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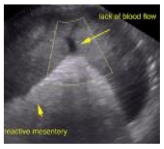

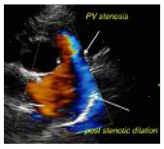

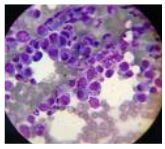
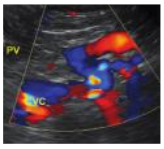

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT

Crue Miller

SPECIES

Canine

BREED

Mini Pinscher

SEX

MN

AGE

12yr

WEIGHT

12.6 lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Shari Reffi, CVT

HOSPITAL NAME

Legacy AN

REFERRING VET

Dr. Potenzone

INVOICE

14987

DATE

9-27-22

PRESENTING CLINICAL SIGNS

Collapsing events. Current meds: Pred 5mg sid for IBD (for 5 years)
Abnormal PE/Chem/CBC/UA Results: wnl (thyroid pending)

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	6.0		1.4	1.5	44	77	0.35
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	101	1.3	1.0		2.9	2.9	

Cardiac Presentation

The echocardiogram in this patient demonstrated minor enlarged **left atrial** size based on 3 different LA measurement methods. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis. Doppler indicated measurable moderate eccentric insufficiency. Borderline increased MR velocity was present. 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. Mild aortic insufficiency was present on doppler measuring 3.0 m/s velocity. 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, laminar flow, and diameter (approx.1:1 pa/ao ratio). Trace pulmonic insufficiency was present on doppler. 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. No evidence of arrhythmia was noted.

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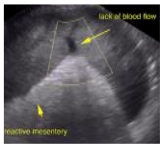
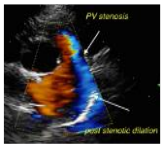
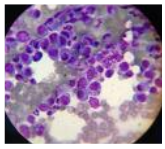
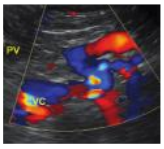

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Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2.0 cm exhibited normal thickness and tone. Mild asymmetrical luminal surface to micropolyploid changes were present likely associated with age related mural changes. 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.

The residual prostate was free of pathology.

The area of the aortic trifurcation was free of pathology.

Normal size was present in the kidneys. A normal 1:3 cortex / medulla ratio was maintained. Variably echogenic cortex echogenicity with areas of minor asymmetrical renal margination were present in both kidneys with moderate 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 3.9 cm in length.

Adrenal Glands

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 1.4 cm length x 0.43 cm width at the caudal pole. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 1.4 cm length x 0.45 cm width at the caudal pole.

Spleen

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.

Liver/ Gallbladder

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. The gallbladder was non-distended in size with thin walls and primarily anechoic luminal content. The cystic and common bile ducts were normal.

Gastrointestinal

The stomach exhibited variable mild irregular wall thickening exhibiting mild nonuniform mural echogenicity. Moderate gastric ingesta was present exhibiting subtle progressive distal acoustic shadowing. The ventral gastric body wall width measured 0.65 cm. No evidence of mechanical pyloric outflow obstruction was noted.

The small intestine exhibited intact wall layering with generalized propensity for mildly prominent mucosa layer. The duodenum wall measured 0.35 cm width. The jejunum wall measured 0.32 cm width.

Normal visible colon wall layers were present with subjective semi-formed to soft fecal matter.

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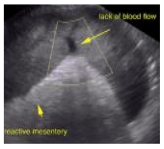
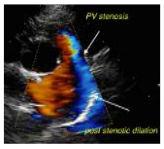
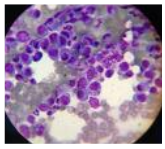
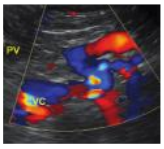

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Pancreas

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 were evident.

Free Abdomen

No overt lymphadenopathy or peritoneal effusion was present.

ULTRASONOGRAPHIC FINDINGS

- Chronic mitral valve disease (ACVIM B1)
- Aortic insufficiency
- Trace pulmonic insufficiency
- Mild to variably thickened stomach exhibiting nonhomogeneous to increased gastric mural echogenicity, gastric ingesta
- Intact yet subjective generalized mild prominent small bowel walls
- Bilateral chronic renal changes with evidence of cortical infarcts
- Sonographically unremarkable bilateral adrenal glands - no evidence of adrenal neoplasia

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The lack of significant left atrium enlargement or evidence of left heart volume overload indicates that the current and future risk of complication secondary to mitral valve insufficiency is relatively low at this stage. No other clinical issues such as LV systolic dysfunction or evidence of clinical pulmonary hypertension, as well as no evidence of arrhythmogenic disease.

In a nonclinical patient without evidence of significant chamber enlargement, cardiac medications are not overtly indicated. However, prognosis Is highly variable, and serial sonographic monitoring is required for further assessment. ECG +/- Holter Monitor may be considered if recurrent or progressive collapsing events. Systemic BP is recommended to assess for evidence of hypertension, given the borderline elevated MR velocity and presence of aortic insufficiency.

Sonographically, the appearance of the gastrointestinal tract consistent with chronic IBD and concurrent chronic gastritis. The presence of gastric ingesta is likely consistent with recent meal ingestion, although some degree of gastric metabolic hypomotility or nonobstructive delayed gastric emptying may be considered if documented NPO.

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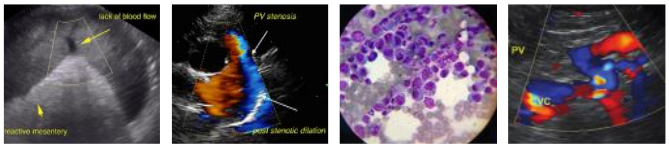

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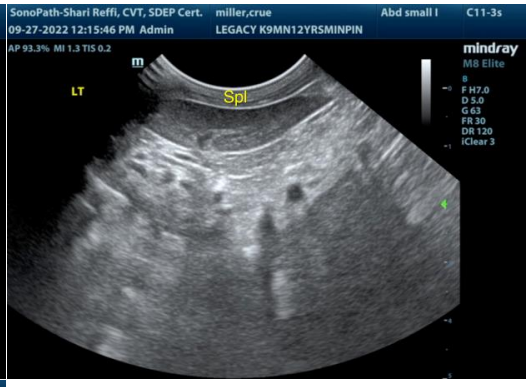

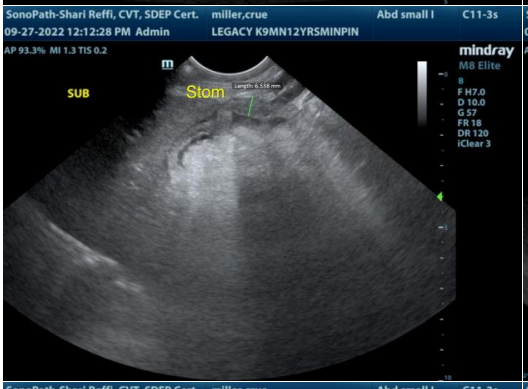

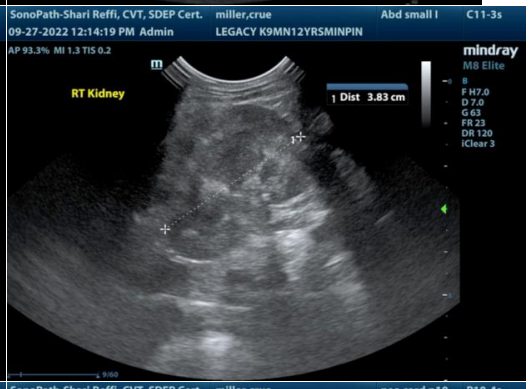

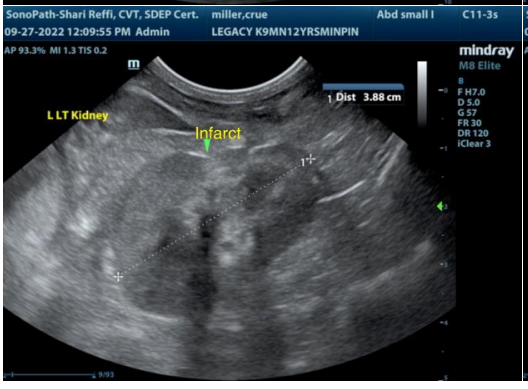

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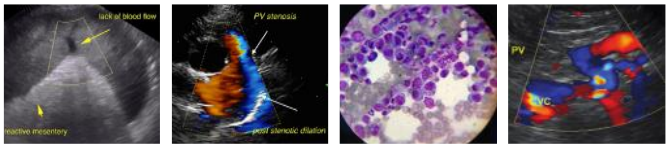

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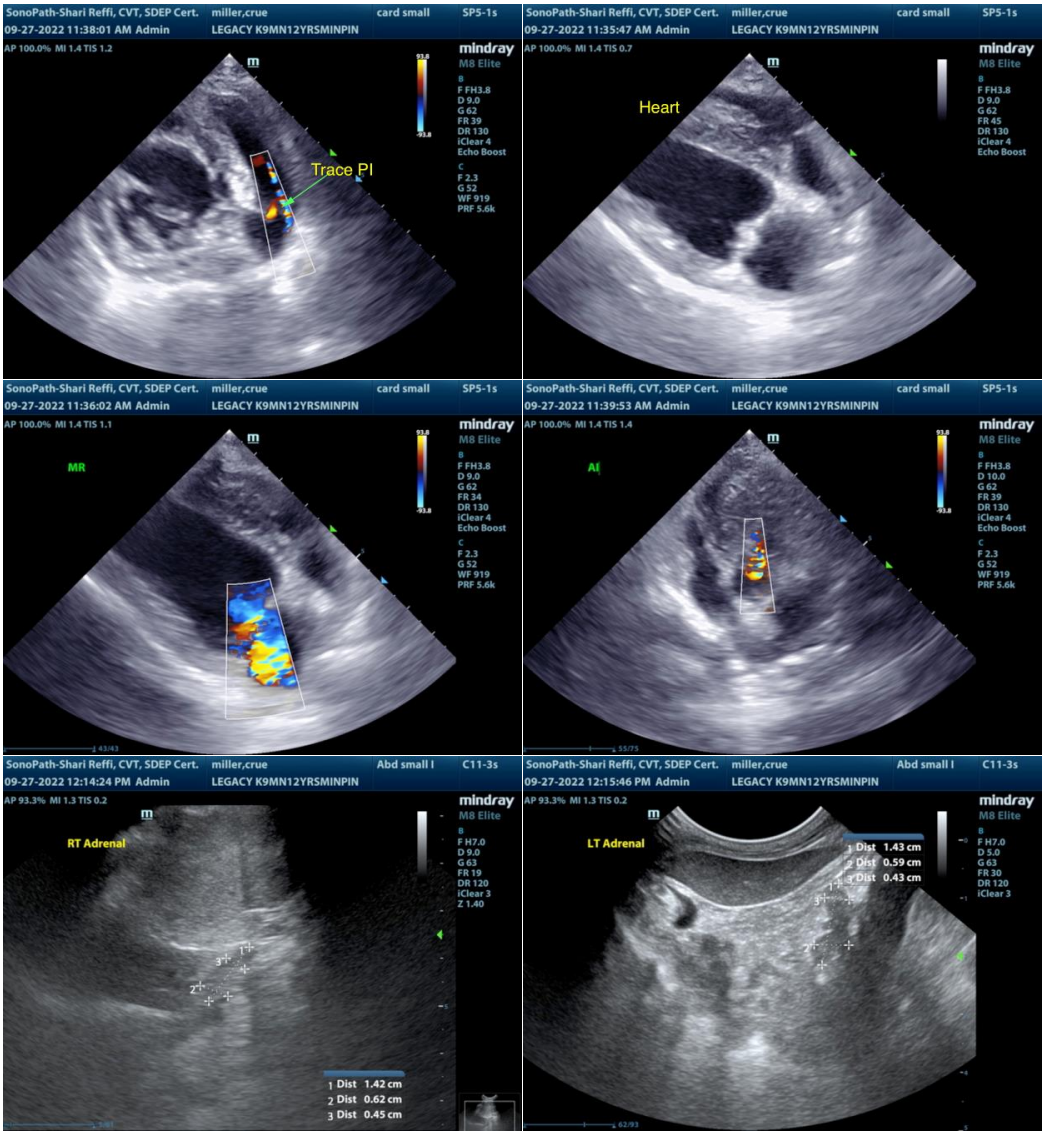

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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