



**PATIENT**

Apollo Caldwell

**SPECIES**

Canine

**BREED**

Havanese

**SEX**

Neutered Male

**AGE**

10 Years

**WEIGHT**

10.7 kg

**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**IMAGING PERFORMED BY**

Dr. Callihan

**HOSPITAL NAME**

Animal Emergency  
Hospital

**REFERRING VET**

Dr. Drummond

**INVOICE**

18123

**DATE**

11/19/22

**PRESENTING CLINICAL SIGNS**

History: Presented on ER last night for acute onset vomiting. Had been normal through day, ate normal dinner, but then went outdoors and started eating grass, vomited repeatedly. History of hepatopathy unknown Had ultrasound a year ago at specialty center, had elevated liver values at that time (AST 262, ALT 1716, ALP 1322, TBili 1.9) diffusely hyperechoic parenchyma with ill-defined hypoechoic foci throughout; diagnosed with Cholangiohepatitis, discharged with Denamarin, Clavacillin and ursodiol; don't know course after that, though owner says they were normal in June 2022) At the time of this scan, pt has not eaten in > 24 hrs.

Abnormal PE/Chem/CBC/UA Results: Radiographs last night showed enlarged irregular contour liver; stomach full but not distended; a little gas distension in one of the SI loops; Last night ALT 222, ALP 800, GGT 35, Amyl 1730, Lip 5213; recheck today all values improved, GGT 29, ALT 185,

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

The **urinary bladder**, trigone, and pelvic urethra presented normal thicknesses and normal tone. The ureters were not visible which is normal. No uroliths or sediment were visualized, and anechoic urine was present. No evidence of inflammatory or neoplastic changes were noted. Ureteral papillae were normal. The pelvic urethra was imaged 2.0 cm beyond the cystourethral junction.

The **kidneys** revealed normal size and structure, corticomedullary definition and ratio for this age. The cortices presented largely uniform texture with normal echogenic relationship to liver and spleen. Medullary structure differed distinctly from the cortex and no evidence of pelvic dilation was present. The capsules were acceptably uniform without significant irregularities. The right kidney measured 5.74 cm. The left kidney measured 5.42 cm.

**Adrenal Glands**

Both **adrenal glands** were visualized and recognized as having normal shape, size, position and echogenicity for this breed. The phrenic vasculature, glandular echogenicity and detail were unremarkable. Capsule, cortex, and medullary definition were normal for this age patient. The left adrenal gland measured 0.43 cm. The right adrenal gland measured 0.46 cm.

**Spleen**

The **spleen** presented a smooth homogeneous parenchyma hyperechoic to liver and renal cortical parenchyma. The capsule was smooth without noticeable expansion or deviation from within the spleen or adjacent pathology. The splenic vasculature demonstrated normal volume without signs of congestion or thrombosis. No sonographic evidence of acute or chronic inflammatory, neoplastic, or infarctual changes were noted.

**Liver**

The **liver** presented diffuse nodular parenchymal changes with increased portal markings. The gallbladder and common bile duct were unremarkable.

**Gastrointestinal**

The **stomach** was overdistended with chyme and some shadowing gastric fundic material, as well as chyme in the pylorus. The pylorus appeared patent. The small intestine and colon were unremarkable.



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**Pancreas**

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The base and limbs of the **pancreas** were observed to be largely isoechoic to surrounding omental fat. Pancreatic duct and capsular contour were acceptably normal and parenchyma respected normal curvilinear patterns. No overt evidence of active inflammatory or neoplastic disease was noted.

## SPECIES

Canine

## Free Abdomen

The **mesenteric lymph nodes** (measuring up to 2.82 cm x 1.0 cm) presented normal length to width ratio with slight, swollen contour. There was no loss of parenchymal detail. This is most consistent with reactive lymphadenitis or lymphatic hyperplasia.

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## SEX

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- Diffuse hepatic remodeling consistent with chronic active hepatitis/cirrhosis type pattern
- Gastric fundic material, retention of ingesta is possible versus foreign matter yet does not appear obstructive
- Reactive mesenteric lymph nodes

## AGE

10 Years

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

I'm most concerned about the diffuse hepatic disease consistent with subjectively near end stage liver disease. Underlying inciting causes such as Leptospirosis should be considered. Liver biopsy would be ideal. Endoscopy could be considered for noninvasive investigation of the gastric fundic material; however, this is likely delayed outflow and ingesta. Prognosis is guarded to poor depending upon ability to rebound from the current hepatic failure.

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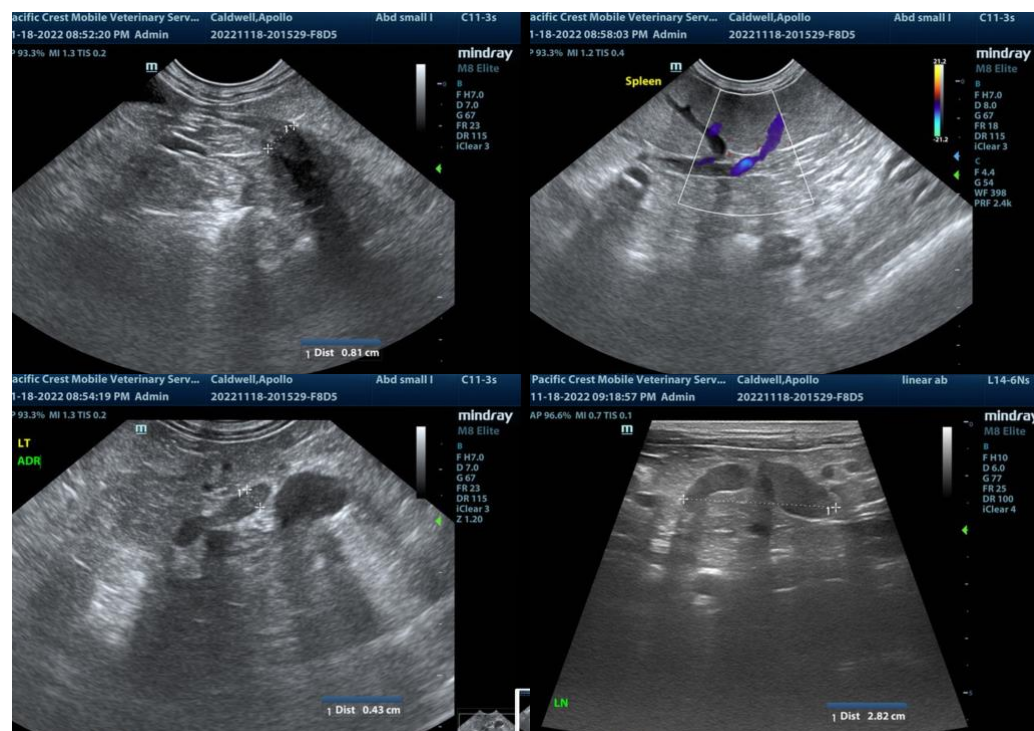
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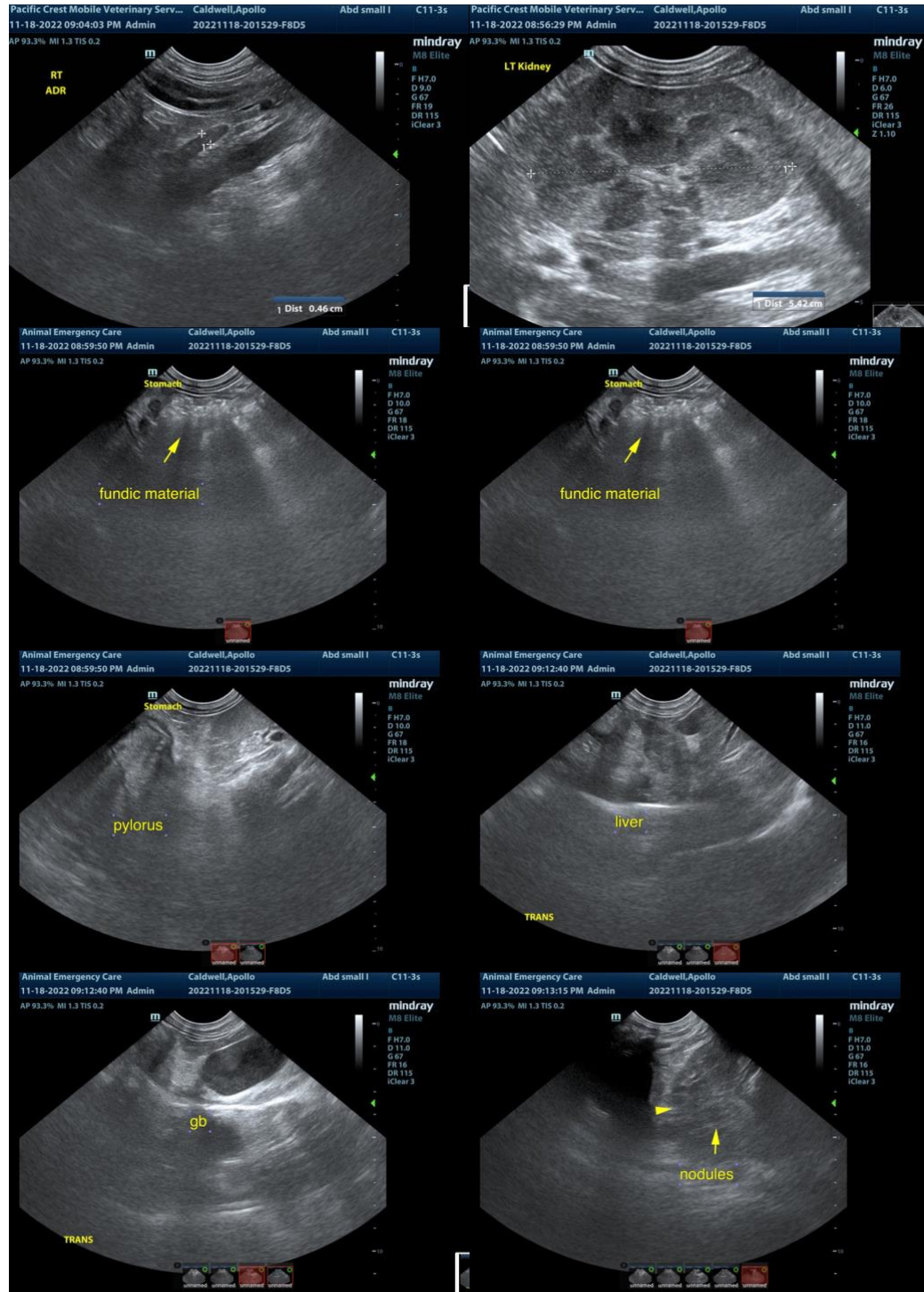
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

**Eric Lindquist**, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com  
info@SonoPath.com