



**PATIENT**

**PRESENTING CLINICAL SIGNS**

Ellie Merry

History: Decreased appetite for the past week, progressing to not eating at all yesterday. Diarrhea for 2 weeks, no blood or mucus. No vomiting. Drinking and urinating a lot. Normal energy level. On PE liver extends slightly beyond rib margins, tense abdomen.

**SPECIES**

Abnormal PE/Chem/CBC/UA Results: CPL=normal CBC=lymphopenia=0.76 (1.05-5.10) First run of serum ALT, ALP were too high to read Dilution run 1:9 ALT=3740(10-125) ALP=3579(23-212) Alb=6.8(2.2-3.9) Tprotein=8.9(5.2-8.2) Glob=2.1(2.5-4.5) on 3-19-21 ALT=36 ALP=66 Alb=4.2

Canine

**BREED**

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

Miniature Schnauzer

**Urinary System**

**SEX**

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.

Spayed Female

**AGE**

The left kidney has a normal shape and size (4.33 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.

8 years

**WEIGHT**

The right kidney has a normal shape and size (3.93 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.

13 lbs

**INTERPRETED BY**

**Adrenal Glands**

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

The left adrenal gland is normal in size measuring 0.35 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 0.37 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**

M Kermendy CVT

**HOSPITAL NAME**

**Spleen**

Wauwautosa VC

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. Bonstrom

**Liver**

**INVOICE**

The liver is subjectively large 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. . The gallbladder is not clearly visualized. I suspect it is very small or very isoechoic to the surrounding parenchyma. No pathology is noted in this area.

92088

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9/28/21



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**Gastrointestinal**

The stomach is moderately dilated with fluid and irregular shadowing material most consistent with normal ingesta and gas. 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 layering 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 (0.27 cm) and the jejunum measured as normal. 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.

**ULTRASONOGRAPHIC FINDINGS**

**PRIMARY FINDINGS:**

- Large, heterogenous 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.

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The liver is large and heterogenous. These are common, non-specific findings particularly in a schnauzer.

- Consider a fasted liver function test
- Fasted triglycerides and cholesterol if samples are lipemic as this can skew liver values, albumin, etc.
- Consider close evaluation of history for possible toxic changes examine medications, diet, dietary indiscretion etc...



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- Consider PCR on urine/serum for leptospirosis (if not on antibiotics)/serology if recent antibiotic history
- If the ALP is significantly elevated relative to the ALT and symptoms consistent with Cushing's are present, consider adrenal function testing (ACTH stim)
- Recommend three view thoracic radiographs
- Consider Fine needle aspirate if round cell neoplasia is on your differentia list (25 g needle, normal coags)
- If no response to supportive care (Denamarin, fluids, antibiotics,+/- Ursodiol etc...) Consider liver biopsy with samples obtained for histopathology, culture, and copper levels.

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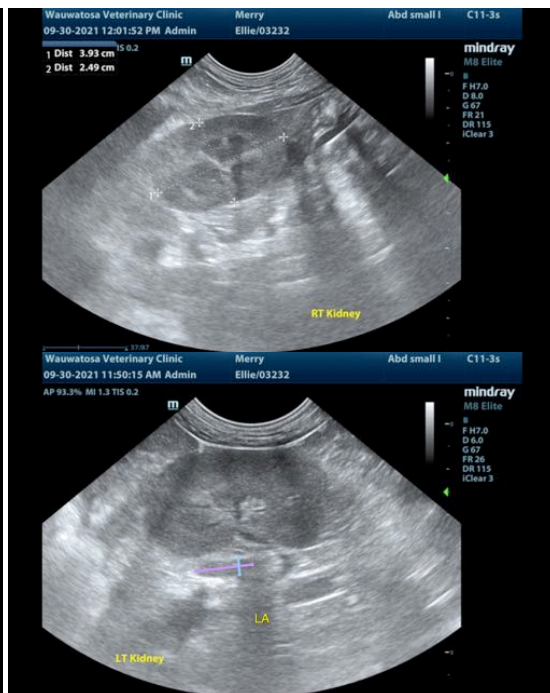
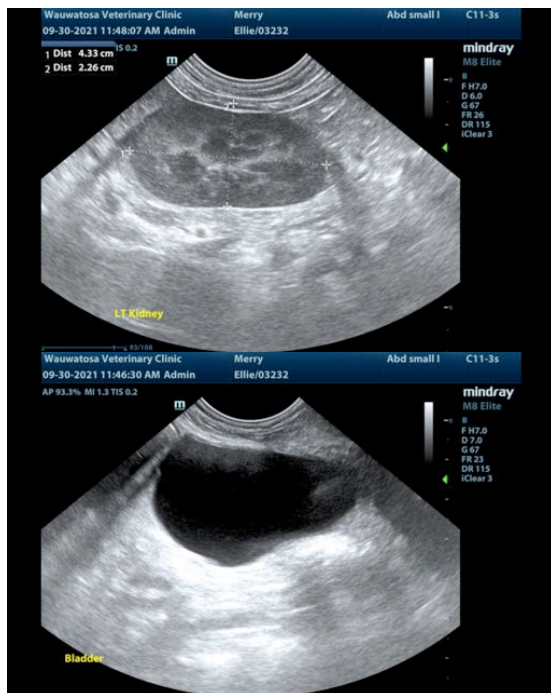
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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