



PATIENT PRESENTING CLINICAL SIGNS

Matilda Finn History: Coughing, collapse, pulmonary changes, systolic heart murmur Current meds: Furosemide
Abnormal PE/Chem/CBC/UA Results: NR

SPECIES ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

Canine

BREED

Beagle Mix

SEX

Spayed Female

AGE

14 Years

WEIGHT

26 Pounds

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	1.8	NM	1.2	44	76.1	0.29
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	161	1.3	0.85	--	3.8	3.6	--

INTERPRETED BY

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

IMAGING PERFORMED BY

Jessica Miller

HOSPITAL NAME

Newton VH

REFERRING VET

N/A

INVOICE

15909

DATE

6/7/22

Cardiac Presentation

The echocardiogram in this patient demonstrated normal to minor increased **left atrial** size based on 3 different LA measurement methods. Chamber volumes were essentially normal. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis with minor prolapse of the anterior leaflet. Doppler indicated measurable moderate eccentric insufficiency. The **left ventricle** presented thicknesses with maintained linear contour with subjective minor increased LV 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 minor TR on 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.

Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of – cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or



PATIENT	sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes were noted.
Matilda Finn	
SPECIES	Normal size and margination was 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 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 5.2 cm in length. The right kidney measured 4.9 cm in length.
Canine	
BREED	Adrenal Glands
Beagle Mix	The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 2.1 cm in length x 0.79 cm width at the caudal pole.
SEX	The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 2.1 cm in length x 0.54 cm width at the caudal pole.
Spayed Female	
AGE	Spleen
14 Years	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.
WEIGHT	Liver
26 Pounds	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. The hepatic and portal vasculature were normal in appearance without signs of congestion.
INTERPRETED BY	The gallbladder was non distended in size with mild nondependent yet nonorganized gallbladder sludge. The gallbladder was otherwise normal. No evidence of gallbladder or peripheral gallbladder inflammation. The cystic duct and common bile ducts were normal without evidence of dilation.
R. McKenzie Daniel, DVM, DABVP (Canine and Feline)	
IMAGING PERFORMED BY	Gastrointestinal
Jessica Miller	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.
HOSPITAL NAME	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.
Newton VH	
REFERRING VET	Normal visible colon wall layers were present with apparent formed feces in lumen.
N/A	Pancreas
INVOICE	The pancreas was normal in size and contour with isoechoic to heterogeneous parenchyma compared to adjacent omentum. No signs of active inflammation or neoplasia. Likely consistent with age-related pancreatic changes and considered incidental.
15909	Free Abdomen
DATE	No overt lymphadenopathy or peritoneal effusion was present.
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ULTRASONOGRAPHIC FINDINGS

- Chronic mitral valve disease with mild anterior leaflet prolapse (ACVIM B-1- early B-2)
- Minor TR- estimated pulmonary pressure gradient not overtly consistent with clinical pulmonary hypertension
- Vacuolar hepatopathy pattern
- Mild gallbladder debris (non-mucocele)
- Mild chronic renal changes

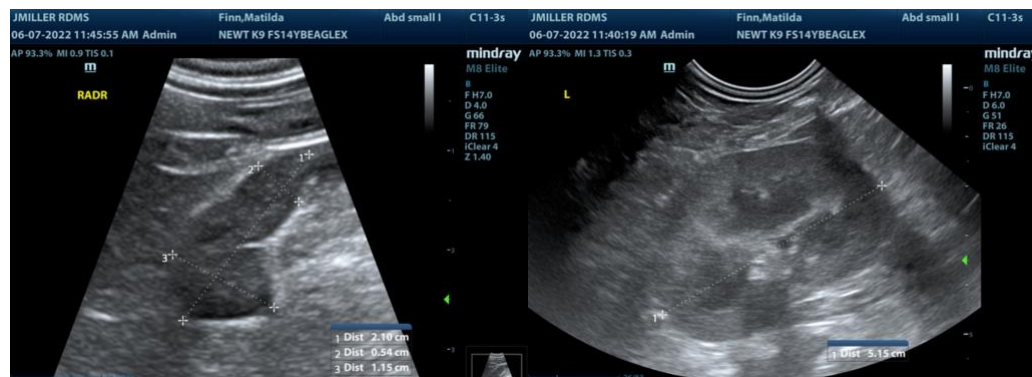
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur is secondary to chronic degenerative valvular changes with secondary eccentric mitral valve and minor tricuspid valve insufficiency. The lack of significant left atrial enlargement or overt left heart volume overload was not obviously suggestive of left sided congestion/CHF. No other clinical issues, such as LV systolic dysfunction or obvious clinical pulmonary hypertension as contributing factors to the patients clinical signs. The coughing in this patient may be multifactorial in origin with potential primary upper or lower respiratory component.

Given the minimal cardiac changes, Pimobendan at 0.3 mg/kg PO BID with low dose Lasix trial warranted, as Pimobendan may help prolong cardiac changes associated with mitral valve insufficiency. Continued, as needed, respiratory support is suggested.

ECG or potential Holter monitor may be indicated, if persistent/progressive collapsing episodes to assess for underlying nonobvious arrhythmogenic disease. Recheck echocardiogram suggested in 6-months or sooner if clinical signs suggestive of left sided congestion are noted.

Largely geriatric abdomen without evidence of significant visceral pathology as an obvious contributing factor to the patients clinical signs. Correlation with full CBC/Chemistry panel and urinalysis suggested.





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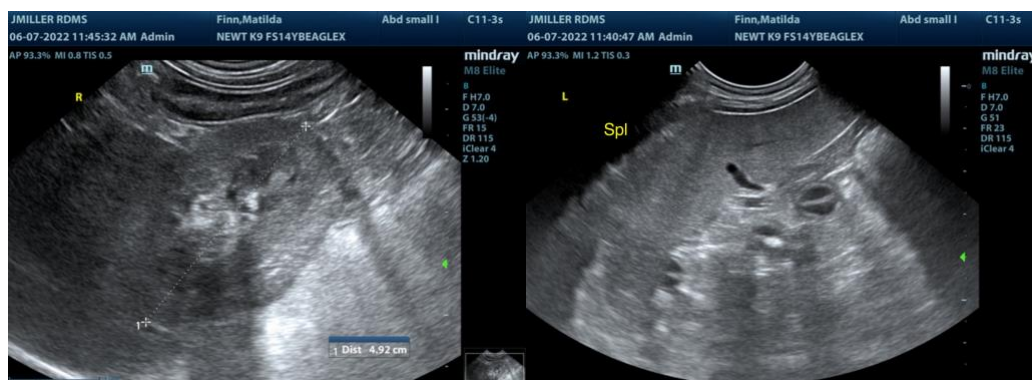
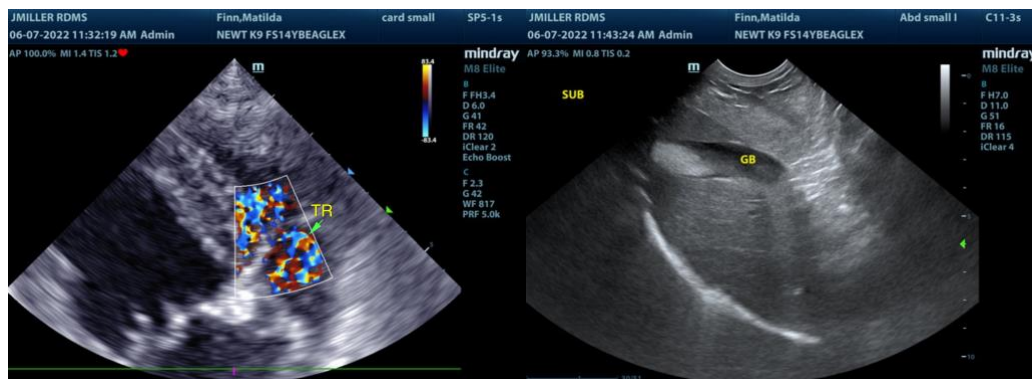
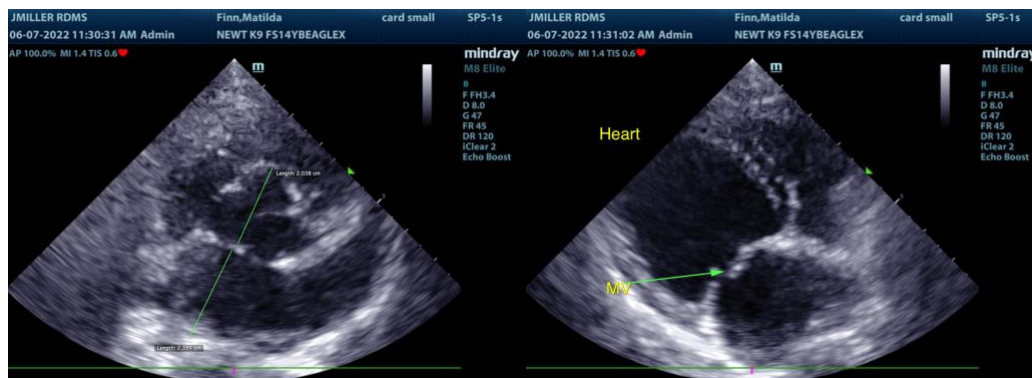
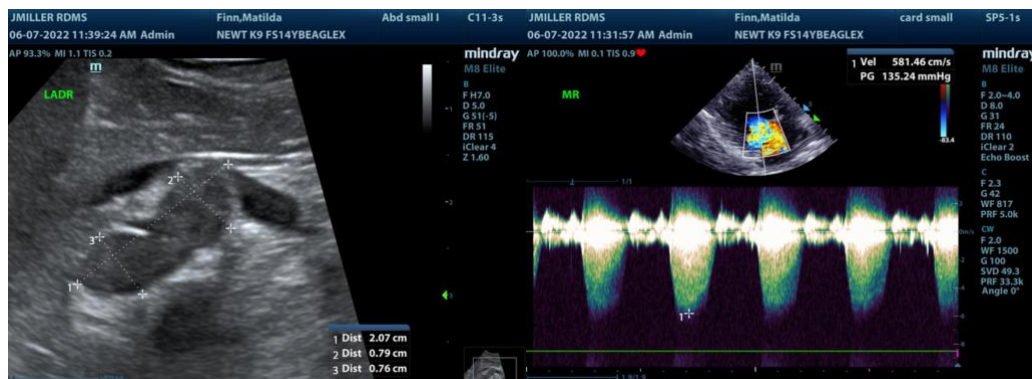
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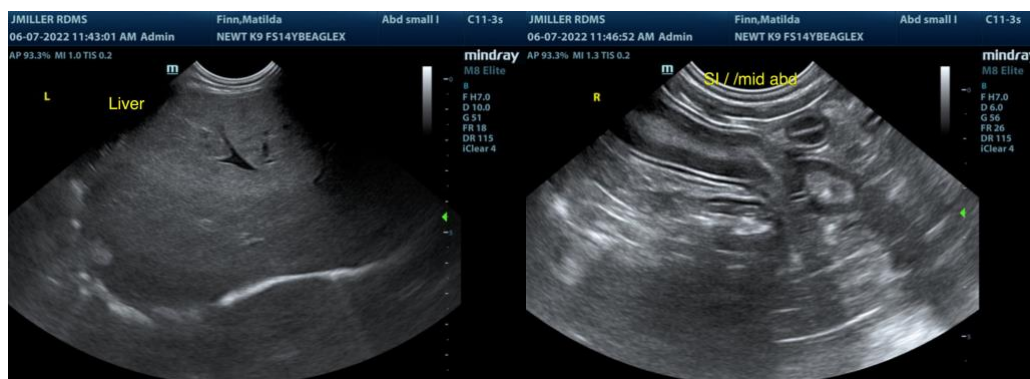
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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