



PATIENT

Bailey Vierling

SPECIES

Canine

BREED

Cavapoo

SEX

FS

AGE

11 years

WEIGHT

28 lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Kelly Vazquez

HOSPITAL NAME

Bergen County VC

REFERRING VET

Dr. Megan Moore

INVOICE

13167

DATE

1/26/22

PRESENTING CLINICAL SIGNS

Grade 5/6 progressive heart murmur, coughing, systemic hypertension, waxing/waning D+, history of proteinuria. No current meds.

Abnormal PE/Chem/CBC/UA Results: 8/28/21: ALP 317, TP 7.7, CK 245. U/A: trace ketones, pH 6.5, 3+ protein, USG 1.042.

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	5.8	2.1	1.6	1.68	39.2	70.4	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	BELOW	BELOW	BELOW	BELOW
PATIENT	112	2.0	0.9		3.8	3.8	

Cardiac Presentation

The echocardiogram in this patient demonstrated mildly enlarged **left atrial** size based on 3 different LA measurement methods. Minor deviation for the Interatrial septum towards the right atrium suggestive of mild increased left atrial pressure was present. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis. No evidence of valvular prolapse or chordae tendineae rupture was noted. Doppler indicated measurable moderate eccentric insufficiency. The **left ventricle** presented thicknesses with linear contour with mild subjective increased left ventricle volume. 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 or chamber overload. **Tricuspid** valvular assessment demonstrated mild thickening with mild insufficiency on color doppler. 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, laminar flow, and diameter (approx.1:1 pa/ao ratio). No visible **pericardial** or free pleura fluid was noted. No echographically detectable evidence of infiltrative disease was visible. The cranial **mediastinum and pericardial regions** were free of masses in the visible window.



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Urinary System

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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.

BREED

Cavapoo

The area of the aortic trifurcation was free of pathology.

SEX

FS

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio was maintained. Both kidneys exhibited mild nonuniform cortical echotexture and mild loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. The left kidney measured 5.7 cm in length. The right kidney measured 5.4 cm in length.

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Adrenal Glands

WEIGHT

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The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.62 cm width at the caudal pole and 0.51 cm width at the cranial pole. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.48 cm width at the caudal pole and 0.53 cm width at the cranial pole. No evidence of adrenal hyperplasia or tumors was noted.

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Spleen

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The spleen exhibited primarily finely textured parenchyma 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 or neoplastic disease.

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Liver/ Gallbladder

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The liver presented 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. Subtle isoechoic discreet parenchymal nodule was present in the ventral liver, measuring 1.1 cm in diameter. This nodule was nonspecific yet not overtly consistent with neoplastic criteria and suggestive of a discreet area of hematopoiesis or potential nodular to regenerative hyperplasia. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended in size with primarily anechoic luminal content. The cystic and common bile ducts were normal.

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Gastrointestinal

The stomach presented intact wall layering with a normal wall layer ratio. Mild, subtly shadowing ingesta and chyme was present in the gastric lumen. The gastric body wall width measured 0.32 cm.



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	Normal visible colon wall layers were present with formed to semi-formed feces in lumen.
BREED	Pancreas
Cavapoo	The pancreas was normal in size and contour with isoechoic to heterogeneous parenchyma compared to adjacent omentum. No signs of active inflammation or neoplasia.
SEX	Free Abdomen
FS	No overt lymphadenopathy or peritoneal effusion was present.
AGE	ULTRASONOGRAPHIC FINDINGS
11 years	Primary Findings
WEIGHT	<ul style="list-style-type: none"> • Chronic mitral valve disease (ACVIM B2) • Minor TR - estimated pulmonary pressure gradient (<20 mm Hg) not overtly consistent with clinical pulmonary hypertension • Bilateral nonspecific mild chronic renal changes • Vacuolar hepatopathy pattern - subjectively benign • Overtly normal gastrointestinal tract with mild gastric and segmental small intestinal ingesta / chyme • Mild heterogeneous pancreas
28 lbs.	
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HOSPITAL NAME	INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS
Bergen County VC	The mild LA enlargement, as well as mild subjective increased LV volume indicate that the risk of complication secondary to mitral valve insufficiency is elevated yet overall, the heart appears to be compensated without additional clinical issues such as systolic dysfunction or overt clinical pulmonary hypertension. The coughing in this patient may be multifactorial with concurrent contribution to potential primarily lower airway disease. Pimobendan 0.3 mg/kg PO BID is recommended as this medication may help prolong cardiac changes associated with mitral valve insufficiency. Hydrocodone trial with assessment of clinical response and at appropriate dose may be considered with as-needed respiratory support. Recheck echocardiogram is suggested in 6 months, sooner if persistent or progressive clinical signs suggestive of cardiac disease are noted.
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1/26/22	Further renal staging to include urine C/S and protein: creatinine ratio on sterile urine sample may be considered.



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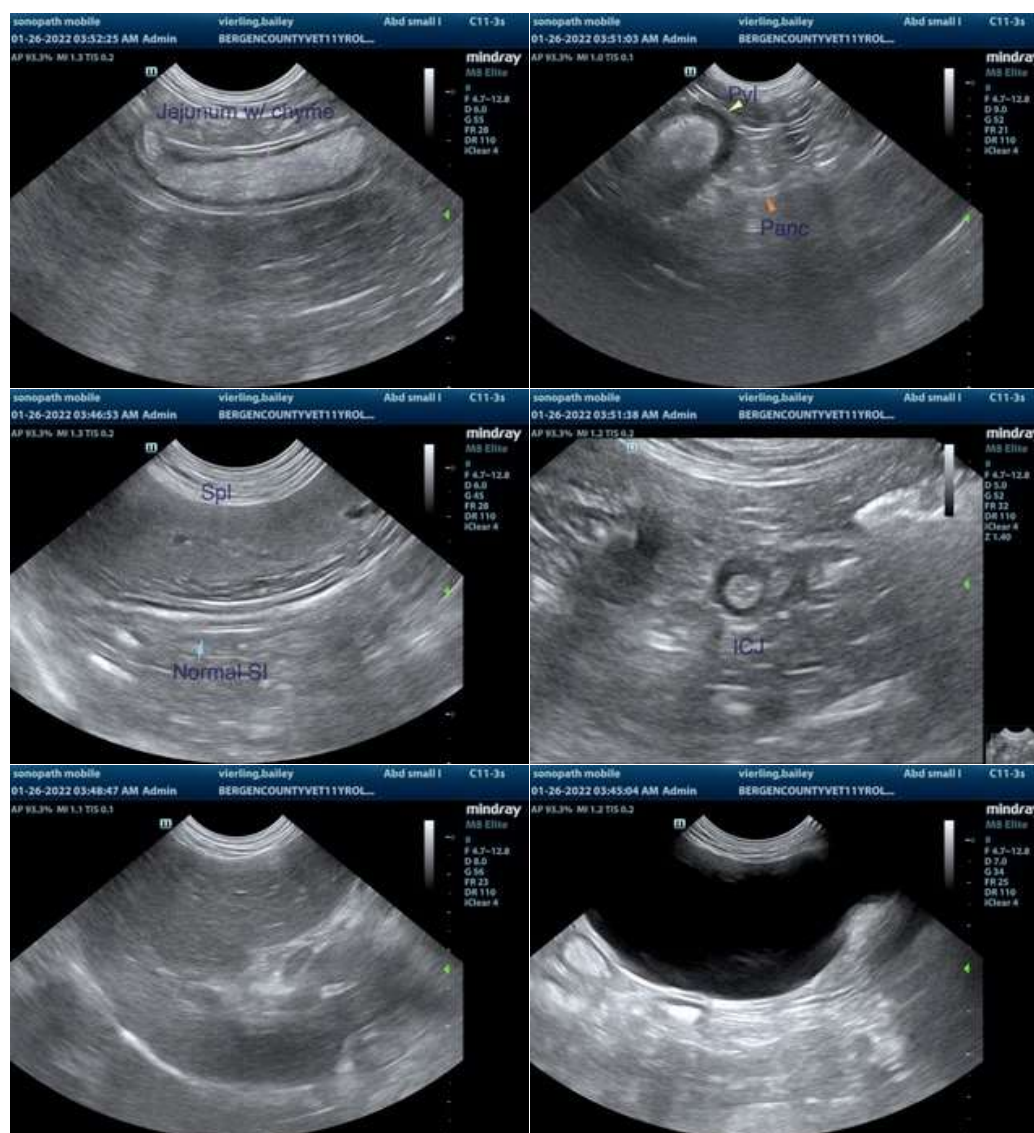
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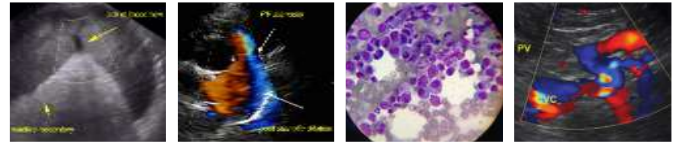
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In patients with recurrent gastrointestinal signs, low-grade to chronic pancreatitis, dysbiosis, food intolerance / dietary hypersensitivity, IBD, or in this case, less likely neoplastic infiltrative intestinal disease is possible. Further assessment may include a GI panel to include PLI/TLI/Cobalamin/Folate.

Empirically, a limited antigen or hydrolyzed diet trial with potential long term dietary therapy, prophylactic deworming (Panacur 50 mg/kg SID x 5 consecutive days with repeat protocol in 3 weeks even if fecal testing is negative), high colony count probiotic (Proviale or Visbiome), antibiotic trial and as needed gastrointestinal support with assessment of clinical response may prove beneficial. Intestinal biopsies may be indicated if GI signs continue despite empirical therapy.





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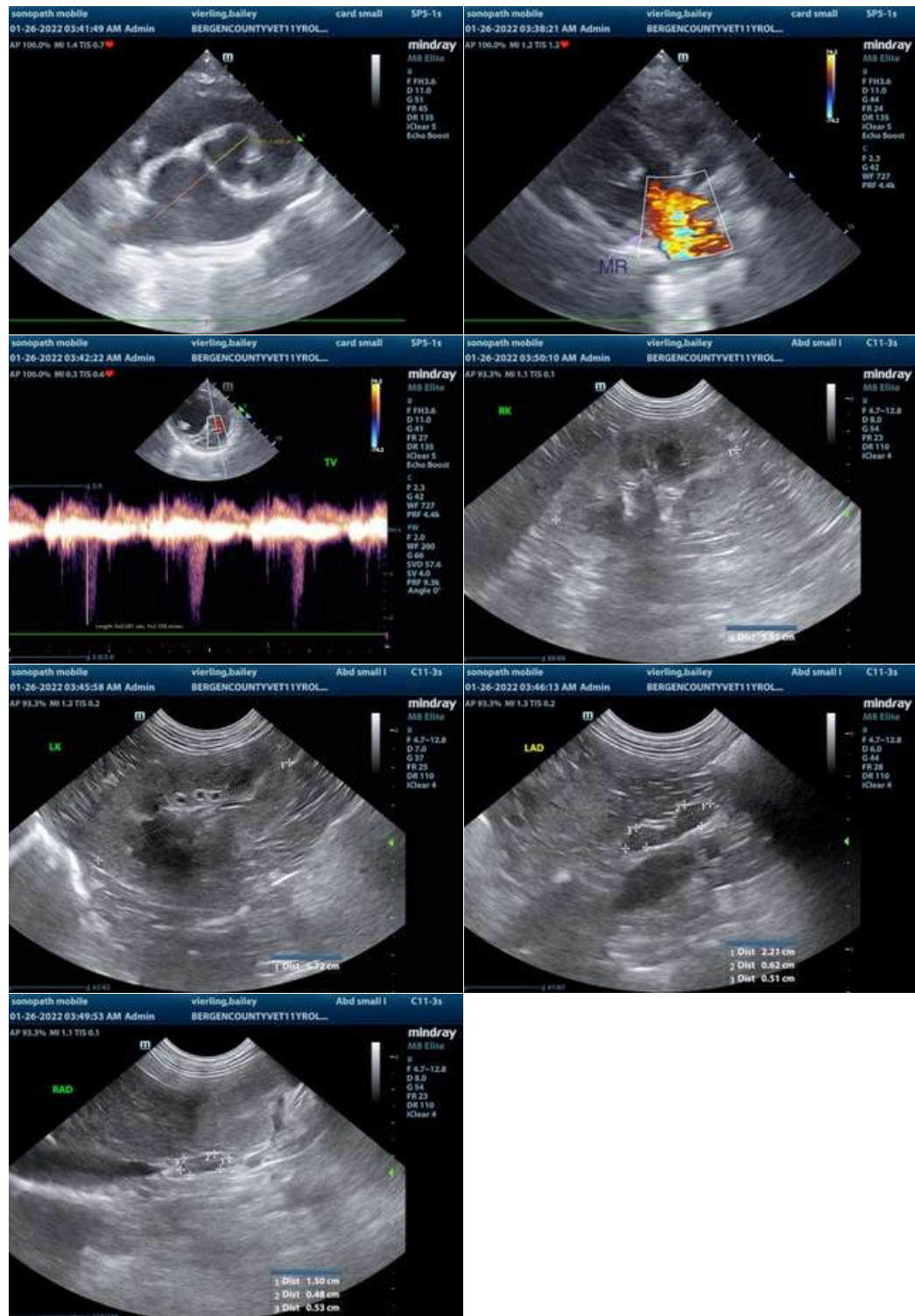
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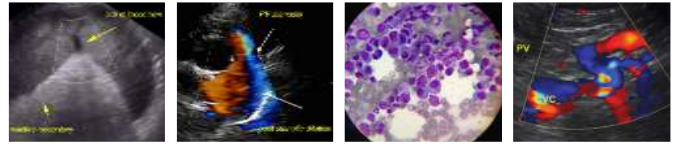
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.



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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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