



PATIENT PRESENTING CLINICAL SIGNS

PATIENT Sadie Davenport
SPECIES Canine
BREED Poodle Mix
SEX Spayed Female
AGE 10 Years
WEIGHT 13 Pounds

History: Cyanosis, syncope, hemopericardium (20cc aspirated) overnight at Valley Central Referral. O reports pu/pd. Current meds VitK, Buprenorphine, Cerenia.
 Abnormal PE/Chem/CBC/UA Results: Mild neutrophilia, eos 0.02, monos 1.51, wbc 17.43, neuts 13.84, AIP 11

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	5.0	3.5	--	2.8	40	72.2	0.27
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	125	1.3	1.2	--	4.2	3.1	--

INTERPRETED BY

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 DVM, DABVP
 (Canine and Feline)

IMAGING PERFORMED BY

Shari Reffi, CVT

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Cardiac Presentation

The echocardiogram for this patient presented moderate to severely excessive **left atrial size** based on 2 separate LA measurement methods. Deviation of the intraatrial septum towards the right atrium consistent with increased left atrial pressure and mild horizontal component to the left atrial enlargement was present. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis. No overt evidence of valvular prolapse or chordae tendineae rupture. Doppler indicated measurable moderate eccentric insufficiency. The **left ventricle** presented thicknesses with maintained 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 overt evidence of masses in the area of the right atrium or auricle or evidence of chamber overload noted. **Tricuspid** valvular assessment demonstrated concurrent mild subjective thickening with mild 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). Mild to potential moderate volume pleural free fluid was present with potential for persistent scant pericardial free fluid. No overt or echographically detectable evidence of infiltrative disease was visible. The cranial mediastinum and pericardial regions were free of overt masses in the visible window.



PATIENT

Urinary System

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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 were noted. Aortic trifurcation was normal.

SPECIES

Canine

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 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 3.8 cm in length. The right kidney measured 4.1 cm in length.

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Adrenal Glands

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 1.6 cm in length x 0.42 width at the caudal pole.

AGE

10 Years

The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 1.4 cm in length x 0.52 cm width at the caudal pole.

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Spleen

The spleen was normal in size and contour with primarily maintained finely textured homogeneous parenchyma, exhibiting overall normal echogenicity. Focal to intermittent subtly hypoechoic nondisruptive cranial splenic nodules were present. An example of splenic nodule measured 0.3 cm in diameter. The nodules did not distort the cranial splenic capsule.

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Liver

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.

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The gallbladder was non distended in size with primarily anechoic content with mild primarily dependent nonorganized luminal debris. The cystic duct and common bile ducts were normal without evidence of dilation.

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Gastrointestinal

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach contained moderate variably echogenic yet non-shadowing ingesta. The gastric ingesta extended into the duodenum.

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The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. The gastric ingesta extended into the duodenum.

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

Pancreas

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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 was evident.



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Free Abdomen

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No omental masses, lymphadenopathy or peritoneal effusion was present.

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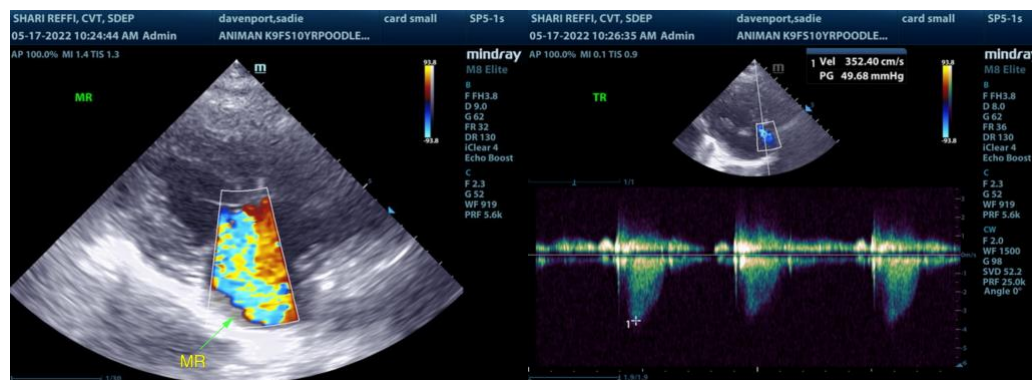
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ULTRASONOGRAPHIC FINDINGS

- Chronic mitral valve disease (ACVIM B-2- C)
- TR- estimated pulmonary pressure gradient consistent with mild to moderate elevated pulmonary pressure/pulmonary hypertension.
- Mild to potential moderate volume pleural free fluid +/- persistent scant pericardial free fluid
- Focal to intermittent nondisruptive cranial splenic nodules- nonspecific. Multiple etiologies possible, including areas of subtle lymphoid hyperplasia, hematopoiesis, small hematomas, splenitis, granulomas with neoplastic criteria possible yet thought less likely.
- Mild gallbladder debris (non-mucocele)
- Sonographically unremarkable gastrointestinal tract with mild gastroduodenal ingesta/chyme

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

A murmur was not reported in this patient yet suspected and consistent with chronic degenerative valvular changes with secondary eccentric mitral valve and tricuspid valve insufficiency. The moderate to severe LA enlargement indicates that the current and future risk of complication, going forward, is moderately to significantly elevated and could potentially be consistent with cardiogenic pleural effusion. Pimobendan at 0.3 mg/kg PO BID with diuretic therapy, such as Lasix at 1-2 mg/kg PO BID is recommended. However, given the reported hemopericardium, noncardiogenic pericardial effusion, potentially secondary to non-visualized neoplastic process, which at times can be difficult to detect sonographically, could be present. No evidence of cor pulmonale or hepatic congestion, secondary to pulmonary hypertension was present at this stage. Coagulation profile, as well as assessment of clinical response to cardiac medications and ideally, sonographic monitoring for evidence of recurrent pericardial effusion is recommended. Guarded prognosis.



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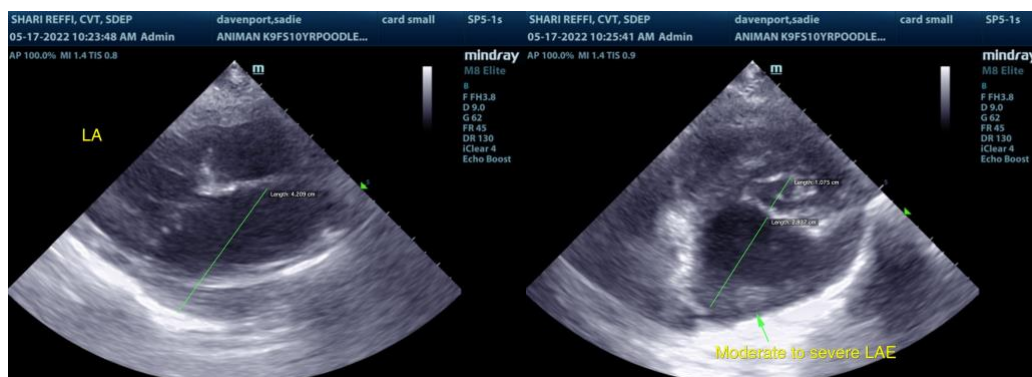
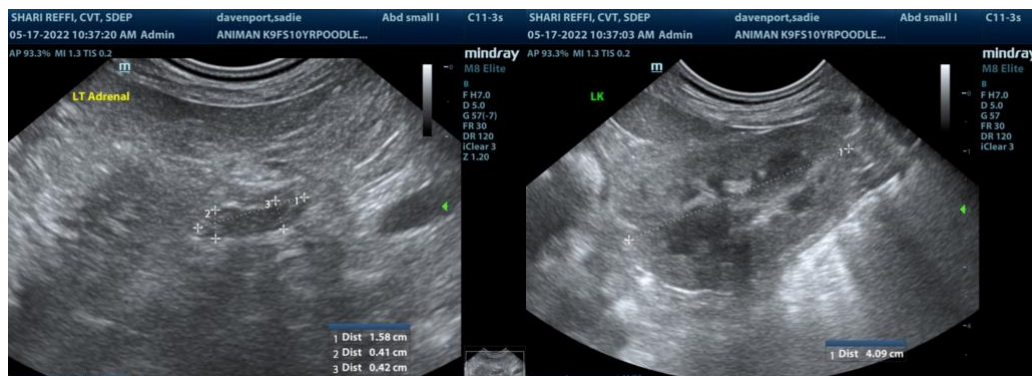
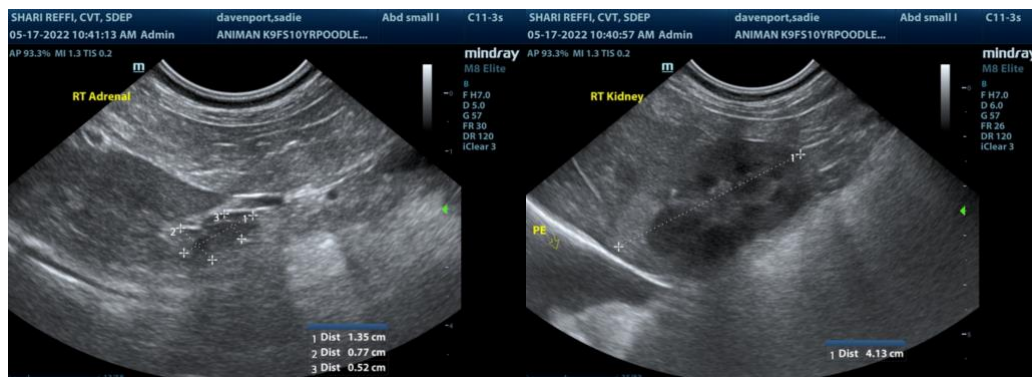
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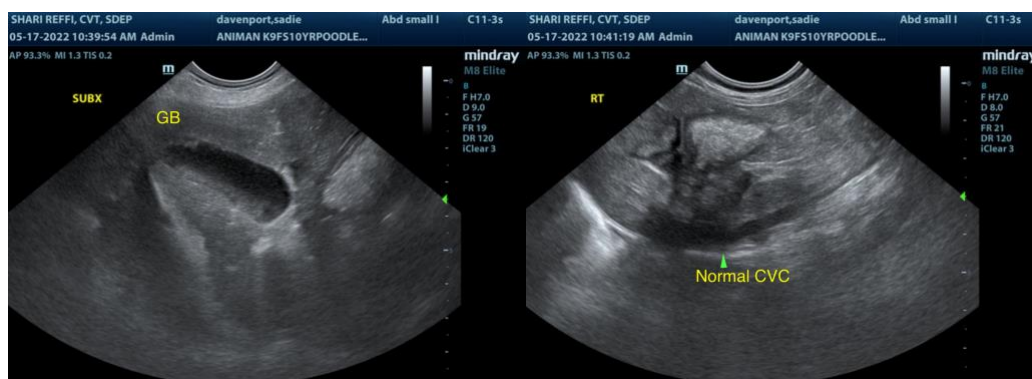
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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