



## PATIENT

Bo Graham

## SPECIES

Canine

## BREED

Mix

## SEX

Neutered Male

## AGE

2

## WEIGHT

57.5

## INTERPRETED BY

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

## IMAGING PERFORMED BY

Jenn

## HOSPITAL NAME

Rockaway AH

## REFERRING VET

Dr. Maniar

## INVOICE

12133

## DATE

8/17/21

## PRESENTING CLINICAL SIGNS

collapsed last weekend and one other time prior, elevated liver options Currently on Denamarin

## ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
PATIENT			--	1.1	38.2	71.9	0.3
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT (kg)	LA 2D short axis Base view (cm)	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	BELOW	BELOW	BELOW	BELOW
PATIENT	120	1.0	0.7		3.6	3.4	

### Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 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. No evidence of arrhythmogenic disease or activity was noted.

### Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 3.0 cm exhibited normal thickness and tone. Anechoic urine was 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 changes was noted.



<b>PATIENT</b>	No evidence of pathology was noted in the areas of the residual prostate or aortic trifurcation.
Bo Graham	Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio and normal corticomedullary definition were maintained. The echogenicity of the cortex was similar to or slightly less than normal liver parenchyma while the medulla echogenicity was hypoechoic to the cortex with no evidence of pelvic dilation. The left kidney measured 5.5 cm in length. The right kidney measured 5.5 cm in length.
<b>SPECIES</b>	
Canine	
<b>BREED</b>	<b>Adrenal Glands</b>
Mix	The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 2.3 cm length x 0.47 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 2.3 cm length x 0.46 cm width at the caudal pole.
<b>SEX</b>	
Neutered Male	
<b>AGE</b>	<b>Spleen</b>
2	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.
<b>WEIGHT</b>	
57.5	
<b>INTERPRETED BY</b>	<b>Liver/ Gallbladder</b>
R. McKenzie Daniel, DVM, DABVP (Canine and Feline)	The liver was subjectively normal in size, structure, and contour. The liver parenchyma was uniform and hypoechoic to the spleen with a mild coarse echotexture. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended in size with thin walls and primarily anechoic luminal content. The cystic and common bile ducts were normal.
<b>IMAGING PERFORMED BY</b>	
Jenn	<b>Gastrointestinal</b>
<b>HOSPITAL NAME</b>	The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach was empty with no signs of ileus, obstruction, or foreign material.
Rockaway AH	
<b>REFERRING VET</b>	The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. The lumen of the small intestine was empty with no signs of ileus, obstruction, or foreign material.
Dr. Maniar	Normal visible colon wall layers were present with apparent formed feces in lumen.
<b>INVOICE</b>	<b>Pancreas</b>
12133	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 were evident.
<b>DATE</b>	
8/17/21	<b>Free Abdomen</b>
	No overt lymphadenopathy or peritoneal effusion was present.



**PATIENT**

**ULTRASONOGRAPHIC FINDINGS**

Bo Graham

**Primary Findings**

**SPECIES**

- Hepatopathy - subjectively benign

Canine

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

**BREED**

No sonographic evidence of structural or functional cardiomyopathy. Given the reported collapsing episodes, the potential for a paroxysmal or arrhythmia cannot be definitively excluded. ECG assessment or potential Holter Monitor may be considered if collapsing episodes continue. No indication for cardiac medications.

Mix

**SEX**

Neutered Male

Assuming normal clotting status, hepatic FNA may be considered for screening cytology. No overt evidence of a portosystemic shunt, given the normal overall hepatic size and vascular volume, as well as lack of evidence of urinary bladder or renal mineralization. Further assessment may include Leptospirosis titers / PCR if clinically indicated, bile acid testing +/- resting cortisol to rule out the unlikely potential for occult Addison's Disease. Thorough neurological examination or potential neurological consult may be considered if arrhythmogenic disease is ruled out and pending additional diagnostics.

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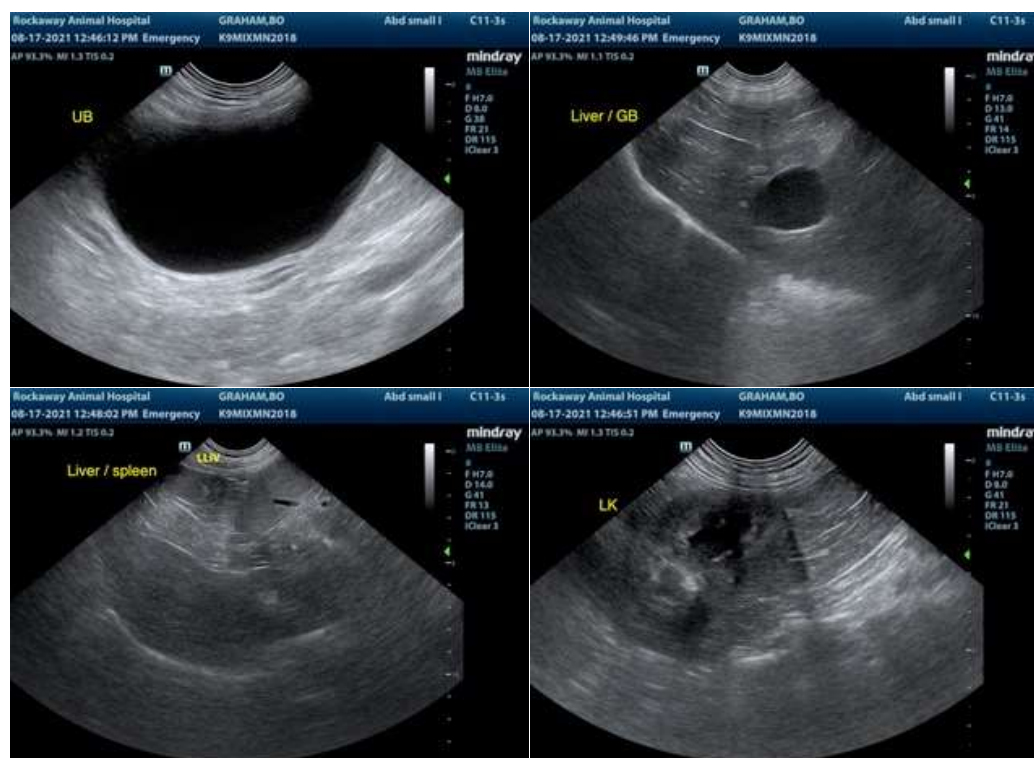
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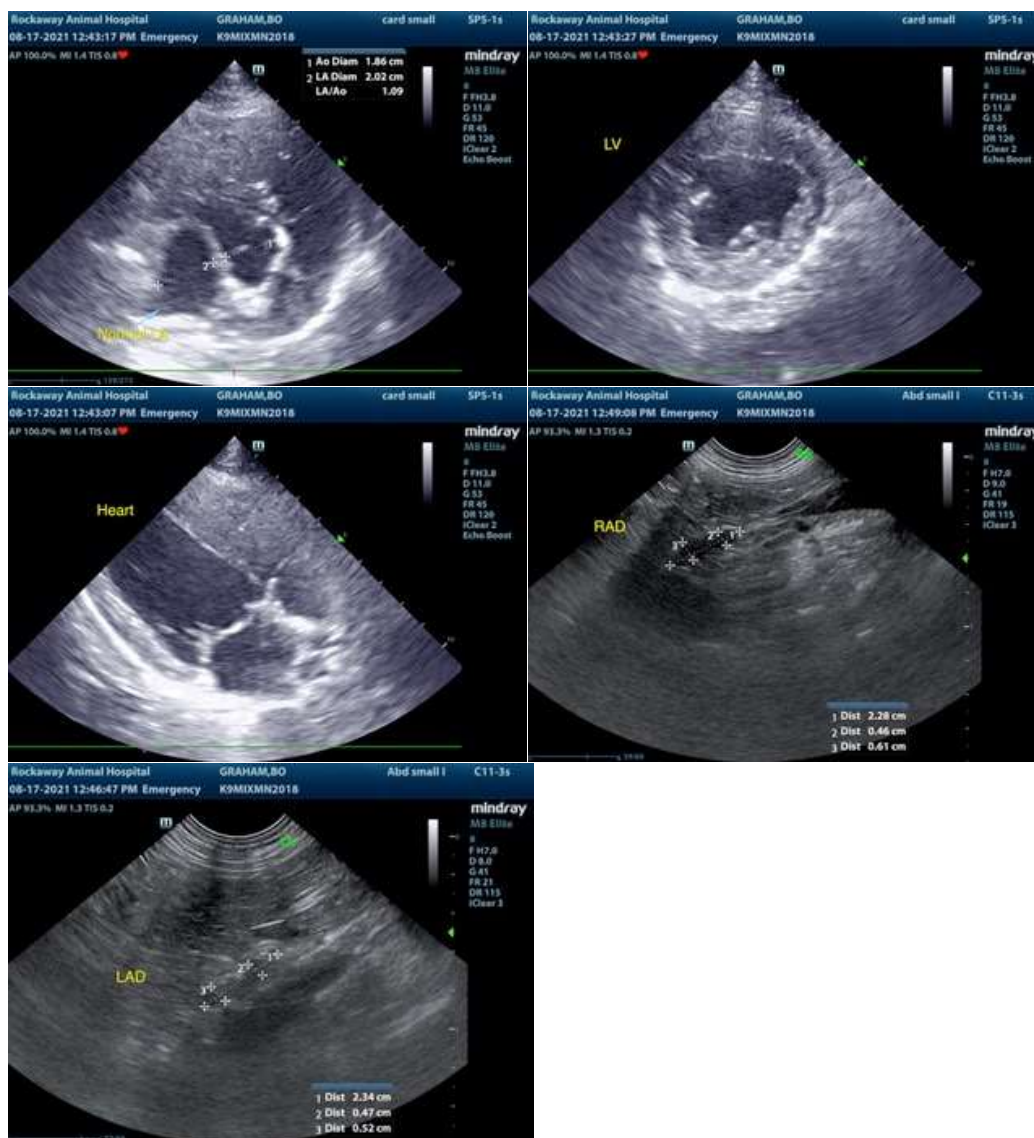
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)  
info@SonoPath.com