



PATIENT

Remi Brennan

SPECIES

Canine

BREED

Labrador Retriever Mix

SEX

Spayed Female

AGE

7 Years 1 Month

WEIGHT

81 pounds

INTERPRETED BY

R. McKenzie Daniel,
DVM, DABVP (Canine
/ Feline Practice)

IMAGING PERFORMED BY

Rebecca Hamilton

HOSPITAL NAME

Rockaway Animal
Hospital

REFERRING VET

Dr. Maniar

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DATE

04/10/26

PRESENTING CLINICAL SIGNS

Renal failure, inc. RR and RE, not eating, weakness, epistaxis

Abnormal PE/Chem/CBC/UA Results: BUN, Creat, Phos unreadably high, HCT 21

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (M-Mode)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	Up to 1.6	28-40	40-100	<0.6
PATIENT	--	--	NM	1.2	40	74	0.3
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT (lbs)	LAD LA MAX 4 Chamber	LVIDd Avg; 2D and m-mode short axis (cm)	LVIDs Avg; 2D and m-mode short axis (cm)
NORMAL PARAMETER	50-100	0.7-1.7	0.7-1.6				
PATIENT	NM	1.8	0.9	81.0	4.0	4.2	--

Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** dimension based on 2 separate methods of LA evaluation. The cranial and caudal **mitral** valve leaflets presented normal linear structure, extension in systole, and union in diastole with normal kinesis. The **left ventricle** presented thicknesses with linear contour and was not dilated nor restricted. The **myocardium** presented normal echogenicity without subjective evidence of significant fibrotic or ischemic disease. **Contractility** of the ventricular walls was adequate and in normal range for this patient evidenced by the fractional shortening measurement and subjective evaluation of the different regions of the myocardium. The **left ventricular outflow** tract demonstrated normal laminar flow and subjective structural integrity. The **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted. **Tricuspid** valvular assessment demonstrated adequate linear morphology and kinesis. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. **Pulmonary outflow** tract assessment revealed normal valve structure, laminar flow, and diameter (approx.1:1 pa/ao ratio). No visible **pericardial** or free pleura fluid was noted. The cranial **mediastinum and pericardial and extra-cardiac regions** were free of masses in the visible window. Significant pericardial and transdiaphragmatic comet tail artifact was present.

Urinary System

The urinary bladder was distended in size with normal tone. The trigone, cystourethral junction, and visible pelvic urethra to a depth of 5.0 cm exhibited normal thickness and tone. Anechoic urine was



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present in the lumen with no uroliths or sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic change were noted.

The area of the aortic trifurcation was free of pathology.

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Normal renal size with asymmetrical margination was present in both kidneys. The renal cortex presented uniformly increased in echogenicity with uniform echotexture. The renal cortex appeared to be hypertrophied resulting in an altered cortex: medulla ratio. Mild indistinct corticomedullary border demarcation was also present. No evidence of pyelectasia. The left kidney measured 6.9 cm in length. The right kidney measured 7.4 cm in length.

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Adrenal Glands

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The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.68 cm width at the caudal pole.

The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.55 cm width at the caudal pole.

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Spleen

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The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. 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. Acute to chronic inflammatory, neoplastic, or benign parenchyma changes were not noted.

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Liver & Gallbladder

The liver presented mild / moderately enlarged in size. The parenchyma of the liver was subjectively normal in echogenicity compared to the spleen and renal cortices. The liver parenchyma was uniform with a mildly coarse echotexture. The capsule of the liver was symmetrically rounded to mildly swollen in margination. The hepatic and portal vasculature were normal in appearance without signs of congestion.

IMAGING PERFORMED BY

Rebecca Hamilton

The gallbladder was non-distended in size. The gallbladder wall was minor thickened in appearance consisting of an echogenic double rim corresponding to the inner and outer portions of the wall. This is consistent with gallbladder wall edema. Possible causes may include acute inflammation, edema and anaphylaxis.

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Gastrointestinal

The stomach revealed generalized variably thickened hypoechoic wall with empty lumen. Indistinct gastric wall layer detail measuring 1.2 cm wall width.

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The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. Generalized empty intestinal lumen with minor segmental duodenojejunal corrugation.

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Normal visible colon wall layers were present. Segmental empty lumen with nondistended descending colon containing nonformed fecal matter.

Pancreas



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The parenchyma of the left limb, body and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease was evident.

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Free Abdomen

No overt lymphadenopathy or peritoneal effusion was present.

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ULTRASONOGRAPHIC FINDINGS

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- Normal cardiac structure/function.
- Bilateral nonspecific nephropathy with concern for acute renal injury.
- Noncongested hepatomegaly.
- Minor edematous gallbladder.
- Empty stomach with thickened hypoechoic wall and indistinct/loss of mural detail.
- Sonographically normal empty small intestine with minor segmental duodenojejunal corrugation.
- Segmental nonformed fecal matter in colon.
- Significant pericardial and transdiaphragmatic comet tail artifact.

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

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Although some degree of chronic renal changes were present, the kidneys did not appear to be end stage, indicating potential for acute renal failure. Consideration for infectious disease or renal toxin is indicated.

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Further assessments may include (assuming normal clotting status) hepatic FNA cytology despite lack of reported hepatic enzyme elevations, and leptospirosis titers/PCR.

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No evidence of structural or functional cardiomyopathy as a contributing factor to the respiratory signs, indicating concurrent primary pulmonary disease with considerations including infection, inflammation/pneumonitis, acute respiratory distress syndrome, systemic influence or other. Uremic gastritis with potential for emerging gastric neoplasia is possible.

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Hospitalization with renal, gastrointestinal and respiratory support with close clinical monitoring is recommended. Prognosis is guarded.

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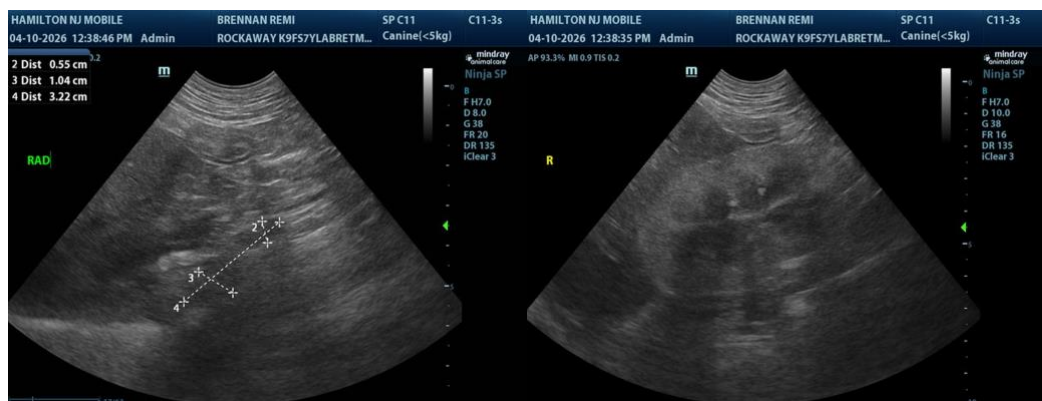
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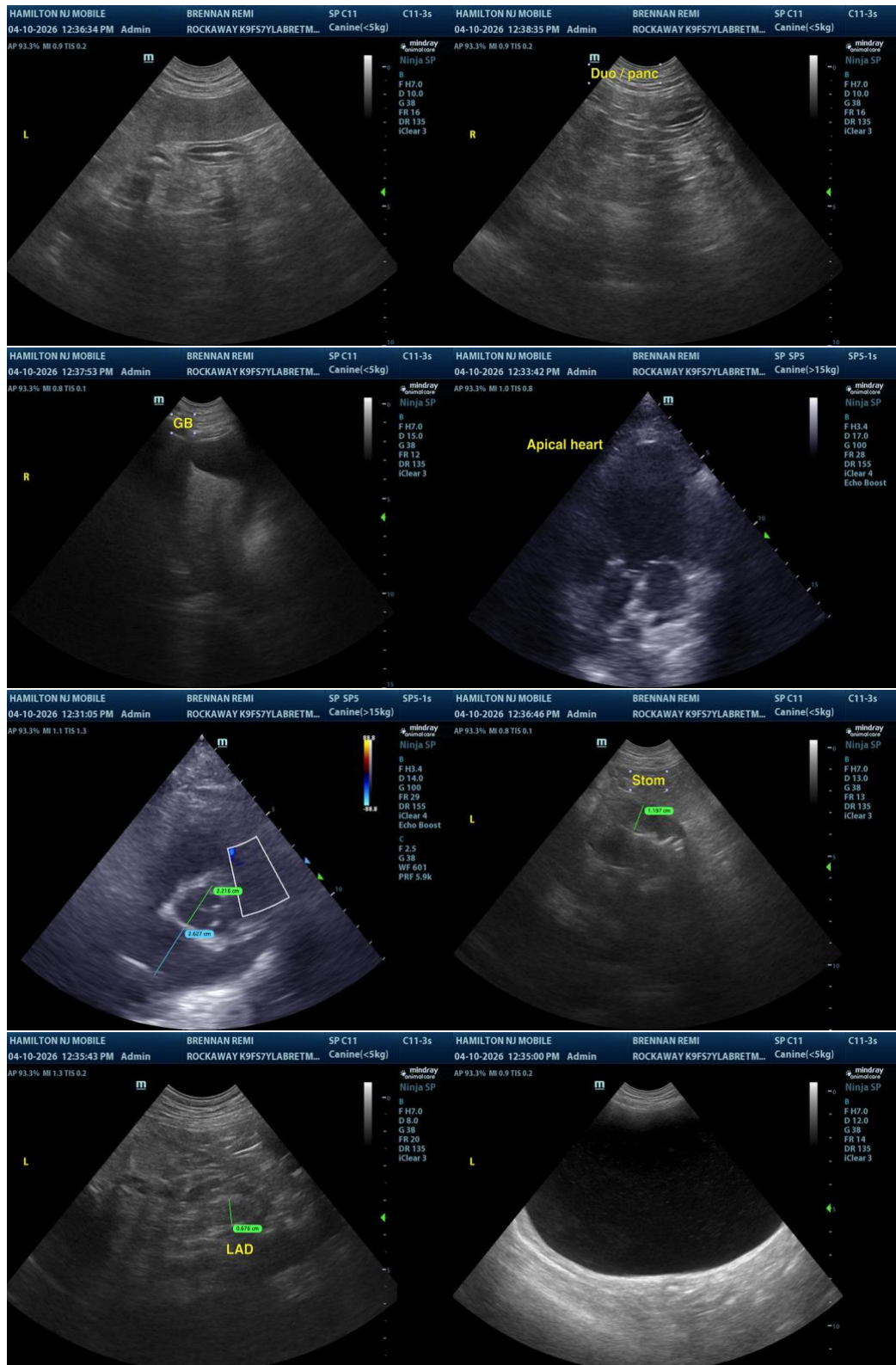
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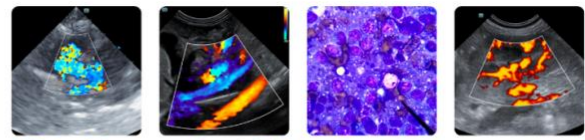
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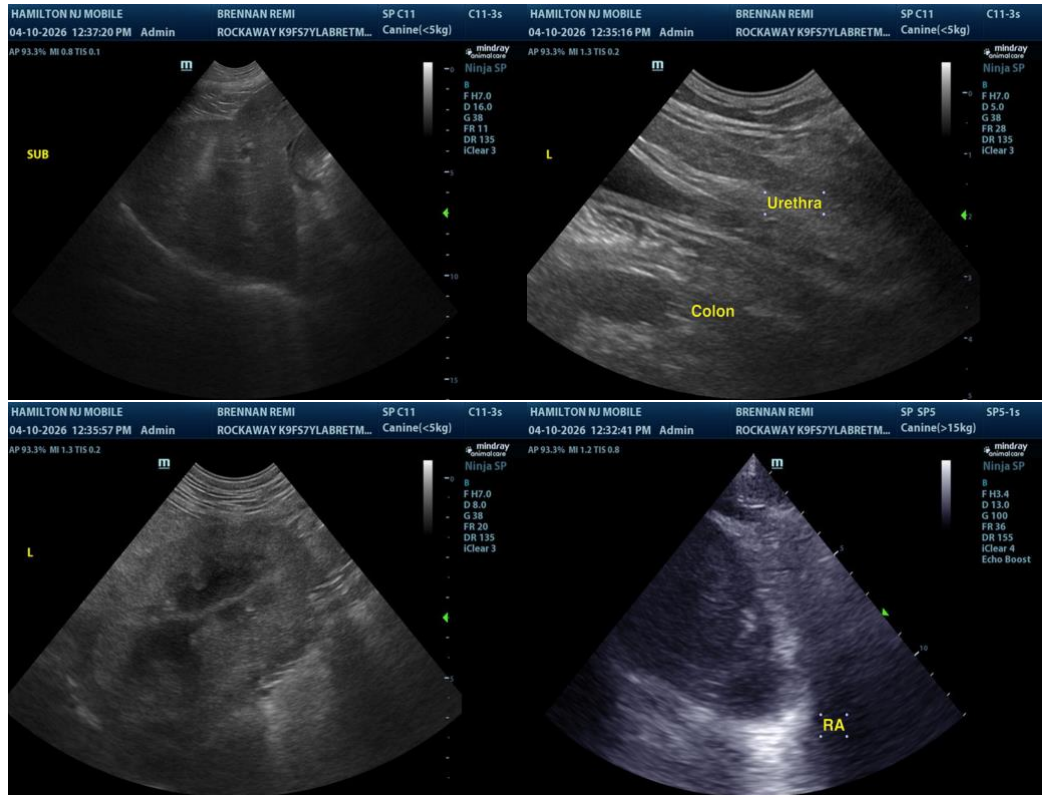
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)

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