



## PATIENT

Bailey Oulette

## SPECIES

Canine

## BREED

Cockapoo

## SEX

MN

## AGE

17 years, 7 months

## WEIGHT

20.5 lbs.

## INTERPRETED BY

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

## IMAGING PERFORMED BY

Sorbo

## PRESENTING CLINICAL SIGNS

Presenting for seizure like episode. General labs revealed non-regenerative anemia of unknown origin - no other clinical history.

Abnormal PE/Chem/CBC/UA Results: Pallor on exam, grade IV/VI systolic murmur. Labs attached, but here summarized: PCV 15%. MCV 82 (high) MCHC 29 (low) PLT 430 (high) Monos 987 (high) Eos 1410 (high) ALT 134 (high) Accuplex 4xneg. Today's scans = general survey and mass hunt. Sent out CXR as well and have started P on 5mg/kg doxycycline PO BID and prednisone 2mg/kg SID for now. Tick-borne always a huge concern in our area.

## 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	<1.3	28-40	40-100	<0.6
PATIENT	5.8			1.1	49	80	0.2
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				
PATIENT	NM	1.7	1.0		3.2	3.0	

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## Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 2 different LA measurement methods. Chamber volumes and echogenicity were normal. The cranial and caudal **mitral** valve leaflets presented moderate thickening consistent with endocardiosis. Doppler indicated measurable moderate eccentric insufficiency. 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. Normal measured LVOT velocity with aortic insufficiency measuring 4.0 m/s was noted on Doppler. The **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted or chamber overload. **Tricuspid** valvular assessment demonstrated adequate linear morphology. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. **Pulmonic** tract assessment revealed normal valve structure,



<b>PATIENT</b>	lamellar flow, and diameter (approx.1:1 pa/ao ratio). No visible <b>pericardial</b> or free pleura fluid was noted. No echographically detectable evidence of infiltrative disease was visible. The cranial <b>mediastinum and pericardial regions</b> were free of masses in the visible window.
Bailey Oulette	
<b>SPECIES</b>	<b>Urinary System</b>
Canine	The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2.0 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>BREED</b>	
Cockapoo	
<b>SEX</b>	The residual prostate was free of pathology.
MN	No evidence of pathology in the area of the aortic trifurcation.
<b>AGE</b>	Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio was maintained. The medulla and cortices were uniform in texture with some increased echogenicity and moderate loss of corticomedullary symmetry and definition expected for the age of the patient. Left kidney mild to moderate pyelectasia was present. There was no evidence of left hydronephrosis. The left kidney measured 4.9 cm in length. The right kidney measured 5.2 cm in length.
17 years, 7 months	
<b>WEIGHT</b>	<b>Adrenal Glands</b>
20.5 lbs.	The bilateral adrenal glands were normal in size. Mild parenchyma heterogeneity and mild capsule asymmetry was present without suspicion for overt neoplasia. The left adrenal gland measured 0.52 cm width in the cranial pole and 0.57 cm width in the caudal pole. The right adrenal gland measured 0.62 cm width in the caudal pole.
<b>INTERPRETED BY</b>	<b>Spleen</b>
R. McKenzie Daniel, DVM, DABVP (Canine and Feline)	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>IMAGING PERFORMED BY</b>	<b>Liver/ Gallbladder</b>
Sorbo	The liver was subjectively normal in size, structure, and contour. The liver parenchyma was mildly nonuniform and hypoechoic to the spleen with a moderate coarse echotexture and subjective mild to benign parenchymal remodeling. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended in size with subjective mildly thickened hyperechoic gallbladder wall. The gallbladder contained anechoic content with mild, nonorganized, hyperechoic lumen sediment. No evidence of peripheral gallbladder inflammation was noted. The cystic and common bile ducts were normal.
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<b>INVOICE</b>	<b>Gastrointestinal</b>
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<b>PATIENT</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.
Bailey Oulette	
<b>SPECIES</b>	Normal visible colon wall layers were present with apparent formed feces in lumen.
Canine	<b>Pancreas</b>
<b>BREED</b>	The pancreas was normal in size and contour with isoechoic to heterogeneous parenchyma compared to adjacent omentum, consistent with age-related pancreatic changes. No signs of active inflammation or neoplasia.
Cockapoo	<b>Free Abdomen</b>
<b>SEX</b>	No omental masses, lymphadenopathy, or evidence of peritoneal effusion were noted.
MN	<b>ULTRASONOGRAPHIC FINDINGS</b>
<b>AGE</b>	<ul style="list-style-type: none"> <li>• Compensated chronic mitral valve disease (ACVIM B1)</li> <li>• Aortic insufficiency</li> <li>• Chronic renal changes with left kidney pyelectasia</li> <li>• Sonographically normal spleen</li> <li>• Hepatic parenchymal remodeling, nonspecific low-grade chronic hepatopathy</li> <li>• Mild gallbladder sediment - possible mild chronic cholecystitis</li> </ul>
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R. McKenzie Daniel, DVM, DABVP (Canine and Feline)	<b>INTERPRETATION OF THE FINDINGS &amp; FURTHER RECOMMENDATIONS</b>
<b>IMAGING PERFORMED BY</b>	The cause of the murmur is chronic degenerative valvular changes with secondary eccentric mitral valve insufficiency. The lack of left atrial enlargement implies that the risk of complication secondary to mitral valve insufficiency is low at this time and, without current clinical signs, indicates that medical therapy is not required. Systemic BP is recommended to assess for evidence of hypertension, given aortic insufficiency. Conservative monitoring is recommended with a recheck echocardiogram in 6-12 months, sooner if clinical signs suggestive of heart disease develop.
Sorbo	Further renal staging to include urine C/S and protein: creatinine ratio on sterile urine sample may be considered. Assuming normal clotting status and if stabilized PCV, screening hepatic FNA cytology using a 25-gauge needle could be considered for screening cytology primarily to assess for evidence of inflammatory criteria, given the mild ALT elevation and rule out the unlikely potential for occult hepatic neoplasia.
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<b>INVOICE</b>	Overall, a definitive cause of the patient's anemia without evidence of definitive intrabdominal or cardiac / pericardial neoplasia was not obvious. Tick titers could be considered if clinically indicated.
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Anemia +/- thrombocytopenia with spherocytes/autoagglutination in dogs and hyperbilirubinemia, bilirubinuria. (NOTE: cats do not get spherocytes in IMHA)



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Consider Onion/Garlic derivative ingestion if Heinz bodies present.

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**Prednisone (K9) Prednisolone (Feline):** 2 mg/kg Sid/Bid initially x 3 weeks then attempt taper

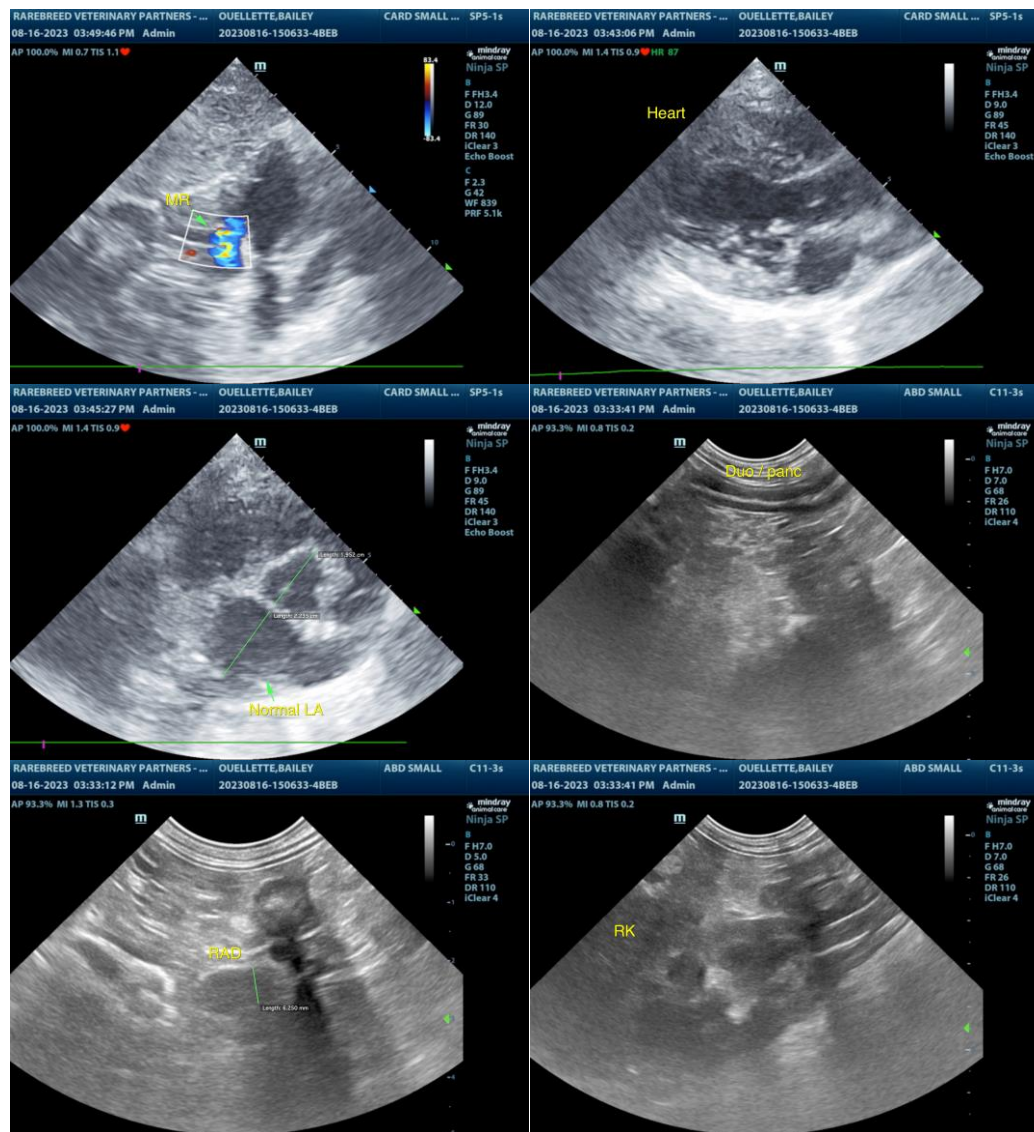
**Aspirin** 0.5 mg/kg Sid owing to hypercoagulable state

**Sucralfate** 0.5-1 g po tid dogs, 0.5 g bid cats in slurry

**Doxycycline** if infectious suspected clinically or based on CBC path review:

**Dogs, Cats:** 10 mg/kg p.o. q24h with food or water bolus in cats

**Long-term management dogs:** Azothiaprine 2 mg/kg Sid or Cyclosporine 10mg/kg po sid bid





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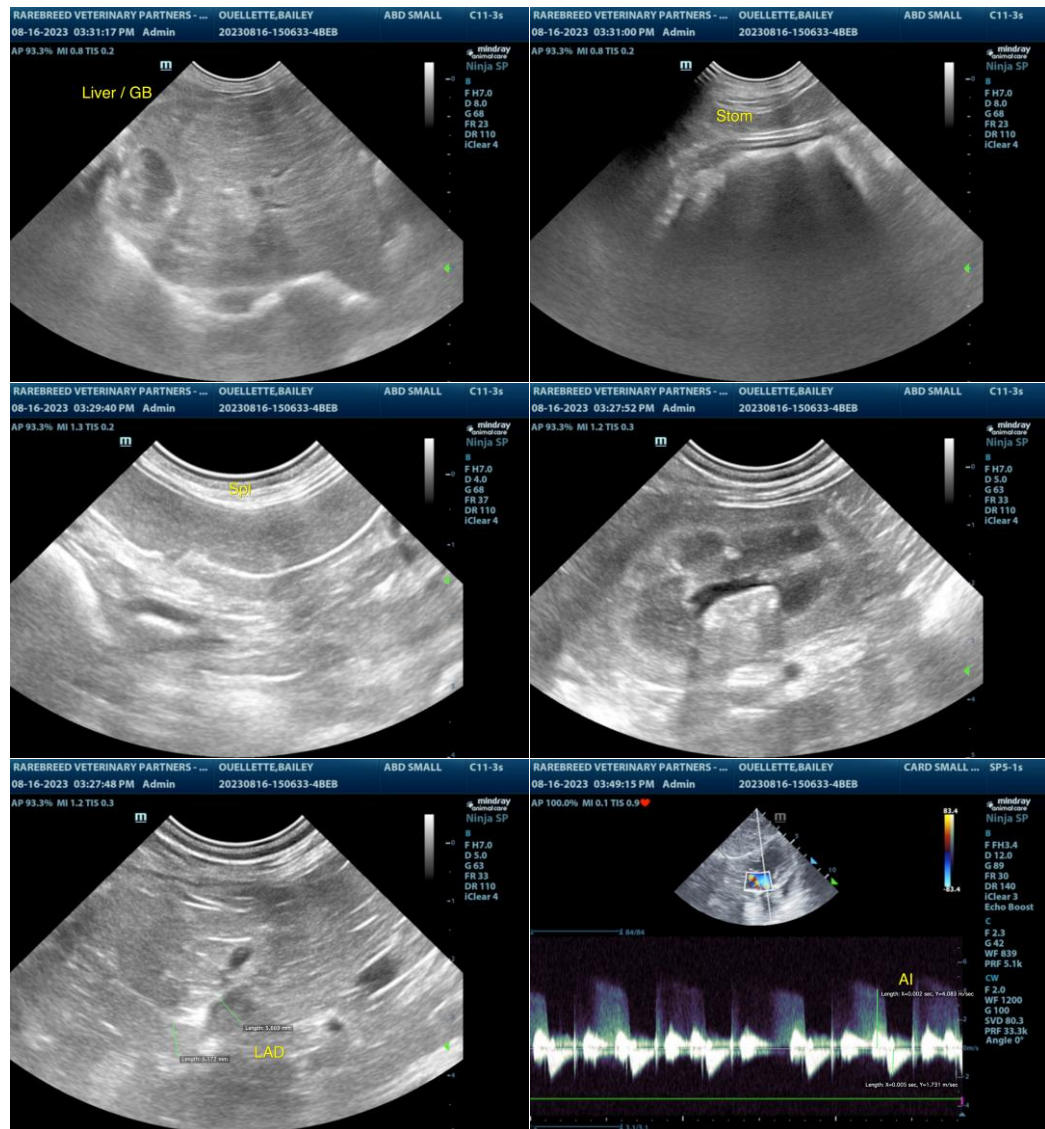
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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