



**PATIENT**

Ole Kinzel

**PRESENTING CLINICAL SIGNS**

**SPECIES**

Canine

Sinus arrhythmia- History of diarrhea(kaolin pectin and diageal therapy)-  
Abnormal PE/Chem/CBC/UA Results: LABS 3/25/2022 Mildly elevated ALP (186), improved  
ALT (625 from 1071) after being on Super Milk Thistle X Liver Support Capsules and SamE for  
over a month. LABS were pre-dental. Dental postponed.

**BREED**

Double Doodle

**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.

**SEX**

Neutered Male

The prostate is normal in size (0.42 cm) and shape for this neutered male dog. The parenchyma is  
homogenous and the external margins are smooth. The prostatic urethra appears normal with no  
evidence of irregularity, invasion, mass effect or calculi.

**AGE**

2 Years

The left kidney has a normal shape and size (6.8 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.

**WEIGHT**

83 Pounds

The right kidney has a normal shape and size (5.9 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 0.42 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.

**IMAGING BY**

Loetitia Saint-Jacques,  
LVT

The right adrenal gland is normal in size measuring 0.38 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**

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Sierra Vet Hospital

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**

**REFERRING VET**

Dr. Kidder

The liver is subjectively normal in size. It is hypoechoic, irregular and somewhat nodular. The  
parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible  
portions of the vasculature and biliary tract appear normal. There are numerous ill-defined,  
hypoechoic nodules visualized. One such nodule on the left side measures 0.96 cm x 0.66 cm.  
Another measures 0.52 cm.

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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.

**SPECIES**

Canine

**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.

**BREED**

Double Doodle

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.

**SEX**

Neutered Male

**AGE**

2 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**

83 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.

**Free Abdomen**

Evaluation of the peritoneal cavity did not reveal any evidence of effusion. There is a prominent mesenteric lymph node visualized at 0.92 cm and a sublumbar lymph node at 0.86 cm. The omentum is generally of normal echogenicity.

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**ULTRASONOGRAPHIC FINDINGS**

**IMAGING BY**

Loetitia Saint-Jacques,  
LVT

- Hypoechoic, heterogeneous liver with irregular, nodular margins – 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.

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- Prominent mesenteric lymph nodes – The prominent abdominal lymph nodes are most consistent with reactive lymphadenitis or lymphoid hyperplasia. Neoplastic infiltration is considered less likely.

**REFERRING VET**

Dr. Kidder

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

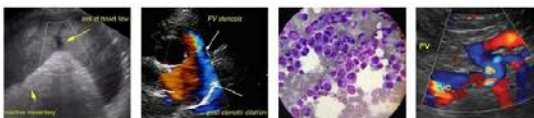
The liver is hypoechoic and heterogeneous with an irregular/nodular parenchyma. These findings are concerning particularly in such a young dog. A portosystemic shunt is not visualized, but cannot be definitively ruled out. If bile acids are significantly elevated, a contrast CT scan may be necessary to further evaluate for this type of issue.

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- Recommend pre- and post-prandial bile acids to evaluate liver function.
- Recommend screening for Leptospirosis.
- Consider surgical biopsy for histopathology and cultures.

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If a definitive diagnosis can be made based on biopsies, there is a better chance for intervention and preventing permanent liver damage. Continue supportive care for the liver with Denamarin, liver supplements +/- Ursodiol, but specific therapies would be pending a diagnosis.

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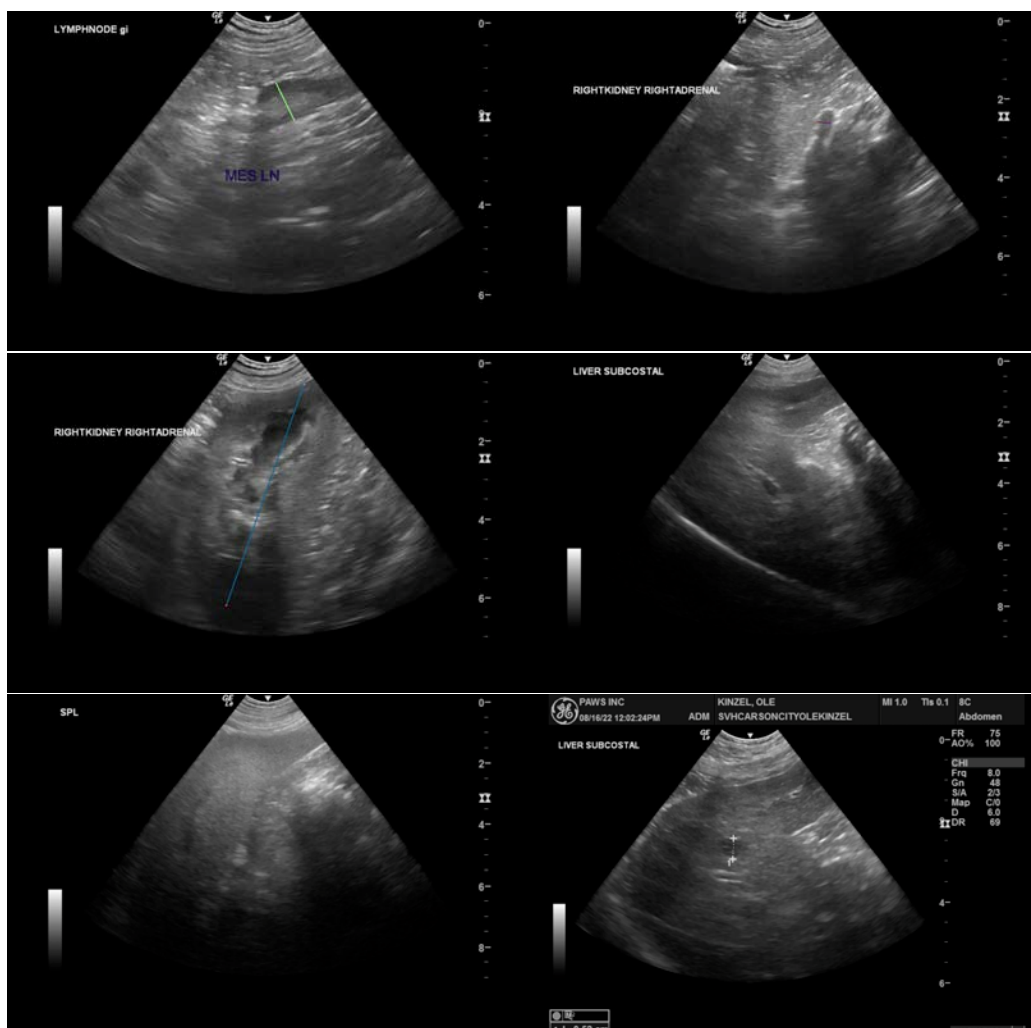
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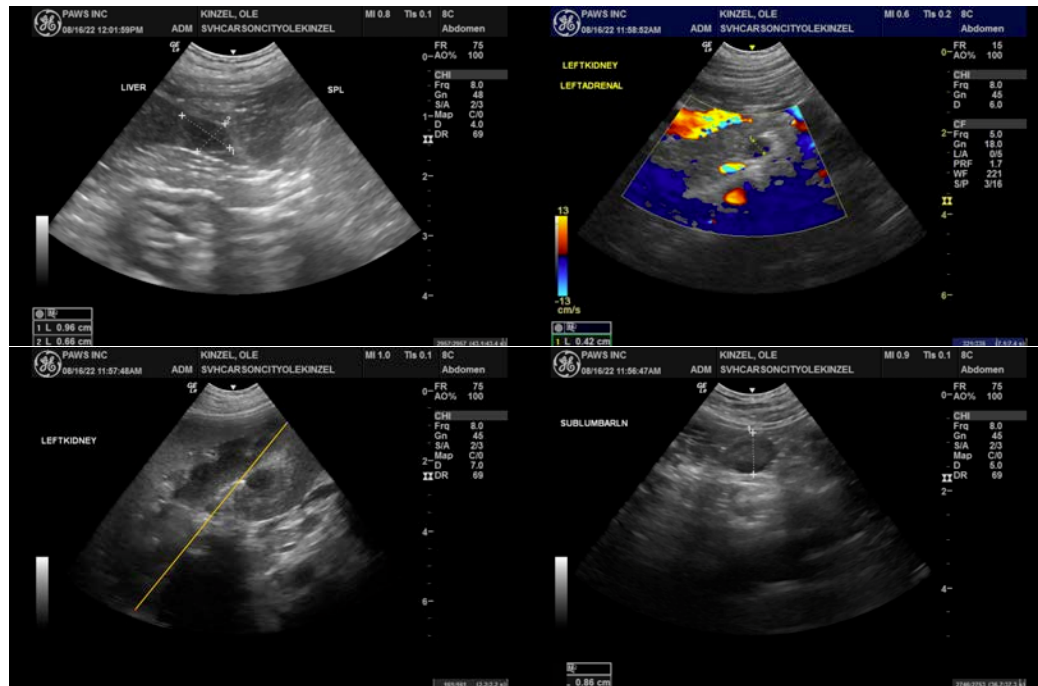
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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