



**PATIENT**

Riley Corsi

**SPECIES**

Canine

**BREED**

Maltese Mix

**SEX**

MN

**AGE**

17 years

**WEIGHT**

17.1 lbs.

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Jessica Miller

**HOSPITAL NAME**

AH of Roxbury

**REFERRING VET**

Dr. Hickenbottom

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13898

**DATE**

5/18/22

**PRESENTING CLINICAL SIGNS**

Grade 5/6 heart murmur, recheck, abdominal pain. Current meds: pimobendan  
Abnormal PE/Chem/CBC/UA Results: BUN/Crea ratio 28, Glu 57, Chol 330, Tri 435, Plt 429, SDMA 17.5 UA pending

**ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN**

CANINE	MR	TR	LA/AO	LA/AO	FS	EF	EPSS
CARDIAC	VMAX	VMAX	(Boon method)	(Heart Base; Swe)	(%)	(%)	(cm)
PARAMETERS	(m/s)	(m/s)					
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.3	28-40	40-100	<0.6
PATIENT	5.0	3.4	1.22	1.5	52	84.2	0.2
CANINE	HR	AV	PV	BODY WEIGHT	LA	LVIDd	LVIDs
CARDIAC	(BPM)	VMAX	MAX	(kg)	2D short axis Base view	Avg; 2D and m-mode short axis	Avg; 2D and m-mode short axis
PARAMETERS		(m/s)	(m/s)		(cm)	(cm)	(cm)
NORMAL PARAMETER	50-100	0.7-1.7	0.7-1.6				
PATIENT	82	1.8	0.75		3.6	3.3	

**Cardiac Presentation**

The echocardiogram in this patient demonstrated mildly enlarged **left atrial** size based on 3 different LA measurement methods. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis with very minor prolapse of the cranial and caudal mitral valve leaflets. 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 with evidence of minor myocardial remodeling, yet no 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. Previously noted aortic insufficiency measuring 2.0 m/s, was present. 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. Mild TR was present 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.



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**Urinary System**

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The urinary bladder, trigone, and cystourethral junction 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.

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The area of the residual prostate was free of pathology.

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The area of the aortic trifurcation was free of pathology.

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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. Mild pyelectasia was present in the left kidney. The left kidney measured 3.8 cm in length. The right kidney measured 3.8 cm in length.

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**Adrenal Glands**

The bilateral adrenal glands were normal in size. Mild parenchyma heterogeneity and mild capsule asymmetry was present without suspicion for overt neoplasia. Potential for minor adenomatous adrenal changes is suspected. No evidence of adrenal neoplastic criteria was noted. The left adrenal gland measured 1.7 cm length x 0.52 width in the caudal pole. The right adrenal gland measured 1.9 cm length x 0.52 width in the caudal pole.

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**Spleen**

The spleen exhibited primarily finely textured parenchyma which was hyperechoic to the liver and renal cortical parenchyma. A solitary mildly hypoechoic nondisruptive cranial splenic nodule was present, measuring 0.78 cm diameter. 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 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. A solitary cystic to nonhomogeneous, non-expansive nodule was noted in the caudoventral liver, measuring 1.1 cm diameter. The hepatic and portal vasculature were normal in appearance without signs of congestion.

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The gallbladder was non-distended in size containing anechoic content with moderate congealed hyperechoic yet nonorganized luminal debris. No evidence of peripheral gallbladder inflammation was noted. 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. The lumen of the stomach was empty with no signs of ileus, obstruction, or foreign material.



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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. Minor nonspecific duodenal mucosal speckling was noted.

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Normal visible colon wall layers were present with apparent formed feces in lumen.

***Pancreas***

**BREED**

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The pancreas was normal in size and contour with isoechoic to heterogeneous parenchyma compared to adjacent omentum. No signs of active inflammation or neoplasia.

***Free Abdomen***

**SEX**

No overt lymphadenopathy or peritoneal effusion was present.

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**ULTRASONOGRAPHIC FINDINGS**

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- Chronic mitral valve disease (Static ACVIM B2)
- TR - estimated pulmonary pressure gradient (approximately 46 mm Hg), consistent with mild pulmonary hypertension
- Previously noted aortic insufficiency
- Bilateral chronic renal changes with mild left kidney pyelectasia
- Nonspecific yet suspect benign splenic nodule - focal lymphoid hyperplasia, hematopoiesis, small hematoma, or similar likely, emerging neoplastic criteria is considered less likely
- Hepatic parenchymal remodeling with solitary cystic to nonhomogeneous intraparenchymal nodule - suspect hepatic cyst, cystic biliary adenoma, or similar, no evidence of hepatic neoplastic criteria
- Moderate to congealed gallbladder debris (non-mucocele)
- Pancreatic remodeling - suspect associated with age, minor potential for low-grade to chronic pancreatitis possible

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

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The overall heart appeared to be subjectively static to the previous study without evidence of significant progression owing to mitral valve insufficiency. Likewise, no evidence of RA/RV enlargement, suggestive of clinical pulmonary hypertension. Continued protocol including Pimobendan is warranted with continued monitoring. Recheck echocardiogram is suggested in 6 months, sooner if clinical signs consistent with left-sided heart disease or clinical pulmonary hypertension are noted. Assessment of systemic BP, to assess for evidence of hypertension given the aortic Insufficiency, is suggested if not recently done.

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Overall largely geriatric abdomen without evidence of significant visceral pathology or a definitive source of intraabdominal pain.



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The pyelectasia in the left kidney may be owing to chronic renal changes, potential pelvic scarring possibly owing to previous calculi passage, IV fluid therapy (if applicable). Urine C/S and protein:creatinine ratio on sterile urine sample is recommended.

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Sonographic monitoring of the hepatosplenic nodules for evidence of progression would be reasonable.

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Potential for low-grade to chronic pancreatitis would be suspected if evidence of cranial abdominal or subxiphoid discomfort on palpation, given the reported abdominal pain.

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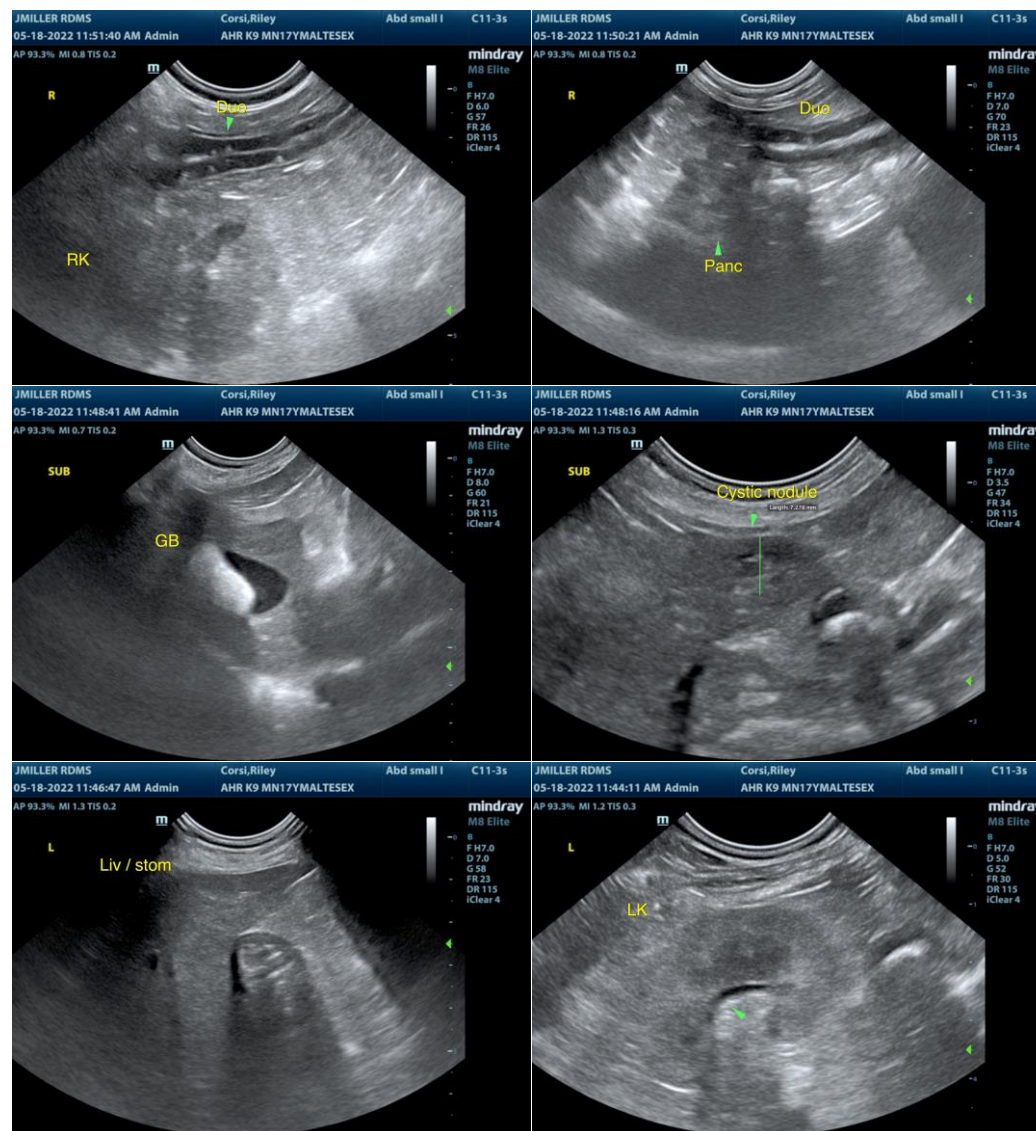
Dr. Hickenbottom

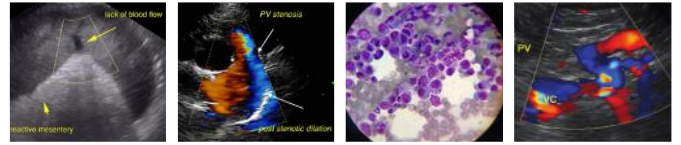
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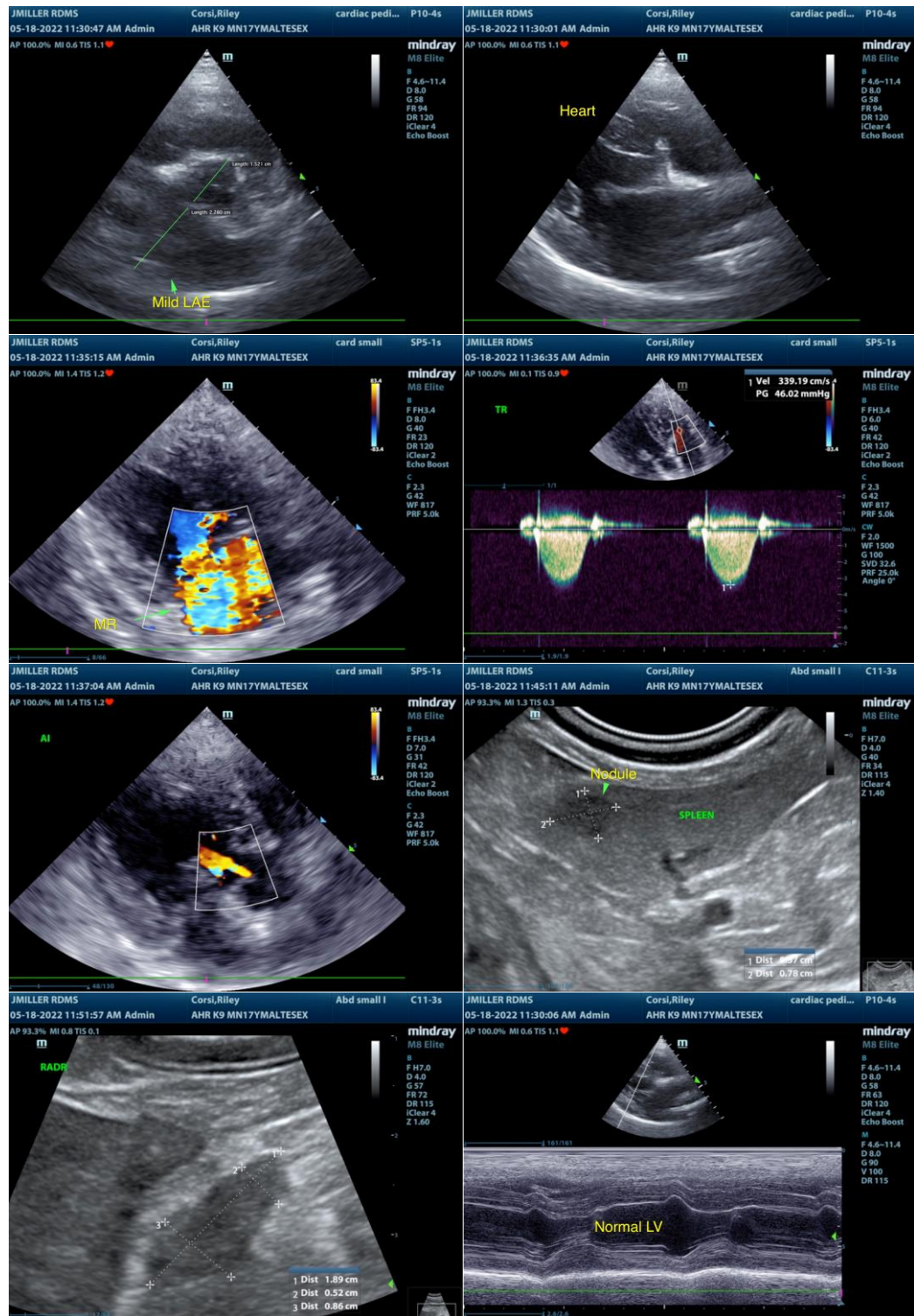
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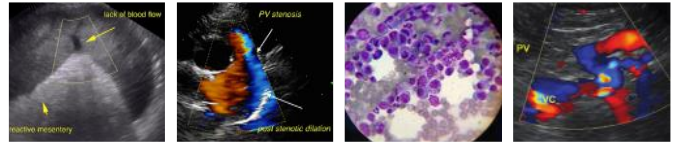
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.



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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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**info@SonoPath.com**

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