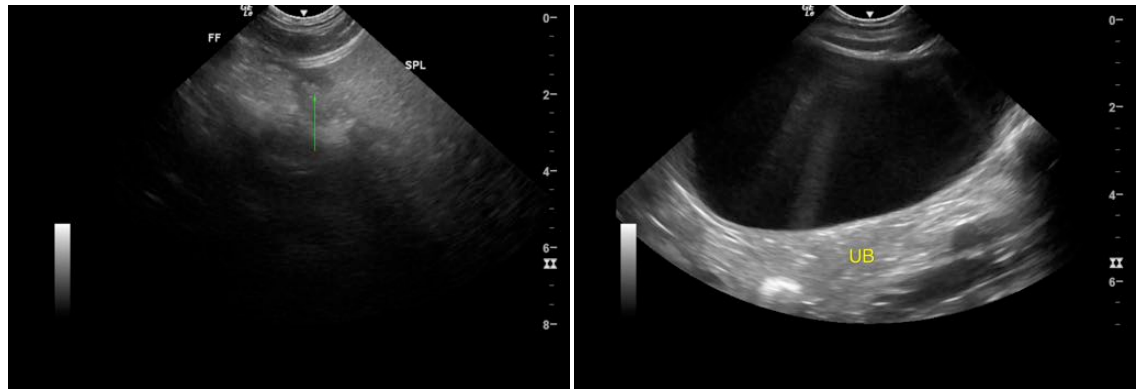
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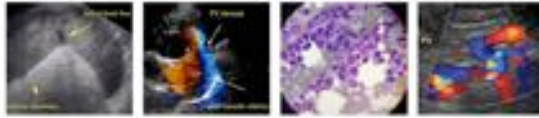
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The information and recommendations provided are based on the images presented by the referring



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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.

**SPECIES**

Canine

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

**BREED**

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kathleen.sennello@sonopath.com

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