



PATIENT

Hannah Adams

SPECIES

Canine

BREED

Beagle

SEX

Spayed Female

AGE

10 Years

WEIGHT

11.7 kg

INTERPRETED BY

R. McKenzie Daniel, DVM,
DABVP (Canine and
Feline)

IMAGING PERFORMED BY

Pamela Harrigan, RDMS

HOSPITAL NAME

New England AMC

REFERRING VET

Dr. Kathryn Doyon,
DVM

INVOICE

13692

DATE

1/21/22

PRESENTING CLINICAL SIGNS

History: Dyspneic and cyanotic. Pulmonary edema r/o CHF (L vs R vs Bilateral) vs hepatopathy/failure vs neoplasia vs pneumonia. Elevated liver values; azotemia, r/o renal vs pre-renal component. Hyperkalemia, r/p CKD vs AKI. Hyperphosphatemia, r/o CKD vs AKI. Neutrophilia, r/o inflammatory vs infectious. Hyperglycemia, r/o stress, diabetes mellitus. PE: grade II/VI systolic murmur; crackles caudal lung fields, sit effort. BP on initial presentation - 146 mmHg; BP today: 180 mmHg. Cranial organomegaly; no fluid wave appreciated. Radiographs: severe cardiomegaly and LAE; high probability of cardiogenic pulmonary edema and pleural edema. Moderate generalized hepatomegaly. Labs: CBD: WBC 18.92; mono 1.44; neu 13.18; Chem: ALP 1598; ALT 175; BUN 58; crea 1.9; Glu 204; Phos 8.3; K 7.3. UA: USG 1.010, quiet sediment. Medications: Oxygen cage at all times until dyspnea resolved; furosemide 2 mg/kg IV q6h, reduce when edema improves; Pimobendan 0.25 mg/kg q12h; Cerenia 1 mg/kg IV q24h; Denamarin 225 mg q24h; Gabapentin 100 mg q12h for anxiety. Having bicavity ultrasound exams

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 3.0 cm exhibited normal thickness and tone. Primarily anechoic urine was present in the lumen. Mild nondependent particulate sediment was present without evidence of calculus formation. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic mural changes were noted. Aortic trifurcation was normal.

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio was maintained. Both kidneys exhibited mild variable increased corticomedullary echogenicity with multiple cortical cysts and mild bilateral pyelectasia. Moderate loss of corticomedullary symmetry and definition noted, expected for the age of the patient. The left kidney measured 6.4 cm in length. The right kidney measured 5.8 cm in length.

Adrenal Glands

The right adrenal gland was normal in size. Mild parenchyma heterogeneity and mild capsule asymmetry was present without suspicion for overt neoplasia. The right adrenal gland measured 0.63 cm width in the cranial pole and 0.49 cm width in the caudal pole.

A well-defined, hyperechoic nodule was present in the mid to cranial left adrenal gland with mild associated symmetrical capsule expansion. The nodule did not exhibit signs of mineralization, vascular invasion or parenchymal escape. The nodule measured 1.5 cm x 1.1 cm in diameter. The overall left adrenal gland measured 1.1 cm at the cranial pole and 0.60 cm at the caudal pole.

Spleen

The spleen exhibited potential for mild generalized enlargement yet subjectively benign without evidence of neoplastic criteria. Primarily finely textured parenchyma was noted which was hyperechoic to the liver and renal cortical parenchyma. Mild generalized parenchyma heterogeneity was present without evidence of nodular changes. The capsule was smooth and regular without apparent expansion. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis. The parenchymal heterogeneity is likely consistent with benign changes such as extramedullary hematopoiesis or age-related remodeling with minor potential for inflammatory disease.

Liver



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The liver exhibited generalized enlargement and mild hepatic parenchymal remodeling with solitary, likely benign left intraparenchymal nodule, suggestive of probable area of nodular hyperplasia or lipogranuloma. The hepatic vasculature was dilated in appearance, most notable at the level of the hepatic vein / caudal vena cava junction, without evidence of thrombosis.

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The gallbladder was non distended in size with echogenic, nonmineralized, non-dependent biliary sludge. The biliary sludge was non organized with a hypoechoic to anechoic, irregular to interrupted rim visible between the nondependent sludge and inner wall. No signs of peripheral inflammation. The cystic and common bile ducts were normal.

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Gastrointestinal

The stomach presented mild wall thickening secondary to echogenic mucosa hypertrophy. Intact wall layering was maintained and distinct. The gastric body wall measured 0.48 cm width. Mild gastric distension with primarily anechoic fluid was present.

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The small intestine exhibited intact wall layering and primarily maintained 1:3 muscularis to mucosa ratio with mild generalized duodenojejunal mucosal speckling and mild upper duodenal ileus pattern along with subtle duodenal corrugation. The duodenum wall measured 0.50 cm.

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Normal visible colon wall layers were present with semi-formed feces in lumen.

Pancreas

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The pancreas was normal in size and contour with isoechoic to heterogeneous parenchyma compared to adjacent omentum. No signs of active inflammation or neoplasia.

Free Abdomen

No overt lymphadenopathy or ascites present.

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ULTRASONOGRAPHIC FINDINGS

- Hepatopathy, exhibiting evidence of hepatic vasculature congestion- congestive hepatopathy, potentially owing to right heart disease or elevated pulmonary pressure with potential for primary or concurrent parenchymal disease, such as cholangiohepatitis given the presence of the partial gallbladder mucocele, vacuolar hepatic changes, cholestasis or other hepatopathy. No overt evidence of hepatic neoplastic criteria.
- Partial gallbladder mucocele
- Bilateral moderate chronic renal changes, exhibiting cortical cyst and mild bilateral pyelectasia.
- Left adrenal nodule- suspect adenoma, potential for emerging neoplasia (i.e., adenocarcinoma, pheochromocytoma or other) possible. Sonographic monitoring of the left adrenal nodule for evidence of progression would be ideal.
- Mild gastroenteritis pattern. As needed gastrointestinal support recommended if evidence of inappetence, vomiting, etc.
- Mild urinary bladder sediment

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS



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The overall appearance of the kidneys is most consistent with chronic non-specific changes as opposed to acute kidney injury, although potential for acute on chronic nephropathy cannot be definitively excluded. The urinary bladder sediment may suggest cellular / crystalline debris or mucus. Cystocentesis for UA +/- C/S if evidence of inflammatory cells is recommended.

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Correlation with echocardiogram recommended. Empirically, CKD therapy with hepatogastrointestinal support and monitoring for evidence increasing cholestasis or subxiphoid/cranial abdominal palpation on discomfort associated with the gallbladder would be appropriate.

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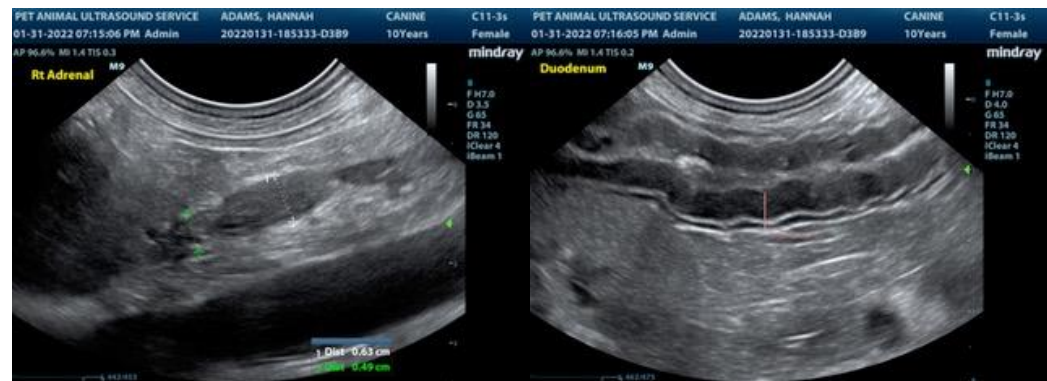
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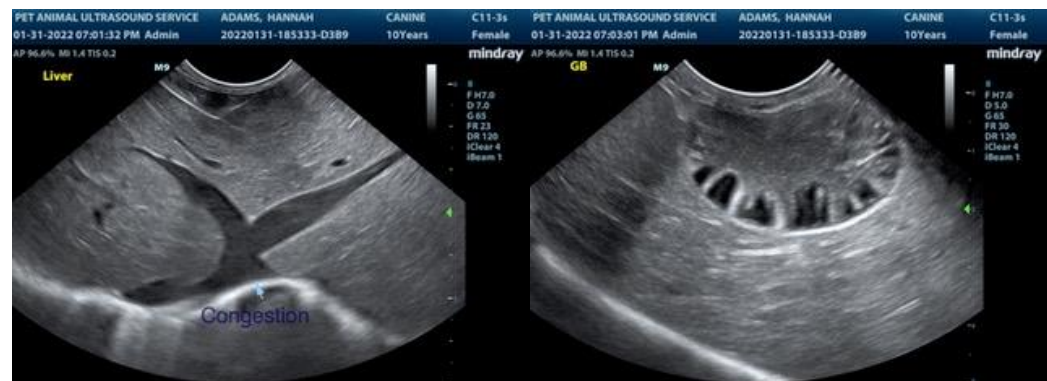


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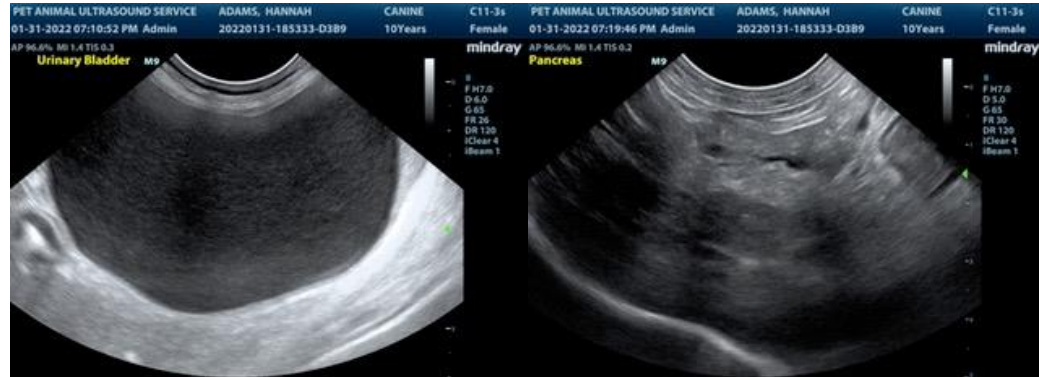
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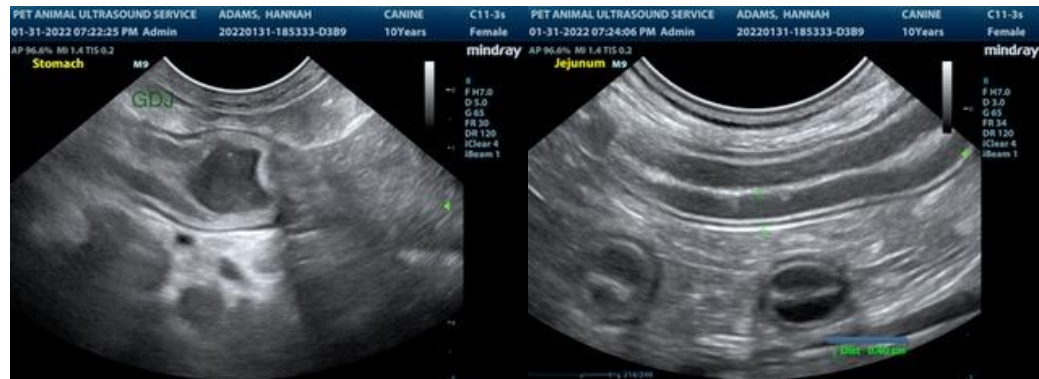


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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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